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CAT 2018 Paper SLOT 1 [SOLVED]

"Everybody pretty much agrees that the relationship between elephants and people has dramatically changed," [says psychologist Gay] Bradshaw. "Where for centuries humans and elephants lived in relatively peaceful coexistence, there is now hostility and violence. Now, I use the term 'violence' because of the intentionality associated with it, both in the aggression of humans and, at times, the recently observed behavior of elephants." . . .

Typically, elephant researchers have cited, as a cause of aggression, the high levels of testosterone in newly matured male elephants or the competition for land and resources between elephants and humans. But. . . Bradshaw and several colleagues argue. . . that today's elephant populations are suffering from a form of chronic stress, a kind of species-wide trauma. Decades of poaching and culling and habitat loss, they claim, have so disrupted the intricate web of familial and societal relations by which young elephants have traditionally been raised in the wild, and by which established elephant herds are governed, that what we are now witnessing is nothing less than a precipitous collapse of elephant culture. . . .

Elephants, when left to their own devices, are profoundly social creatures. . . . Young elephants are raised within an extended, multitiered network of doting female caregivers that includes the birth mother, grandmothers, aunts and friends. These relations are maintained over a life span as long as 70 years. Studies of established herds have shown that young elephants stay within 15 feet of their mothers for nearly all of their first eight years of life, after which young females are socialized into the matriarchal network, while young males go off for a time into an all-male social group before coming back into the fold as mature adults. . . .

This fabric of elephant society, Bradshaw and her colleagues [demonstrate], ha[s] effectively been frayed by years of habitat loss and poaching, along with systematic culling by government agencies to control elephant numbers and translocations of herds to different habitats. . . . As a result of such social upheaval, calves are now being born to and raised by ever younger and inexperienced mothers. Young orphaned elephants, meanwhile, that have witnessed the death of a parent at the hands of poachers are coming of age in the absence of the support system that defines traditional elephant life. "The loss of elephant elders," [says] Bradshaw . . . "and the traumatic experience of witnessing the massacres of their family, impairs normal brain and behavior development in young elephants."

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What Bradshaw and her colleagues describe would seem to be an extreme form of anthropocentric conjecture if the evidence that they've compiled from various elephant researchers. . . weren't so compelling. The elephants of decimated herds, especially orphans who've watched the death of their parents and elders from poaching and culling, exhibit behavior typically associated with post-traumatic stress disorder and other trauma-related disorders in humans: abnormal startle response, unpredictable asocial behavior, inattentive mothering and hyperaggression. . . .

[According to Bradshaw], "Elephants are suffering and behaving in the same ways that we recognize in ourselves as a result of violence. . . . Except perhaps for a few specific features, brain organization and early development of elephants and humans are extremely similar."

Q 1: The passage makes all of the following claims EXCEPT:

1. elephant mothers are evolving newer ways of rearing their calves to adapt to emerging threats.
2. the elephant response to deeply disturbing experiences is similar to that of humans.
3. human actions such as poaching and culling have created stressful conditions for elephant communities.
4. elephants establish extended and enduring familial relationships as do humans.

Q 2: Which of the following statements best expresses the overall argument of this passage?

1. Recent elephant behaviour could be understood as a form of species-wide trauma-related response.
2. Elephants, like the humans they are in conflict with, are profoundly social creatures.
3. The relationship between elephants and humans has changed from one of coexistence to one of hostility.
4. The brain organisation and early development of elephants and humans are extremely similar.

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Q 3: Which of the following measures is Bradshaw most likely to support to address the problem of elephant aggression?

1. Funding of more studies to better understand the impact of testosterone on male elephant aggression.
2. The development of treatment programmes for elephants drawing on insights gained from treating post-traumatic stress disorder in humans.
3. Studying the impact of isolating elephant calves on their early brain development, behaviour and aggression.
4. Increased funding for research into the similarity of humans and other animals drawing on insights gained from human-elephant similarities.

Q 4: In paragraph 4, the phrase, "The fabric of elephant society . . . has(s) effectively been frayed by . . ." is:

1. an accurate description of the condition of elephant herds today.
2. a metaphor for the effect of human activity on elephant communities.
3. an exaggeration aimed at bolstering Bradshaw's claims.
4. an ode to the fragility of elephant society today.

Q 5: In the first paragraph, Bradshaw uses the term "violence" to describe the recent change in the human-elephant relationship because, according to him:

1. there is a purposefulness in human and elephant aggression towards each other.
2. elephant herds and their habitat have been systematically destroyed by humans.
3. human-elephant interactions have changed their character over time.
4. both humans and elephants have killed members of each other's species.

The only thing worse than being lied to is not knowing you're being lied to. It's true that plastic pollution is a huge problem, of planetary proportions. And it's true we could all dwvg o more to

reduce our plastic footprint. The lie is that blame for the plastic problem is wasteful consumers and that changing our individual habits will fix it.

Recycling plastic is to saving the Earth what hammering a nail is to halting a falling skyscraper. You struggle to find a place to do it and feel pleased when you succeed. But your effort is wholly inadequate and distracts from the real problem of why the building is collapsing in the first place. The real problem is that single-use plastic—the very idea of producing plastic items like grocery bags, which we use for an average of 12 minutes but can persist in the environment for half a millennium—is an incredibly reckless abuse of technology. Encouraging individuals to recycle more will never solve the problem of a massive production of single-use plastic that should have been avoided in the first place.

As an ecologist and evolutionary biologist, I have had a disturbing window into the accumulating literature on the hazards of plastic pollution. Scientists have long recognized that plastics biodegrade slowly, if at all, and pose multiple threats to wildlife through entanglement and consumption. More recent reports highlight dangers posed by absorption of toxic chemicals in the water and by plastic odors that mimic some species' natural food. Plastics also accumulate up the food chain, and studies now show that we are likely ingesting it ourselves in seafood. . . .

Beginning in the 1950s, big beverage companies like Coca-Cola and Anheuser-Busch, along with Phillip Morris and others, formed a non-profit called Keep America Beautiful. Its mission is/was to educate and encourage environmental stewardship in the public. . . . At face value, these efforts seem benevolent, but they obscure the real problem, which is the role that corporate polluters play in the plastic problem. This clever misdirection has led journalist and author Heather Rogers to describe Keep America Beautiful as the first corporate greenwashing front, as it has helped shift the public focus to consumer recycling behavior and actively thwarted legislation that would increase extended producer responsibility for waste management. . . .

[T]he greatest success of Keep America Beautiful has been to shift the onus of environmental responsibility onto the public while simultaneously becoming a trusted name in the environmental movement. . . .

So what can we do to make responsible use of plastic a reality? First: reject the lie. Litterbugs are not responsible for the global ecological disaster of plastic. Humans can only function to the best of their abilities, given time, mental bandwidth and systemic constraints. Our huge problem with

plastic is the result of a permissive legal framework that has allowed the uncontrolled rise of plastic pollution, despite clear evidence of the harm it causes to local communities and the world's oceans. Recycling is also too hard in most parts of the U.S. and lacks the proper incentives to make it work well.

Q 6: In the second paragraph, the phrase "what hammering a nail is to halting a falling skyscraper" means:

1. relying on emerging technologies to mitigate the ill-effects of plastic pollution.
2. encouraging the responsible production of plastics by firms.
3. focusing on consumer behaviour to tackle the problem of plastics pollution.
4. focusing on single-use plastic bags to reduce the plastics footprint.

Q 7: In the first paragraph, the author uses "lie" to refer to the:

1. blame assigned to consumers for indiscriminate use of plastics.
2. understatement of the enormity of the plastics pollution problem.
3. understatement of the effects of recycling plastics.
4. fact that people do not know they have been lied to.

Q 8: The author lists all of the following as negative effects of the use of plastics EXCEPT the:

1. slow pace of degradation or non-degradation of plastics in the environment.
2. air pollution caused during the process of recycling plastics.
3. adverse impacts on the digestive systems of animals exposed to plastic.
4. poisonous chemicals released into the water and food we consume.

Q 9: Which of the following interventions would the author most strongly support:

1. completely banning all single-use plastic bags.

2. having all consumers change their plastic consumption habits.
3. recycling all plastic debris in the seabed.
4. passing regulations targeted at producers that generate plastic products.

Q 10: It can be inferred that the author considers the Keep America Beautiful organisation:

1. an innovative example of a collaborative corporate social responsibility initiative.
2. a sham as it diverted attention away from the role of corporates in plastics pollution.
3. an important step in sensitising producers to the need to tackle plastics pollution.
4. a "greenwash" because it was a benevolent attempt to improve public recycling habits.

Economists have spent most of the 20th century ignoring psychology, positive or otherwise. But today there is a great deal of emphasis on how happiness can shape global economies, or — on a smaller scale — successful business practice. This is driven, in part, by a trend in "measuring" positive emotions, mostly so they can be optimized. Neuroscientists, for example, claim to be able to locate specific emotions, such as happiness or disappointment, in particular areas of the brain. Wearable technologies, such as Spire, offer data-driven advice on how to reduce stress.

We are no longer just dealing with "happiness" in a philosophical or romantic sense — it has become something that can be monitored and measured, including by our behavior, use of social media and bodily indicators such as pulse rate and facial expressions.

There is nothing automatically sinister about this trend. But it is disquieting that the businesses and experts driving the quantification of happiness claim to have our best interests at heart, often concealing their own agendas in the process. In the workplace, happy workers are viewed as a "win-win." Work becomes more pleasant, and employees, more productive. But this is now being pursued through the use of performance-evaluating wearable technology, such as Humanyze or Virgin Pulse, both of which monitor physical signs of stress and activity toward the goal of increasing productivity.

Cities such as Dubai, which has pledged to become the "happiest city in the world," dream up ever-more elaborate and intrusive ways of collecting data on well-being — to the point where there is now talk of using CCTV cameras to monitor facial expressions in public spaces. New

ways of detecting emotions are hitting the market all the time: One company, Beyond Verbal, aims to calculate moods conveyed in a phone conversation, potentially without the knowledge of at least one of the participants. And Facebook [has] demonstrated . . . that it could influence our emotions through tweaking our news feeds — opening the door to ever-more targeted manipulation in advertising and influence.

As the science grows more sophisticated and technologies become more intimate with our thoughts and bodies, a clear trend is emerging. Where happiness indicators were once used as a basis to reform society, challenging the obsession with money that G.D.P. measurement entrenches, they are increasingly used as a basis to transform or discipline individuals.

Happiness becomes a personal project, that each of us must now work on, like going to the gym. Since the 1970s, depression has come to be viewed as a cognitive or neurological defect in the individual, and never a consequence of circumstances. All of this simply escalates the sense of responsibility each of us feels for our own feelings, and with it, the sense of failure when things go badly. A society that deliberately removed certain sources of misery, such as precarious and exploitative employment, may well be a happier one. But we won't get there by making this single, often fleeting emotion, the over-arching goal.

Q 11: In the author's opinion, the shift in thinking in the 1970s:

1. introduced greater stress into people's lives as they were expected to be responsible for their own happiness.
2. was a welcome change from the earlier view that depression could be cured by changing circumstances.
3. put people in touch with their own feelings rather than depending on psychologists.
4. reflected the emergence of neuroscience as the authority on human emotions.

Q 12: The author's view would be undermined by which of the following research findings?

1. There is a definitive move towards the adoption of wearable technology that taps into emotions.

2. A proliferation of gyms that are collecting data on customer well-being.
3. Individuals worldwide are utilising technologies to monitor and increase their well-being.
4. Stakeholders globally are moving away from collecting data on the well-being of individuals.

Q 13: According to the author, Dubai:

1. develops sophisticated technologies to monitor its inhabitants' states of mind.
2. incentivises companies that prioritise worker welfare.
3. collaborates with Facebook to selectively influence its inhabitants' moods.
4. is on its way to becoming one of the world's happiest cities.

Q 14: According to the author, wearable technologies and social media are contributing most to:

1. happiness as a "personal project".
2. disciplining individuals to be happy.
3. depression as a thing of the past.
4. making individuals aware of stress in their lives.

Q 15: From the passage we can infer that the author would like economists to:

1. correlate measurements of happiness with economic indicators.
2. measure the effectiveness of Facebook and social media advertising.
3. incorporate psychological findings into their research cautiously.
4. work closely with neuroscientists to understand human behaviour.

When researchers at Emory University in Atlanta trained mice to fear the smell of almonds (by pairing it with electric shocks), they found, to their consternation, that both the children and grandchildren of these mice were spontaneously afraid of the same smell. That is not supposed to happen. Generations of schoolchildren have been taught that the inheritance of acquired

characteristics is impossible. A mouse should not be born with something its parents have learned during their lifetimes, any more than a mouse that loses its tail in an accident should give birth to tailless mice. . . .

Modern evolutionary biology dates back to a synthesis that emerged around the 1940s-60s, which married Charles Darwin's mechanism of natural selection with Gregor Mendel's discoveries of how genes are inherited. The traditional, and still dominant, view is that adaptations – from the human brain to the peacock's tail – are fully and satisfactorily explained by natural selection (and subsequent inheritance). Yet [new evidence] from genomics, epigenetics and developmental biology [indicates] that evolution is more complex than we once assumed. . . .

In his book On Human Nature (1978), the evolutionary biologist Edward O Wilson claimed that human culture is held on a genetic leash. The metaphor [needs revision]. . . . Imagine a dog-walker (the genes) struggling to retain control of a brawny mastiff (human culture). The pair's trajectory (the pathway of evolution) reflects the outcome of the struggle. Now imagine the same dog-walker struggling with multiple dogs, on leashes of varied lengths, with each dog tugging in different directions. All these tugs represent the influence of developmental factors, including epigenetics, antibodies and hormones passed on by parents, as well as the ecological legacies and culture they bequeath. . . .

The received wisdom is that parental experiences can't affect the characters of their offspring. Except they do. The way that genes are expressed to produce an organism's phenotype – the actual characteristics it ends up with – is affected by chemicals that attach to them. Everything from diet to air pollution to parental behaviour can influence the addition or removal of these chemical marks, which switches genes on or off. Usually these so-called 'epigenetic' attachments are removed during the production of sperm and eggs cells, but it turns out that some escape the resetting process and are passed on to the next generation, along with the genes. This is known as 'epigenetic inheritance', and more and more studies are confirming that it really happens. Let's return to the almond-fearing mice. The inheritance of an epigenetic mark transmitted in the sperm is what led the mice's offspring to acquire an inherited fear. . . .

Epigenetics is only part of the story. Through culture and society, [humans and other animals] inherit knowledge and skills acquired by [their] parents. . . . All this complexity . . . points to an

evolutionary process in which genomes (over hundreds to thousands of generations), epigenetic modifications and inherited cultural factors (over several, perhaps tens or hundreds of generations), and parental effects (over single-generation timespans) collectively inform how organisms adapt. These extra-genetic kinds of inheritance give organisms the flexibility to make rapid adjustments to environmental challenges, dragging genetic change in their wake – much like a rowdy pack of dogs.

Q 16: The Emory University experiment with mice points to the inheritance of:

1. psychological markers
2. acquired characteristics
3. personality traits
4. acquired parental fears

Q 17: Which of the following best describes the author's argument?

1. Darwin's and Mendel's theories together best explain evolution.
2. Mendel's theory of inheritance is unfairly underestimated in explaining evolution.
3. Wilson's theory of evolution is scientifically superior to either Darwin's or Mendel's.
4. Darwin's theory of natural selection cannot fully explain evolution.

Q 18: Which of the following, if found to be true, would negate the main message of the passage?

1. A study affirming the influence of socio-cultural markers on evolutionary processes.
2. A study highlighting the criticality of epigenetic inheritance to evolution.
3. A study indicating the primacy of ecological impact on human adaptation.
4. A study affirming the sole influence of natural selection and inheritance on evolution.

CAT 2018 Paper SLOT 1 [SOLVED]

Q 19: The passage uses the metaphor of a dog walker to argue that evolutionary adaptation is most comprehensively understood as being determined by:

1. extra genetic, genetic, epigenetic and genomic legacies.
2. socio-cultural, genetic, epigenetic, and genomic legacies
3. ecological, hormonal, extra genetic and genetic legacies.
4. genetic, epigenetic, developmental factors, and ecological legacies.

Q 20: In the first paragraph, the author laments the fact that:

1. there is no recognition of the Indian soldiers who served in the Second World War.
2. the new war memorial will be built right next to India Gate.
3. India lost thousands of human lives during the Second World War.
4. funds will be wasted on another war memorial when we already have the India Gate memorial.

The] Indian government [has] announced an international competition to design a National War Memorial in New Delhi, to honour all of the Indian soldiers who served in the various wars and counter-insurgency campaigns from 1947 onwards. The terms of the competition also specified that the new structure would be built adjacent to the India Gate – a memorial to the Indian soldiers who died in the First World War. Between the old imperialist memorial and the proposed nationalist one, India's contribution to the Second World War is airbrushed out of existence.

The Indian government's conception of the war memorial was not merely absent-minded. Rather, it accurately reflected the fact that both academic history and popular memory have yet to come to terms with India's Second World War, which continues to be seen as little more than mood music in the drama of India's advance towards independence and partition in 1947. Further, the political trajectory of the postwar subcontinent has militated against popular remembrance of the war. With partition and the onset of the India-Pakistan rivalry, both of the

new nations needed fresh stories for self-legitimisation rather than focusing on shared wartime experiences.

However, the Second World War played a crucial role in both the independence and partition of India. . . . The Indian army recruited, trained and deployed some 2.5 million men, almost 90,000 of which were killed and many more injured. Even at the time, it was recognised as the largest volunteer force in the war. . . .

India's material and financial contribution to the war was equally significant. India emerged as a major military-industrial and logistical base for Allied operations in south-east Asia and the Middle East. This led the United States to take considerable interest in the country's future, and ensured that this was no longer the preserve of the British government.

Other wartime developments pointed in the direction of India's independence. In a stunning reversal of its long-standing financial relationship with Britain, India finished the war as one of the largest creditors to the imperial power.

Such extraordinary mobilization for war was achieved at great human cost, with the Bengal famine the most extreme manifestation of widespread wartime deprivation. The costs on India's home front must be counted in millions of lives.

Indians signed up to serve on the war and home fronts for a variety of reasons. . . . [M]any were convinced that their contribution would open the doors to India's freedom. . . . The political and social churn triggered by the war was evident in the massive waves of popular protest and unrest that washed over rural and urban India in the aftermath of the conflict. This turmoil was crucial in persuading the Attlee government to rid itself of the incubus of ruling India. . . .

Seventy years on, it is time that India engaged with the complex legacies of the Second World War. Bringing the war into the ambit of the new national memorial would be a fitting – if not overdue – recognition that this was India's War.

Q 21: The phrase "mood music" is used in the second paragraph to indicate that the Second World War is viewed as:

1. setting the stage for the emergence of the India–Pakistan rivalry in the subcontinent.

2. a tragic period in terms of loss of lives and national wealth.
3. a backdrop to the subsequent independence and partition of the region.
4. a part of the narrative on the ill-effects of colonial rule on India.

Q 22: The author lists all of the following as outcomes of the Second World War EXCEPT:

1. independence of the subcontinent and its partition into two countries.
2. US recognition of India's strategic location and role in the War.
3. large-scale deaths in Bengal as a result of deprivation and famine.
4. the large financial debt India owed to Britain after the War.

Q 23: The author claims that omitting mention of Indians who served in the Second World War from the new National War Memorial is:

1. a reflection of the academic and popular view of India's role in the War.
2. appropriate as their names can always be included in the India Gate memorial.
3. a reflection of misplaced priorities of the post-independence Indian governments.
4. is something which can be rectified in future by constructing a separate memorial.

Q 24: The author suggests that a major reason why India has not so far acknowledged its role in the Second World War is that it:

1. blames the War for leading to the momentous partition of the country.
2. wants to forget the human and financial toll of the War on the country.
3. has been focused on building an independent, non-colonial political identity.
4. views the War as a predominantly Allied effort, with India playing only a supporting role.

Q 25: The four sentences (labelled 1,2,3,4) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper sequence of order of the sentences and key in this sequence of four numbers as your answer:

CAT 2018 Paper SLOT 1 [SOLVED]

1. Impartiality and objectivity are fiendishly difficult concepts that can cause all sorts of injustices even if transparently implemented.
2. It encourages us into bubbles of people we know and like, while blinding us to different perspectives, but the deeper problem of 'transparency' lies in the words "…and much more".
3. Twitter's website says that "tweets you are likely to care about most will show up first in your timeline…based on accounts you interact with most, tweets you engage with, and much more."
4. We are only told some of the basic principles, and we can't see the algorithm itself, making it hard for citizens to analyse the system sensibly or fairly or be convinced of its impartiality and objectivity.
5.

Q 26: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. Translators are like bumblebees.
2. Though long since scientifically disproved, this factoid is still routinely trotted out.
3. Similar pronouncements about the impossibility of translation have dogged practitioners since Leonardo Bruni's De interpretatione recta, published in 1424.
4. Bees, unaware of these deliberations, have continued to flit from flower to flower, and translators continue to translate.
5. In 1934, the French entomologist August Magnan pronounced the flight of the bumblebee to be aerodynamically impossible

Q 27: The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. The woodland's canopy receives most of the sunlight that falls on the trees.

2. Swifts do not confine themselves to woodlands, but hunt wherever there are insects in the air.
3. With their streamlined bodies, swifts are agile flyers, ideally adapted to twisting and turning through the air as they chase flying insects – the creatures that form their staple diet.
4. Hundreds of thousands of insects fly in the sunshine up above the canopy, some falling prey to swifts and swallows
5.

Q 28: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Production and legitimation of scientific knowledge can be approached from a number of perspectives. To study knowledge production from the sociology of professions perspective would mean a focus on the institutionalization of a body of knowledge. The professions-approach informed earlier research on managerial occupation, business schools and management knowledge. It however tends to reify institutional power structures in its understanding of the links between knowledge and authority. Knowledge production is restricted in the perspective to the selected members of the professional community, most notably to the university faculties and professional colleges. Power is understood as a negative mechanism, which prevents the non-professional actors from offering their ideas and information as legitimate knowledge.

1. Professions-approach aims at the institutionalization of knowledge but restricts knowledge production as a function of a select few.
2. The study of knowledge production can be done through many perspectives.
3. Professions-approach focuses on the creation of institutions of higher education and disciplines to promote knowledge production
4. The professions-approach has been one of the most relied upon perspective in the study of management knowledge production.
5.

Q 29: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

CAT 2018 Paper SLOT 1 [SOLVED]

Artificial embryo twinning is a relatively low-tech way to make clones. As the name suggests, this technique mimics the natural process that creates identical twins. In nature, twins form very early in development when the embryo splits in two. Twinning happens in the first days after egg and sperm join, while the embryo is made of just a small number of unspecialized cells. Each half of the embryo continues dividing on its own, ultimately developing into separate, complete individuals. Since they developed from the same fertilized egg, the resulting individuals are genetically identical.

1. Artificial embryo twinning is low-tech and mimetic of the natural development of genetically identical twins from the embryo after fertilization.
2. Artificial embryo twinning is low-tech unlike the natural development of identical twins from the embryo after fertilization.
3. Artificial embryo twinning is just like the natural development of twins, where during fertilization twins are formed.
4. Artificial embryo twinning is low-tech and is close to the natural development of twins where the embryo splits into two identical twins.
5.

Q 30: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

The conceptualization of landscape as a geometric object first occurred in Europe and is historically related to the European conceptualization of the organism, particularly the human body, as a geometric object with parts having a rational, three-dimensional organization and integration. The European idea of landscape appeared before the science of landscape emerged, and it is no coincidence that Renaissance artists such as Leonardo da Vinci, who studied the structure of the human body, also facilitated an understanding of the structure of landscape. Landscape which had been a subordinate background to religious or historical narratives, became an independent genre or subject of art by the end of sixteenth century or the beginning of the seventeenth century.

1. Landscape became a major subject of art at the turn of the sixteenth century.

2. The three-dimensional understanding of the organism in Europe led to a similar approach towards the understanding of landscape.
3. The study of landscape as an independent genre was aided by the Renaissance artists.
4. The Renaissance artists were responsible for the study of landscape as a subject of art.
5.

Q 31: The four sentences (labelled 1,2,3,4) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper sequence of order of the sentences and key in this sequence of four numbers as your answer:

1. But now we have another group: the unwitting enablers.
2. Democracy and high levels of inequality of the kind that have come to characterize the United States are simply incompatible.
3. Believing these people are working for a better world, they are, actually, at most, chipping away at the margins, making slight course corrections, ensuring the system goes on as it is, uninterrupted.
4. Very rich people will always use money to maintain their political and economic power.

5.

Q 32: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. In many cases time inconsistency is what prevents our going from intention to action.
2. For people to continuously postpone getting their children immunized, they would need to be constantly fooled by themselves.
3. In the specific case of immunization, however, it is hard to believe that time inconsistency by itself would be sufficient to make people permanently postpone the decision if they were fully cognizant of its benefits.
4. In most cases, even a small cost of immunization was large enough to discourage most people.
5. Not only do they have to think that they prefer to spend time going to the camp next month rather than today, they also have to believe that they will indeed go next month.

CAT 2018 Paper SLOT 1 [SOLVED]

Q 33: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. Displacement in Bengal is thus not very significant in view of its magnitude.
2. A factor of displacement in Bengal is the shifting course of the Ganges leading to erosion of river banks.
3. The nature of displacement in Bengal makes it an interesting case study.
4. Since displacement due to erosion is well spread over a long period of time, it remains invisible.
5. Rapid displacement would have helped sensitize the public to its human costs.

Q 34: The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. The eventual diagnosis was skin cancer and after treatment all seemed well.
2. The viola player didn't know what it was; nor did her GP.
3. Then a routine scan showed it had come back and spread to her lungs.
4. It started with a lump on Cathy Perkins' index finger.

1600 satellites were sent up by a country for several purposes. The purposes are classified as broadcasting (B), communication (C), surveillance (S), and others (O). A satellite can serve multiple purposes; however a satellite serving either B, or C, or S does not serve O.

The following facts are known about the satellites:

1. The numbers of satellites serving B, C, and S (though may be not exclusively) are in the ratio 2:1:1.

2. The number of satellites serving all three of B, C, and S is 100.

3. The number of satellites exclusively serving C is the same as the number of satellites exclusively serving S. This number is 30% of the number of satellites exclusively serving B.

4. The number of satellites serving O is the same as the number of satellites serving both C and S but not B.

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CAT 2018 Paper SLOT 1 [SOLVED]

Q 35: What best can be said about the number of satellites serving C?

