

XAT 2018

English

Instructions [1 - 3]

Please read the passage below and answer the questions that follow:

If history doesn't follow any stable rules, and if we cannot predict its future course, why study it? It often seems that the chief aim of science is to predict the future - meteorologists are expected to forecast whether tomorrow will bring rain or sunshine; economists should know whether devaluing the currency will avert or precipitate an economic crisis; good doctors foresee whether chemotherapy or radiation therapy will be more successful in curing lung cancer. Similarly, historians are asked to examine the actions of our ancestors so that we can repeat their wise decisions and avoid their mistakes. But it never works like that because the present is just too different from the past. It is a waste of time to study Hannibal's tactics in the Second Punic War so as to copy them in the Third World War. What worked well in cavalry battles will not necessarily be of much benefit in cyber warfare. Science is not just about predicting the future, though. Scholars in all fields often seek to broaden our horizons, thereby opening before us new and unknown futures. This is especially true of history. Though historians occasionally try their hand at prophecy (without notable success), the study of history aims above all to make us aware of possibilities we don't normally consider. Historians study the past not in order to repeat it, but in order to be liberated from it. Each and every one of us has been born into a given historical reality, ruled by particular norms and values, and managed by a unique economic and political system. We take this reality for granted, thinking it is natural, inevitable and immutable. We forget that our world was created by an accidental chain of events, and that history shaped not only our technology, politics and society, but also our thoughts, fears and dreams. The cold hand of the past emerges from the grave of our ancestors, grips us by the neck and directs our gaze towards a single future. We have felt that grip from the moment we were born, so we assume that it is a natural and inescapable part of who we are. Therefore we seldom try to shake ourselves free, and envision alternative futures. Studying history aims to loosen the grip of the past. It enables us to turn our head this way and that, and begin to notice possibilities that our ancestors could not imagine, or didn't want us to imagine. By observing the accidental chain of events that led us here, we realise how our very thoughts and dreams took shape - and we can begin to think and dream differently. Studying history will not tell us what to choose, but at least it gives us more options.

1. Based on the passage, which of the following options would be the most appropriate for citizens to learn history?
 - A British names of streets in India should not be changed.
 - B Every street in India should display a plaque that lists all its previous names.
 - C British names of streets in India should be changed to Indian names along with an explanation of their history.
 - D Names of Indian streets should be based on suggestions generated through an opinion poll.
 - E Names of Indian streets should be periodically changed.
2. Which of the following options is the closest to the essence of the passage?
 - A History, unlike Physics, does not help predict future.
 - B History deals with long time periods.
 - C History documents the past events related to specific people.

D There is no strict cause and effect relationship in history.

E History has the potential to make us eclectic.

3. Read the following sentences:

1. A historian successfully predicted a political crisis based on similar events of the last century.

2. Using the latest technology, doctors could decipher the microbe causing the disease.

3. Students who prepared for an examination by perusing past 10 years' question papers did not do well in the examination.

4. A tribe in Andaman learns to predict epidemic outbreaks by listening to the stories of how their ancestors predicted the past outbreaks.

Which of the statement(s) above, if true would contradict the view of the author?

A 1 and 2 only

B 3 and 4 only

C 2 and 3 only

D 1 and 4 only

E 1, 2 and 4 only

Instructions [4 - 7]

Please read the passage below and answer the questions that follow:

Rene Descartes' assertion that ideas may be held true with certainty if they are "clear and distinct" provides the context for Peirce's title, "How to Make Our Ideas Clear." Peirce argued that an idea may seem clear if it is familiar. Distinctness depends on having good definitions, and while definitions are desirable they do not yield any new knowledge or certainty of the truth of empirical propositions. Peirce argues that thought needs more than a sense of clarity; it also needs a method for making ideas clear. Once we have made an idea clear, then we can begin the task of determining its truth. The method that Peirce offers came to be known as the pragmatic method and the epistemology on which it depends is pragmatism. Peirce rejected Descartes' method of doubt. We cannot doubt something, for the sake of method, that we do not doubt in fact. In a later essay, he would state as his rule "Dismiss make-believes." This refers to Descartes' method of doubting things, in the safety of his study, such things as the existence of the material world, which he did not doubt when he went out on the street. Peirce proposed that a philosophical investigation can begin from only one state of mind, namely, the state of mind in which we find ourselves when we begin. If any of us examines our state of mind, we find two kinds of thoughts: beliefs and doubts. Peirce had presented the interaction of doubt and belief in an earlier essay "The Fixation of Belief".