1. Must be between 450 and 725
2. Cannot be more than 800
3. Must be between 400 and 800
4. Must be at least 100

Q 36: What is the minimum possible number of satellites serving B exclusively?

1. 100
2. 200
3. 500
4. 250

Q 37: If at least 100 of the 1600 satellites were serving O, what can be said about the number of satellites serving S?

1. At most 475
2. Exactly 475
3. At least 475
4. No conclusion is possible based on the given information

Q 38: If the number of satellites serving at least two among B, C, and S is 1200, which of the following MUST be FALSE?

A The number of satellites serving C cannot be uniquely determined

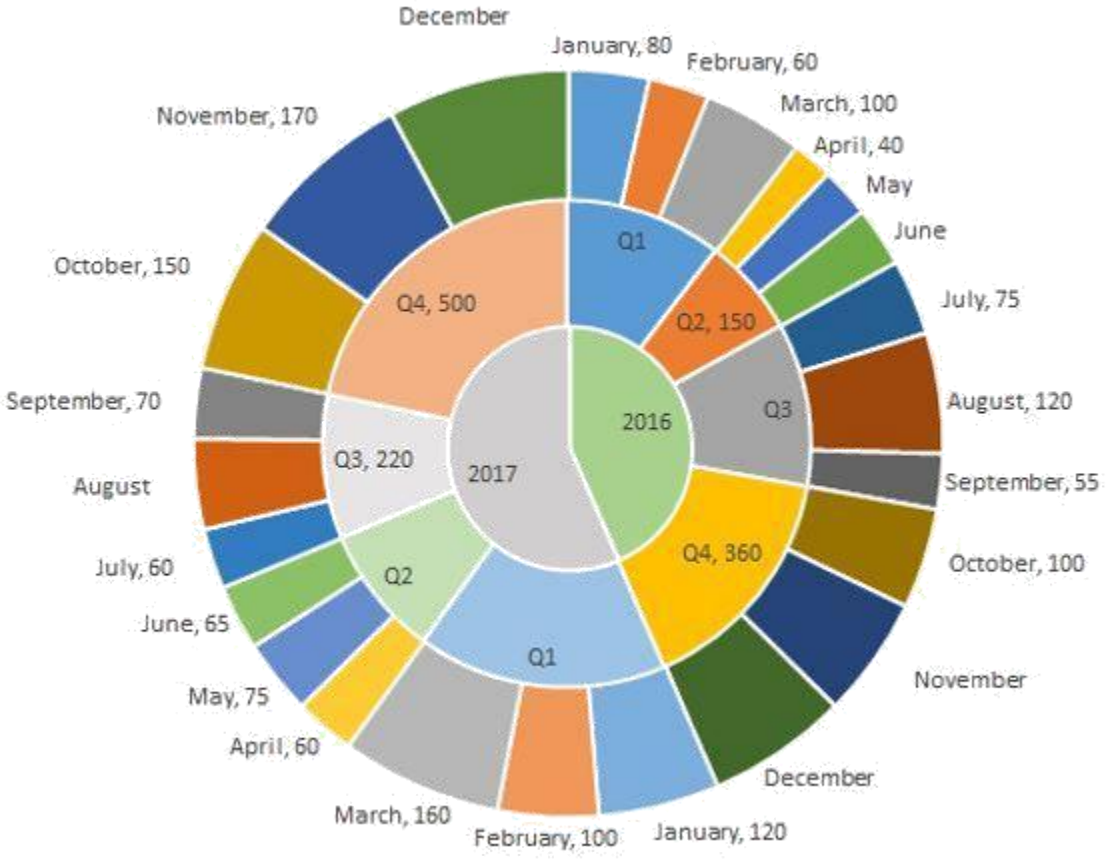
B The number of satellites serving B is more than 1000

C All 1600 satellites serve B or C or S

D The number of satellites serving B exclusively is exactly 250

CAT 2018 Paper SLOT 1 [SOLVED]

The multi-layered pie-chart below shows the sales of LED television sets for a big retail electronics outlet during 2016 and 2017. The outer layer shows the monthly sales during this period, with each label showing the month followed by sales figure of that month. For some months, the sales figures are not given in the chart. The middle-layer shows quarter-wise aggregate sales figures (in some cases, aggregate quarter-wise sales numbers are not given next to the quarter). The innermost layer shows annual sales. It is known that the sales figures during the three months of the second quarter (April, May, June) of 2016 form an arithmetic progression, as do the three monthly sales figures in the fourth quarter (October, November, December) of that year.



Q 39: What is the percentage increase in sales in December 2017 as compared to the sales in December 2016?

1. 28.57

Q. 22.22

R. 50.00

S. 38.46

Q 40: In which quarter of 2017 was the percentage increase in sales from the same quarter of 2016 the highest?

A Q1

B Q3

C Q4

D Q2

Q 41: During which quarter was the percentage decrease in sales from the previous quarter's sales the highest?

Q. Q2 of 2017

R. Q1 of 2017

S. Q4 of 2017

T. Q2 of 2016

Q 42: During which month was the percentage increase in sales from the previous month's sales the highest?

Q. March of 2017

R. October of 2017

S. October of 2016

T. March of 2016

An ATM dispenses exactly Rs. 5000 per withdrawal using 100, 200 and 500 rupee notes. The ATM requires every customer to give her preference for one of the three denominations of notes.

It then dispenses notes such that the number of notes of the customer's preferred denomination exceeds the total number of notes of other denominations dispensed to her.

Q 43: In how many different ways can the ATM serve a customer who gives 500 rupee notes as her preference?

Q 44: If the ATM could serve only 10 customers with a stock of fifty 500 rupee notes and a sufficient number of notes of other denominations, what is the maximum number of customers among these 10 who could have given 500 rupee notes as their preferences?

Q 45: What is the maximum number of customers that the ATM can serve with a stock of fifty 500 rupee notes and a sufficient number of notes of other denominations, if all the customers are to be served with at most 20 notes per withdrawal?

A 10
B 16
C 12
D 13

Q 46: What is the number of 500 rupee notes required to serve 50 customers with 500 rupee notes as their preferences and another 50 customers with 100 rupee notes as their preferences, if the total number of notes to be dispensed is the smallest possible?

Q. 800
R. 750
S. 900
T. 1400

Adriana, Bandita, Chitra, and Daisy are four female students, and Amit, Barun, Chetan, and Deb are four male students. Each of them studies in one of three institutes - X, Y, and Z. Each student

majors in one subject among Marketing, Operations, and Finance, and minors in a different one among these three subjects. The following facts are known about the eight students:

A Three students are from X, three are from Y, and the remaining two students, both female, are from Z.

B Both the male students from Y minor in Finance, while the female student from Y majors in Operations.

C Only one male student majors in Operations, while three female students minor in Marketing.

D One female and two male students major in Finance.

E Adriana and Deb are from the same institute. Daisy and Amit are from the same institute.

F Barun is from Y and majors in Operations. Chetan is from X and majors in Finance.

G Daisy minors in Operations.

Q 47: Who are the students from the institute Z?

A Adriana and Bandita
B Adriana and Daisy
C Bandita and Chitra
D Chitra and Daisy

Q 48: Which subject does Deb minor in?

A Cannot be determined uniquely from the given information
B Marketing
C Operations
D Finance

Q 49: Which subject does Amit major in?

Q. Operations

R. Marketing

S. Cannot be determined uniquely from the given information

T. Finance

Q 50: If Chitra majors in Finance, which subject does Bandita major in?

Q. Cannot be determined uniquely from the given information

R. Marketing

S. Finance

T. Operations

You are given an n×n square matrix to be ?lled with numerals so that no two adjacent cells have the same numeral. Two cells are called adjacent if they touch each other horizontally, vertically or diagonally. So a cell in one of the four corners has three cells adjacent to it, and a cell in the ?rst or last row or column which is not in the corner has five cells adjacent to it. Any other cell has eight cells adjacent to it.

Q 51: What is the minimum number of different numerals needed to ?ll a 3×3 square matrix?

Q 52: What is the minimum number of different numerals needed to ?ll a 5×5 square matrix?

Q 53: Suppose you are allowed to make one mistake, that is, one pair of adjacent cells can have the same numeral. What is the minimum number of different numerals required to ?ll a 5×5 matrix?

Q. 16

R. 4

S. 25

T. 9

CAT 2018 Paper SLOT 1 [SOLVED]

Q 54: Suppose that all the cells adjacent to any particular cell must have different numerals. What is the minimum number of different numerals needed to fill a 5×5 square matrix?

1. 9
2. 16
3. 4
4. 25

Fuel contamination levels at each of 20 petrol pumps P1, P2, …, P20 were recorded as either high, medium, or low.

A Contamination levels at three pumps among P1 – P5 were recorded as high.

B P6 was the only pump among P1 – P10 where the contamination level was recorded as low.

C P7 and P8 were the only two consecutively numbered pumps where the same levels of contamination were recorded.

D High contamination levels were not recorded at any of the pumps P16 – P20.

E The number of pumps where high contamination levels were recorded was twice the number of pumps where low contamination levels were recorded.

Q 55: Which of the following MUST be true?

Q. The contamination level at P10 was recorded as high.
R. The contamination level at P13 was recorded as low.
S. The contamination level at P20 was recorded as medium.
T. The contamination level at P12 was recorded as high.

Q 56: What best can be said about the number of pumps at which the contamination levels were recorded as medium?

Q. Exactly 8

R. More than 4

S. At least 8

T. At most 9

Q 57: If the contamination level at P11 was recorded as low, then which of the following MUST be true?

Q. The contamination level at P12 was recorded as high.

R. The contamination level at P14 was recorded as medium.

S. The contamination level at P15 was recorded as medium.

T. The contamination level at P18 was recorded as low.

Q 58: If contamination level at P15 was recorded as medium, then which of the following MUST be FALSE?

Q. Contamination level at P14 was recorded to be higher than that at P15.

R. Contamination levels at P10 and P14 were recorded as the same.

S. Contamination levels at P13 and P17 were recorded as the same.

T. Contamination levels at P11 and P16 were recorded as the same.

A company administers a written test comprising of three sections of 20 marks each – Data Interpretation (DI), Written English (WE) and General Awareness (GA), for recruitment. A composite score for a candidate (out of 80) is calculated by doubling her marks in DI and adding it to the sum of her marks in the other two sections. Candidates who score less than 70% marks in two or more sections are disqualified. From among the rest, the four with the highest composite scores are recruited. If four or less candidates qualify, all who qualify are recruited.

Ten candidates appeared for the written test. Their marks in the test are given in the table below. Some marks in the table are missing, but the following facts are known:

1. No two candidates had the same composite score.

4. Ajay was the unique highest scorer in WE.

5. Among the four recruited, Geeta had the lowest composite score.

6. Indu was recruited.

7. Danish, Harini, and Indu had scored the same marks the in GA.

8. Indu and Jatin both scored 100% in exactly one section and Jatin's composite score was 10 more than Indu's.

Candidate	marks out of 20		
	DI	WE	GA
Ajay	8		16
Bala		9	11
Chetna	19	4	12
Danish	8	15	
Ester	12	18	16
Falak	15	7	10
Geeta	14		6
Harini	5		
Indu		8	
Jatin		16	14

Q 59: Which of the following statements MUST be true?

A Jatin's composite score was more than that of Danish.

B Indu scored less than Chetna in DI.

C Jatin scored more than Indu in GA.

1. Only 2
2. Only 1
3. Both 1 and 2
4. Both 2 and 3

Q 60: Which of the following statements MUST be FALSE?

Q. Chetna scored more than Bala in DI

R. Harini's composite score was less than that of Falak

S. Bala's composite score was less than that of Ester

T. Bala scored same as Jatin in DI

Q 61: If all the candidates except Ajay and Danish had different marks in DI, and Bala's composite score was less than Chetna's composite score, then what is the maximum marks that Bala could have scored in DI?

Q 62: If all the candidates scored different marks in WE then what is the maximum marks that Harini could have scored in WE?

Twenty four people are part of three committees which are to look at research, teaching, and administration respectively. No two committees have any member in common. No two committees are of the same size. Each committee has three types of people: bureaucrats, educationalists, and politicians, with at least one from each of the three types in each committee. The following facts are also known about the committees:

Q.The numbers of bureaucrats in the research and teaching committees are equal, while the number of bureaucrats in the research committee is 75% of the number of bureaucrats in the administration committee.

R. The number of educationalists in the teaching committee is less than the number of educationalists in the research committee. The number of educationalists in the research committee is the average of the numbers of educationalists in the other two committees.

S. 60% of the politicians are in the administration committee, and 20% are in the teaching committee.

Q 63: Based on the given information, which of the following statements MUST be FALSE?

1. The size of the research committee is less than the size of the administration committee

Q. In the teaching committee the number of educationalists is equal to the number of politicians

R. In the administration committee the number of bureaucrats is equal to the number of educationalists

S. The size of the research committee is less than the size of the teaching committee

Q 64: What is the number of bureaucrats in the administration committee?

Q 65: What is the number of educationalists in the research committee?

Q 66: Which of the following CANNOT be determined uniquely based on the given information?

1. The total number of educationalists in the three committees
2. The total number of bureaucrats in the three committees
3. The size of the research committee
4. The size of the teaching committee

CAT 2018 Paper SLOT 1 [SOLVED]

CAT 2018 Paper SLOT 1 [SOLVED]

Q 67: Let x, y, z be three positive real numbers in a geometric progression such that x < y < z. If 5x, 16y, and 12z are in an arithmetic progression then the common ratio of the geometric progression is

Q. 3/6
R. 3/2
S. 5/2
T. 1/6

Q 68: A tank is fitted with pipes, some filling it and the rest draining it. All filling pipes fill at the same rate, and all draining pipes drain at the same rate. The empty tank gets completely filled in 6 hours when 6 filling and 5 draining pipes are on, but this time becomes 60 hours when 5 filling and 6 draining pipes are on. In how many hours will the empty tank get completely filled when one draining and two filling pipes are on?

Q 69: Given that $x^{2018}y^{2017} = 1/2$ and $x^{2016}y^{2019} = 8$, the value of $x^2 + y^3$ is

Q. 35/4
R. 37/4
S. 31/4
T. 33/4

Q 70: Point P lies between points A and B such that the length of BP is thrice that of AP. Car 1 starts from A and moves towards B. Simultaneously, car 2 starts from B and moves towards A. Car 2 reaches P one hour after car 1 reaches P. If the speed of car 2 is half that of car 1, then the time, in minutes, taken by car 1 in reaching P from A is

A 71: If $\log_2 (5 + \log_3 a) = 3$ and $\log_5 (4a + 12 + \log_2 b) = 3$, then a + b is equal to

4. 67
5. 40
6. 32
7. 59

CAT 2018 Paper SLOT 1 [SOLVED]

Q 72: A trader sells 10 litres of a mixture of paints A and B, where the amount of B in the mixture does not exceed that of A. The cost of paint A per litre is Rs. 8 more than that of paint B. If the trader sells the entire mixture for Rs. 264 and makes a profit of 10%, then the highest possible cost of paint B, in Rs. per litre, is

Q. 26
R. 16
S. 20
T. 22

Q 73: In a circle, two parallel chords on the same side of a diameter have lengths 4 cm and 6 cm. If the distance between these chords is 1 cm, then the radius of the circle, in cm, is

Q. $\sqrt{12}$
R. $\sqrt{14}$
S. $\sqrt{13}$
T. $\sqrt{11}$

Q 74: If among 200 students, 105 like pizza and 134 like burger, then the number of students who like only burger can possibly be

1. 93
2. 26
3. 23
4. 96

Q 75: In an apartment complex, the number of people aged 51 years and above is 30 and there are at most 39 people whose ages are below 51 years. The average age of all the people in the apartment complex is 38 years. What is the largest possible average age, in years, of the people whose ages are below 51 years?

1. 27
2. 28

2. 26
3. 25

Q 76: Given an equilateral triangle T1 with side 24 cm, a second triangle T2 is formed by joining the midpoints of the sides of T1. Then a third triangle T3 is formed by joining the midpoints of the sides of T2. If this process of forming triangles is continued, the sum of the areas, in sq cm, of infinitely many such triangles T1, T2, T3,... will be

1. $164\sqrt{3}$
2. $188\sqrt{3}$
3. $248\sqrt{3}$
4. $192\sqrt{3}$

Q 77: If $u^2 + (u-2v-1)^2 = -4v(u + v)$, then what is the value of $u + 3v$?

1. 1/4
2. 0
3. 1/2
4. -1/4

Q 78: If x is a positive quantity such that $2^x = 3^{\log_5 2}$, then x is equal to

1. $1 + \log_{3-5} 3$
2. $\log_5 8$
3. $1 + \log_{5-5} 3$
4. $\log_5 9$

Q 79: While multiplying three real numbers, Ashok took one of the numbers as 73 instead of 37. As a result, the product went up by 720. Then the minimum possible value of the sum of squares of the other two numbers is

CAT 2018 Paper SLOT 1 [SOLVED]

Q 80: Points E, F, G, H lie on the sides AB, BC, CD, and DA, respectively, of a square ABCD. If EFGH is also a square whose area is 62.5% of that of ABCD and CG is longer than EB, then the ratio of length of EB to that of CG is

A 2 : 5

B 4 : 9

C 3 : 8

D 1 : 3

Q 81: A right circular cone, of height 12 ft, stands on its base which has diameter 8 ft. The tip of the cone is cut off with a plane which is parallel to the base and 9 ft from the base. With π = 22/7, the volume, in cubic ft, of the remaining part of the cone is

Q 82: $\log_{12} 81 = p$, *then* $3\left(\frac{4-p}{4+p}\right)$ is equal to

Q. $\log_4 16$

R. $\log_6 8$

S. $\log_6 16$

T. $\log_2 8$

Q 83: Train T leaves station X for station Y at 3 pm. Train S, traveling at three quarters of the speed of T, leaves Y for X at 4 pm. The two trains pass each other at a station Z, where the distance between X and Z is three-fifths of that between X and Y. How many hours does train T take for its journey from X to Y?

Q 84: Each of 74 students in a class studies at least one of the three subjects H, E and P. Ten students study all three subjects, while twenty study H and E, but not P. Every student who studies P also studies H or E or both. If the number of students studying H equals that studying E, then the number of students studying H is

Q 85: A wholesaler bought walnuts and peanuts, the price of walnut per kg being thrice that of peanut per kg. He then sold 8 kg of peanuts at a profit of 10% and 16 kg of walnuts at a profit of 20% to a shopkeeper. However, the shopkeeper lost 5 kg of walnuts and 3 kg of peanuts in

transit. He then mixed the remaining nuts and sold the mixture at Rs. 166 per kg, thus making an overall profit of 25%. At what price, in Rs. per kg, did the wholesaler buy the walnuts?

A 98
B 96
C 84
D 86

Q 86: A CAT aspirant appears for a certain number of tests. His average score increases by 1 if the first 10 tests are not considered, and decreases by 1 if the last 10 tests are not considered. If his average scores for the first 10 and the last 10 tests are 20 and 30, respectively, then the total number of tests taken by him is

Q 87: Raju and Lalitha originally had marbles in the ratio 4:9. Then Lalitha gave some of her marbles to Raju. As a result, the ratio of the number of marbles with Raju to that with Lalitha became 5:6. What fraction of her original number of marbles was given by Lalitha to Raju?

Q. 1/4
R. 7/33
S. 1/5
T. 6/19

Q 88: Let ABCD be a rectangle inscribed in a circle of radius 13 cm. Which one of the following pairs can represent, in cm, the possible length and breadth of ABCD?

1. 24, 10
2. 25, 9
3. 24, 12
4. 25, 10

Q 89: In a parallelogram ABCD of area 72 sq cm, the sides CD and AD have lengths 9 cm and 16 cm, respectively. Let P be a point on CD such that AP is perpendicular to CD. Then the area, in sq cm, of triangle APD is

CAT 2018 Paper SLOT 1 [SOLVED]

1. $18\sqrt{3}$
2. $24\sqrt{3}$
3. $32\sqrt{3}$
4. $12\sqrt{3}$

Q 90: In a circle with center O and radius 1 cm, an arc AB makes an angle 60 degrees at O. Let R be the region bounded by the radii OA, OB and the arc AB. If C and D are two points on OA and OB, respectively, such that OC = OD and the area of triangle OCD is half that of R, then the length of OC, in cm, is

1. $\left(\frac{\pi}{3\sqrt{3}}\right)^{\frac{1}{2}}$
2. $\left(\frac{\pi}{4}\right)^{\frac{1}{2}}$
3. $\left(\frac{\pi}{6}\right)^{\frac{1}{2}}$
4. $\left(\frac{\pi}{4\sqrt{3}}\right)^{\frac{1}{2}}$

Q 91: How many numbers with two or more digits can be formed with the digits 1,2,3,4,5,6,7,8,9, so that in every such number, each digit is used at most once and the digits appear in the ascending order?

Q 92: The number of integers x such that $0.25 < 2^x < 200$, and $2^x + 2$ is perfectly divisible by either 3 or 4, is

Q 93: If f(x + 2) = f(x) + f(x + 1) for all positive integers x, and f(11) = 91, f(15) = 617, then f(10) equals

Q 94: In an examination, the maximum possible score is N while the pass mark is 45% of N. A candidate obtains 36 marks, but falls short of the pass mark by 68%. Which one of the following is then correct?

1. $N \leq 200$.

5. $243 \leq N \leq 252$.
6. $N \geq 253$.
7. $201 \leq N \leq 242$.

Q 95: Two types of tea, A and B, are mixed and then sold at Rs. 40 per kg. The profit is 10% if A and B are mixed in the ratio 3 : 2, and 5% if this ratio is 2 : 3. The cost prices, per kg, of A and B are in the ratio

A 18:25
B 19:24
C 21:25
D 17:25

Q 96: John borrowed Rs. 2,10,000 from a bank at an interest rate of 10% per annum, compounded annually. The loan was repaid in two equal instalments, the first after one year and the second after another year. The first instalment was interest of one year plus part of the principal amount, while the second was the rest of the principal amount plus due interest thereon. Then each instalment, in Rs., is

Q 97: Let $f(x) = \min\{2x^2, 52-5x\}$, where x is any positive real number. Then the maximum possible value of f(x) is

Q 98: The distance from A to B is 60 km. Partha and Narayan start from A at the same time and move towards B. Partha takes four hours more than Narayan to reach B. Moreover, Partha reaches the mid-point of A and B two hours before Narayan reaches B. The speed of Partha, in km per hour, is

Q. 4
R. 6
S. 5
T. 3

Q 99: Humans and robots can both perform a job but at different efficiencies. Fifteen humans and five robots working together take thirty days to finish the job, whereas five humans and

fifteen robots working together take sixty days to finish it. How many days will fifteen humans working together (without any robot) take to finish it?

Q. 36
R. 32
S. 45
T. 40

Q 100: When they work alone, B needs 25% more time to finish a job than A does. They two finish the job in 13 days in the following manner: A works alone till half the job is done, then A and B work together for four days, and finally B works alone to complete the remaining 5% of the job. In how many days can B alone finish the entire job?

Q. 20
R. 16
S. 22
T. 18

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CAT 2018 Paper SLOT 1 [SOLVED]

CAT 2018 Paper SLOT 1 [SOLVED]

Solution 1

The second choice can be seen in the last sentence of the second last paragraph: "the elephants of decimated herds, especially orphans who've watched the death of their parents and elders from poaching and culling, exhibit behavior typically associated with…. humans…"

Again, the evidence for choice 2 can been found in the second last paragraph; anthropocentric means concerning humans or brought by/caused by humans. Thus both options 2 and 3 can be safely eliminated.

The clue to the choice 4 can be found in the third paragraph, which says that elephants are profoundly social creatures. For option1 we have no evidence.

Solution 2

This question is just another way of asking the central idea of the question. Here we have been asked to express the overall argument of the passage.

Though option 4 is visible in the paragraph, it is not the central idea. The central idea seems to be focusing on the change in the elephants' attitude towards humans. Option 1 captures the key argument of the passage.

Like option 4, option 2, though true as per the passage, is not the key focus of the passage.

Option 3 might look like a good choice, but there is a flaw in the option. The passage is not focusing on the relationship between elephants and humans, though the passage starts on that note. The author is more focused on bringing to our attention the aggressive behavior of elephants and tries to find out the causes of that aggression.

Option 1 is the best choice because bulk of the passage is dedicated to how and why the elephants behave aggressively (species-wide-trauma-related response)

Solution 3

To answer this question, we must first carefully read the question. The question wants us to address the problem of aggression in elephants, suggesting that we must pick the option that brings a solution to the problem of elephant aggression.

Option 1 goes out because the testosterone issue is not at all a concern or the bone of contention. Moreover, by understanding it, how would we be able to address the problem concerning elephant aggression.

Option 2 could indeed help us address the problem of elephant aggression because the trauma experienced by elephants is very similar to stress disorder in humans, and because elephants are social creatures just as humans are, insights gained from treating post-traumatic stress disorder in humans might help us address the problem of elephant aggression. Option 2 is the right choice

Both option 3 and 4 are not likely to contribute in any ways to addressing the problem of elephant aggression. If yes, then there must a strong evidence for that in the passage, but we have no such evidence.

Solution 4

The fabric has been frayed is a figurative expression in which the elephant society has been compared to a fabric that humans have frayed. Choice 2, by stating that it is a metaphor, properly captures the essence of the statement.

Option 1 is incorrect because the statement is not a description but an assertion of a condition that exists today.

Both option 3 and 4 are not in tune with the author's purpose. The author is not exaggerating the disintegration of elephant society. He is, in fact, being quite sympathetic.

Option 4 suggests that the society has become frail on its own, without any external cause. But human activity is the cause and that has frayed the fabric. Thus, option 4 too is not correctly expressing the idea given in the question.

Solution 5

The hint to the right answer is there in the first para. The author says that there is intentionality associated with the word 'violence', suggesting that there is a reason behind human and elephant aggression towards each other. Option 1 is thus the right choice.

Option 2 says 'systematically destroyed'. There is no evidence of 'systematic destruction' of elephant herds by humans. It is an extreme choice.

Option 3 is true as per the passage, but that is not the reason behind the author's using the term 'violence' to describe the recent change in the human-elephant relationship.

Option 4 is incorrect but the author is focusing on elephants' aggression towards humans, something that should not be necessarily interpreted as 'killing'

Solution 6

The clue to the right answer is given in the last sentence of the first para and first sentence of the second para. The last sentence of the first para says "the lie is that blame for the plastic problem is wasteful consumers and that changing our individual habits will fix it." The author suggests that changing consumer habits may not be a solution to the problem.

He further adds in the second para "Recycling plastic is to saving the Earth what hammering a nail is to halting a falling skyscraper". He suggests that neither recycling nor change in consumer behavior is going to solve the problem. The right answer is 3

Solution 7

The answer to this question can be directly found in the passage. The author has used the word 'lie' in the first para. He says "The lie is that blame for the plastic problem is wasteful consumers and that changing our individual habits will fix it". The first part gives us the answer: the lie is the blame for the plastic problem is consumers. Thus, option 1 is the right choice. Since, the answer is directly stated and we have got the right choice, there is no point in disproving the others.

Solution 8

This is one of the simplest questions in this paper. You have to search the options and you will find the right answer. Except for the air pollution effect, everything is given in the passage. Thus option 2 is the right choice.

Solution 9

The clue to the right answer can be found in the last sentence of the paragraph. Right from the start the author says that there is no point in blaming consumers and in recycling plastics. The problem is likely to persist until we change the legal framework. The last part of the para says "Our huge problem with plastic is the result of a permissive legal framework that has allowed the uncontrolled rise of plastic pollution, despite clear evidence of the harm it causes to local communities and the world's oceans."

If we pass regulations targeted at producers of plastics, we might be able to change the situation. Thus option 4 is the right choice.

Solution 10

The authors opinion about Keep America Beautiful can be found in the following lines in the

second last paragraph of the passage: This clever misdirection has led journalist and author Heather Rogers to describe Keep America Beautiful as the first corporate greenwashing front, as it has helped shift the public focus to consumer recycling behavior and actively thwarted legislation…. From this sentence we can infer that the author believes that Keep America Beautiful diverted people's attention away from the role of corporates in plastic pollution. **Solution 11**

This is a very good question. We must touch the right area of the passage to arrive at the answer. The clue to the answer lies in the last paragraph, which says "Since the 1970s, depression has come to be viewed as a cognitive or neurological defect in the individual, and never a consequence of circumstances. All of this simply escalates the sense of responsibility each of us feels for our own feelings, and with it, the sense of failure when things go badly." The author suggests that before 1970 people thought that depression was a result of one's circumstances. Option b is incorrect, as it speaks about how depression could be cured, while the passage has nothing about it.

As the second part of the extract suggests, people, after 1970, became more responsible towards their happiness, as it became clear that depression was not a result of circumstances but of neurological or cognitive defects.

Option 1 is the best choice.

Solution 12

This is a slightly tricky question. To answer this question correctly, we have to correctly identify the author's argument or view. The author's views can be found in many parts of the passage. The author's views are clearly expressed in the second paragraph:

As the science grows more sophisticated and technologies become more intimate with our thoughts and bodies, a clear trend is emerging. Where happiness indicators were once used as a basis to reform society, challenging the obsession with money that G.D.P. measurement entrenches, they are increasingly used as a basis to transform or discipline individuals.

The author in the last sentence says that happiness indicators are used as a basis to transform or discipline individuals. Option 4 clearly weakens the author's argument by saying that stakeholders are moving away from collecting data on the well-being of individuals. Thus, option 4 is undermining or weakening the author's argument.

All the other three choices are supportive of the author's views given in the paragraph.

Solution 13

Option 1 is clearly stated in the second paragraph of the passage. The second para says:
Cities such as Dubai, which has pledged to become the "happiest city in the world," dream up ever-more elaborate and intrusive ways of collecting data on well-being — to the point where there is now talk of using CCTV cameras to monitor facial expressions in public spaces…

Thus, option 1 is the right choice. There is no evidence for option 2 and 3, while option 4 says that it is on its way to becoming one of the world's happiest cities. However, the passage says that Dubai wants to become. It doesn't mean that it is likely to become the happiest city in the world.

Solution 14

The clue to the right answer is in the first paragraph; towards the end the author says that wearable devices are helping us to reduce stress. In other words, they are disciplining individuals to be happy. Option 3 is not so good a choice because though it is trying to make us happy, it does not say that it will entirely overcome depression in individuals. Option 3 is too extreme an interpretation of what is given in the passage.

Solution 15

The clue to the right answer is given in the very first sentence of the passage. The author right at the start says that economists have ignored psychology. From this we can infer that he would like economists to incorporate psychological findings in their research work. Option 3 becomes the right choice.

Solution 16

This is a very easy question and right at the start of the passage the clue to the right answer can be found. The passage says "a mouse should not be born with something that its parents have learned during their lifetime". Thus the author suggests that they should not have been born with acquired characteristics during their lifetime. We should not be tempted with option 4 because though it looks good, it is not the right choice. Fear is just one characteristics that is likely to be inherited, while the passage points at a broader conclusion that can be derived from this experiment. So the inheritance may not necessarily be of fears, but of anything that the parents might have acquired in their lifetime.

Solution 17

The hint to the right answer can be found in the second paragraph of the passage. The second para says: The traditional, and still dominant, view is that adaptations – from the human brain to the peacock's tail – are fully and satisfactorily explained by natural selection (and subsequent inheritance). Yet [new evidence] from genomics, epigenetics and developmental biology [indicates] that evolution is more complex than we once assumed. .

Thus 1 is the best choice, as the author attributes inheritance to much more than natural selection and mendelian gentics. The other negative opinions expressed in the other options cannot be seen anywhere in the passage.

Solution 18

To answer this question correctly, we have to understand the main message of the passage. The main idea is that there is a lot more to inheritance than just natural selection and genetics. So if there is a study that affirms the sole influence of natural selection and inheritance on evolution than the author's main argument would be weakened.

We can see clear evidence in these lines: All these tugs represent the influence of developmental factors, including epigenetics, antibodies and hormones passed on by parents, as well as the ecological legacies and culture they bequeath.

Solution 19

This too is an easy question, the clue to the right answer can be seen here in these lines:

We can see clear evidence in these lines: All these tugs represent the influence of developmental factors, including epigenetics, antibodies and hormones passed on by parents, as well as the ecological legacies and culture they bequeath.

Solution 20

The clue to the right answer is there right in the first paragraph. The author says: Between the old imperialist memorial and the proposed nationalist one, India's contribution to the Second World War is airbrushed out of existence.

The phrase 'airbrushed out of existence' has that regret in the tone. Thus 1 is the right choice.

Solution 21

3

CAT 2018 Paper SLOT 1 [SOLVED]

Passage Overview: In the passage the author seems to be stressing on "India's contribution to the second world war, and its consequences, something which has been ignored both by academicians and the Indian government"

This question is a kind of interpretation question. If we don't know the meaning of the phrase 'mood music', we must try to the see the context in which it has been used. By the way, 'mood music' is recorded music that is played in the background to make the audience relax. So if you know the meaning, you can straightaway mark 3 as the answer. A backdrop is a background just as mood music is played in the background. Even from the passage it is clear that to the Indian government and Indian academicians, India's contribution to the second world war is just a little more than a mood music, in other words it is not a significant contribution, something that the author seems to be lamenting. Option 3 is the right choice.

Solution 22

This is a factual question whose answer depends on how well you are able to find the information scattered in the passage. The first outcome is stated in the first sentence of the third paragraph where the author says that "India's contribution played a significant role in India's independence and partition". So, since option 1 is given, it is not the right answer. Option 2 is given in the fourth paragraph. Option 3 is stated in the third last paragraph. Thus, option 4 is the right choice.

We could have marked option 4 directly, as it is stating exactly opposite of what is given in the passage. It was not India but Britain that owed large financial debt. India was one of the biggest creditors to Britain, the passage says. This means that it was India had lent resources to Britain.

Solution 23

This is a very easy question, as the clue to the right answer is directly visible in the passage. The first sentence of the second paragraph says that the 'omission was not absent-minded, suggesting that it was deliberate. He further adds that the omission "accurately reflected the fact that both academic history and popular memory have

yet to come to terms with India's Second World War". The other choices are neither stated nor implied in the paragraph.

.

Solution 24

This is a slightly difficult question, but can be solved by the process of elimination. Though the passage nowhere directly states the reason why India has not so far acknowledged its role in the Second World War, the hint is there in the second paragraph.

The last sentence of the second paragraph says: With partition and the onset of the India-Pakistan rivalry, both of the new nations needed fresh stories for self-legitimization rather than focusing on shared wartime experiences. "Self-legitimization" would mean self-assertion, or establishing oneself as a strong legal entity. This makes option 3 the right choice. Moreover, none of the other options have any hint in the paragraph. Option 1 and 4 go out because the author asserts that India did make a significant contribution to the war. Option might seem a tempting choice, but there is no hint for it.

Solution 25

This is an average difficulty question. Right from the start we can sense that sentence 1 is likely to start the paragraph. It introduces the idea of 'impartiality and objectivity'. Sentences 2,3 and 4 form one unit because they all revolve around Twitter. The algorithm that statement 4 talks about must be about algorithm that twitter would be using. The pronoun 'it' in statement 2 refers to Twitter. Thus 2 must come after 3. 32 is a pair. The problem of transparency in statement 2 is further elaborated in statement 4. Statement 2 says that the problem of transparency lies in something…statement 4 takes over by saying ..we are only told some of the basic principles..(the problem of transparency is continued).

Solution 26

This is a dubious question, and deserves a challenge. All the sentences can come together and form a coherent paragraph. 'this factoid' in statement 2 can be found in statement 5. Thus 5 and 2 form a pair. 1 opens the paragraph. Impossibility of translation in 3 and impossibility of bumblebee flight are connected. Thus 1523 form a coherent paragraph. Statement 4 can come in the concluding lines. This question has no odd sentence. The source of the passage can be found here

Solution 27

This is a difficult question as there very little to choose from two sequences 1423 and 1432. Both the sequences are plausible, though 1 and 4 will come before 2 and 3. 'the canopy' in statement 4 refers to the woodland's canopy in statement 1. Thus 1 and 4 form a pair. The hunting process of

the swifts is described in statement 3, and this hunting is not just confined to woodlands is what statement 2 says. Thus 3 and 2 form a pair. The right sequence is 1432.

Solution 28

This question, though it looks a little challenging, is in fact quite simple. You must read the passage twice to get some basic understanding of it. The first sentence says that scientific knowledge can be approached from a number of perspectives. Studying something from the perspective of a particular profession would lead to institutionalization of that knowledge. Though it helps, it restricts knowledge production to a domain of few, which results in power centered in the hands of few, preventing the non-professional actors from offering their ideas. The above simplification helps us arrive at option 1 as the right choice. Options 3 and 4 are against the author's stand in the passage. Option 2 is not the core message, but an inference that can be derived from the above passage.

Solution 29

This is a slightly tricky question in which we have to pick the options after carefully comparing them with the others. The first sentence says that artificial embryo twinning is low-tech. The second sentence says that it mimics the natural process that creates identical twins. Option 1 very much captures the key ideas. In option 2, the word 'unlike' shows dissimilarity, but the passage focuses on similarity, not dissimilarity. Option 2 goes out. Option 3 says twins are formed during fertilization, but the passage says that the twins are formed after fertilization. Option 4 is close to 1 but does not clearly specify the exact time when the embryo splits into two. Moreover, the passage says mimics, while option 4 says 'close to', which is a slight distortion of the facts as given in the passage.

Solution 30

Both options 2 and 3 are very close. Option a goes out because the paragraph says that landscape became an independent genre of art of form, while the option says it became a major subject of art. This is a distortion of the fact given in the passage.

Option 2 too has some distortions; while the passage says that conceptualization of landscape as geometric object is related to the European conceptualization of the organism as a geometric object, the option says that three-dimensional understanding of the organism led to a similar approach…. It should be geometric understanding of the organism.

Option 3 best captures the author's position, which in the passage is clearly visible as "Renaissance artists also facilitated an understanding of the structure of landscape".

Option 4 is incorrect because it distorts the fact by saying the Renaissance artists were responsible, while the passage says that they facilitated.

Solution 31

There is little doubt that statement 2 will open the paragraph. The sentence says that democracy and high levels of inequality are simple incompatible. Why? Because very rich people will always use money to maintain their political and economic power. Thus 2 and 4 form a pair. Statement 1 says that now apart from the rich people we have another group: the unwitting enablers. What they do is described in sentence 3. Thus 2413 is the right sequence.

Solution 32

This question is of a very high difficulty. It would be difficult for us to arrive at the answer because we don't see any sentence that can start the paragraph. Statement 2 and 5 form a pair and must go together. Statement 2 says people will have to fool themselves and statement 5 says how they should fool themselves. Now we must find two more statements that can go together. Those two are statements 1 and 3. Both 1 and 3 speak of time inconsistency, 1 speaks of time inconsistency in most cases, while 3 speaks of time inconsistency in specific cases. Thus 1325 form a coherent para, there is no place for statement 4, as it does not connect with any other sentence.

Solution 33

Though it would be difficult for us to create a coherent paragraph in this question, we can find the odd one out by looking for the sentence that does not match with any other sentence. Statement 3 is likely to open the paragraph, 2 will take the idea ahead as it explains to us the cause of that displacement, which in this case is caused by erosion. Statement 4 says that since displacement due to erosion is well spread over a long period of time, it remains invisible. Finally, we have the conclusion in statement 1. Statement 5 does not seem to connect with any of the sentences.

Solution 34

This is one of the easiest questions of CAT 18 VA. The clue to the sequence lies in the pronoun 'it', and in the phrase 'had come back', which suggests that it must have gone first, and then it

must have come back. The pronoun ‘it’ refers to a disease, and is most likely to refer to the noun ‘skin cancer’. Also, we must look for that sentence in which ‘the skin cancer’ must have gone back. Sentence 1 has the noun ‘skin cancer’ and says that the treatment had gone well. This connects sentence 1 with 3. 13 is a pair. Statement 4 is likely to start the paragraph because it opens the idea by suggesting that something had started. So the idea goes like this: it started with a lump and no one knew what it was. Thus, 4 and 2 form a pair. After this must have come the diagnosis. Thus 4213 is the right sequence.

Solution

It is given that the satellites serving either B, C or S do not serve O.

From (1), let the number of satellites serving B, C and S be 2K, K, K respectively.

Let the number of satellites exclusively serving B be x.

From (3), the number of satellites exclusively serving C and exclusively serving S will each be 0.3x

From (4), the number of satellites serving O is same as the number of satellites serving only C and S. Let that number be y.

Since the number of satellites serving C is same as the number of satellites serving S, we can say that

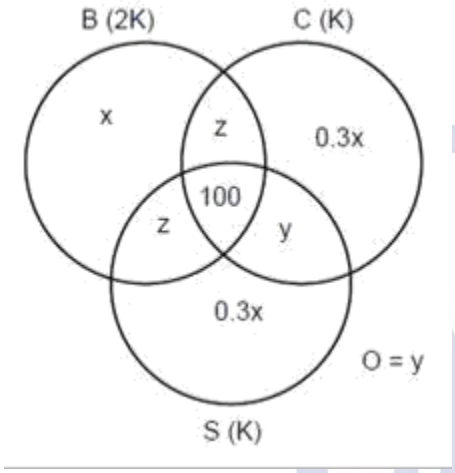
(number of satellites serving only B and C) + 0.3x + 100 + y = (number of satellites serving only B and S) +

0.3x + 100 + y

Let the number of satellites serving only B and C = the number of satellites serving only B and S = Z

Therefore, the venn diagram will be as follows

CAT 2018 Paper SLOT 1 [SOLVED]



Given that there are a total of 1600 satellites

=> x + z + 0.3x + z + 100 + y + 0.3x + y = 1600

1.6x + 2y + 2z = 1500 ---------- (1)

Also K = 0.3x + z + y +100

Satellites serving B = 2K = x + 2z + 100

=> 2(0.3x + z + y + 100) = x + 2z + 100

0.4x = 2y + 100

x = 5y + 250 ---------- (2)

Substituting (2) in (1), we will get

1.6 (5y + 250) + 2y + 2z = 1500

10y + 2z = 1100

Z = 550 – 5y ---------- (3)

Question 1:

The number of satellites serving C = z + 0.3x + 100 + y

1.(550 – 5y) + 0.3(5y + 250) + 100 + y = 725 – 2.5y

This number will be maximum when y is minimum.

Minimum value of y is 0.

Therefore, the maximum number of satellites serving C will be 725.

From ③, z = 550 – 5y

Since the number of satellites cannot be negative,

$A \geq 0 \Rightarrow 550 - 5y \geq 0$

$Q. \quad \leq 110$

Maximum value of y is 110.

When y = 110, the number of satellites serving C will be 725 – 2.5 × 110 = 450. This will be the minimum

number of satellites serving C.

The number of satellites serving C must be between 450 and 725.

Question 2:

From 2, the number of satellites serving B exclusively is x = 5y + 250

This is minimum when y is minimum.

Minimum value of y = 0.

The minimum number of satellites serving B exclusively = 5 × 0 + 250 = 250.

Question 3:

Given that at least 100 satellites serve 0; we can say in this case that y ≥ 100.

Number of satellites serving s = 0.3x + z +100 + y=725 – 2.5y

This is minimum when y is maximum, i.e. 110, (from③)

Minimum number of satellites serving = 725 – 2.5 ×100 = 450.

This is maximum when y is minimum, i.e., 100 in this case.

Maximum number of satellites serving = 725 – 2.5 ×100 = 475

Therefore, the number of satellites serving S is at most 475

Question 4:

The number of satellites serving at least two of B, C or S = number of satellites serving exactly two of

B, C or S + Number of satellites serving all the three

Q. z + z + y + 100

R. 2(550 – 5y) + y + 100

S.1200 – 9y.

Given that this is equal to 1200

1200 – 9y = 1200

=> y = 0

If y = 0, x = 5y + 250 = 250

z = 550 – 5y = 550

No. of satellites serving C = k = z + 0.3x + 100 + y

A 550 + 0.3 × 250 + 100 + y

B 725

No. of satellites serving B = 2k = 2 × 725 = 1450.

From the given options, we can say that the option "the number of satellites serving C cannot be uniquely determined" must be FALSE

Solution

It is given that the sales figures during the three months of the second quarter (April, May, June) of 2016 form an arithmetic progression.

So 40 + (40 + x) + (40 + 2x) = 150

Or x = 10

April 2016 = 40

May 2016 = 50

June 2016 = 60

Also, the same case holds for October, November, December of 2016.

100 + (100 + x) ++ (100 + 2x) = 360

Or x = 20

October 2016 = 100

November 2016 = 120

December 2016 = 140

2016			2017		
Quarter	Month	Sales Figures	Quarter	Month	Sales Figures
Q_1 (240)	January	80	Q_1 (380)	January	120
	February	60		February	100
	March	100		March	160
Q_2 (150)	April	40	Q_2 (200)	April	60
	May	50		May	75
	June	60		June	65
Q_3 (250)	July	75	Q_3 (220)	July	60
	August	120		August	90
	September	55		September	70
Q_4 (360)	October	100	Q_4 (500)	October	150
	November	120		November	170
	December	140		December	180

Sales in December 2017 = 180

Sales in December 2016 = 140

Percentage increase = $\frac{40}{140} \times 100 = 28.57\%$

CAT 2018 Paper SLOT 1 [SOLVED]

	2017	2016	Percentage increase
Q_1	380	240	$\frac{140}{240} \times 100 = 58.33$
Q_2	200	150	$\frac{50}{150} \times 100 = 33.33$
Q_3	220	250	$\frac{-30}{250} \times 100 = -12$
Q_4	500	360	$\frac{140}{560} \times 100 = 38.88$

So the percentage increase in the sales is highest for Q1

Θ. Q_1 of 2017 compared with Q_4 of 2016

Θ. $\frac{380 - 360}{360} \times 100 = 5.55\%$ increase.

Θ. Q_2 of 2016 compared with Q_1 of 2016

Θ. $\frac{150 - 240}{\text{decrease } 240} \times 100 = -37.5\%$ increase or 37.5 %

3. Q_4 of 2017 with compared with Q_3 of 2017

There is an increase from 220 to 500 .

A Q_2 of 2017 with compared with Q_1 of 2017

A $\frac{200 - 380}{380} \times 100 = -47.36$ or 47.36 % decrease

So, sales of Q_2 of \$2017 ,\$ had the highest percentage decrease compared with Q_1 of \$2017 .\$

Solution

Question 1:

The ATM dispenses only 500, 200 and 100 notes and since 500 rupee notes is the preference, it has to dispense more 500 rupee notes than the other two notes combined. The following ways are possible:

500 rupee notes	200 rupee notes	100 rupee notes
10	0	0
9	2	1
9	1	3
9	0	5
8	5	0
8	4	2
8	3	4

Hence, a total of seven ways are possible. **Ans : 7**

Question 2:

To serve the maximum number of customers with 500 rupee notes as preference, we need to minimize the number of 500 rupee notes that can be served to any person.

From the above solution, the minimum number of 500 rupee notes that the ATM can dispense to any person with 500 rupee notes as his/her preference is 8. Hence, with fifty 500 rupee notes, a total of 6 persons can be served. **Ans : 6**

Question 3:

Since there are a limited number of 500 rupee notes, we can minimize the number of 500 rupee notes dispensed to each customer, while ensuring that each customer is served at most 20 notes.

If no 500 rupee notes is dispensed, the minimum number of notes that must be dispensed is 25 (all 200 rupee notes). This is not possible.

If one 500 rupee note is dispensed, the minimum number of notes is 14 (one 500 rupee note, twelve 200 rupee notes and one 100 rupee note). This is also not possible.

If two 500 rupee notes are dispensed, the minimum number of notes is 22 (two 500 rupee notes and twenty 200 rupee notes).

If three 500 rupee notes are dispensed, the minimum number of notes is 21 (three 500 rupee notes, seventeen 200 rupee notes and one 100 rupee note). If four 500 rupee notes are dispensed, the minimum number of notes is 19 (four 500 rupee notes and fifteen 200 rupee notes). Hence, the minimum number of 500 rupee notes that can be dispensed to any person is 4. With fifty 500 rupee notes, a maximum of 12 persons can be served. **Ans : 12**

Question 4:

To dispense the smallest possible number of notes to a person with 500 rupee notes as his/her preference, the ATM should dispense all 500 rupee notes. Hence, minimum number of notes required to serve any person with 500 rupee notes as his/her preference = 10 (all of 500 rupees).

Total number of 500 rupee notes required to serve 50 customers with 500 rupee notes as his/her preference = $10 \times 50 = 500$

To minimize the number of notes to be served to a person with 100 rupee notes as his/her preference, we can maximize the number of 500 rupee notes served to him, keeping the 100 rupee notes more than the sum of the other two denominations.

This is possible if the machine serves eight 500 rupee notes and ten 100 rupee notes. Hence, the total number of 500 rupee notes required to serve 50 customers with 100 rupee notes as his/her preference = $8 \times 50 = 400$

Total number of 500 rupee notes required in the given scenario = 500 + 400 = 900 **Ans : 900**

Note: Given that the ATM dispenses 500, 200 and 100 rupee notes. A possible interpretation of this is that at least one note of each denomination is dispensed. However, as there is no additional information supporting this, you should also consider the cases in which not all the three denominations are dispensed.

Solution

CAT 2018 Paper SLOT 1 [SOLVED]

Name	Gender	Institute	Major	Minor
Adriana	F	P		F
Bandita	F	Z		F
Chitra	F	Z		F
Daisy	F	q		O
Amit	M	q		
Barun	M	Y	O	F
Chetan	M	X	F	
Deb	M			

Daisy minors in operations (O) so other three must have minored in Finance (F). Let Adriana and Ded be from the some institute P. Daisy and Amit are from some institute q. So Bandita and Chitra must be from z as only two females are from z. Female student from y majors in operations so daisy cannot be from Y so daisy is from X so is Amit. So Adriana and Deb are form Y

	Gender	Institute	Major	Minor
Adriana	F	Y	O	M
Bandita	F	Z	F/O	M
Chitra	F	Z	F/O	M
Daisy	F	X	F/M	O
Amit	M	X	F	O/M
Barun	M	Y	O	F
Chetan	M	X	F	O/M
Deb	M	Y	M	F

Question 1:

Chitra and Bandita. **Ans : Chitra and Bandita**

Question 2:

Deb minors in Finance. **Ans : Finance**

Question 3:

Amit majors in finance. **Ans : Finance**

Question 4:

CAT 2018 Paper SLOT 1 [SOLVED]

Given one female student majors in finance. If chitra majors in finance, Bandita majors in operations.

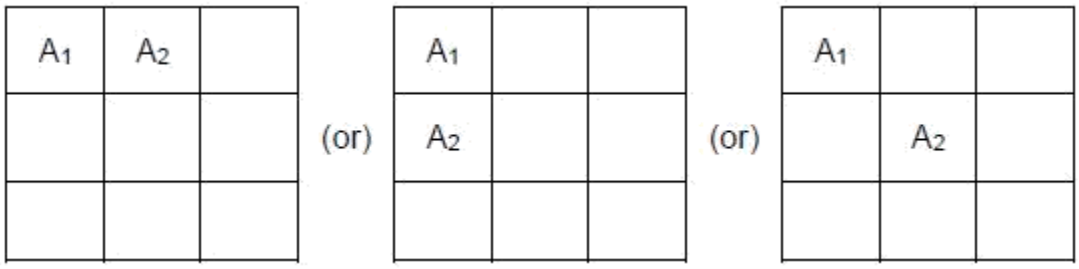
Ans : Operations

Solution

Given that n × n square matrix to be filled with numerals so that no two adjacent cells have the same numeral.

Also, two cells are called adjacent if they touch each other horizontally, vertically or diagonally.

As per the given definition, in the following matrix, the following are the cases of adjacent cells.



Question1:

As per the information, we've the following diagram for a 3 x 3 matrix to have minimum number of numerals.

1	2	1
3	4	3
1	2	1

So, we require 4 elements to have all different numerals**. Ans : 4**

Question 2:

As per the information, we've the following diagram for a 5 x 5 matrix to have minimum number of numerals.