Beliefs and doubts are distinct. Beliefs consist of states of mind in which we would make a statement; doubts are states in which we would ask a question. We experience a doubt as a sense of uneasiness and hesitation. Doubt serves as an irritant that causes us to appease it by answering a question and thereby fixing a belief and putting the mind to rest on that issue. A common example of a doubt would be arriving in an unfamiliar city and not being sure of the location of our destination address in relation to our present location. We overcome this doubt and fix a belief by getting the directions. Once we achieve a belief, we can take the necessary action to reach our destination. Peirce defines a belief subjectively as something of which we are aware and which appeases the doubt. Objectively, a belief is a rule of action. The whole purpose of thought consists in overcoming a doubt and attaining a belief. Peirce acknowledges that some people like to think about things or argue about them without caring to find a true belief, but he asserts that such dilettantism does not constitute thought. The beliefs that we hold determine how we will act. If we believe, rightly or wrongly, that the building that we are trying to reach sits one block to our north, we will walk in that direction. We have beliefs about matters of fact, near and far. For example, we believe in the real objects in front of us and we believe generally accepted historical statements. We also believe in relations of ideas such as that seven and five equal twelve. In addition to these we have many beliefs about science, politics, economics, religion and so on. Some beliefs may be false since we are capable of error. To believe something means to think that it is true.

4. According to Peirce, for a particular thought, which of the following statements will be correct?

- A A belief always leads to a doubt.
- B A doubt always leads to a belief.
- C A doubt and a belief may co-exist.
- D A belief and a doubt are not related.
- E A doubt may lead to a belief.

5. "A candidate has applied for XAT". According to Peirce, it indicates that:

- A The candidate has a belief in the XAT application process.
- B The candidate has a belief that XAT is a good test of ability.
- C The candidate is doubtful about her/his performance in XAT.
- D The candidate believes that s/he will perform well in XAT.
- E The candidate has a doubt about her/his performance in other MBA entrance examinations.

6. Which of the following words is the closest in meaning to "dilettantism"?

- A Belief
- B Doubt
- C Guess
- D Surety
- E Unlikelihood

7. A person thinks that s/he has to keep awake for twenty hours in a day to score well in an examination, but is awake for only fifteen hours.

For the above statement, which of the following options will be right, according to Peirce?

- A This person believes in a minimum sleep of 10 hours.
- B This person does not have a true belief.
- C It is a counter-argument of Pierce theory.
- D It is only a thought, a pure thought, nothing to do with action.
- E The person does not have a doubt.

Instructions [8 - 10]

Please read the passage below and answer the questions that follow:

It is sometimes said that consciousness is a mystery in the sense that we have no idea what it is. This is clearly not true. What could be better known to us than our own feelings and experiences? The mystery of consciousness is not what consciousness is, but why it is.

Modern brain imaging techniques have provided us with a rich body of correlations between physical processes in the brain and the experiences had by the person whose brain it is. We know, for example, that a person undergoing stimulation in her or his ventromedial hypothalamus feels hunger. The problem is that no one knows why these correlations hold. It seems perfectly conceivable that ventromedial hypothalamus stimulation could do its job in the brain without giving rise to any kind of feeling at all. No one has even the beginnings of an explanation of why some physical systems, such as the human brain, have experiences. This is the difficulty David Chalmers famously called 'the hard problem of consciousness'.

Materialists hope that we will one day be able to explain consciousness in purely physical terms. But this project now has a long history of failure. The problem with materialist approaches to the hard problem is that they always end up avoiding the issue by redefining what we mean by 'consciousness'. They start off by declaring that they are going to solve the hard problem, to explain experience; but somewhere along the way they start using the word 'consciousness' to refer not to experience but to some complex behavioural functioning associated with experience, such as the ability of a person to monitor their internal states or to process information about the environment. Explaining complex behaviours is an important scientific endeavour. But the hard problem of consciousness cannot be solved by changing the subject.

In spite of these difficulties, many scientists and philosophers maintain optimism that materialism will prevail. At every point in this glorious history, it is claimed, philosophers have declared that certain phenomena are too special to be explained by physical science - light, chemistry, life - only to be subsequently proven wrong by the relentless march of scientific progress.

Before Galileo it was generally assumed that matter had sensory qualities: tomatoes were red, paprika was spicy, flowers were sweet smelling. How could an equation capture the taste of spicy paprika? And if sensory qualities can't be captured in a mathematical vocabulary, it seemed to follow that a mathematical vocabulary could never capture the complete nature of matter. Galileo's solution was to strip matter of its sensory qualities and put them in the soul (as we might put it, in the mind). The sweet smell isn't really in the flowers, but in the soul (mind) of the person smelling them ... Even colours for Galileo aren't on the surfaces of the objects themselves, but in the soul of the person observing them. And if matter in itself has no sensory qualities, then it's possible in principle to describe the material world in the purely quantitative vocabulary of mathematics. This was the birth of mathematical physics.

But of course Galileo didn't deny the existence of the sensory qualities. If Galileo were to time travel to the present day and be told that scientific materialists are having a problem explaining consciousness in purely physical terms, he would no doubt reply, "Of course they do, I created physical science by taking consciousness out of the physical world!"

8. Which of the following statements captures the essence of the passage?

- A** Materialists redefine the hard problem by changing the issues.
- B** The hard problem cannot be solved by materialists.
- C** Materialists can explain the reasons humans see a particular colour.
- D** Materialists and philosophers agree on the concept of consciousness.
- E** The hard problem can best be solved by segregation.

9. Which of the following options would most likely be an example of the hard problem?

- A** Feeling the heat while holding a glass of hot water
- B** Experiencing joy after doing well in an examination
- C** What makes us tired after walking for 20 kilometres?

D Why we prostrate in front of a deity?

E Why do humans take birth?

10. Which of the following statements can be inferred from the passage?

A The passage argues that science could uncover all mysteries of the world.

B The passage argues that science could uncover all mysteries of the world by giving alternative explanations.

C The passage argues that science could never uncover all the mysteries of nature.

D The passage argues that science and consciousness are two different domains.

E The passage argues that nature is so mysterious that humans are not even aware of the phenomena that can be researched.

Instructions [11 - 13]

Please read the passage below and answer the questions that follow:

Labor and capital are the opposite poles of capitalist society. This polarity begins in each enterprise and is realized on a national and even international scale as a giant duality of classes which dominates the social structure. And yet this polarity is incorporated in a necessary identity between the two. Whatever its form, whether as money or commodities or means of production, capital is labor: it is labor that has been performed in the past, the objectified product of preceding phases of the cycle of production which becomes capital only through appropriation by the capitalist and its use in the accumulation of more capital. At the same time, as living labor which is purchased by the capitalist to set the production process into motion, labor is capital. That portion of money capital which is set aside for the payment of labor, the portion which in each cycle is converted into living labor power, is the portion of capital which stands for and corresponds to the working population, and upon which the latter subsists. Before it is anything else, therefore, the working class is the animate part of capital, the part which will set in motion the process that yields to the total capital its increment of surplus value. As such, the working class is first of all, raw material for exploitation. This working class lives a social and political existence of its own, outside the direct grip of capital. It protests and submits, rebels or is integrated into bourgeois society, sees itself as a class or loses sight of its own existence, in accordance with the forces that act upon it and the moods, conjunctures, and conflicts of social and political life. But since, in its permanent existence, it is the living part of capital, its occupational structure, modes of work, and distribution through the industries of society are determined by the ongoing processes of the accumulation of capital. It is seized, released, flung into various parts of the social machinery and expelled by others, not in accord with its own will or self-activity, but in accord with the movement of capital.

11. While labor is capital, it is poles apart from each other because:

A Labor does not have a will of its own.

B The will of capital overpowers the will of labor.

C Capital is labor performed in the past.

D Labor exists outside the direct grip of capital.