CAT 2018 Paper SLOT 1 [SOLVED]

1	2	1	2	1
4	3	4	3	4
1	2	1	2	1
4	3	4	3	4
1	2	1	2	1

So, we require 4 elements to have all different numerals. **Ans : 4**

Question 3:

Even if one mistake is allowed, then also there won't be any change in the solution given above. **Ans : 4**

Question 4:

Given that all the cells adjacent to any particular cell must have different numerals, which is satisfied only

when there are at least 9 numerals. **Ans : 9**

Solution

According to 1 and 2, we get

P1	P2	P3	P4	P5	P6
H	M	H	M	H	L

Also, from 4, we get 2 cases:

P16	P17	P18	P19	P20
L	M	L	M	L
M	L	M	L	M

From (5)

If total number of low (L) pipes = 3

number of high (H) pipes = 6

number of medium (M) pipes = 11

Also if number of low (L) pipes = 4

number of high (H) pipes = 8

number of medium (M) pipes = 8

P7 and P8 can be HH or MM

Therefore, two cases arise for P1 – P10

1	2	3	4	5	6	7	8	9	10
H	M	H	M	H	L	M	M	H	M
H	M	H	M	H	L	H	H	M	H

Combining (1) & (2), we get the following possible

cases for P1 – P 20

Case 1:

HMHMHLHHMH

MHMHMLMLML

No. (L) = 4

No. (H) = 8

No. (M) = 8

Case 2:

HMHMHLHHMH

LMHMHMLMLM

No. (L) = 4,

No. (H) = 8,

and No. (M) = 8

Case 3:

HMHMHLHHMH

MLHMHMLMLM

No. (L) = 4

No. (H) = 8

No. (M) = 8

Solution

Given, Indu was recruited and Indu scored 100% in exactly one section.

Jatin scored 100% in exactly one section

=> Jatin's scored are

DI	WE	GA
20	16	14

Composite score = 20 x + 2 + 16 + 14 = 70

Indu's score is 70 – 10 =60

If Indu scores 20 in DI, Indus's score in GA = 60 – 40 – 8 = 12

In this case, Indu will not quality Hence, Indu scored 20 in GA.

A score in Dl = $\frac{60 - 20 - 8}{22} = \frac{32}{} = 16$

Θ. Danish, Harini and Indu scored 20 in

GA Score of Danish is 2(8) + 15 + 20 = 51

Hence, Score of Ajay is 2(8) + 20 + 16 = 52

(As Ajay scores either 19 or 20 in DI, the composite score cannot be 51)

CAT 2018 Paper SLOT 1 [SOLVED]

	DI	WE	GA	Total
A	8	20	16	52
B		9	11	
c	19	4	12	54
d	8	15	20	51
e	12	18	16	58
f	15	7	10	47
g	14	> 14	6	
h	5		20	
i	16	8	20	60
j	20	16	14	70

Question 1:

(Jatin's composite score was more than that of Danish) and (Indu scored less than Chetan in DI).

Ans : Both 1 and 2

Question 2:

If Bala scores 20 in DI, Score = 2(20) + 9 + 11 = 60, which is the same as that of

Indu. Not possible

Hence, Bala scored same as Jatin in DI must be false. **Ans : Bala scored same as Jatin in DI**

Question 3:

Ans: 13

Question 4:

Ans: 14

Solution

	Research	Teaching	Administration
Bureaucrats	3x	3x	4x
Educationalist	m > n	n	o
Politicians	y	y	3y

CAT 2018 Paper SLOT 1 [SOLVED]

Total = 24

Bureaucrats are in the ratio 3 : 3 : 4 only value will be 3, 3, 4. So x = 1

Educationalist $n < m < o$ and $m = \frac{o + n}{2}$

Politicians are in ratio 1 : 1 : 3 only value will be 1, 1, 3.

Possible value of m, n, o are 3, 2, 4 and 3, 1, 5.

Case (i)

	R	T	A	
B	3	3	4	10
E	3	2	4	9
P	1	1	3	5
	7	6	11	24

Case (ii)

	R	T	A	
B	3	3	4	10
E	3	1	5	9
P	1	1	3	5
	7	5	12	24

Solution 67

Since x, y ,and z are in G.P. and x<y<z, let x = a, y=ar and $z=ar^2$, where a>0 and r>1.

It is also given that, 15x, 16y and 12z are in A.P.

Therefore, 2×16y=5x+12z

Substituting the values of x, y and z we get,

$32ar = 5a + 12ar^2$

$\Theta.\ 32r = 5 + 12r^2$

P. $12r^2 - 32r + 5 = 0$

On solving the above quadratic equation we get r=1/6 or 5/2.

Since r>1, therefore r=5/2.

Solution 68

Let the rate of each filling pipes be 'x lts/hr' similarly, the rate of each draining pipes be 'y lts/hr'. As per the first condition,

Capacity of tank = (6x - 5y)×6.....(i)

Similarly, from the second condition,

Capacity of tank = (5x - 6y) × 60.....(ii)

On equating (i) and (ii), we get

(6x - 5y) × 6 = (5x - 6y)×60

or, 6x - 5y = 50x - 60y

or, 44x = 55y

or, 4x = 5y

or, x = 1.25y

Therefore, the capacity of the tank = (6x - 5y) × 6 = (7.5y - 5y) × 6 = 15y lts

Effective rate of 2 filling pipes and 1 draining pipe = (2x - y) = (2.5y - y) = 1.5y

Hence, the required time = 15y/1.5y=10 hours.

Solution 69

$x^{2018} y^{2017} = \frac{1}{2}$ .....(1)

and $x^{2016}y^{2019} = 8$ …..(2)

Dividing (1) by (2), $\frac{x^2}{y^2} = \frac{1}{16}$

$\frac{x}{y} = \frac{1}{4}$ i.e. $x = \pm\frac{1}{4}y$

$\left(\left|\pm\frac{1}{4}y\right|\right)^{2018} y^{2017} = \frac{1}{2}$

$y^{4035} = 2^{4035}$

$y = 2$

Therefore, $x = \pm\frac{1}{4}y = \pm\frac{1}{2}$

Hence, $x^2 + y^3 = -\frac{1}{4} + 8 = \frac{33}{4}$

Solution 70

Let the time taken for car 1 to reach P from A be x hours.

Speed of car 1=AP/x

Given BP=3AP

Car 2 starts from B to A and reaches P one hour after car 1 reaches P.

Speed of car 2 = $\frac{3AP}{x+1}$

Therefore, $\frac{3AP}{x+1} = \frac{1}{2}\left(\left|\frac{AP}{x}\right|\right)$

Or x = $\frac{1}{5}$. Time taken for car 1 to reach P from A is 12 min.

CAT 2018 Paper SLOT 1 [SOLVED]

Solution 71

$5 + \log_3 a = 2^3 = 8 \Rightarrow a = 27$

Similarly, $4a + 12 + \log_2 b = 5^3 = 125$

since $a = 27$, $4(27) + 12 + \log_2 b = 125 \Rightarrow b = 32$

a + b = 59.

Solution 72

Let the quantities of the paints A and B in the mixture sold be a litres and b litres respectively. Value at which the entire mixture is sold=264 Profit percent made=10% $\frac{100}{\_\_}$

Price at which the entire mixture is bought=24 per litre Let the cost of B be x per litre. Cost of A=(x+8)per litre

$$\frac{(x+8)a + xb}{10} = 24$$

Maximum cost of B will occur when a is minimum. b<=a. So, minimum a is 5. Corresponding b is 5. Then (x+8)(5)+x(5)=240 x=20

Solution 73

Let the 6 cm long chord be x cm away from the centre of the circle. Let the radius of the circle be r cm.

The perpendiculars from the centre of the circle to the chords bisect the chords.

$r^2 = x^2 + 3^2 = (x+1)^2 + 2^2$

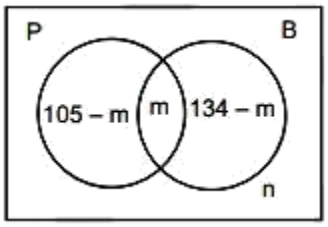
Solving, $x = 2$ and $r = \sqrt{13}$

CAT 2018 Paper SLOT 1 [SOLVED]

Solution 74

Let the number of students who like both pizza and burger be 'm' .

The number of students who like neither of them be n



From venn diagram 105 – m + m + 134 – m + n = 200 m – n = 39

A The possible values of (m, n) are (39, 0) (40, 1).....(105, 66)

B The number of students who like only burger is lies in the range [134 – 105, 134 – 39] = [29, 95]

C From options, 93 is a possible answer

Solution 75

Let the average age of people aged 51 years and above be x years.

Let the average age of people aged below 51 years be y years.

Let the number of people aged below 51 years be N.

Given, the average age of all the people in the apartment complex is 38 years.

Therefore,

$$\frac{x \times 30 + y \times N}{30 + N} = 38 \ldots.(1)$$

We want to maximize y, which occurs when x is minimum i.e. for x=51.

Substituting the value of x in (1) we get

390=N×(38-y)

Again, when y is maximum, N is also maximum i.e. 39

Therefore maximum value of y = 28.

Solution 76

Any equilateral triangle formed by joining the midpoints of the sides of another equilateral triangle will have its side equal to half the side of the second equilateral triangle. Side of T1 = 24 cm Side of T2 = 12 cm Side of T3 = 6 cm and so on.

Sum of the areas of all the triangles

$$= \frac{\sqrt{3}}{4}\left(24^2 + 12^2 + 6^2 + \ldots\ldots\right)$$

$$= \frac{\sqrt{3}}{4}\left(\frac{576}{1-\frac{1}{4}}\right) = 192\sqrt{3}$$

Solution 77

$u^2 + (u - 2v - 1)^2 = -4v\,(u + v)$

A $u^2 + u^2 + 4v^2 + 1 - 4uv + 4v - 2u + 4vu + 4v^2 = 0$

B $2u^2 - 2u + 8v^2 + 4v + 1 = 0$

X $2\left(u^2 - u + \frac{1}{4}\right) + 2\left(4v^2 + 2v + \frac{1}{4}\right) = 0$

1.

$$\Rightarrow 2\left(u - \frac{1}{2}\right)^2 + 2\left(2v + \frac{1}{2}\right)^2 = 0$$

ı) $u - \frac{1}{2} = 0;\ 2v + \frac{1}{2} = 0$

u = $\frac{1}{2}$ and v = $-\frac{1}{4}$

u + 3v = $\frac{1}{2} - \frac{3}{4} = -\frac{1}{4}$

CAT 2018 Paper SLOT 1 [SOLVED]

Solution 78

Givne that: $2^{x} = 3^{\log_5 2}$

A $2^{x} = 2^{\log_5 3}$

B $x = \log_5 3$

1. $= \frac{3*5}{x \log_5 5}$

2. $x = \log_5 5 + \log_5 5^{3}$

3. $x = 1 + \log_5 5^{3}$.

Solution 79

Let the other two numbers be y and z.

As per the condition

73yz - 37yz = 720

Or 36yz=720

Or yz=20

Minimum possible sum of the squares of the other two numbers would occur when y = z i.e.

$y = z = \sqrt{20}$

Hence the required sum = 40.

Solution 80

Let the area of ABCD be 100. Side of ABCD = 10 Area of EFGH is 62.5 => Side of EFGH = $\sqrt{62.5}$

Triangles AEH, BFE, CGF and DHG are congruent by ASA.

Let AE = BF = CG = DH = x; EB = FC = DG = AH = 10 -xx

$AE^2 + AH^2 = EH^2$

$x^2 + (10 - x)^2 = (\sqrt{62.5})^2$

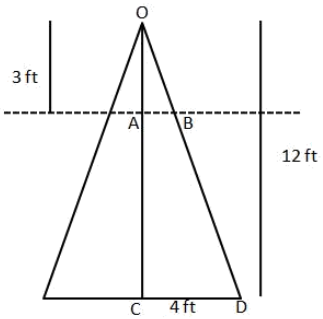
Solving, x = 2.5 or 7.5

Since it's given that CG is longer than EB, CG = 7.5 and EB = 2.5.

Therefore, EB : CG = 1 : 3

Solution 81

We are given that diameter of base = 8 ft. Therefore, the radius of circular base = 8/2 = 4 ft



In triangle OAB and OCD

$$\frac{OA}{AB} = \frac{OC}{CD}$$

3. $AB = \frac{3 \times 4}{12} = 1$ ft.

Therefore, the volume of remaining part = Volume of entire cone - Volume of smaller cone

A $\frac{1}{3} \times \pi \times 4^2 \times 12 - \frac{1}{3} \times \pi \times 1^2 \times 3$

B $\frac{1}{3} \times \pi \times 189$

X $\frac{22}{7} \times 3 \times 189$

Δ 198 cubic ft

CAT 2018 Paper SLOT 1 [SOLVED]

Solution 82

$\log_{12} 81 = p \Rightarrow \log_{12} 3^4 = p$

$\Theta. 4 \log_{12} 3 = p$

$P. \frac{p}{4} = \log_{12} 3$

$$3\left(\frac{4-p}{4+p}\right) = 3\left(\frac{1-\frac{p}{4}}{1+\frac{p}{4}}\right)$$

$$= 3\left(\frac{1-\log_{12} 3}{}\right)$$

$$= 3\left(\frac{\log_{12} 12 - \log_{12} 3}{}\right)$$

$$= 3\left(\frac{\log(12/3)}{\log(12/3)}\right)$$

$$= 3\frac{\log 4}{\log 36} = 3\log_{36} 4$$

$$= \log_6 8$$

Solution 83

Train T starts at 3 PM and train S starts at 4 PM.

Let the speed of train T be t.

=> Speed of train S = 0.75t.

When the trains meet, train t would have traveled for one more hour than train S.

Let us assume that the 2 trains meet x hours after 3 PM. Trains S would have traveled for x-1 hours.

Distance traveled by train T = xt

Distance traveled by train S = (x-1)*0.75t = 0.75xt-0.75t

We know that train T has traveled three fifths of the distance. Therefore, train S should have traveled two-fifths the distance between the 2 cities.

=> (xt)/(0.75xt-0.75t) = 3/2

2xt = 2.25xt-2.25t

0.25x = 2.25

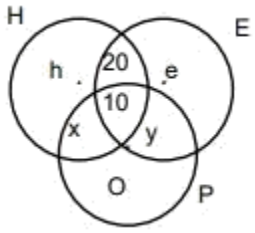
x = 9 hours.

Train T takes 9 hours to cover three-fifths the distance. Therefore, to cover the entire distance, train T will take 9*(5/3) = 15 hours.

Therefore, 15 is the correct answer.

Solution 84

Let the number of students who studying only H be h, only E be e, only H and P but not E be x, only E and P but not H be y



Given only P = 0 All three = 10; Studying only H and E but not P = 20

Given number of students studying H = Number of students studying E

Q. h + x + 20 + 10

R. e + y + 20 + 10

h + x = e + y total number of students = 74

Therefore, h + x + 20 + 10 + e + y = 74

h + x + e + y = 44

h + x + h + x = 44

h + x = 22

Therefore, the number of students studying H = h + x + 20 + 10 = 22 + 20 + 10 = 52.

Solution 85

Let the cost price of peanuts for the wholesaler be x per kg.

Cost price of walnuts for the wholesaler is 3x per kg.

The wholesaler sold 8 kg of peanuts at 10% profit and 16 kg of walnuts at 20% profit to a shopkeeper.

Total cost price to the shopkeeper = (8)(x)(1.1) + 16(3x)(1.2) = 66.4x

The shopkeeper lost 5 kg walnuts and 3 kg peanuts.

The shopkeeper sold the mixture of 11 kg walnuts and 5 kg peanuts.

His total selling price=166(16) = 2656

His total cost price = $2656\left(\frac{100}{}\right) = 2124.8$

$66.4x = 2124.8$

$x = 32$

Price at which the wholesaler bought walnuts = 3x = 96/- per kg

Solution 86

Let the average score of the aspirant in all the tests be x. Let the number of tests be n.

The aspirant's average score for the first 10 tests and last 10 tests are 20 and 30 respectively.

$\frac{nx-200}{n-10} = x+1$ and $\frac{nx-300}{n-10} = x-1$

Solving, we get n=60

Solution 87

Let the number of marbles with Raju and Lalitha initially be 4x and 9x.

Let the number of marbles that Lalitha gave to Raju be y.

It has been given that (4x+y)/(9x-y) = 5/6

24x + 6y = 45x – 5y

11y = 21x

y/x = 21/11

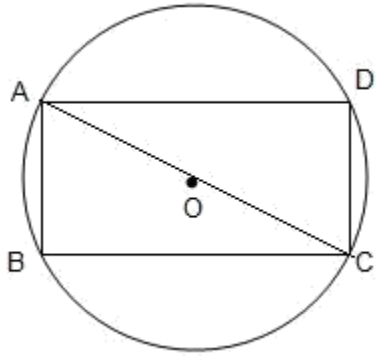
Fraction of original marbles given to Raju by Lalitha = y/9x (As Lalitha had 9x marbles initially).

y/9x = 21/99

= 7/33.

CAT 2018 Paper SLOT 1 [SOLVED]

Solution 88



We know that AC is the diameter and ∠ ABC = 90°. AC = 2*13 = 26 cm

In right angle triangle ABC,

$AC^2 = AB^2 + BC^2$

A $AB^2 + BC^2 = 26^2$

B $AB^2 + BC^2 = 676$

Let us check with the options.

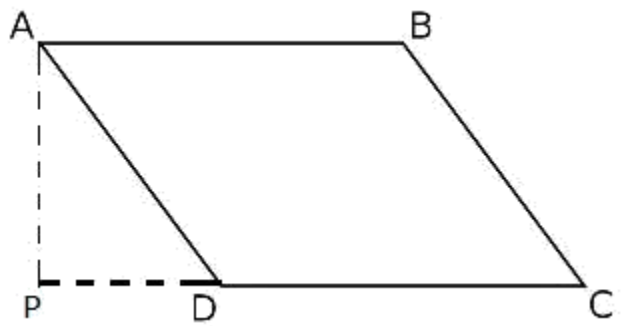
Option (A): $24^2 + 10^2 = 676$.

Option (B): $25^2 + 9^2 = 706 \neq 676$.

Option (C): $25^2 + 10^2 = 725 \neq 676$.

Option (D): $24^2 + 12^2 = 720 \neq 676$.

Solution 89



Area of the parallelogram ABCD = (base)(height) = (CD)(AP) = 72 sq.cm.

(CD)(AP) = 72 9(AP) = 72 => AP = 8

$DP = \sqrt{AD^2 - AP^2} = \sqrt{16^2 - 8^2} = 8\sqrt{3}$

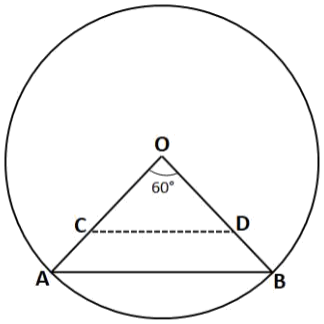
Area of triangle $APD = \frac{1}{2}(AP)(PD) = 32\sqrt{3}$

Solution 90

It is given that radius of the circle = 1 cm

Chord AB subtends an angle of 60° on the centre of the given circle. R be the region bounded by the radii OA, OB and the arc AB.

Therefore, R = $\frac{60°}{360°}$ ×Area of the circle = $\frac{1}{6} \times \pi \times (1)^2 = \frac{\pi}{6}$ sq. cm



It is given that OC = OD and area of triangle OCD is half that of R. Let OC = OD = x. Area of triangle COD = $\frac{1}{2} \times OC \times OD \times \sin 60°$

$\frac{A}{6 \times 22} = \frac{1}{2} \times x \times x \times \frac{\sqrt{3}}{2}$

Θ. $x_2 = \frac{\pi}{3\sqrt{3}}$

P. $x = (\frac{\pi}{3\sqrt{3}})^{\frac{1}{2}}$ cm.

Solution 91

As the digits appear in ascending order in the numbers, number of ways of forming a n-digit number using the 9 digits = ${}^{9}C_n$

Number of possible two-digit numbers which can be formed =

CAT 2018 Paper SLOT 1 [SOLVED]

Q. $C_2 + {}^9C_3 + {}^9C_4 + {}^9C_5 + {}^9C_6 + {}^9C_7 + {}^9C_8 + {}^9C_9$

$1.2^9 - (9C_1 + {}^9C_1)$

$2.512 - (1+9) = 502$

Solution 92

$0.25 \le 2^x \le 200$

Possible values of x satisfying the above inequality are –2, –1,0, 1, 2, 3, 4, 5, 6, 7.

When x = 0, 1, 2, 4 and 6, $2^x + 2$ is divisible by 3 or 4.

The number of values of x is 5

Solution 93

f(x+2) = f(x) + f(x+1)

f(11) = 91

Let f(12) = a

f(13) = 91 + a

f(14) = 91 + 2a

f(15) = 182 + 3a.

This is also equal to 617.

182 + 3a = 617 => a = 145

f(10) = f(12) - f(11) = 145 - 91 = 54

Solution 94

A got 36 marks but falls short of pass marks by 68%.

Maximum possible score is N.

Pass mark is 45% of N. 32% of 45% of N = 36 => N = 250

Solution 95

The selling price of the mixture is Rs.40/kg.

Let a be the quantity of tea A in the mixture and b be the quantity of tea B in the mixture.

It has been given that the profit is 10% if the 2 varieties are mixed in the ratio 3:2

Let the cost price of the mixture be x.

It has been given that 1.1x = 40

x = 40/1.1

$$\frac{3a + 2b}{5} = \frac{40}{1.1}$$

$3.3a + 2.2b = 200$ --------(1)

The profit is 5% if the 2 varieties are mixed in the ratio 2:3.

$$\frac{2a + 3b}{5} = \frac{40}{1.05}$$

$2.1a + 3.15b = 200$ ------(2)

Equating (1) and (2), we get,

$3.3a + 2.2b = 2.1a + 3.15b$

$1.2\ a = 0.95b$

$$\frac{Q.}{R.} = \frac{0.95}{1.2}$$

$$\frac{a}{b} = \frac{19}{24}$$

Solution 96

Let each instalment be ₹x. Equating the present value of both the instalments to the money borrowed,

$$\frac{x}{1.1} + \frac{x}{1.1^2} = 210000$$

x=121000

Solution 97

$f(x) = \min (2x^2 , 52 - 5x)$

The maximum possible value of this function will be attained when $2x^2 = 52 - 5x$

$. 2x^2 + 5x - 52 = 0$

$(2x + 13)(x - 4) = 0$

$\Rightarrow x = \frac{-13}{2}$ or $x = 4$

Since x has to be positive integer, we can discard the case $x = \frac{-13}{2}$.

$x = 4$ is the point at which the function attains the maximum value.

putting $x = 4$ in the original function, we get, $2x^2 = 2*4^2 = 32$.

Or the maximum value of f(x) = 32

Solution 98

Let the time taken by Partha to cover 60 km be x hours.

As per the condition, Narayan will cover 60 km in x-4 hours.

Therefore, Speed of Partha = 60/x
And Speed of Narayan = 60/(x−4)

It is also given that Partha reaches the mid-point of A and B two hours before Narayan reaches B. Hence,

$\Rightarrow \frac{30}{\frac{60}{Q.}} + 2 = \frac{60}{(x-4)}$

$\frac{x}{2} + 2 = x - 4$

$\frac{x+4}{2} = x - 4$

$x + 4 = 2x - 8$

$Q. = 12$

OR Partha will take 12 hours to cross 60 km.

=> Speed of Partha = 60/12=5 Kmph.

Solution 99

Let the rates of work of each human and each robot be H and R respectively (both in units/day).

CAT 2018 Paper SLOT 1 [SOLVED]

$15H + 5R = \frac{1}{30}$ …… (1)

$5H + 15R = \frac{1}{60}$ ……(2)

$3(1) - (2) \Rightarrow 40H = \frac{1}{12}$

$H = \frac{1}{480}$

In a day, 15 humans can complete 15H i.e. $\frac{1}{32}$ *th* of the job.

15 humans can complete the job in 32 days

Solution 100

Let the time taken by A to finish the job be "a" days.

Time taken by B to finish the job = $\frac{5}{4}a$ days.

Part of the job completed when A and B worked together for 4 days = 1 = $\frac{1}{2} - \frac{5}{100} = \frac{9}{20}$

$$4\left(\frac{1}{a} + \frac{1}{\frac{5a}{4}}\right) = \frac{9}{20} \Rightarrow a = 16$$

Time taken by B alone to complete the entire job = 5a/4 = 20 days.

CAT 2018 Paper SLOT 2 [SOLVED]

CAT 2018 Paper SLOT 2 [SOLVED]

The complexity of modern problems often precludes any one person from fully understanding them. Factors contributing to rising obesity levels, for example, include transportation systems and infrastructure, media, convenience foods, changing social norms, human biology and psychological factors. . . . The multidimensional or layered character of complex problems also undermines the principle of meritocracy: the idea that the 'best person' should be hired. There is no best person. When putting together an oncological research team, a biotech company such as Gilead or Genentech would not construct a multiple-choice test and hire the top scorers, or hire people whose resumes score highest according to some performance criteria. Instead, they would seek diversity. They would build a team of people who bring diverse knowledge bases, tools and analytic skills. . . .

Believers in a meritocracy might grant that teams ought to be diverse but then argue that meritocratic principles should apply within each category. Thus the team should consist of the 'best' mathematicians, the 'best' oncologists, and the 'best' biostatisticians from within the pool. That position suffers from a similar flaw. Even with a knowledge domain, no test or criteria applied to individuals will produce the best team. Each of these domains possesses such depth and breadth, that no test can exist. Consider the field of neuroscience. Upwards of 50,000 papers were published last year covering various techniques, domains of enquiry and levels of analysis, ranging from molecules and synapses up through networks of neurons. Given that complexity, any attempt to rank a collection of neuroscientists from best to worst, as if they were competitors in the 50-metre butterfly, must fail. What could be true is that given a specific task and the composition of a particular team, one scientist would be more likely to contribute than another. Optimal hiring depends on context. Optimal teams will be diverse.

Evidence for this claim can be seen in the way that papers and patents that combine diverse ideas tend to rank as high-impact. It can also be found in the structure of the so-called random decision forest, a state-of-the-art machine-learning algorithm. Random forests consist of ensembles of decision trees. If classifying pictures, each tree makes a vote: is that a picture of a fox or a dog? A weighted majority rules. Random forests can serve many ends. They can identify bank fraud and diseases, recommend ceiling fans and predict online dating behaviour. When building a forest, you do not select the best trees as they tend to make similar classifications. You want diversity. Programmers achieve that diversity by training each tree on different data, a technique

known as bagging. They also boost the forest 'cognitively' by training trees on the hardest cases – those that the current forest gets wrong. This ensures even more diversity and accurate forests.

Yet the fallacy of meritocracy persists. Corporations, non-profits, governments, universities and even preschools test, score and hire the 'best'. This all but guarantees not creating the best team. Ranking people by common criteria produces homogeneity. . . . That's not likely to lead to breakthroughs.

Q 1: Which of the following conditions, if true, would invalidate the passage's main argument?