E Labor is the animate part of capital.

12. According to the passage, what does the working class subsists on?

- A The benevolence of the bourgeois society
- B The living labor
- C Capital which is same as labor
- D The labor that is performed in the past
- E Living labor purchased by the capitalist

13. Which of the following statements will be true, according to the passage?

- A Capital exploits the working class.
- B Working class when converted into capital is exploited by the bourgeois.
- C Working class is exploited by the conflicts of social and political life.
- D The pursuit of capital accumulation results in exploitation of the working class.
- E Working class is the raw material for capital.

14. Read the Following statements and answer the question that follows:

1. But its most advanced formulation is called superstring theory, which even predicts the precise number of dimensions: ten.
2. However, the theory has already swept across the major physics research laboratories of the world and has irrevocably altered the scientific landscape of modern physics, generating a staggering number of research papers in the scientific literature (over 5,000 by one count).
3. Scientifically, the hyperspace theory goes by the names of Kaluza-Klein theory and supergravity.
4. The usual three dimensions of space (length, width, and breadth) and one of time are now extended by six more spatial dimensions.
5. We caution that the theory of hyperspace has not yet been experimentally confirmed and would, in fact, be exceedingly difficult to prove in the laboratory.

Rank the above five statements so as to make it a logical sequence:

- A 3, 1, 4, 5, 2
- B 3, 4, 1, 5, 2
- C 5, 1, 4, 3, 2
- D 3, 1, 4, 2, 5
- E 2, 5, 3, 1, 4

15. Read the Following statements and answer the question that follows:

1. It is less appealing, but morally more urgent, to understand the actions of the perpetrators.
2. It is easy to sanctify policies or identities by the deaths of the victims.
3. The victims were people; a true identification with them would involve grasping their lives rather than grasping at their deaths.
4. The moral danger, after all, is never that one might become a victim but that one might be a perpetrator or a bystander.
5. By definition the victims are dead, and unable to defend themselves from the use that others make of their deaths.

Rank the above five statements so as to make it a logical sequence:

- A 1, 2, 3, 5, 4
- B 5, 3, 2, 4, 1
- C 3, 5, 2, 1, 4
- D 3, 1, 2, 4, 5
- E 5, 3, 1, 2, 4

16. Read the following paragraph and answer the question that follows:

Arti is planning for higher studies and her future goals include working as a manager of a non-profit organization designed to provide assistance to under-represented populations. Arti researched the mission statements of various colleges and discovered that college X, a small private college with a fee of Rs. 8 lakhs per year, was dedicated to producing compassionate and curious leaders. College Y, a large institute with a fee of Rs. 9 lakh per year, promoted itself as a leading research facility. Based on her research, she decided to apply to college X rather than College Y.

Which of the following options is the most likely explanation of Arti's decision?

- A A direct relationship exists between a college's cost and the quality of the education it provides.
- B Students apply to smaller colleges that offer more personalized attention from professors.
- C A large research university cannot prepare students for a career as a non-profit executive.
- D Students apply to colleges with mission statements that align with their goals.
- E The best colleges have the best mission statements. Hence, students select a college with the best mission statement.

17. Carefully read the following statement:

The payoff from _____ in education is so _____ and _____ that it is almost _____ as a predictor of economic change over a five to ten year period.

Fill in the blanks meaningfully, in the above statement, from the following options.

- A Expenditure, small, insignificant, irrelevant
- B Productivity, small, erratic, useless
- C Expenditure, fast, significant, powerful
- D Investment, slow, erratic, useless
- E Investment, slow, predictable, irrelevant

18. Carefully read the following paragraphs:

The Lannisters had _____ gold than the Tyrells until the Lannister army sacked Highgarden and took the Tyrell fortune to pay back the Iron Bank. On the other hand, the Northern army has _____ than 10,000 men and therefore, Jon needs to bend the knee to Daenerys. What happens in the story next is dependent on George R. Martin, the writer of the series. For _____, he has not written anything further and we hope George R. Martin will get around to finishing the book _____. But as it happens, _____, book releases are delayed.

Fill in the blanks meaningfully, in the above paragraph, from the following options.