5. If top-scorers possessed multidisciplinary knowledge that enabled them to look at a problem from several perspectives.
6. If assessment tests were made more extensive and rigorous.
7. If it were proven that teams characterised by diversity end up being conflicted about problems and take a long time to arrive at a solution.
8. If a new machine-learning algorithm were developed that proved to be more effective than the random decision forest.

Q 2: The author critiques meritocracy for all the following reasons EXCEPT that:

5. an ideal team comprises of best individuals from diverse fields of knowledge.
6. modern problems are multifaceted and require varied skill-sets to be solved.
7. criteria designed to assess merit are insufficient to test expertise in any field of knowledge.
8. diversity and context-specificity are important for making major advances in any field.

Q 3: Which of the following conditions would weaken the efficacy of a random decision forest?

5. If a large number of decision trees in the ensemble were trained on data derived from easy cases.
6. If the types of decision trees in each ensemble of the forest were doubled.

5. If a large number of decision trees in the ensemble were trained on data derived from easy and hard cases.
6. If the types of ensembles of decision trees in the forest were doubled.

Q 4: On the basis of the passage, which of the following teams is likely to be most effective in solving the problem of rising obesity levels?

5. A team comprised of nutritionists, psychologists, urban planners and media personnel, who have each scored a distinction in their respective subject tests.
6. A team comprised of nutritionists, psychologists, urban planners and media personnel, who have each performed well in their respective subject tests.
7. A specialised team of nutritionists from various countries, who are also trained in the machine-learning algorithm of random decision forest.
8. A specialised team of top nutritionists from various countries, who also possess some knowledge of psychology.

Q 5: Which of the following best describes the purpose of the example of neuroscience?

5. Unlike other fields of knowledge, neuroscience is an exceptionally complex field, making a meaningful assessment of neuroscientists impossible.
6. In narrow fields of knowledge, a meaningful assessment of expertise has always been possible.
7. Neuroscience is an advanced field of science because of its connections with other branches of science like oncology and biostatistics.
8. In the modern age, every field of knowledge is so vast that a meaningful assessment of merit is impossible.

Grove snails as a whole are distributed all over Europe, but a specific variety of the snail, with a distinctive white-lipped shell, is found exclusively in Ireland and in the Pyrenees mountains that lie on the border between France and Spain. The researchers sampled a total of 423 snail specimens from 36 sites distributed across Europe, with an emphasis on gathering large numbers

of the white-lipped variety. When they sequenced genes from the mitochondrial DNA of each of these snails and used algorithms to analyze the genetic diversity between them, they found that. .

. a distinct lineage (the snails with the white-lipped shells) was indeed endemic to the two very specific and distant places in question.

Explaining this is tricky. Previously, some had speculated that the strange distributions of creatures such as the white-lipped grove snails could be explained by convergent evolution—in which two populations evolve the same trait by coincidence—but the underlying genetic similarities between the two groups rules that out. Alternately, some scientists had suggested that the white-lipped variety had simply spread over the whole continent, then been wiped out everywhere besides Ireland and the Pyrenees, but the researchers say their sampling and subsequent DNA analysis eliminate that possibility too. “If the snails naturally colonized Ireland, you would expect to find some of the same genetic type in other areas of Europe, especially Britain. We just don’t find them,” Davidson, the lead author, said in a press statement.

Moreover, if they’d gradually spread across the continent, there would be some genetic variation within the white-lipped type, because evolution would introduce variety over the thousands of years it would have taken them to spread from the Pyrenees to Ireland. That variation doesn’t exist, at least in the genes sampled. This means that rather than the organism gradually expanding its range, large populations instead were somehow moved en mass to the other location within the space of a few dozen generations, ensuring a lack of genetic variety.

“There is a very clear pattern, which is difficult to explain except by involving humans,” Davidson said. Humans, after all, colonized Ireland roughly 9,000 years ago, and the oldest fossil evidence of grove snails in Ireland dates to roughly the same era. Additionally, there is archaeological evidence of early sea trade between the ancient peoples of Spain and Ireland via the Atlantic and even evidence that humans routinely ate these types of snails before the advent of agriculture, as their burnt shells have been found in Stone Age trash heaps.

The simplest explanation, then? Boats. These snails may have inadvertently traveled on the floor of the small, coast-hugging skiffs these early humans used for travel, or they may have been intentionally carried to Ireland by the seafarers as a food source. “The highways of the past were rivers and the ocean–as the river that flanks the Pyrenees was an ancient trade route to the

Atlantic, what we're actually seeing might be the long lasting legacy of snails that hitched a ride…as humans travelled from the South of France to Ireland 8,000 years ago," Davidson said.

Q 6: All of the following evidence supports the passage's explanation of sea travel/trade EXCEPT:

5. archaeological evidence of early sea trade between the ancient peoples of Spain and Ireland via the Atlantic Ocean.
6. the oldest fossil evidence of white-lipped grove snails in Ireland dates back to roughly 9,000 years ago, the time when humans colonised Ireland.
7. absence of genetic variation within the white-lipped grove snails of Ireland and the Pyrenees, whose genes were sampled.
8. the coincidental existence of similar traits in the white-lipped grove snails of Ireland and the Pyrenees because of convergent evolution.

Q 7: In paragraph 4, the evidence that "humans routinely ate these types of snails before the advent of agriculture" can be used to conclude that:

5. 9,000 years ago, during the Stone Age, humans traveled from the South of France to Ireland via the Atlantic Ocean.
6. white-lipped grove snails may have inadvertently traveled from the Pyrenees to Ireland on the floor of the small, coast-hugging skiffs that early seafarers used for travel.
7. the seafarers who traveled from the Pyrenees to Ireland might have carried white-lipped grove snails with them as edibles.
8. rivers and oceans in the Stone Age facilitated trade in white-lipped grove snails.

Q 8: Which one of the following makes the author eliminate convergent evolution as a probable explanation for why white-lipped grove snails are found in Ireland and the Pyrenees?

5. The absence of genetic similarities between white-lipped grove snails of Ireland and snails from other parts of Europe, especially Britain.
6. The distinct lineage of white-lipped grove snails found specifically in Ireland and the Pyrenees.
7. The absence of genetic variation between white-lipped grove snails of Ireland and the Pyrenees.
8. The coincidental evolution of similar traits (white-lipped shell) in the grove snails of Ireland and the Pyrenees.

Q 9: The passage outlines several hypotheses and evidence related to white-lipped grove snails to arrive at the most convincing explanation for:

5. how the white-lipped variety of grove snails independently evolved in Ireland and the Pyrenees.
6. how the white-lipped variety of grove snails might have migrated from the Pyrenees to Ireland.
7. why the white-lipped variety of grove snails are found only in Ireland and the Pyrenees.
8. why the white-lipped variety of grove snails were wiped out everywhere except in Ireland and the Pyrenees.

More and more companies, government agencies, educational institutions and philanthropic organisations are today in the grip of a new phenomenon: ‘metric fixation’. The key components of metric fixation are the belief that it is possible – and desirable – to replace professional judgment (acquired through personal experience and talent) with numerical indicators of comparative performance based upon standardised data (metrics); and that the best way to motivate people within these organisations is by attaching rewards and penalties to their measured performance.

The rewards can be monetary, in the form of pay for performance, say, or reputational, in the form of college rankings, hospital ratings, surgical report cards and so on. But the most dramatic negative effect of metric fixation is its propensity to incentivise gaming: that is, encouraging professionals to maximise the metrics in ways that are at odds with the larger purpose of the

organisation. If the rate of major crimes in a district becomes the metric according to which police officers are promoted, then some officers will respond by simply not recording crimes or downgrading them from major offences to misdemeanours. Or take the case of surgeons. When the metrics of success and failure are made public – affecting their reputation and income – some surgeons will improve their metric scores by refusing to operate on patients with more complex problems, whose surgical outcomes are more likely to be negative. Who suffers? The patients who don't get operated upon.

When reward is tied to measured performance, metric fixation invites just this sort of gaming. But metric fixation also leads to a variety of more subtle unintended negative consequences. These include goal displacement, which comes in many varieties: when performance is judged by a few measures, and the stakes are high (keeping one's job, getting a pay rise or raising the stock price at the time that stock options are vested), people focus on satisfying those measures – often at the expense of other, more important organisational goals that are not measured. The best-known example is 'teaching to the test', a widespread phenomenon that has distorted primary and secondary education in the United States since the adoption of the No Child Left Behind Act of 2001.

Short-termism is another negative. Measured performance encourages what the US sociologist Robert K Merton in 1936 called 'the imperious immediacy of interests … where the actor's paramount concern with the foreseen immediate consequences excludes consideration of further or other consequences'. In short, advancing short-term goals at the expense of long-range considerations. This problem is endemic to publicly traded corporations that sacrifice long-term research and development, and the development of their staff, to the perceived imperatives of the quarterly report.

To the debit side of the ledger must also be added the transactional costs of metrics: the expenditure of employee time by those tasked with compiling and processing the metrics in the first place – not to mention the time required to actually read them. . . .

Q 10: What main point does the author want to convey through the examples of the police officer and the surgeon?

5. Some professionals are likely to be significantly influenced by the design of performance measurement systems.
6. Metrics-linked rewards may encourage unethical behaviour among some professionals.
7. The actions of police officers and surgeons have a significantly impact on society.
8. Critical public roles should not be evaluated on metrics-based performance measures.

Q 11: Which of the following is NOT a consequence of the 'metric fixation' phenomenon mentioned in the passage?

5. Improving cooperation among employees leading to increased organisational effectiveness in the long run.
6. Short-term orientation induced by frequent measurement of performance.
7. Finding a way to show better results without actually improving performance.
8. Deviating from organisationally important objectives to measurable yet less important objectives.

Q 12: Of the following, which would have added the least depth to the author's argument?

6. An analysis of the reasons why metrics fixation is becoming popular despite its drawbacks.
7. More real-life illustrations of the consequences of employees and professionals gaming metrics-based performance measurement systems.
8. A comparative case study of metrics- and non-metrics-based evaluation, and its impact on the main goals of an organisation.
9. Assessment of the pros and cons of a professional judgment-based evaluation system.

Q 13: All of the following can be a possible feature of the No Child Left Behind Act of 2001, EXCEPT:

5. standardised test scores can be critical in determining a student's educational future.

5. the focus is more on test-taking skills than on higher order thinking and problem-solving.
6. school funding and sanctions are tied to yearly improvement shown on tests.
7. assessment is dependent on the teacher's subjective evaluation of students' class participation.

Q 14: What is the main idea that the author is trying to highlight in the passage?

5. All kinds of organisations are now relying on metrics to measure performance and to give rewards and punishments.
6. Long-term organisational goals should not be ignored for short-term measures of organisational success.
7. Performance measurement needs to be precise and cost-effective to be useful for evaluating organisational performance.
8. Evaluating performance by using measurable performance metrics may misguide organisational goal achievement.

NOT everything looks lovelier the longer and closer its inspection. But Saturn does. It is gorgeous through Earthly telescopes. However, the 13 years of close observation provided by Cassini, an American spacecraft, showed the planet, its moons and its remarkable rings off better and better, revealing finer structures, striking novelties and greater drama. . . .

By and large the big things in the solar system—planets and moons—are thought of as having been around since the beginning. The suggestion that rings and moons are new is, though, made even more interesting by the fact that one of those moons, Enceladus, is widely considered the most promising site in the solar system on which to look for alien life. If Enceladus is both young and bears life, that life must have come into being quickly. This is also believed to have been the case on Earth. Were it true on Enceladus, that would encourage the idea that life evolves easily when conditions are right.

One reason for thinking Saturn's rings are young is that they are bright. The solar system is suffused with comet dust, and comet dust is dark. Leaving Saturn's ring system (which Cassini has shown to be more than 90% water ice) out in such a mist is like leaving laundry hanging on a

line downwind from a smokestack: it will get dirty. The lighter the rings are, the faster this will happen, for the less mass they contain, the less celestial pollution they can absorb before they start to discolour. . . . Jeff Cuzzi, a scientist at America's space agency, NASA, who helped run Cassini, told the Lunar and Planetary Science Conference in Houston that combining the mass estimates with Cassini's measurements of the density of comet-dust near Saturn suggests the rings are no older than the first dinosaurs, nor younger than the last of them—that is, they are somewhere between 200m and 70m years old.

That timing fits well with a theory put forward in 2016, by Matija Cuk of the SETI Institute, in California and his colleagues. They suggest that at around the same time as the rings came into being an old set of moons orbiting Saturn destroyed themselves, and from their remains emerged not only the rings but also the planet's current suite of inner moons—Rhea, Dione, Tethys, Enceladus and Mimas. . . .

Dr Cuk and his colleagues used computer simulations of Saturn's moons' orbits as a sort of time machine. Looking at the rate at which tidal friction is causing these orbits to lengthen they extrapolated backwards to find out what those orbits would have looked like in the past. They discovered that about 100m years ago the orbits of two of them, Tethys and Dione, would have interacted in a way that left the planes in which they orbit markedly tilted. But their orbits are untilted. The obvious, if unsettling, conclusion was that this interaction never happened—and thus that at the time when it should have happened, Dione and Tethys were simply not there. They must have come into being later. . . .

Q 15: Data provided by Cassini challenged the assumption that:

5. Saturn's ring system is composed mostly of water ice.
6. there was life on earth when Saturn's rings were being formed.
7. new celestial bodies can form from the destruction of old celestial bodies.
8. all big things in the solar system have been around since the beginning.

Q 16: The main objective of the passage is to:

6. establish that Saturn's rings and inner moons have been around since the beginning of time.
7. demonstrate how the orbital patterns of Saturn's rings and moons change over time.
8. highlight the beauty, finer structures and celestial drama of Saturn's rings and moons.
9. provide evidence that Saturn's rings and moons are recent creations.

Q 17: Based on information provided in the passage, we can infer that, in addition to water ice, Saturn's rings might also have small amounts of:

6. methane and rock particles.
7. helium and methane.
8. helium and comet dust.
9. rock particles and comet dust.

Q 18: The phrase "leaving laundry hanging on a line downwind from a smokestack" is used to explain how the ringed planet's:

6. atmosphere absorbs comet dust.
7. rings discolour and darken over time.
8. rings lose mass over time.
9. moons create a gap between the rings.

Q 19: Based on information provided in the passage, we can conclude all of the following EXCEPT:

5. Saturn's lighter rings discolour faster than rings with greater mass.
6. Saturn's rings were created from the remains of older moons.
7. none of Saturn's moons ever had suitable conditions for life to evolve.
8. Thethys and Dione are less than 100 million years old.

CAT 2018 Paper SLOT 2 [SOLVED]

Will a day come when India's poor can access government services as easily as drawing cash from an ATM? . . . [N]o country in the world has made accessing education or health or policing or dispute resolution as easy as an ATM, because the nature of these activities requires individuals to use their discretion in a positive way. Technology can certainly facilitate this in a variety of ways if it is seen as one part of an overall approach, but the evidence so far in education, for instance, is that just adding computers alone doesn't make education any better. . . .

The dangerous illusion of technology is that it can create stronger, top down accountability of service providers in implementation-intensive services within existing public sector organisations. One notion is that electronic management information systems (EMIS) keep better track of inputs and those aspects of personnel that are 'EMIS visible' can lead to better services. A recent study examined attempts to increase attendance of Auxiliary Nurse Midwife (ANMs) at clinics in Rajasthan, which involved high-tech time clocks to monitor attendance. The study's title says it all: Band-Aids on a Corpse . . . e-governance can be just as bad as any other governance when the real issue is people and their motivation.

For services to improve, the people providing the services have to want to do a better job with the skills they have. A study of medical care in Delhi found that even though providers, in the public sector had much better skills than private sector providers their provision of care in actual practice was much worse.

In implementation-intensive services the key to success is face-to-face interactions between a teacher, a nurse, a policeman, an extension agent and a citizen. This relationship is about power. Amartya Sen's . . . report on education in West Bengal had a supremely telling anecdote in which the villagers forced the teacher to attend school, but then, when the parents went off to work, the teacher did not teach, but forced the children to massage his feet. . . . As long as the system empowers providers over citizens, technology is irrelevant.

The answer to successfully providing basic services is to create systems that provide both autonomy and accountability. In basic education for instance, the answer to poor teaching is not controlling teachers more . . . The key . . . is to hire teachers who want to teach and let them teach, expressing their professionalism and vocation as a teacher through autonomy in the

classroom. This autonomy has to be matched with accountability for results—not just narrowly measured through test scores, but broadly for the quality of the education they provide.

A recent study in Uttar Pradesh showed that if, somehow, all civil service teachers could be replaced with contract teachers, the state could save a billion dollars a year in revenue and double student learning. Just the additional autonomy and accountability of contracts through local groups—even without complementary system changes in information and empowerment—led to that much improvement. The first step to being part of the solution is to create performance information accessible to those outside of the government. . . .

Q 20: The main purpose of the passage is to:

5. argue that some types of services can be improved by providing independence and requiring accountability.
6. find a solution to the problem of poor service delivery in education by examining different strategies.
7. analyse the shortcomings of government-appointed nurses and their management through technology.
8. critique the government's involvement in educational activities and other implementation-intensive services.

Q 21: In the context of the passage, we can infer that the title "Band Aids on a Corpse" (in paragraph 2) suggests that:

- the nurses who attended the clinics were too poorly trained to provide appropriate medical care.
- the electronic monitoring system was a superficial solution to a serious problem.
- the clinics were better funded, but performance monitoring did not result in any improvement.
- the nurses attended the clinics, but the clinics were ill-equipped.

CAT 2018 Paper SLOT 2 [SOLVED]

5. 22: The author questions the use of monitoring systems in services that involve face-to-face interaction between service providers and clients because such systems:

are ineffective because they are managed by the government.
are not as effective in the public sector as they are in the private sector.
do not improve services that need committed service providers.
improve the skills but do not increase the motivation of service providers.

Q 23: According to the author, service delivery in Indian education can be improved in all of the following ways EXCEPT through:

5. use of technology.
6. access to information on the quality of teaching.
7. recruitment of motivated teachers.
8. elimination of government involvement.

Q 24: Which of the following, IF TRUE, would undermine the passage's main argument?

5. Empowerment of service providers leads to increased complacency and rigged performance results.
6. If absolute instead of moderate technological surveillance is exercised over the performance of service providers.
7. If it were proven that service providers in the private sector have better skills than those in the public sector.
8. If it were proven that increase in autonomy of service providers leads to an exponential increase in their work ethic and sense of responsibility.

Q 25: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

E Much has been recently discovered about the development of songs in birds.

F Some species are restricted to a single song learned by all individuals, others have a range of songs.

G The most important auditory stimuli for the birds are the sounds of other birds.

H For all bird species there is a prescribed path to development of the final song,

I A bird begins with the subsong, passes through plastic song, until it achieves the species song.

Q 26: The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

T. It was his taxpayers who had to shell out as much as $1.6bn over 10 years to employees of failed companies.

U. Companies in many countries routinely engage in such activities which means that the employees are left with unpaid entitlements

V. Deliberate and systematic liquidation of a company to avoid liabilities and then restarting the business is called phoenixing.

W. The Australian Minister for Revenue and Services discovered in an audit that phoenixing had cost the Australian economy between 2.9bnand2.9bnand5.1bn last year.

5.

Q 27: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

The early optimism about sport's deterrent effects on delinquency was premature as researchers failed to find any consistent relationships between sports participation and deviance. As the initial studies were based upon cross-sectional data and the effects captured were short-term, it was problematic to test and verify the temporal sequencing of events suggested by the deterrence theory. The correlation between sport and delinquency could not be disentangled from class and cultural variables known. Choosing individuals to play sports in the first place was problematic, which became more acute in the subsequent decades as researchers began to document just how closely sports participation was linked to social class indicators.

E Sports participation is linked to class and cultural variables such as education, income, and social capital.

F Contradicting the previous optimism, latter researchers have proved that there is no consistent relationship between sports participation and deviance.

G Statistical and empirical weaknesses stand in the way of inferring any relationship between sports participation and deviance.

H There is a direct relationship between sport participation and delinquency but it needs more empirical evidence.

5.

Q 28: The four sentences (labelled 1,2,3,4) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper sequence of order of the sentences and key in this sequence of four numbers as your answer:

U. They would rather do virtuous side projects assiduously as long as these would not compel them into doing their day jobs more honourably or reduce the profit margins.

V. They would fund a million of the buzzwordy programs rather than fundamentally question the rules of their game or alter their own behavior to reduce the harm of the existing distorted, inefficient and unfair rules.

W. Like the dieter who would rather do anything to lose weight than actually eat less, the business elite would save the world through social-impact-investing and philanthro-capitalism.

X. Doing the right thing — and moving away from their win-win mentality — would involve real sacrifice; instead, it's easier to focus on their pet projects and initiatives.

5.

Q 29: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

U. As India looks to increase the number of cities, our urban planning must factor in potential natural disasters and work out contingencies in advance.

E Authorities must revise data and upgrade infrastructure and mitigation plans even if their local area hasn't been visited by a natural calamity yet.

F Extreme temperatures, droughts, and forest fires have more than doubled since 1980.

G There is no denying the fact that our baseline normal weather is changing.

H It is no longer a question of whether we will be hit by nature's fury but rather when.

Q 30: The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

U. Self-management is thus defined as the 'individual's ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition'.

V. Most people with progressive diseases like dementia prefer to have control over their own lives and health-care for as long as possible.

W. Having control means, among other things, that patients themselves perform self-management activities.

X. Supporting people in decisions and actions that promote self-management is called self-management support requiring a cooperative relationship between the patient, the family, and the professionals.

5.

Q 31: The passage given below is followed by four summaries. Choose the option that best captures the author's position:

A Japanese government panel announced that it recommends regulating only genetically modified organisms that have had foreign genes permanently introduced into their genomes and not those whose endogenous genes have been edited. The only stipulation is that researchers and businesses will have to register their modifications to plants or animals with the government, with the exception of microbes cultured in contained environments. Reactions to the decision are mixed. While lauding the potential benefits of genome editing, an editorial opposes across-the-board permission. Unforeseen risks in gene editing cannot be ruled out. All genetically modified products must go through the same safety and labeling processes regardless of method.

H A government panel in Japan says transgenic modification and genome editing are not the same.

I Excepting microbes cultured in contained environments from the regulations of genome editing is premature.

J Exempting from regulations the editing of endogenous genes is not desirable as this procedure might be risk-prone.

K Creating categories within genetically modified products in terms of transgenic modification and genome editing advances science but defies laws.

5.

Q 32: The four sentences (labelled 1,2,3,4) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper sequence of order of the sentences and key in this sequence of four numbers as your answer:

E In the era of smart world, however, 'Universal Basic Income' is an ineffective instrument which cannot address the potential breakdown of the social contract when large swathes of the population would effectively be unemployed.

F In the era of industrial revolution, the abolition of child labour, poor laws and the growth of trade unions helped families cope with the pressures of mechanised work.

G Growing inequality could be matched by a creeping authoritarianism that is bolstered by technology that is increasingly able to peer into the deepest vestiges of our lives.

H New institutions emerge which recognise ways in which workers could contribute to and benefit by economic growth when, rather than if, their jobs are automated.

5.

Q 33: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key the number in:

E Our smartphones can now track our diets, our biological cycles, even our digestive systems and sleep-patterns.

U. Researchers have even coined a new term, "orthosomnia", to describe the insomnia brought on by paying too much attention to smartphones and sleep-tracking apps.

V. Sleep, nature's soft nurse, is a blissful, untroubled state all too easily disturbed by earthly worries or a guilty conscience.

W. The existence of a market for such apps is unsurprising: shift work, a long-hours culture and blue light from screens have conspired to rob many of us of sufficient rest.

X. A new threat to a good night's rest has emerged – smart-phones, with sleep-tracking apps.

Q 34: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Should the moral obligation to rescue and aid persons in grave peril, felt by a few, be enforced by the criminal law? Should we follow the lead of a number of European countries and enact bad Samaritan laws? Proponents of bad Samaritan laws must overcome at least three different sorts of obstacles. First, they must show the laws are morally legitimate in principle, that is, that the duty to aid others is a proper candidate for legal enforcement. Second, they must show that this duty to aid can be defined in a way that can be fairly enforced by the courts. Third, they must show that the benefits of the laws are worth their problems, risks and costs.

U. A number of European countries that have successfully enacted bad Samaritan laws may serve as model statutes.

V. Everyone agrees that people ought to aid others, the only debate is whether to have a law on it.

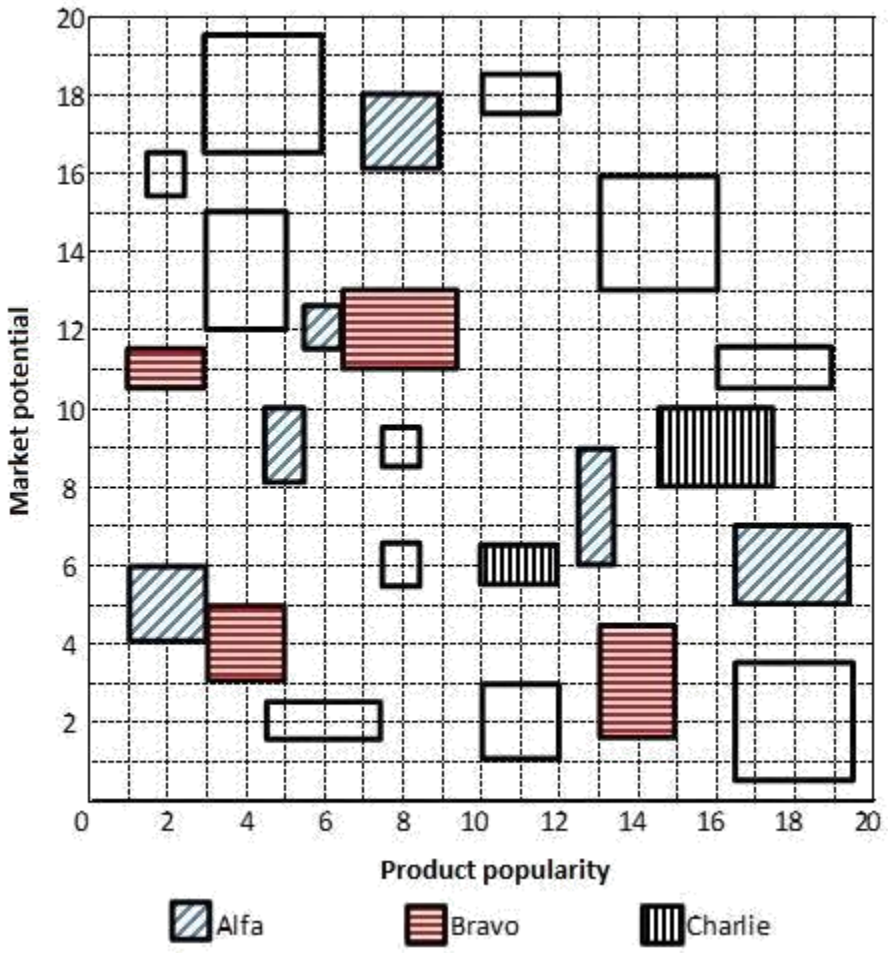
W. If bad Samaritan laws are found to be legally sound and enforceable they must be enacted.