- A less, fewer, some time, sometime, sometimes
- B fewer, less, sometime, some time, sometimes
- C less, fewer, sometime, some time, sometimes
- D fewer, less, sometimes, sometime, some time
- E fewer, less, some time, sometime, sometimes

19. Which of the following sentences contains correct and meaningful usage of the underlined words?

- A Vikram's approach to the problem was unique from Harpreet's, and he hadn't expected no criticism from her.
- B Vikram's approach to the problem was different from Harpreet's, but he hadn't expected no criticism from her.
- C Vikram's approach to the problem was different from Harpreet's, but he had expected no criticism from her.
- D Vikram's approach to the problem was unique from Harpreet's, further he hadn't expected no criticism from her.
- E Vikram's approach to the problem was different from Harpreet's, and he had expected no criticism from her.

Instructions [20 - 21]

A spirit that lives in this world and does not wear the shirt of love, such an existence in a deep disgrace.
 Be foolish in love, because love is all there is.
 There is no way into presence except through love exchange.
 If someone asks, But what is love? Answer, dissolving the will.
 True freedom comes to those who have escaped the question of freewill and fate.
 Love is an emperor. The two worlds play across him. He barely notices their tumbling game.
 Love and lover live in eternity. Other desires are substitute for that way of being.
 How long do you lay embracing a corpse? Love rather the soul, which cannot be held.
 Anything born in spring dies in the fall, but love is not seasonal.
 With wine pressed from grapes, expect a hangover.
 But this love path has no expectations. You are uneasy riding the body?
 Dismount, travel lighter. Wings will be given.
 Be clear like mirror holding nothing.
 Be clean of pictures and the worry that comes with images.
 Gaze into what is not ashamed or afraid of any truth.
 Contain all human faces in your own without any judgment of them.
 Be pure emptiness. What is inside of that? You ask. Silence is all I can say.
 Lovers have some secrets they keep.

20. How are the words "freewill", "fate" and "will" used in the poem above?

- A All the three words are opposites of love.
- B These words are used as a hallmark of an intelligent person.
- C Freewill and will connote self-determination while fate connotes loss of control.

- D These are used as something that corpses do not possess.
- E Freewill and will are synonymous while fate is an antonym to both.

21. Which of the following is the closest interpretation of "lovers have some secrets that they keep"?

- A The secret refers to profundity of knowledge.
- B The secret is not to have any secret.
- C The secret refers to freedom from emptiness.
- D The secret refers to being a fine judge of human quality.
- E The secret is about loving someone as much as you love yourself.

22. Read the following paragraph and answer the question that follows:

The size of oceanic waves is a function of the velocity of the wind and of fetch, the length of the surface of the water subject to those winds. The average impact of waves against a coastline is a function of the size of the waves and the shape of the sea bottom. The degree of erosion on coastline is a function of the average impact of waves and the geologic composition of the coastline.

According to the above paragraph, which of the following options will be true?

- A The fetch of wind is related to the shape of the sea bottom.
- B The size of oceanic waves will not fluctuate far from average.
- C The size of oceanic wave is correlated with the shape of the sea bottom.
- D Degree of erosion on coastline is not related with the velocity of wind.
- E Degree of erosion on coastline is related to shape of the sea-bottom.

23. Read the following paragraph and answer the question that follows:

Indian religious and ethical space is different from that of the western countries. The Vedas, the Upanishads, the Bhagavad Gita, the Ramayana, and the Mahabharata etc. enrich Indian religious and social space. Details of the treatment of human values and Dharmas have a long tradition. They are often compared, contrasted and debated by the characters in the Ramayana and the Mahabharata. In the process, it has given birth to a tradition of dharma, which has been transferred from generation to generation. Ethical discourse was not a one-time affair. From time to time, religious leaders from various regions of India nourished and strengthened the Indian ethical arena. Tiruvalluvar (second century B.C.), Kabir from Uttar Pradesh (fifteenth century A.D.), Nanak from Punjab (fifteenth century A.D.), Alvars and Nayanmars of Tamil Nadu (eighth century A.D.), Basaveswara of Karnataka (Twelfth century A.D.), Sri Chaitanya (Sixteenth century) were prominent.

Which of the following assumptions will make the above paragraph redundant?

- A All religious leaders, mentioned in the paragraph, preach the same message and it is transferred from one generation to the next.
- B Western religious spaces do not have details of treatment of principle of Dharma.
- C Ramayana and Mahabharata have made it possible for religious leaders to build the tradition.

- D Western civilizations have been traversed by a different kind of religious leaders.
- E Western ethical and religious space has a long tradition of treatment of human values and Dharma.

24. Read the following statement:

A manager seeks approval for conducting a training programme on 'openness'. He puts forward the following arguments in favour of the program to his CEO.

Which of the following arguments is the least likely to have a logical fallacy?

- A We did a pilot training program with a group of employees. Post the program, one of the participants was open to new ideas.
- B This program should be good for our organization since it is designed by a leading consultant.
- C Internal studies conducted across groups and locations showed that 'openness' increases innovation.
- D We have only two options; we can either train our employees on 'openness' or suffer the consequences.
- E If you really care about the organization, you should approve this training program.

25. Read the following paragraph:

"Music probably does something interesting," explains neuropsychologist Catherine Loveday of the University of Westminster. "It stimulates the brain in a very powerful way, because of our emotional connection with it." Unlike brain-games, playing an instrument is a rich and complex experience. This is because it's integrating information from senses like vision, hearing, and touch, along with fine movements. This can result in long-lasting changes in the brain. This can also be applicable in the business world.

Go through the following statements:

1. Playing a musical instrument is a unique experience involving vision, hearing and touch.
2. Instrumental musicians are far more creative than vocalists.
3. Playing brain games does not integrate various senses and movements as much as playing a musical instrument.
4. Integrating the five senses is critical in the business world.

Which of the above statements can definitely be interpreted based on the passage above?

- A Statement 1 only
- B Statement 1 and 2
- C Statement 3 only

- D Statement 1 and 3
- E Statement 3 and 4

26. Carefully read the following statement:

Though he thought of himself as a/an _____ person, his boss's abusive behaviour made him talk back. However, as he engaged in a/an _____ with his boss, all he got in response was a/an _____, which only filled him with _____

Fill in the blanks meaningfully, in the above statement, from the following options:

- A nonchalant, remonstrance, philippic, ennui
- B insouciant, philippic, remonstrance, ennui
- C philippic, remonstrance, ennui, insouciance
- D ennui, philippic, insouciance, remonstrance
- E nonchalant, ennui, philippic, remonstrance

Decision Making

Instructions [27 - 29]

Answer the following questions on the basis of information given in the following situation.

Satyender heads a branch of a Micro-Finance company. The company provides small-size loans catering to rural households. As the head of the branch, he supervises three collection officers - Palani, Sayed, and Godwin. Palani was recently transferred by the company from another branch.

27. Sayed feared Palani's transfer may pull down the performance of the branch, as he felt Palani was transferred due to his poor performance in the previous branch.

Which of the following information will most likely assuage Sayed's fear?

- A In the past 12 years as the head of branch, Satyender has exceeded targets every time.
- B Palani has been a top performer in the organization; his performance has deteriorated only in the last three years.
- C The branch's performance has been good for the past 10 years; Sayed has joined the organization 3 years back.
- D When Sayed joined as a fresher in this branch, others in the branch had feared that he might bring down the performance of the branch.
- E While calculating the branch's performance, the branch head has the choice to exclude new joinee's performance.

28. Three months later, Palani submitted local travel bills to Satyender for reimbursement. Satyender realized that the bill amount was 30% higher than expected.

Which of the following options, if true, will enable Satyender take a decision that shall set a precedent, which is least likely to be misused in the future?

- A Palani being new to the area uses autorickshaws which are more expensive than personal motorcycles used by other collection officers.
- B Unlike his colleagues, Palani's house has very poor public transport connectivity.
- C Unlike his colleagues, Palani's sales territory has a powerful competitor.
- D Unlike his colleagues, Palani's customers can meet him only during weekends.
- E Unlike his colleagues, Palani has to visit customers repeatedly as they require additional persuasion.

29. Satyender is allocating territories to his subordinates for the coming financial year. So far, Palani's performance has been poor and this allocation will decide his future in the organization.