X. Bad Samaritan laws may be desirable but they need to be tested for legal soundness.

CAT 2018 Paper SLOT 2 [SOLVED]

CAT 2018 Paper SLOT 2 [SOLVED]

Each of the 23 boxes in the picture below represents a product manufactured by one of the following three companies: Alfa, Bravo and Charlie. The area of a box is proportional to the revenue from the corresponding product, while its centre represents the Product popularity and Market potential scores of the product (out of 20). The shadings of some of the boxes have got erased.



The companies classified their products into four categories based on a combination of scores (out of 20) on the two parameters – Product popularity and Market potential as given below:

	Promising	Blockbuster	Doubtful	No-hope
Product popularity score	>10	>10	≤10	≤10
Market potential score	>10	≤10	>10	≤10

The following facts are known:

5. Alfa and Bravo had the same number of products in the Blockbuster category.

6. Charlie had more products than Bravo but fewer products than Alfa in the No-hope category.

7. Each company had an equal number of products in the Promising category.

8. Charlie did not have any product in the Doubtful category, while Alfa had one product more than Bravo in this category.

9. Bravo had a higher revenue than Alfa from products in the Doubtful category.

10. Charlie had a higher revenue than Bravo from products in the Blockbuster category.

11. Bravo and Charlie had the same revenue from products in the No-hope category.

12. Alfa and Charlie had the same total revenue considering all products.

Q 35: Considering all companies' products, which product category had the highest revenue?

F Doubtful
G Promising
H No-hope
I Blockbuster

Q 36: Which of the following is the correct sequence of numbers of products Bravo had in No-hope, Doubtful, Promising and Blockbuster categories respectively?

U. 1,3,1,3
V. 1,3,1,2
W. 2,3,1,2
X. 3,3,1,2

Q 37: Which of the following statements is NOT correct?

U. Bravo's revenue from Blockbuster products was greater than Alfa's revenue from Doubtful products

V. The total revenue from No-hope products was less than the total revenue from Doubtful products

W. Bravo and Charlie had the same revenues from No-hope products

X. Alfa's revenue from Blockbuster products was the same as Charlie's revenue from Promising products

Q 38: If the smallest box on the grid is equivalent to revenue of Rs.1 crore, then what approximately was the total revenue of Bravo in Rs. crore?

U. 40

V. 24

W. 30

X. 34

There are only four brands of entry level smartphones called Azra, Bysi, Cxqi, and Dipq in a country.

Details about their market share, unit selling price, and profitability (defined as the profit as a percentage of the revenue) for the year 2016 are given in the table below:

Brand	Market Share (%)	Unit Selling Price (Rs.)	Profitability (%)
Azra	40	15,000	10
Bysi	25	20,000	30
Cxqi	15	30,000	40
Dipq	20	25,000	30

In 2017, sales volume of entry level smartphones grew by 40% as compared to that in 2016. Cxqi offered a 40% discount on its unit selling price in 2017, which resulted in a 15% increase in its market share. Each of the other three brands lost 5% market share. However, the profitability of Cxqi came down to half of its value in 2016. The unit selling prices of the other three brands and their profitability values remained the same in 2017 as they were in 2016.

CAT 2018 Paper SLOT 2 [SOLVED]

Q 39: The brand that had the highest revenue in 2016 is:

U. Dipq
V. Bysi
W. Cxqi
X. Azra

Q 40: The brand that had the highest profit in 2016 is:

9. Azra
10. Bysi
11. Cxqi
12. Dipq

Q 41: The brand that had the highest profit in 2017 is:

D Dipq
E Bysi
F Cxqi
G Azra

Q 42: The complete list of brands whose profits went up in 2017 from 2016 is:

U. Azra, Bysi, Cxqi
V. Bysi, Cxqi, Dipq
W. Cxqi, Azra, Dipq
X. Azra, Bysi, Dipq

Seven candidates, Akil, Balaram, Chitra, Divya, Erina, Fatima, and Ganeshan, were invited to interview for a position. Candidates were required to reach the venue before 8 am. Immediately

upon arrival, they were sent to one of three interview rooms: 101, 102, and 103. The following venue log shows the arrival times for these candidates. Some of the names have not been recorded in the log and have been marked as '?'.

Time	7:10 am	7:15 am	7:25 am	7:30 am	7:40 am	7:45 am
Person	Akil, ?	?	?	Chitra	Fatima	?

Additionally here are some statements from the candidates:

Balaram: I was the third person to enter Room 101.

Chitra: I was the last person to enter the room I was allotted to.

Erina: I was the only person in the room I was allotted to.

Fatima: Three people including Akil were already in the room that I was allotted to when I entered it.

Ganeshan: I was one among the two candidates allotted to Room 102.

Q 43: What best can be said about the room to which Divya was allotted?

T. Definitely Room 102
U. Definitely Room 103
V. Definitely Room 101
W. Either Room 101 or Room 102

Q 44: Who else was in Room 102 when Ganeshan entered?

T. No one
U. Divya
V. Chitra
W. Akil

CAT 2018 Paper SLOT 2 [SOLVED]

Q 45: When did Erina reach the venue?

5. 7:25 am
6. 7:45 am
7. 7:10 am
8. 7:15 am

Q 46: If Ganeshan entered the venue before Divya, when did Balaram enter the venue?

F 7:45 am
G 7:25 am
H 7:15 am
I 7:10 am

The base exchange rate of a currency X with respect to a currency Y is the number of units of currency Y which is equivalent in value to one unit of currency X. Currency exchange outlets buy currency at buying exchange rates that are lower than base exchange rates, and sell currency at selling exchange rates that are higher than base exchange rates.

A currency exchange outlet uses the local currency L to buy and sell three international currencies A, B, and C, but does not exchange one international currency directly with another. The base exchange rates of A, B and C with respect to L are in the ratio 100:120:1. The buying exchange rates of each of A, B, and C with respect to L are 5% below the corresponding base exchange rates, and their selling exchange rates are 10% above their corresponding base exchange rates.

The following facts are known about the outlet on a particular day:

U. The amount of L used by the outlet to buy C equals the amount of L it received by selling C.

V. The amounts of L used by the outlet to buy A and B are in the ratio 5:3.

W. The amounts of L the outlet received from the sales of A and B are in the ratio 5:9.

U.The outlet received 88000 units of L by selling A during the day.

V.The outlet started the day with some amount of L, 2500 units of A, 4800 units of B, and 48000 units of C.

W. The outlet ended the day with some amount of L, 3300 units of A, 4800 units of B, and 51000 units of C.

Q 47: How many units of currency A did the outlet buy on that day?

Q 48: How many units of currency C did the outlet sell on that day?

B 19000
C 3000
D 6000
E 22000

Q 49: What was the base exchange rate of currency B with respect to currency L on that day?

Q 50: What was the buying exchange rate of currency C with respect to currency L on that day?

U. 0.95
V. 1.10
W. 1.90
X. 2.20

Fun Sports (FS) provides training in three sports – Gilli-danda (G), Kho-Kho (K), and Ludo (L). Currently it has an enrollment of 39 students each of whom is enrolled in at least one of the three sports. The following details are known:

U.The number of students enrolled only in L is double the number of students enrolled in all the three sports.

V.There are a total of 17 students enrolled in G.

5. The number of students enrolled only in G is one less than the number of students enrolled only in L.

6. The number of students enrolled only in K is equal to the number of students who are enrolled in both K and L.

7. The maximum student enrollment is in L.

8. Ten students enrolled in G are also enrolled in at least one more sport.

Q 51: What is the minimum number of students enrolled in both G and L but not in K?

Q 52: If the numbers of students enrolled in K and L are in the ratio 19:22, then what is the number of students enrolled in L?

3. 18
4. 19
5. 17
6. 22

Q 53: Due to academic pressure, students who were enrolled in all three sports were asked to withdraw from one of the three sports. After the withdrawal, the number of students enrolled in G was six less than the number of students enrolled in L, while the number of students enrolled in K went down by one. After the withdrawal, how many students were enrolled in both G and K?

Q 54: Due to academic pressure, students who were enrolled in all three sports were asked to withdraw from one of the three sports. After the withdrawal, the number of students enrolled in G was six less than the number of students enrolled in L, while the number of students enrolled in K went down by one. After the withdrawal, how many students were enrolled in both G and L?

1. 6

CAT 2018 Paper SLOT 2 [SOLVED]

4. 7
5. 5
6. 8

An agency entrusted to accredit colleges looks at four parameters: faculty quality (F), reputation (R), placement quality (P), and infrastructure (I). The four parameters are used to arrive at an overall score, which the agency uses to give an accreditation to the colleges. In each parameter, there are five possible letter grades given, each carrying certain points: A (50 points), B (40 points), C (30 points), D (20 points), and F (0 points). The overall score for a college is the weighted sum of the points scored in the four parameters. The weights of the parameters are 0.1, 0.2, 0.3 and 0.4 in some order, but the order is not disclosed. Accreditation is awarded based on the following scheme:

Range	Accreditation
Overall score ≥ 45	AAA
$35 \leq$ Overall score < 45	BAA
$25 \leq$ Overall score < 35	BBA
$15 \leq$ Overall score < 25	BBB
Overall score < 15	Junk

Eight colleges apply for accreditation, and receive the following grades in the four parameters (F, R, P, and I):

	F	R	P	I
A-one	A	A	A	B
Best Ed	B	C	D	D
Cosmopolitan	B	D	D	C
Dominance	D	D	B	C
Education Aid	A	A	B	A

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Fancy	A	A	B	B
Global	C	F	D	D
High Q	C	D	D	B

It is further known that in terms of overall scores:

5. High Q is better than Best Ed;

6. Best Ed is better than Cosmopolitan; and

7. Education Aid is better than A-one.

Q 55: What is the weight of the faculty quality parameter?

5. 0.3
6. 0.2
7. 0.4
8. 0.1

Q 56: How many colleges receive the accreditation of AAA?

Q 57: What is the highest overall score among the eight colleges?

Q 58: How many colleges have overall scores between 31 and 40, both inclusive?

5. 1
6. 3
7. 0
8. 2

According to a coding scheme the sentence

Peacock is designated as the national bird of India

is coded as

5688999 35 1135556678 56 458 13666689 1334 79 13366

This coding scheme has the following rules:

E The scheme is case-insensitive (does not distinguish between upper case and lower case letters).

F Each letter has a unique code which is a single digit from among 1,2,3, …, 9.

G The digit 9 codes two letters, and every other digit codes three letters.

H The code for a word is constructed by arranging the digits corresponding to its letters in a non-decreasing sequence.

Answer these questions on the basis of this information.

Q 59: What best can be concluded about the code for the letter L?

U. 1
V. 1 or 8
W. 6
X. 8

Q 60: What best can be concluded about the code for the letter B?

E 1 or 3 or 4
F 3
G 1
H 3 or 4

Q 61: For how many digits can the complete list of letters associated with that digit be identified?

U. 3

V. 0

W. 1

X. 2

Q 62: Which set of letters CANNOT be coded with the same digit?

5. S,U,V
6. I,B,M
7. X,Y,Z
8. S,E,Z

Each visitor to an amusement park needs to buy a ticket. Tickets can be Platinum, Gold, or Economy. Visitors are classified as Old, Middle-aged, or Young. The following facts are known about visitors and ticket sales on a particular day:

5. 140 tickets were sold.

6. The number of Middle-aged visitors was twice the number of Old visitors, while the number of Young visitors was twice the number of Middle-aged visitors.

7. Young visitors bought 38 of the 55 Economy tickets that were sold, and they bought half the total number of Platinum tickets that were sold.

8. The number of Gold tickets bought by Old visitors was equal to the number of Economy tickets bought by Old visitors.

Q 63: If the number of Old visitors buying Platinum tickets was equal to the number of Middle-aged visitors buying Platinum tickets, then which among the following could be the total number of Platinum tickets sold?

2. 34
3. 38
4. 32

4. 36

Q 64: If the number of Old visitors buying Platinum tickets was equal to the number of Middle-aged visitors buying Economy tickets, then the number of Old visitors buying Gold tickets was

Q 65: If the number of Old visitors buying Gold tickets was strictly greater than the number of Young visitors buying Gold tickets, then the number of Middle-aged visitors buying Gold tickets was

Q 66: Which of the following statements MUST be FALSE?

8. The numbers of Old and Middle-aged visitors buying Economy tickets were equal
9. The numbers of Old and Middle-aged visitors buying Platinum tickets were equal
10. The numbers of Middle-aged and Young visitors buying Gold tickets were equal
11. The numbers of Gold and Platinum tickets bought by Young visitors were equal

CAT 2018 Paper SLOT 2 [SOLVED]

CAT 2018 Paper SLOT 2 [SOLVED]

Q 67: The value of the sum 7 x 11 + 11 x 15 + 15 x 19 + ...+ 95 x 99 is

U. 80707
V. 80773
W. 80730
X. 80751

Q 68: How many two-digit numbers, with a non-zero digit in the units place, are there which are more than thrice the number formed by interchanging the positions of its digits?

U. 5
V. 6
W. 8
X. 7

Q 69: The smallest integer n such that $n^3 - 11n^2 + 32n - 28 > 0$ is

Q 70: Gopal borrows Rs. X from Ankit at 8% annual interest. He then adds Rs. Y of his own money and lends Rs. X+Y to Ishan at 10% annual interest. At the end of the year, after returning Ankit's dues, the net interest retained by Gopal is the same as that accrued to Ankit. On the other hand, had Gopal lent Rs. X+2Y to Ishan at 10%, then the net interest retained by him would have increased by Rs. 150. If all interests are compounded annually, then find the value of X + Y.

Q 71: On a long stretch of east-west road, A and B are two points such that B is 350 km west of A. One car starts from A and another from B at the same time. If they move towards each other, then they meet after 1 hour. If they both move towards east, then they meet in 7 hrs. The difference between their speeds, in km per hour, is

Q 72: On a triangle ABC, a circle with diameter BC is drawn, intersecting AB and AC at points P and Q, respectively. If the lengths of AB, AC, and CP are 30 cm, 25 cm, and 20 cm respectively, then the length of BQ, in cm, is

Q 73: A chord of length 5 cm subtends an angle of 60° at the centre of a circle. The length, in cm, of a chord that subtends an angle of 120° at the centre of the same circle is

U. 8
V. $6\sqrt{2}$

6. $5\sqrt{3}$
7. 2π

Q 74: Let $f(x)=\max\{5x, 52-2x^2\}$, where x is any positive real number. Then the minimum possible value of f(x) is

Q 75: A 20% ethanol solution is mixed with another ethanol solution, say, S of unknown concentration in the proportion 1:3 by volume. This mixture is then mixed with an equal volume of 20% ethanol solution. If the resultant mixture is a 31.25% ethanol solution, then the unknown concentration of S is

2. 52%
3. 50%
4. 55%
5. 48%

Q 76: A tank is emptied everyday at a fixed time point. Immediately thereafter, either pump A or pump B or both start working until the tank is full. On Monday, A alone completed ?lling the tank at 8 pm. On Tuesday, B alone completed filling the tank at 6 pm. On Wednesday, A alone worked till 5 pm, and then B worked alone from 5 pm to 7 pm, to fill the tank. At what time was the tank ?lled on Thursday if both pumps were used simultaneously all along?

B 4:36 pm
C 4:12 pm
D 4:24 pm
E 4:48 pm

Q 77: If a and b are integers such that $2x^2 - ax + 2 > 0$ and $x^2 - bx + 8 \geq 0$ for all real numbers x, then the largest possible value of $2a-6b$ is

Q 78: A water tank has inlets of two types A and B. All inlets of type A when open, bring in water at the same rate. All inlets of type B, when open, bring in water at the same rate. The empty tank is completely filled in 30 minutes if 10 inlets of type A and 45 inlets of type B are open, and in 1 hour if 8 inlets of type A and 18 inlets of type B are open. In how many minutes will the empty tank get completely filled if 7 inlets of type A and 27 inlets of type B are open?

CAT 2018 Paper SLOT 2 [SOLVED]

Q 79: If N and x are positive integers such that $N^N = 2^{160}$ and $N^2 + 2^N$ is an integral multiple of 2^x, then the largest possible x is

R.80: Let $t_1, t_2, \ldots$ be real numbers such that $t_1+t_2+\ldots+t_n = 2n^2+9n+13$, for every positive integer $n \geq 2$. If $t_k=103$, then k equals

Q 81: If $p^3 = q^4 = r^5 = s^6$, then the value of $\log_s(pqr)$ is equal to

T. 16/5
U. 1
V. 24/5
W. 47/10

Q 82: Ramesh and Ganesh can together complete a work in 16 days. After seven days of working together, Ramesh got sick and his efficiency fell by 30%. As a result, they completed the work in 17 days instead of 16 days. If Ganesh had worked alone after Ramesh got sick, in how many days would he have completed the remaining work?

C 13.5
D 11
E 12
F 14.5

Q 83: A jar contains a mixture of 175 ml water and 700 ml alcohol. Gopal takes out 10% of the mixture and substitutes it by water of the same amount. The process is repeated once again. The percentage of water in the mixture is now

R. 35.2
S. 30.3
T. 20.5
U. 25.4

Q 84: In a tournament, there are 43 junior level and 51 senior level participants. Each pair of juniors play one match. Each pair of seniors play one match. There is no junior versus senior match. The number of girl versus girl matches in junior level is 153, while the number of boy

versus boy matches in senior level is 276. The number of matches a boy plays against a girl is

R.85: If A = $\{6^{2n} - 35n - 1 : n = 1,2,3,...\}$ and B = $\{35(n-1) : n = 1,2,3,...\}$ then which of the following is true?

1. Neither every member of A is in B nor every member of B is in A
2. Every member of A is in B and at least one member of B is not in A
3. Every member of B is in A.
4. At least one member of A is not in B

Q 86: A parallelogram ABCD has area 48 sqcm. If the length of CD is 8 cm and that of AD is s cm, then which one of the following is necessarily true?

R. $s \geq 6$
S. $s \neq 6$
T. $s \leq 6$
U. $5 \leq s \leq 7$

Q 87: Let $a_1, a_2, \ldots, a_{52}$ be positive integers such that $a_1 < a_2 < \ldots < a_{52}$. Suppose, their arithmetic mean is one less than the arithmetic mean of $a_2, a_3, \ldots, a_{52}$. If $a_{52} = 100$, then the largest possible value of a_1 is

R. 20
S. 23
T. 48
U. 45

Q 88: Points A and B are 150 km apart. Cars 1 and 2 travel from A to B, but car 2 starts from A when car 1 is already 20 km away from A. Each car travels at a speed of 100 kmph for the first 50 km, at 50 kmph for the next 50 km, and at 25 kmph for the last 50 km. The distance, in km, between car 2 and B when car 1 reaches B is

Q 89: The arithmetic mean of x, y and z is 80, and that of x, y, z, u and v is 75, where u=(x+y)/2 and v=(y+z)/2. If $x \geq z$, then the minimum possible value of x is

CAT 2018 Paper SLOT 2 [SOLVED]

Q 90: If the sum of squares of two numbers is 97, then which one of the following cannot be their product?

4. −32
5. 48
6. 64
7. 16

Q 91: For two sets A and B, let AΔB denote the set of elements which belong to A or B but not both. If P = {1,2,3,4}, Q = {2,3,5,6,}, R = {1,3,7,8,9}, S = {2,4,9,10}, then the number of elements in (PΔQ)Δ(RΔS) is

B 9
C 7
D 6
E 8

Q 92: The smallest integer n for which $4^n > 17^{19}$ holds, is closest to

B 33
C 37
D 39
E 35

Q 93: The strength of a salt solution is p% if 100 ml of the solution contains p grams of salt. If three salt solutions A, B, C are mixed in the proportion 1 : 2 : 3, then the resulting solution has strength 20%. If instead the proportion is 3 : 2 : 1, then the resulting solution has strength 30%. A fourth solution, D, is produced by mixing B and C in the ratio 2 : 7. The ratio of the strength of D to that of A is

B 2 : 5
C 1 : 3
D 1 : 4

4. 3:10

Q 94: The area of a rectangle and the square of its perimeter are in the ratio 1 : 25. Then the lengths of the shorter and longer sides of the rectangle are in the ratio

R. 1:4
S. 2:9
T. 1:3
U. 3:8

Q 95: The scores of Amal and Bimal in an examination are in the ratio 11 : 14. After an appeal, their scores increase by the same amount and their new scores are in the ratio 47 : 56. The ratio of Bimal's new score to that of his original score is

S. 5 : 4
T. 8 : 5
U. 4 : 3
V. 3 : 2

Q 96: From a rectangle ABCD of area 768 sq cm, a semicircular part with diameter AB and area 72π sq cm is removed. The perimeter of the leftover portion, in cm, is

D $80 + 16\pi$
E $86+8\pi$
F $82 + 24\pi$
G $88 + 12\pi$

Q 97: A triangle ABC has area 32 sq units and its side BC, of length 8 units, lies on the line x = D Then the shortest possible distance between A and the point (0,0) is

1. 4 units
2. 8 units
3. $4\sqrt{2}$ units
4. $2\sqrt{2}$ units

CAT 2018 Paper SLOT 2 [SOLVED]

Q 98: There are two drums, each containing a mixture of paints A and B. In drum 1, A and B are in the ratio 18 : 7. The mixtures from drums 1 and 2 are mixed in the ratio 3 : 4 and in this final mixture, A and B are in the ratio 13 : 7. In drum 2, then A and B were in the ratio

ii) 229 : 141
iii) 220 : 149
iv) 239 : 161
v) 251 : 163

Q 99: Points A, P, Q and B lie on the same line such that P, Q and B are, respectively, 100 km, 200 km and 300 km away from A. Cars 1 and 2 leave A at the same time and move towards B. Simultaneously, car 3 leaves B and moves towards A. Car 3 meets car 1 at Q, and car 2 at P. If each car is moving in uniform speed then the ratio of the speed of car 2 to that of car 1 is

C 1 : 2
D 2 : 9
E 1 : 4
F 2 : 7

Q 100: $\frac{1}{\log_2 100} - \frac{1}{\log_4 100} + \frac{1}{\log_5 100} - \frac{1}{\log_{10} 100} + \frac{1}{\log_{20} 100} - \frac{1}{\log_{25} 100} + \frac{1}{\log_{50} 100} = ?$

4. 1/2
5. 0
6. 10
7. −4

CAT 2018 Paper SLOT 2 [SOLVED]

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 1

This is one of the most difficult questions of slot 2. The clue to the right answer lies in finding the key argument of the author. From the above given options, we can shortlist two choices: 1 and 3. Though 3 seems tempting, it is not invalidating the author's main argument because the author's main argument is not about the time taken to arrive at the solution, and about whether there are conflicts in teams characterized by diversity. The author's argument could be valid even if these two points are true. After all option 3 is in a way supporting the author by suggesting that solutions can be arrived at, even though there might a few conflicts and additional time taken by the teams. The author's main concern is diversity and he says that diversity is important. He is against homogeneity throughout the passage, but if it were found that top-scorers possessed multidisciplinary knowledge that enabled them to look at a problem from several perspectives, then his argument on diversity would be totally weakened. Thus option 1 is the right choice.

Solution 2

The author in the passage discusses meritocracy from all the above perspectives except choice 1. Choice 1 speaks of what an ideal team comprises of, but the idea of 'ideal team' has not even come in the passage. To critique something means to evaluate that thing. The author evaluates meritocracy from different perspectives. Choice 2 can be seen in the first para of the passage where the author says: The multidimensional or layered character of complex problems also undermines the principle of meritocracy. Choice 3 is substantiated from the sentences that come in the second para where the author says: Even with a knowledge domain, no test or criteria applied to individuals will produce the best team. In other words, there cannot be a test to assess merit in any field of knowledge. Choice 4 can be found in the first sentence of the second paragraph: Believers in a meritocracy might grant that teams ought to be diverse but then argue that meritocratic principles should apply within each category.

Thus we see that meritocracy has been discussed from all of the above perspectives except 1. The composition of an ideal team has not been discussed anywhere in the passage.

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 3

The last sentence of the second last para says: Programmers also boost the forest 'cognitively' by training trees on the hardest cases – those that the current forest gets wrong. This ensures even more diversity and accurate forests. Thus, if we want to weaken the efficacy of a random decision forest, we should train a large number of decision trees on data derived from easy cases. Thus option 1 directly weakens the argument. There is no need to test the other choices.

Solution 4

To mark the correct answer, we must keep in mind the author's criteria. The author is very much focused on diversity, but at the same time, he says that there cannot any test to judge the best expert. He says such a test is not possible. So the idea of distinction in choice 1 is not at all possible. You can do well in your respective subject test, but the idea of scoring a distinction implies a test, which is just not possible to design. Thus though option 1 has the diversity, it misses the test angle the author discusses. Option 2 has the diversity at the same time implies that an expert can perform well in his area of expertise, but that area of expertise cannot be tested.

Option 3 and 4 are missing on the diversity angle that the author argues in favor of.

Solution 5

To answer the question correctly, we must read the sentence that comes immediately before the sentence in which the idea of neuroscience is introduced. The sentence says: Each of these domains possesses such depth and breadth, that no test can exist. Consider the field of neuroscience

By reading these two sentences, we can say that the author gives neuroscience just as an example to illustrate the idea of depth and breadth of any field. The earlier sentence says 'each of these domains possess…'. Thus it is not neuroscience alone that has immense depth and breadth but almost any other field.

Solution 6

The idea of convergent evolution would weaken the author's argument of sea travel or trade. The author's argument is that convergent evolution can be ruled out on the basis of the underlying genetic similarities between the two groups. If the author has ruled out convergent evolution, then it cannot be used as an evidence of the snails' sea travel. The sea travel has been used as an evidence in support of the purported snails' migration by sea from Spain to Ireland.