Which of the following information will be the least useful to Satyender in taking a fair allocation decision?

- A Sayed's territory has shown consistently good performance in the past three years.
- B Sayed's territory faces stiff competition from a well-known brand.
- C A new territory that faces competition from two relatively unknown brands.
- D Godwin's territory has shown consistent results in the past three years.
- E Godwin's territory performance has been flat for the past two years.

Instructions [30 - 32]

Answer questions 30-32 on the basis of information given in the following situation.

Lal & Sons, a family business, comprises three different companies in three different industries. Sudarshan Lal was heading this entire business from the inception. Two years ago, he hired three managers, one for each company and Chhaganlal Jha as Chief Executive Officer (CEO) to look after the entire business. These three managers are reporting to the CEO. However, Sudarshan Lal and his family still own the entire business, though they are not involved in day to day operations.

30. Two years after the handing over, Sudarshan was concerned that none of the companies, except one, is profitable.

Which of the following information, if true, will most likely reduce Sudarshan's concerns?

- A A leading financial institution recently advised its investors to purchase the shares of the two loss making companies with a long term outlook.
- B The Corporation's performance was stagnant for three years, before Sudarshan handed it over to professionals.
- C The best performing division belongs to an industry, which is growing in double digits.
- D People holding senior positions have been replaced two years ago by fresh and young talent.
- E The rate at which employees are leaving the best performing division is higher than the industry average.

31. Some of the senior employees who left Lal & Sons in recent past have complained to Sudarshan that the long cherished values of the organization such as respect for elders, job security etc. are being compromised.

Which of the following options, if true, will indicate to Sudarshan that the employees are misleading him?

- A The replaced employees have been average performers for many years.
- B When senior employees were assigned to lead challenging but critical positions in the organization, they resigned.
- C The senior employees were replaced by people below them and not from outside the organization.
- D The replaced senior employees had only 4 more years of service and were not compensated for the premature termination.
- E The number of senior employees voluntarily leaving this organization is lower than the industry average.

32. Chhaganlal Jha, the CEO, was certain that someone in his leadership team was leaking information to Sudarshan Lal, well before Chhaganlal communicated.

Given the following options, how best should Chhaganlal Jha respond to this situation?

- A Chhaganlal should request Sudarshan to kindly wait for him to communicate as informal sources may lead to misinformation.
- B Chhaganlal should complain about this to Sudarshan and threaten to resign.
- C Chhaganlal should request his team to continue passing information, since it brings down the communication barrier.
- D Chhaganlal should understand that this is bound to happen and should not bother.
- E Chhaganlal should threaten his team that one of them will be fired by the weekend if this practice of passing information doesn't stop immediately.

Instructions [33 - 35]

Answer questions 33-35 on the basis of information given in the following situation.

Rose is the Queen of Kingdom A and Emily is the Queen of Kingdom B; both share a common border. They also share a border with Kingdom C, a much larger kingdom, ruled by King Jonathan who has expansive ambitions. Though individually their armies were no match to his might, together their armies were more powerful than King Jonathan's army.

Jonathan's kingdom also bordered Kingdom K on the opposite side, making Kingdom C a buffer state between Kingdoms A, B and K. Kingdom K is ruled by King Summer Sault, who united a group of warring and belligerent tribes under his aegis. Kingdom K and Kingdom C had continuous skirmishes with each other.

33. Jonathan realized that he has limited arms and ammunition to fight on all the three fronts simultaneously. Therefore, he planned to double the arms and ammunition which will take a few years. When this news reached Emily and Rose they held a secret meeting to discuss the situation.

Which of the following actions, by Emily and Rose, will be the best suited to delay Jonathan's plan?

- A Emily and Rose should send arms and ammunition to Summer Sault for the next few years.
- B The two queens should meet Jonathan and attempt to sign a peace pact.
- C Emily and Rose should also double their armies.
- D Emily and Rose should attack Jonathan immediately.
- E The two queens should ignore the news.

34. Jonathan aims to invade and annex Kingdom K once and for all.

Which of the following options will best enable him to accomplish the ambition?