Solution 7

To answer this question, we must carefully understand the main idea of the passage. The passage is about white-lipped grove snails which are found only in Spain and Ireland. The passage focuses on why they are found only in these two places. The author seems to have ruled out a no of possibilities and has zeroed down on the migration theory, through which he suggests that the snails might have migrated on the ships or boats of seafarers who might have carried them as eatables. If humans routinely ate these types of snails before the advent of agriculture, then we can conclude statement 3 which says that seafarers might have carried white-lipped grove snails with them as edibles.

Solution 8

This point has come in the passage. The idea of convergent evolution has been eliminated by the author because there are genetic similarities between the two groups found in two different countries. Presence of genetic similarities means absence of genetic variation. Thus option 3 is the best choice. Option 1 is just the opposite. Absence of genetic similarities would support convergent evolution.

Solution 9

We have to understand the question to arrive at the right answer. The question speaks about several hypotheses. On the basis of 'several hypotheses' and 'the central idea of the passage', we can shortlist two choices. The central idea is about why the white-lipped grove snails are found only in two places. The wiped out idea in option 4 is nowhere mentioned in the passage. So we can eliminate choice 4. Since there is no independent evolution of the two, we cannot choose

option 1. We must not forget that convergent evolution and independent evolution are one and the same thing.

We are left with two choices only. The first is why the white-lipped grove snails are found only in these two places, and the second is how they might have migrated. The migration theory is a tempting choice, but there are not several hypotheses for this. There is only one hypothesis for the migration theory: the snails might have travelled on boats of seafarers, who might have carried them as eatables.

But there are several hypotheses, some rejected while some improbable, why the snails are found only in these two places. In fact, the whole passage seems to be discussing this idea only. Thus, choice 3 is the best answer.

Solution 10

The author has cited examples of the police officer and the surgeon to highlight the undesirable practices that might result from metric fixation. Option 1 goes out because it has a positive tone to it. To significantly influence something means to have a positive impact on something. Option 1 goes out.

Option 2 makes sense as metrics-linked rewards may result in unethical behavior in undesirable practices. Option 3, like option 1, talks about significant impact, which is not the reason for discussing the actions of these two professions. Choice 4 takes the focus away from 'any role' to 'critical public roles'. The author does not have only critical public roles in mind. He is talking about roles in general.

Solution 11

This is a very simple question. The author talks about the flaws of metric-based rewards. One of the major flaws that the author discusses in the passage is loss of long-term objectives, and focus on short-term gains. Option 2 is one of the consequences that the author discusses in the passage. By discussing the example of a doctor and a policeman, the author points out at the ways people might improve metrics without actually improving their performance. Option 4 too, like option 2, suggests moving away from the more important long-term goals of the organization. The long-

term improvement in choice 1 is opposite to what the author says in the passage. This is an exception and the right choice.

Solution 12

This is a difficult question. We have to understand the question, what is already given in the passage, and what, when added, would give more substance to the author's argument.

The question wants to pick a choice that would add 'least' depth to the author's argument. So the options that are likely to add depth will go out.

The reason why option 2 becomes the right choice right away is because the author has already discussed the negative consequences of gaming metrics-based performance by taking real-life illustrations of a doctor and a policeman. It would be superfluous for the author to discuss more examples. Option 1 is not discussed in the passage, and is likely to shed more light on why metric fixation is becoming popular despite its drawbacks. The comparative study mentioned in option 3 too is not discussed in the passage and will add some more substance to the author's argument. Option 4 also has not been discussed in the passage. The author has said that a professional judgement-based evaluation is good, but why is not discussed. So the pros and cons will indeed shed more light on this.

Solution 13

This too is a little tricky question, as it focuses on the 'except' part of the right choice. We have to pick an option that cannot be a feature of the No Child Left Behind Act of 2001. Since the No Child Left Behind Act of 2001 is an example of how metric based performance might take the organization's focus away from the more important organizational goals, the act will have features that are in tune with metric based performance criteria.

Option 1: test score is a metric based criterion. Since the option says that it is critical, it is likely to be a possible feature (ignore the choices that are pro metric based performance)

Option 2: the focus is more on test-taking skills (again we have metric based criteria)

Option 3: funding is based on improvement shown in tests (again we have metric based criteria)

Option 4: subjective evaluation is non-metric based criteria. Thus option 4 is the best choice.

Solution 14

To answer this question, we will take one option at a time

Option 1: all kinds of organization is not the focus. The drawbacks of metric fixation is the main idea of the passage

Option 2: This option completely ignores the drawbacks of metric-based performance evaluation. It rather compares the long term organizational goals vis a vis short-term measures of organizational success.

Option 3: The idea of cost-effectiveness is not there in the passage

Option 4: Precisely what the author is discussing in the passage. It has the keyword metric based performance with its negative outcome, which is what the author is primarily concerned with in the passage.

Solution 15

The first sentence of the second paragraph says that the things in the solar system are believed to have been around since the beginning. Cassini, however, comes up with evidence that challenges this assumption. Throughout the second and third paragraph we have evidence gathered by Cassini pointing at those things in the solar system that must have come into being later. Dione and Tethys are the two such examples discussed in the last paragraph. Thus choice 4 is the best choice.

Solution 16

This question can be answered on the basis of the evidence used to answer the first question. The author discusses Saturn's rings and Saturn's moons to attack the assumption that the things in the solar system have been there since a long long time. Thus the main objective of the passage is to provide evidence that Saturn's rings and moons are recent creations.

Option 1 is the exact opposite of what the author is trying to convey

Option 2 is not the main objective of the passage. The orbits have been discussed only in the last paragraph where the author says that the orbits of the two of Saturn's moons are not tilted.

Option 3 there is not much mention of Saturn's beauty and its celestial drama.

Solution 17

Support for comet dust can be seen in the last two sentences of the third paragraph. Now we are left with two choices: helium or rock particles. Helium is a gas, while rock particles is matter. The fourth para says that Saturn's rings were created from the old set of moons that destroyed themselves. Thus the rings must have had substance that the moon was made up of. The moon can be made of rock particles, not helium. Thus option 4 is the best choice.S

Solution 18

the fact that the rings haven't discolored and darkened as much as they should have had, if they have been out there since a long time, suggests that they are recent creations. The laundry example is used to explain that. Thus choice 2 is the best answer

Solution 19

We can find evidence for 1 in the second half of the first paragraph. Option 2 can be found in the second last paragraph. Option 4 can be found in the last paragraph. Thus 3 is the best choice as we don't have any evidence in the paragraph for 3.

Solution 20

The author seems to be focusing on service improvement by empowerment. Option 1 captures the main idea aptly. Firstly, it speaks of service improvement of some type of services, secondly it speaks of how that service can be improved: by providing independence and requiring accountability. Thus option 1 is the best choice.

Option 2 goes out because the author has not examined different strategies in the passage; Moreover, education sector is just an example through which the author seems to be communicating his key idea of empowerment and accountability

Option 3 goes out because it misses the focus of the passage. The focus is not the shortcomings of nurses, but how service delivery can be improved.

Option 4, though close, misses the main idea. The author is not critiquing the government's involvement. Rather, his focus is on what can be done to improve the services.

Solution 21

These types of questions have become quite common in CAT RC. The question wants the answer 'in the context of the passage'. Though the phrase has been used as a title of a book, in the context of the passage it suggests that it was a superficial solution to a more serious problem. The other choices are focusing too much on the nurses and the clinics, but that is not the main idea of the passage. In the context of the passage, the example of nurses is just a small suggestion of a superficial solution to a bigger problem. We should not forget that the question asks us to answer in the context of the passage.

Solution 22

The author in the second last para says that the solution to services that need face-to-face interaction is to hire people who want to teach. In other words, he suggests that we should hire people who are motivated to carry out the job.

Solution 23

this is a slightly confusing question. To answer such questions correctly, we must read them carefully. The question says that service delivery can be improved in all of the following ways except, so we have to pick a choice in which service delivery cannot be improved. Both options 2 and 3 are evident in the passage and are likely to improve service delivery. Now we have two choices: use of technology and elimination of government involvement. We can see that the author has said in the first para that technology can certainly facilitate service delivery in a variety of ways. So the author suggests that technology is helpful but up to some extent.

Elimination of government involvement has not been implied or stated anywhere in the passage. Thus 4 is the best choice

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 24

This is an easy question. The author right across the passage talks of autonomy and empowerment, but if it turned that empowerment leads to increased complacency and rigged performance results, then the author's position would be considerably weakened. Thus 1 is the best choice.

Solution 25

Statement should start the paragraph as it opens the idea by talking about the development of songs in birds. Statement 4 and 5 form a pair because statement 4 speaks of a prescribed path, and statement 5 describes that path (beginning, passing and achieving). So the odd sentence has to be either 3 or 2. Statement 2 is more likely to be a part of the paragraph because it talks about the bird species having a single song or a range of songs.

The right sequence could be 1245. 3 does not fit into the sequence, and is the odd one out.

Solution 26

This is a relatively easy question. There are a few clues that we must notice in order to get the sequence correct in shorter time.

The pronoun 'such activities' in statement 2 must refer to some activities. The only noun it could refer to is phoenixing, which has been introduced in sentence 3. Since statement 3 opens the idea of phoenixing, it should start the paragraph. After statement 3 we can have either 4 or 2. 2 makes more sense because it further adds more information about the idea of phoenixing. Thus 3 and 2 form a pair, and 4 and 1 form another pair because 'his taxpayers' in statement 1 should refer to a noun, which can be found in statement 4 in the Australian minister for Revenue and Services.

Thus 3241 form a logical sequence.

Solution 27

This is an easy question and the right answer should be 3. We can arrive at the right quickly by way of elimination. The passage focuses on delinquency and sports participation, suggesting that

deviation from delinquency and sports participation is not yet confirmed, as there are many hindrances to arriving at the right conclusion.

Option 1 goes out because it says that there is a link, but the link is not yet established

Option 2 is close but the later researches haven't proved anything yet. They have gathered enough evidence that doubts the earlier optimism, without proving that there is no relationship

Option 3 aptly sums up the main position of the paragraph, which is statistical data not being enough to infer anything about relationship between sports participation and deviance.

Option 4 the direct relationship idea is being doubted in the paragraph, while the option states exactly the opposite.

Solution 28

Statements 1 and 2 have the pronoun 'they', which is likely to refer to a noun. That noun is 'business elite' in statement 3. Thus statement 3 would come before statement 1 and 2.

Statement 3 opens the paragraph by comparing a dieter with the business elite. The idea of social-impact-investing and philanthro-capitalism in statement 3 connects with 'they would fund a million of the buzzwordy programs…' in statement 2. Thus 32 form a pair.

4 and 1 form a pair because in statement 4 'doing the right thing would demand real sacrifice' and 'they would rather do virtuous side project assiduously'. The ideas connect. Thus 3241 form a coherent paragraph.

Solution 29

This question too is a little dubious because all the statements seem to go together. 1 and 2 form a pair. They speak of the same thing- things we must do to avoid disaster. Option 4 will start the paragraph because it introduces the idea. So the right answer boils down to 3 and 5. Either could be the right choice. The official answer, however, is 3

Solution 30

There is no doubt that statements 2 and 3 form a pair because they both speak of 'having control'. Statement 2 says 'most people … prefer to have control…', while statement 3 says 'having control means…'. Thus 2 and 3 form a pair. The idea of self-management is further elaborated on by 'self-management support', which has been introduced in statement 4. Now we come to the placement of statement 1. As we see, statement 1 is not about self-management support, but about self-management. Thus 1 must come before 4 because in 4 we have shifted our discussion from self-management to self-management support. Thus 2314 is the right sequence. Statement 1 is the intermediate conclusion for statements 2 and 3.

Solution 31

The paragraph speaks about the Japanese government's recommendation. The recommendation is the key idea of the passage. The recommendation is about regulating only genetically modified organisms, and leaving the rest. The reactions are mixed, however the author cautions about the unforeseen risks. Option 3 is the best choice.

Option 1 goes out because the Japanese recommendation is about regulating only genetically modified organisms. This is the main idea, but option 1 does not cover this idea. The right word is exempting, not excepting. Also, the prematurity part of it is nowhere found in the passage. Option 4 says "creating categories within genetically modified products…defies law". The defying of the legal aspect of it is not there in the passage. Option 3 is the best choice.

Solution 32

By reading the statements, we get to know that 213 form a pair. Statement 2 and statement 3 are the two contrasting ideas. 2 and 1 will form a pair. The idea of growing inequality in statement 3 is a consequence of 'large swathes of population getting unemployed', as indicated in statement E Thus we see that 2, 1 and 3 form a coherent paragraph. The difficult thing is the placement of statement 4. It could come at the start or at the end.

For this we have to understand the contents of statement 4. It says that 'new institutions emerge…'. Both statements 2 and 1 have those new institutions. In statement 2 it is trade unions, while in statement 1 it is universal basic income. Thus the idea stated in 4 finds further substantiation in statements 2 and 1. 4 will come at the start. 4213 form a coherent paragraph.

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 33

This question is slightly dubious. Though the official answer is 3, it is statement 1 that should be the right answer. We can start with statement 3, and continue the idea with statement 5. Statement 2 takes over from 5, with statement 4 coming at the end. Thus 3524 form a coherent paragraph, leaving 1 as the odd one out.

Statement 3 speaks of the things that are likely to disturb sleep. Statement 5 adds one more threat- smartphones. Statement 2 gives a name to that threat, while 4 adds some more information as to why such apps have found a market.

Statement 1 should be the odd one out. However, surprisingly, the official answer given by CAT is 3.

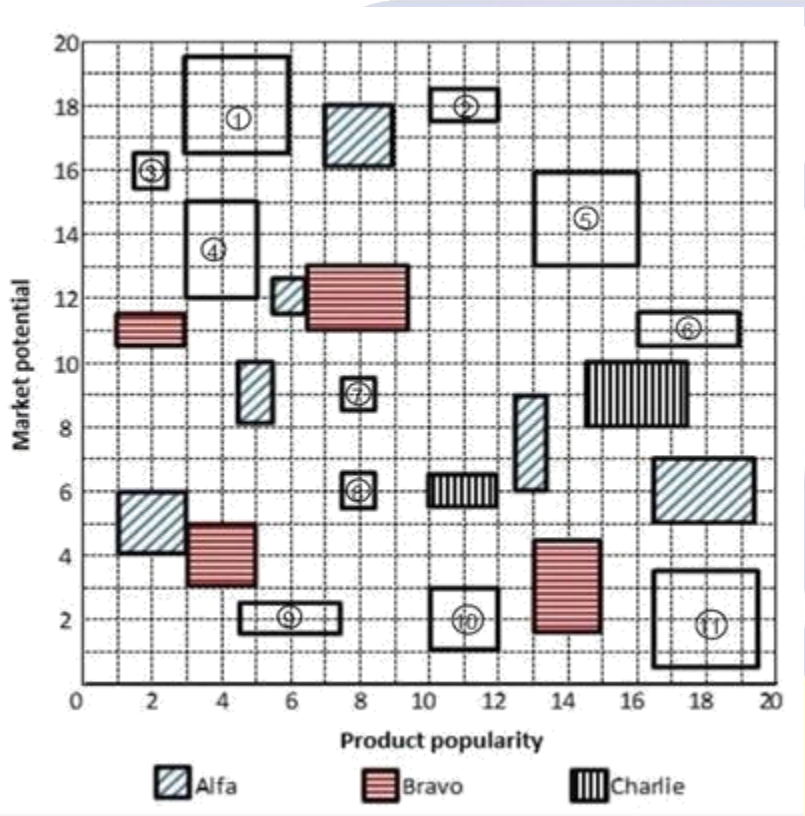
Solution 34

The passage starts with a few questions. The answer is nowhere given by the author. After the questions, the author says that proponents of bad Samaritan laws must overcome three obstacles, and further goes on to elaborate what those obstacles are. These obstacles are the test which must be overcome as per the author. Thus choice 4 is the best choice.

Option 3 goes out because nowhere has the author suggested or implied that the laws must be enacted. The idea of 'everyone agrees', in option 2, is again nowhere found in the message and nor is it the main idea of the passage. Though what is given in option 1 is correct in the context of the passage, it is not the key focus on the paragraph. In summary questions we must capture the key idea of the passage. Any option that ignores the key idea cannot be the right choice.

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 35 to 38



From the given information we can find which product belong to which company. In the given figure the products (number) would belong to the following companies

Alfa	Bravo	Charlie
2, 3, 4, 7/8	1, 6, 10	5, 8/7, 9, 11

So also the entire graph can be divided into four equal parts with the bottom left part having products in the No hope category, the bottom right part with products in the Blockbuster category, the top left part with products in the Doubtful category and the top right part with products in the promising category.

Question 35:

The areas of all the products in the different categories are

No-hope – 4 + 4 + 3 + 2 + 1 + 1 = 15

Blockbuster – 2 + 4 + 3 + 6 + 6 +6 + 9 = 36

Doubtful – 2 + 1+ 6 + 6 + 1 + 9 + 4 = 29

Promising – 2 + 9 + 3 = 14

As the areas is proportional to the revenue the corresponding product, products under Blockbuster category had the highest revenue.

Ans : Blockbuster

Question 36:

The number of products of Bravo in the different categories are

No-hope (bottom left) – 1

Doubtful (top left) – 3

Promising (top right) – 1

Blockbuster (bottom right) – 2

The correct sequence is 1, 3, 1, 2

Ans : 1, 3, 1, 2

Question 37:

Revenue of Bravo from No-hope products – 4

Revenue of Charlie from No-hope products – 4.

The statements is true.

Alfa's revenue from Blockbuster products

Charlie revenue from Promising products – 9

The statement is true

Total revenue from No-hope products – 15

Total revenue from Doubtful products – 29

CAT 2018 Paper SLOT 2 [SOLVED]

The statement is true

Bravo's revenue from Blockbuster products – 6 + 4 = 10

Alfa's revenue from Doubtful products – 6 + 4 + 1 + 1= 12

The statement is not true

Ans : Bravo's revenue from Blockbuster products was

greater than Alfa's revenue from Doubtful products

Question 38:

The total revenue of Bravo is 4 (No. hope) + 10 (Blockbuster) + 17 (Doubtful) + 3 (Promising) = 34

crore. **Ans : 34 .**

Solution 39 to 42

Question 39:

Let the total market size be 100 units. The sales of Azra, Bysi, Cxqi and dipq would be 40, 25, 15 and 20 units respectively.

The revenue would be as follows

Azra = 40 x 15,000 = 6.0 lac

Bysi = 25 x 20,000 = 5.0 lac

Cxgi = 15 x 30,000 = 4.5 lac

Dipq = 20 x 25,000 = 5.0 lac

The brand with the highest revenue is Azra.

Ans : Azra

Question 40:

The profits for the different brands, assuming revenue as in the previous question would be

CAT 2018 Paper SLOT 2 [SOLVED]

Azra -6.0 lac $\times \frac{10}{100} = 60,000$

Bysi -5.0 lac $\times \frac{30}{100} = 1,50,000$

Cxgi -4.5 lac $\times \frac{40}{100} = 1,80,000$

Dipq -5.0 lac $\times \frac{30}{100} = 1,50,000$

The profit is the highest for Cxqi

Ans : Cxqi

Question 41:

The new market share, selling prices and profitability for the different brands are

Brand	Market share	Selling price	Profitability
Azra	35	15,000	10
Bysi	20	20,000	30
Cxqi	30	18,000	20
Dipq	15	25,000	30

Now the total sales is 140 units.(Increase of 40%) The profits are as follows

Azra $-49 \times 15,000 \times \frac{10}{100} = 73,500$

Bysi $-28 \times 20,000 \times \frac{30}{100} = 1,68,000$

Cxgi $-42 \times 18,000 \times \frac{20}{100} = 1,51,200$

Dipq $-21 \times 25,000 \times \frac{30}{100} = 1,57,500$

The profit is the highest for Bysi

CAT 2018 Paper SLOT 2 [SOLVED]

Ans : Bysi

Question 42:

The profits increased for Azra (60,000 – 73,500) for

Bysi (1,50,000 – 1, 68,000) and Dipq (1,50,000 –

1,57,500)

Ans : Azra, Bysi, Dipq

Solution 43 to 46

From the given information,

Balaram is the third person to enter room 101.

Erina was allotted either room 102 or 103.

Three persons entered the room before Fatima. It means Fatima and Akil entered into room 101.

Ganeshan entered room 102 with only one other person. Thus, only Erina entered room 103.

Chitra was the last person to enter the room. Thus, Chitra entered room 102 with Ganeshan.

Divya, who was the second person to enter room 101 From the above information we get the arrangement as follows.

101	102	103
Akil	Ganeshan	Erina
Divya	Chitra	
Balaram		
Fatima		

Question 43:

Divya entered room 101.

Ans : Definitely room 101

CAT 2018 Paper SLOT 2 [SOLVED]

Question 44:

No one entered into the room 102 before Ganeshan.

Ans : No one

Question 45:

Erina entered room at 07:45am as in room 101- Divya and Balaram entered before Fatima and Ganeshan entered the room before Chitra, thus Divya, Balaram and Ganeshan entered room before Chitra and Fatima in any order.

Ans : 7:45 am

Question 46:

From the information, Ganeshan entered room at 7:10 am, Divya entered room at 7:15 am and Balaram

entered room at 7:25 am.

Ans : 7:25 am

Solution 47 to 50

The base exchange rates of currencies A, B and C with respect to L is in the ratio 100 : 120 : 1.

The given information can be tabulated as follows

101	102	103
Akil	Ganeshan	Erina
Divya	Chitra	
Balaram		
Fatima		

The outlet received 88,000 units of L by selling A and the ratio of amounts of L used to by A and B are in the ratio 5 : 3 and from the sales of A and B are in the ratio 5 : 9.

CAT 2018 Paper SLOT 2 [SOLVED]

This set is best solved by looking at the choices for the question which asked for the base exchange rate of currency C. From that we have only two possible value for the base exchange rates for A, B and C 100,120 and 1 or 200, 240 and 2.

Assuming L to be100 for A.

Units sold of $A = \frac{88,000}{110} = 800$

As the net addition is 800, the units of A bought is 1600 Amount of L used in buying 1600 units is 1600 x 0.95

x 100 = 152000 As the amount used to buy A and B are in the ratio 5 : 3, the amount used to buy S. is $\frac{152000}{200\ 5} \times 3 = 91,$

Number of units of B bought = $\frac{91,200}{} = 800$

As the net addition of B is zero, number of units of B sold = 800.

The amount received = 800 x 132 = 105600

The amount received form selling A = 88,000

As 88,000 : 105600 is not in the ratio 5 : 9 as given in the data the base exchange rate for A is not 100 and has to be 200.

Units sold for A $= \frac{88000}{220} = 400$

As net addition is 800, the units of A bought is 1200.

Amount of L used in buying 1200 units of A = 1200 x 0.95 x 2000 = 228000.

As the amount used to buy A and B are in the ratio 5 :3, quantity of L used to buy B is

$\frac{228000}{5} \times 3 = 136800$

Number of units of B bought $= \frac{136800}{228} = 600$

CAT 2018 Paper SLOT 2 [SOLVED]

As the net addition in B is zero, the number of units of B sold = 600.

The amount received from selling B = 600 x 264= 158400

The amount received from selling A = 88,000

The required ratio $\frac{158400}{88,000} = \frac{9}{5}$

Question 47:

Number of units of currency A bought 400 + 800 = 1200

Question 48:

As the net addition in the number of units of C is 3,000 and the buying and selling rates are in the ratio 0.95 and 1.1, assuming x units are sold 0.95 (x + 3000) = 1.1 (x)

0.15x = 2850

X= 19000

Question 49:

The base exchange rate of currency B with respect to L is 240.

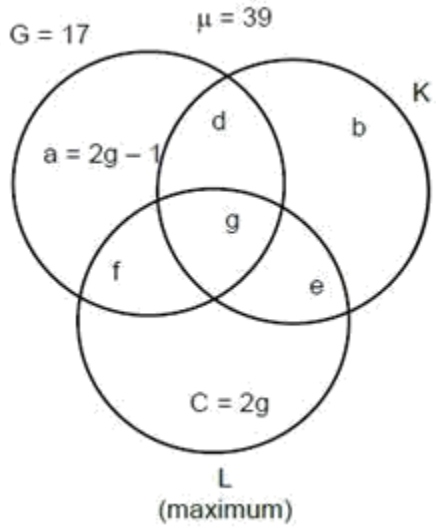
Question 50:

The buying exchange rate of currency C with respect to L on that day was 1.90.

Solution 51 to 54

The given data can be represented as follows.

CAT 2018 Paper SLOT 2 [SOLVED]



f + g + d =10 (given)

g + e = b (given)

Since f + g + d = 10, g = 7 = 2g – 1

Therefore, 2g = 8 ∴ f = 4

Thus, g = 4, c = 8, a = 7 and f + d = 6

b + e = 39 – (G + c) = 14

therefore g + 2e = 14 Hence, e = 5 and b = 9

Since, L is maximum we get the following cases.

Case (i)

G = 17 K = 20 L = 21 d = 2 f = 4

Case (ii)

G = 17 K = 19 L = 22 d = 1 f = 5

Case (iii)

G = 17 K = 18 L = 23 d = 0 f = 6

Question 51:

G and L but not K = f = 4. Ans : 4

Question 52:

The given condition is possible in case (ii). Hence, the number of students enrolled in L = 22. Ans : 22

question 53:

From g = 4, one person moves to f, one person to d and two persons to e. Then the value of G and K = d + g = 2. Ans : 2

Question 54:

From the above G and L = f = 6. Ans : 6

Solution 55 to 58

Let a, b, c and d be the weights of parameters F, R, P and I respectively.

Given,

S. 30a + 20b + 20c + 40d > 40a + 30b + 20c + 20d

T. 40a + 30b + 20c + 20d > 40a + 20b + 20c + 30d

U. 50a + 50b + 40c + 50d > 50a + 50b + 50c +

40d From (i), 2d > a + b

From (ii), b > d

From (iii), d > c

X b > d > c

a, b, c and d are 0.1, 0.2, 0.3 and 0.4 in any order.

d cannot be 0.1 or 0.2. (∵ 2d cannot be greater than a + b)

d can be 0.3 or 0.4, but given b > d.

B b = 0.4, d = 0.3

CAT 2018 Paper SLOT 2 [SOLVED]

$2(0.3) > 0.4 + a$

$a < 0.2$

$a = 0.1, c = 0.2$

	F(0.1)	R(0.3)	P(0.2)	I(0.4)	
A - One	5	15	10	16	46
Best Ed	4	6	4	8	22
Cosmopolitan	4	6	4	12	26
Dominance	2	6	8	12	28
Education Aid	5	15	8	20	48
Fancy	5	15	8	16	42
Global	3	0	4	8	15
High Q	3	6	4	16	29

Question 55

Weight of faculty parameter is 0.1.

Ans : 0.1

Question 56

Three colleges received AAA rating.

Ans : 3

Question 57

Height overall score among the eight colleges is 48.

Ans : 48

Question 58

No college has score between 31 and 40 (both inclusive).

Ans : 0

Solution 59 to 62

CAT 2018 Paper SLOT 2 [SOLVED]

Given 'peacock is designated as the national bird of India' is coded as ' 5688999 35 1135556678 56 458 13666689 1334 79 13366'

9 is the code for o and c from the words peacock and of.

F is coded as 7 from the word of.

I is coded as either 3 or 6 from the word India, but from the word 'is' and 'designated' code for 'I' is 3.

S is coded as 5 from the word is.

A is coded as 6 from the word 'as'.

N is coded as 6 from the word national.

Thus D is coded as 1 from the word India.

E is coded as 5 from the word designated.

T is coded as 8 from the word 'the' and 'National'.

Thus H is coded as 4 from the word 'the'. G is coded as 7. L is coded as 1 from the word 'National'.

P and K are coded as 8 from the word 'peacock'. B and R are coded as 3 and 4 many order from the word 'bird'.

We get the codes as follows

CAT 2018 Paper SLOT 2 [SOLVED]

Code	Letter
1	D, L
2	
3	I
4	H
5	S, E
6	A, N
7	F, G
8	T, P, K
9	O, C

.

B and R is coded as 3 or 4.

Question 59

L is coded as '1'. Ans : 1

Question 60

Either 3 or 4 is the code for B. Ans : 3 or 4

Question 61

The code for 8 and 9 is identified. Ans : 2

Question 62

S, U, V cannot be coded with same digit.

Ans : S, U, V

Solution 63 to 66

Number of young visitors = 2 x number of middle age visitors

Number of middle age visitors = 2 x number of old visitors

CAT 2018 Paper SLOT 2 [SOLVED]

Total number of tickets sold = total number of visitors = 140

Hence, the number of young visitors = 80, the number of middle age visitors = 40 and the number of old visitors = 20

The given data can be tabulated as follows.

	Old = 20	Middle Age = 40	Young = 80	Total = 140
Platinum			Platinum/2	
Gold	a			
Economy	a		38	55
Total				

Question 63

Since half of the platinum tickets were purchased by young visitors, the remaining half were purchased by old and middle age visitors. Since these two are equal, half of total number of platinum tickets should be an even number. Among the given values, this is possible only for 32 and 36.

In case of 36, Old- Platinum = 9. In that case 2a = 11. But this is not possible. Hence, the total number of platinum tickets sold can only be 32.

Ans : 32

Question 64

Let Old – platinum = Middle aged – Economy = x

We get x + 2a = 20 and a + x + 38 = 55

By solving these two equations we get x = 3.

Ans : 3

Question 65

If the number of Old visitors buying Gold tickets was strictly greater than the number of Young visitors buying Gold tickets, then the number of Middle-aged visitors buying Gold tickets was

The maximum possible value of Young - gold = x – 1

Then young – platinum = 80 – (38 + x – 1) = 43 – x

Hence, Old – platinum + Middle age – Platinum = 43 – x

Total old + Middle age = 60

(Old – platinum + Middle age – platinum) + (Old – gold + Middle age – gold) + (Old – economy + Middle age – economy) = 60

Hence, Old – gold + Middle age – gold = x

Thus, Middle age – gold = 0

Ans : Zero

Question 66

Since Old – Economy + Middle age – economy = 17, these two can never be equal. Hence, the statement that "The numbers of Old and Middle-aged visitors buying Economy tickets were equal" is false.

Ans : "The numbers of Old and Middle-aged visitors buying Economy tickets were equal"

Solution 67

N^{th} term of the series can be written as

$tn = (4n + 3)(4n + 7)$

$\Sigma. \quad 16n^2 + 40n + 21$

$\Sigma tn = 16\Sigma n^2 + 40\Sigma n + 21\Sigma 1$

$P. \quad \frac{16\, n(n+1)(2n+1)}{62} + 40\, n(n+1) + 21n$

here n = 23 (7, 11, 15….. 95 is an AP with common different 4 with 23 terms)

$1 \quad t_n = \frac{16 \times 23 \times 24 \times 47}{24 + 21 \times 23\ 6} + 20 \times 23 \times$

S.80707

Solution 68

CAT 2018 Paper SLOT 2 [SOLVED]

Let 'ab' be the two digit number. Where b ≠ 0.

On interchanging the digits, the new number will be 'ba'

As per the condition 10a+b > 3×(10b + a)

7a > 29b

For b = 1, a = {5, 6, 7, 8, 9}

For b = 2, a = {9}

For b = 3, no value of 'a' is possible.

Hence, there are a total of 6 such numbers

Solution 69

Given, $n^3 - 11n^2 + 32n - 28 > 0$

When $n = 2$, $n^3 - 11n^2 + 32n - 28 = 0$

P. $(n-2)\left(n^2 - 9n + 14\right) > 28$

Σ. $(n-2)(n-7)(n-2) > 28$

For n < 2, (n – 2)(n – 7)(n – 2) is negative.

For 2 < n < 7, (n – 2)(n – 7)(n – 2) is negative.

For n > 7, (n – 2)(n – 7)(n – 2) is positive.

When n = 8, (n – 2)(n – 7)(n – 2) = 36, which is greater than 28. Least integral value of n which satisfies the inequation is 8.

Solution 70

Interest to be repaid to Ankit at the end of the year = 0.08X

Interest that Gopal would receive from Ishan in two cases are as given.

Case I: if he lends X + Y

Interest received = (X + Y) × 0.1 = 0.1X + 0.1Y

Interest retained by Gopal after paying to Ankit

= (0.1X + 0.1Y) – (0.08X) = 0.02X + 0.1Y

Given that Interest retained by Gopal is same as that accrued by

Ankit => (0.02X + 0.1Y) = 0.08X

=> Y = 0.6X

Case II: if he lends X + 2Y

Interest received = (X + 2Y) × 0.1 = 0.1X + 0.2Y

Interest retained by Gopal after paying to Ankit

= (0.1X + 0.2Y) – (0.08X) = 0.02X + 0.2Y

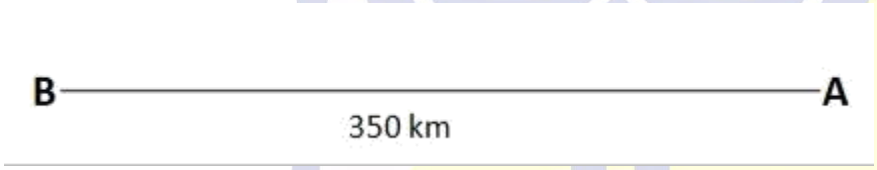
Given that interest retained by Gopal would increase by

150 => (0.02X + 0.2Y) – (0.02X + 0.1Y) = 150 0.1Y = 150

=> Y = 1500 and X = 1500×0.6= 2500

Hence X + Y = 2500 + 1500 = 4000

Solution 71



Let 'x' and 'y' be the speed (in km/hr) of cars starting from both A and B respectively.

If they both move in east direction, then B will overtake A only if y > x.

Also, relative speed of both the cars when they move in east direction = (y - x) km/hr

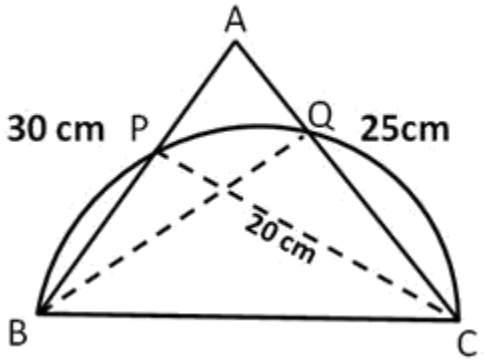
It is mentioned that they take 7 hours to meet. i.e. they travel 350 km in 7 hours with a relative speed of (y-x) km/hr.

Hence, (y - x) = 350/7 = 50 km/hr.

Solution 72

Refer to the below diagram

CAT 2018 Paper SLOT 2 [SOLVED]



Observe that triangle BPC and BQC are inscribed inside a semicircle. Hence,

P. BPC = ∠ BQC = 90°

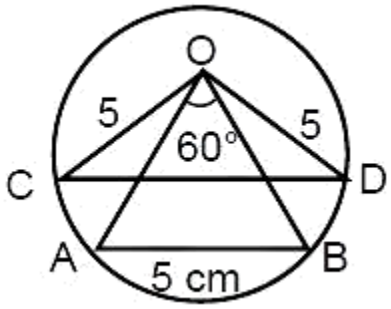
Therefore, we can say that BQ ⊥ AC and CP ⊥ AB.

Also, In triangle ABC,

Area of triangle = (1/2)×Base×Height = (1/2) ×AB×CP = (1/2) ×AC×BQ

A BQ = $\frac{AB \times CP}{AC25} = \frac{30 \times 20}{}$ = 24 cm.

Solution 73



Since ΔOAB is equilateral,

radius of the circle is 5 cm .

In ΔOCD, by sine rule,

$\frac{5}{\sin 30^\circ} = \frac{CD}{\sin 120^\circ}$

$\Rightarrow CD = 5\ \frac{\sqrt{3}}{2} \times 2$

CAT 2018 Paper SLOT 2 [SOLVED]

Θ. $\sqrt{}$ $5\sqrt{3}$

Solution 74

Given x is positive real number. The minimum value of the maximum $\{5x, 52 - 2x^2\}$ will occur when both the graphs intersect. i.e., when $5x = 52 - 2x^2$

$2x^2 + 5x - 52 = 0$

$2x^2 + 13x - 8x - 52 = 0$

$x(2x + 13) - 4(2x + 13) = 0$

$(x - 4)(2x + 13) = 0$

$x = 4$ or $\frac{-13}{2}$

When $x = 4$, $f(x) = 20$

Solution 75

Let the volume of the first and the second Solution be 100 and 300.

When they are mixed, quantity of ethanol in the mixture

= (20 + 300S)

Let this Solution be mixed with equal volume i.e. 400 of third Solution in which the strength of ethanol is 20%.

So, the quantity of ethanol in the final Solution

= (20 + 300S + 80) = (300S + 100)

It is given that, 31.25% of 800 = (300S + 100)

or, 300S + 100 = 250

or S = $\frac{1}{2}$ = 50%

Hence, 50 is the correct answer.

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 76

Let x be the time, on a 24 hours clock, at which the tank is empty.

Time taken by pipe A alone to fill the tank is (20 – x) hrs.

Time taken by pipe B alone to fill the tank is (18 – x) hrs.

On the other day, A fill the tank for (15 – x) hrs and B for 2 hrs.

Let A and B be the rate of works of pipe A and B respectively.

$\Theta.\ (20-x)A = (18-x)B = (17-x)A + 2B$

P. $\frac{A}{B} = \frac{2}{3}$

$\Sigma.\ (20-x)2 = (18-x)3$

T. $(20-x)A = 1$

Let $(20-x)A = 1$

$A = \frac{1}{6}$

$B = \frac{1}{4}$

When both work simultaneously, time taken

$= \frac{1}{\frac{1}{6}+\frac{1}{4}} = 2.4\text{hrs} = 2\text{hrs}24\text{min}$

The tank will be filled by 16 : 24i.e..4 : 24pm

Solution 77

$2x^2 - ax + 2 > 0 \forall x \in R$

$\Theta.\ \Delta < 0$

P. $a^2 - 4 \times 2 \times 2 < 0$

$\Sigma.\ a^2 < 16$

T. $-4 < ax^2 - bx + 8 \geq 0 \forall x \in R$

Y. $b^2 - 4(8) \leq 0$

$\varsigma.\ -4\sqrt{2} \leq b \leq 4\sqrt{2}$

As b is integer $-5 \leq b \leq 5$

Therefore, maximum possible value of 2a – 6b is 2(3) – 6(–5) = 36

CAT 2018 Paper SLOT 2 [SOLVED]

Solution 78

Let the rate of filling of Type A and Type B pipes be a and b respectively.

Given 30×(10a + 45b) = 1 and 60×(8a + 18b) = 1

=> 30 × (10a + 45b) = 60 × (8a + 18b)

=> 10a + 45b = 16a + 36b

=> 3b = 2a or a = 1.5b

The total work = 30 × (10a + 45b) = 30 × (15b + 45b)

= 1800b

Required answer = $\frac{1800b}{7a + 27b} = \frac{1800b}{10.5b + 27b} = 48$

Solution 79

Given $N^N = 2^{160} = 2^{5\times32}$

$1\ (2_5)^{32} \Rightarrow N_N = 32_{32}$

1. N=32

$N^2 + 2^N = 32^2 + 2^{32}$

$1\ (2_5)^2 + 2_{32}$

$2\ \ 2^{10} + 2^{32}$

$\nu\ 2_{10}\ (1 + 2_{22})$

Or x is 10

Solution 80

$t_1 + t_2 + \ldots + t_n = 2n^2 + 9n + 13 \rightarrow (1)$

$t_1 + t_2 + \ldots + tn - 1 = 2(n-1)^2 + 9(n-1) + 13 \rightarrow$

(2) From (2) –(1), we get $t_n = (2n^2 + 9n +$

$13) - (2(n-1)^2 + 9(n-1) + 13) = 4n + 7$

Given $t_k = 103 => 4k + 7 = 103 \Rightarrow k = 24$

Solution 81

Let $p^3 = q^4 = r^5 = s^6 = k$

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3. $= k^{1/3}$, $q = k^{1/4}$, $r = k^{1/5}$, $s = k^{1/6}$

$pqr = k^{\left(\frac{20+15+12}{60}\right)} = k^{\frac{47}{60}}$

$\log_s (pqr) = \log_{\frac{1}{6}} k^{\frac{47}{60}}$

$B\left(\frac{47}{60} \times 6\right) \log_k k$

1.

X 10^{47}

Solution 82

Let r and g be the rates of work of Ramesh and Ganesh respectively.

Let $(r + g)16 = 1$

A $(r + g) = 16^{-1}$

$(r + g)7 = 16^{-7}$

Remaining work to be done = 16^{-9}

Given, $(0.7r + g)10 = \frac{9}{16}$

$A = 2r$

$r = 48^{-1}$

$g = 24^{-1}$

Time taken by g alone to complete the work = $\frac{\frac{9}{16}}{\frac{1}{24}} = 13.5$

Solution 83

Final quantity of alcohol in the mixture = $\frac{700}{700+175} \times (\frac{90}{100})^2 \times [700+175]$ = 567 ml

Therefore, final quantity of water in the mixture = 875 - 567 = 308 ml

Hence, the percentage of water in the mixture = $\frac{308}{875} \times 100 = 35.2\ \%$

Solution 84

Among a group of n persons, number of matches played = n(n – 1)/2

Among the Junior participants, let the number of girls be n.

The number of matches played among girls

= n(n – 1)/2 = 153

=> n(n – 1) = 306 = 18 × 17 => n = 18

Number of boys = 43 – 18 = 25

The number of matches played between a boy and a girl = 25×18 =

450 Among the Senior level participants, let the number of boys be n.

The number of matches played between two

boys = n(n – 1)/2 = 276

=> n(n – 1) = 552 = 24 × 23 => n = 24

The number of girls = 51 – 24 = 27

The number of matches played between a boy and a girl = 27 × 24 = 648

Required answer = 450 + 648 = 1098

Solution 85

$A = 36^n - 35n - 1 = 36^n - 1^n - 35n$

Since $a^n - b^n$ is divisible by $a - b$ for all positive integral values of n, A is a multiple of 35 for any integral value of n and B is a set containing all the multiple of 35 including 0. Hence, every member of A is in B but not every element of B is in A.

Solution 86

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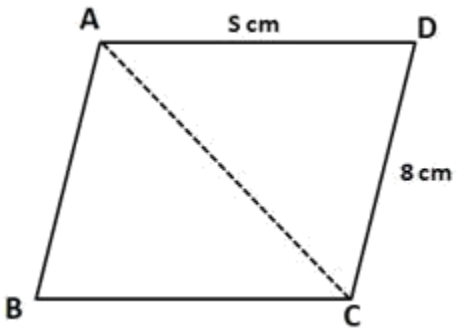

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We can see that area of parallelogram ABCD = 2×Area of triangle ACD

48 = 2×Area of triangle ACD

Area of triangle ACD = 24

$(1/2)\times CD\times DA\times \sin ADC = 24$

$AD\times \sin ADC = 6$

We know that $\sin\theta \leq 1$, Hence, we can say that AD ≥ 6

A s ≥ 6

Solution 87

We want to maximize the value of a1, subject to the condition that a1 is the least of the 52 numbers and that the average of 51 numbers (excluding a1) is 1 less than the average of all the 52 numbers. Since a_{52} is 100 and all the numbers are positive integers, maximizing a1 entails maximizing a_2, a_3, ….a_{51}.

The only way to do this is to assume that a_2, a_3…. a_{52} are in an AP with a common difference of 1.

Let the average of a_2, a_3…. a_{52} i.e. a_{27} be A.

(Note: The average of an odd number of terms in an Arithmetic Progression is equal to the value of the middle-most term)

Since $a_{52} = a_{27} + 25$ and $a_{52} = 100$

=>A=100–25=75

$a_2 + a_3 + \ldots + a_{52} = 75 \times 51 = 3825$

Given $a_1 + a_2 + \ldots + a_{52} = 52(A - 1) = 3848$

Hence $a_1 = 3848 - 3825 = 23$

Solution 88

Time taken to cover first 50 km at 100 km/hr = $\frac{1}{2}$ hr.

Time taken to cover second 50 km at 50 km/hr = 1 hr.

Time taken to cover last 50 km at 25 km/hr = 2 hr.

When car 2 starts, car 1 has already covered 20 km.

So, time taken by car 1 to reach B after car 1 starts = total time - time required to travel first 20 km

= 3 hr 30 min - 12 min = 3 hr 18 min

Distance travelled by car 1 = (50 + 50 + 45) = 145 km

Distance from B = (150 - 145) km = 5 km

Hence, 5 is the correct answer.

Solution 89

Given $\frac{x + y + z}{3} = 80$

A $x + y + z = 240$ …. (1)

also $\frac{x + y + z + u + v}{5} = 75$

$x + y + z + u + v = 375$ …. (2)

From (1) and (2), u + v = 135 …. (3)

$\frac{x + y}{2} + \frac{y + z}{2} = 135$

$x + 2y + z = 270$ …. (4)

From (1) & (4), y=30

$\Theta.\ x + z = 210$

Since x ≥ z, x takes the minimum possible value

at x = 105

Solution 90

Let a and b be the two numbers.

We know that for any two numbers $AM \geq GM$

$\Theta.\ \frac{a^2 + b^2}{ab}^2 \geq$

$ab \leq \frac{97}{2}$

Among the options, only 64 is greater than 48.5

Solution 91

P = {1,2,3,4} and Q = {2,3,5,6,}

PΔQ = {1, 4, 5, 6}

R = {1,3,7,8,9} and S = {2,4,9,10}

RΔS = {1, 2, 3, 4, 7, 8, 10}

(PΔQ)Δ(RΔS) = {2, 3, 5, 6, 7, 8, 10}

Thus, there are 7 elements in (PΔQ)Δ(RΔS) .

hence, 7 is the correct answer.

Solution 92

$4^n > 17^{19}$

$\Theta.\ 16^{n/2} > 17^{19}$

Therefore, we can say that n/2 > 19

n > 38

Solution 93

Let 'a', 'b' and 'c' be the concentration of salt in Solutions A, B and C respectively.

It is given that three salt solutions A, B, C are mixed in the proportion 1 : 2 : 3, then the resulting Solution has strength 20%.

$\Theta. \frac{a+2b+3c}{1+2+3} = 20$

P. $a + 2b + 3c = 120$ ... (1)

Also, if the proportion is 3 : 2 : 1, then the resulting Solution has strength 30%.

$A \frac{3a+2b+c}{1.+2+3} = 30$

B $3a + 2b + c = 180$ ... (2)

From equation (1) and (2), we get

X $b + 2c = 45$

By observation, we find that b = c = 15 and a = 45.

So if we mix Solution B and C in any ratio we get the mixture with 15% concentration whereas A's strength = 45%.

Hence, the required ratio = $\frac{15}{45}$ = 1 : 3

Solution 94

Let the length and the breadth of the rectangle be L and B respectively.

Given that $\frac{\text{Area of rectangle}}{\text{Perimeter}^2} = \frac{1}{25} \Rightarrow \frac{L \times B}{(2(L+B))^2} = \frac{1}{25}$

$\Rightarrow 25LB = 4L^2 + 4B^2 + 8LB$

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A $L^2 + B^2 = (17/4)LB$

(Note: Alternatively, we can also solve the quadratic equation in terms of L/B and we'd get the same result, i.e. 4 or ¼)

Since B < L, the ratio B : L = 1 : 4

Solution 95

Given, ratio of the scores of Amal and Bimal is 11 : 14.

Let 11x and 14x be the scores of Amal and Bimal.

Let a be the score which is increased.

A $\frac{11x + a}{14x + a} = \frac{47}{56}$

$616x + 56a = 658x + 47a$

$9a = 42x$

$A = \frac{42}{9}x$

Required ratio $= \left(14x + \frac{42x}{9}\right) : 14x$

$= \left(1 + \frac{1}{3}\right) : 1$

$= 4:3$

Solution 96

Area of the semicircle with AB as a diameter = $\frac{1}{2} \times \pi \times \left(\frac{AB}{4}^2\right)$

A $\frac{1}{2} \times \pi \times \left(\frac{AB}{4}^2\right) = 72 \times \pi$

B $AB = 24cm$

It is also know that the area of the rectangle ABCD = 768 sq.cm

Θ. AB×BC = 768

P. BC = 32 cm

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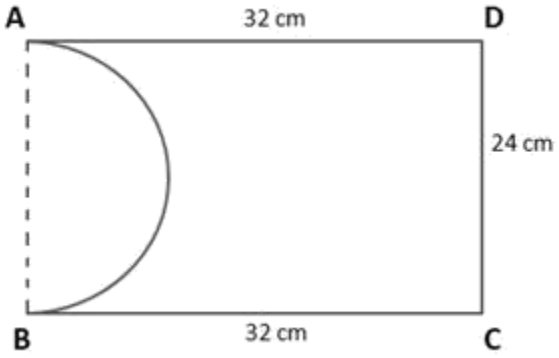
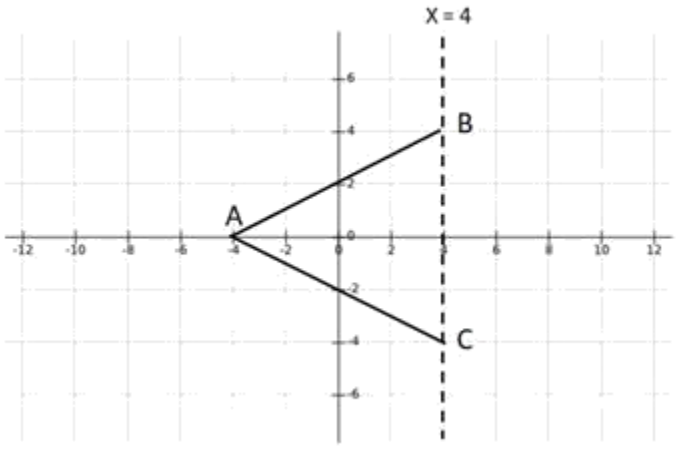


Observe that the perimeter of the remaining shape = AD + DC + BC + Arc(AB)

Θ. $32+24+32+\pi \times 24/2$

P. $88+12\pi$

Solution 97



Since we want point A to be as close to the origin as possible, let point A lie on the x axis and its coordinates be (a, 0).

The distance of A from side BC (lying on the line x = 4) is the height of the triangle => The height of the triangle ABC = |a – 4| Given the area of the triangle = 32

=> (1/2) × 8 × |a – 4| = 32 => |a – 4| = 8

=> a = 12 or –4

Required answer is the shortest distance from (0, 0) i.e. 4 when a = –4.

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Solution 98

Let the ratio of A and B in drum 2 be x : 1

Applying alligation,

$$\frac{13}{20} - \frac{x}{x+1} = \frac{3}{4} \Rightarrow \frac{13}{20} - \frac{x}{x+1} = \frac{3}{4} \times \frac{72-65}{100} = \frac{21}{400}$$

$$\Rightarrow \frac{x}{25} - \frac{13}{20} = \frac{13}{20} - \frac{21}{400} = \frac{239}{400}$$

$$\Rightarrow 400x = 239x + 239$$

$$Q. \quad = 239 / 161$$

Required ratio is 239 : 161.

Solution 99

Car 3 meets car 1 at Q, which is 200 km from A.

Therefore, at the time of their meeting car 1 must have travelled 200 km and car 3 must have travelled 100 km.

As the time is same, ratio of speed of car 1 to speed of car 3 = 2 : 1.

Car 3 meets car 2 at P, which is 100 km from A.

Therefore, at the time of their meeting car 2 must have travelled 100 km and car 3 must have travelled 200 km.

As the time is same, ratio of speed of car 2 to speed of car 3 = 1 : 2.

Speed of car 1 : speed of car 3 = 2 : 1

And speed of car 2 : speed of car 3 = 1 : 2

So, speed of car 1 : speed of car 2 : speed of car 3 = 4 : 1 : 2

Solution 100

We know that $\frac{1}{\log_b a} = \log_a b$, therefore,

$$\frac{1}{\log_2 100} - \frac{1}{\log_4 100} + \frac{1}{\log_5 100} - \frac{1}{\log_{10} 100} + \frac{1}{\log_{20} 100} - \frac{1}{\log_{25} 100} + \frac{1}{\log_{50} 100}$$

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Q. $\log_{100} 2 - \log_{100} 4 + \log_{100} 5 - \log_{100} 10 + \log_{100} 20 - \log_{100} 25 + \log_{100} 50$

R. $\log_{100}\left(\frac{2}{1} \times \frac{5}{4} \times \frac{20}{10} \times \frac{50}{25}\right)$

$= \log_{100} 10$

Using the relation $\log_{a^m} b = \frac{1}{m} \log_a b$

$\log_{100} 10 = \log_{10^2} 10 = \frac{1}{2} \log_{10} 10 = \frac{1}{2}$

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