- A He should request the cooperation of Queen Rose and Queen Emily.
- B He should sign a peace pact with Queen Rose and Queen Emily.
- C He should try and create a rift between the two Queens.
- D He should secretly invest in doubling his army, by reducing all other expenditure.
- E He should attack all three kingdoms simultaneously, giving them no time to cooperate.

35. King Summer Sault was growing tired of the warring tribes, who slowed down the overall economic development of Kingdom K.

Which of the following is the best option for King Summer Sault to focus on economic development?

- A Align with Jonathan to eliminate one or two of the tribes and instil fear in others.
- B Align with the two Queens to eliminate a few tribes and unify the rest.
- C Design annual economic plans, with each plan named after a different tribe.
- D Create a rift among the tribes and instigate a civil war.
- E Request Jonathan to send teachers, doctors and artists to improve economic development of Kingdom K.

Instructions [36 - 38]

Answer questions 36-38 on the basis of information given in the following situation.

Ava is the CEO of Ratan Brothers, a bicycle manufacturing company. The organization is doing well financially, with a steadily increasing share price. Recently, Ava promoted Bhushan, her nephew, to the position of head of procurement after he completed five years in the organization. After the promotion, he was automatically inducted into the quality council headed by Ava.

Dev and Sons is a supplier to Ratan Brothers. It supplies "ball bearings", an important part of any bicycle. After Bhushan took over, he switched to a new supplier citing quality deficiencies in Dev and Sons' product. Dev and Sons responded by publicly declaring that quality was not compromised. Further, it alleged that its competitor bribed Bhushan to get the contract.

36. Post this public allegation, the share price of Ratan Brothers started falling.

Which of the following is the best option for Ava to immediately stem the falling stock prices?

- A Fire Bhushan, blacklist Dev and Sons and inform the press.
- B Issue a press statement that a committee has been formed to look into the matter.
- C Issue a press statement that the company's quality standards have increased and that anyone is welcome to scrutinize the relevant documents.
- D Cancel the remaining order and call for a fresh tender.
- E Do nothing, as Bhushan, as the head of procurement, has the right to decide on the supplier.

37. Under pressure from media and suppliers, Ava constituted a cross-functional committee of senior executives to investigate Dev and Sons' allegation against Bhushan. The committee exonerated Bhushan. However, rumors within the organization began to spread that the decision was influenced by nepotism. Which of the following should be the best response from Ava?
- A Do nothing, as the committee has exonerated Bhushan.
 - B Force Bhushan to resign temporarily. Make an independent enquiry, if found innocent, reinstate Bhushan.
 - C Communicate to all shareholders that these kinds of practices are very common in organizations.
 - D Sack all those employees who questioned the authority of Ava.
 - E Explain in a town hall meeting, open to all the employees, how the decision to exonerate Bhushan was taken.

38. A few months after the issue of Dev and Sons, a vigilance committee discovered some financial irregularities attributable to Bhushan in his earlier stint as a senior manager in marketing. The board of directors was concerned about this and demanded a response from the CEO.

Ava contemplated following responses:

1. Offer to resign from the post of CEO, since as the CEO she is ultimately responsible for everything in the organization.
2. Sack Bhushan immediately and make the reason public.
3. Have a town hall meeting with all the employees and deny any financial irregularities in the organization.
4. Communicate to the board that as the CEO, the organization's financial health is her top priority, on which she has delivered stellar performance in the last five years.
5. Inform the board that Bhushan was promoted because his initiatives helped the company immensely.

Which of the following sequence of actions is the most appropriate for Ava?

- A 5,2,1
- B 5,4,3
- C 1,2,3
- D 2,1,4
- E 3,4,1

Instructions [39 - 41]

A courier service has offices at three locations: Jamshedpur, Kharagpur and Howrah. Its employees travel by trains from one location to another for pick-up and delivery. It takes 40 minutes for an employee to travel from any railway station to the nearest office (and another 40 minutes for coming back); the paperwork to deliver the parcel at the respective office takes an additional 10 minutes. Assume employees do not waste any time.

Employees have the option to choose front any of the trains, whose timetable is given in the table below. Assume all trains travel on time and there is no time gap between arrival and departure of a train. Further, assume that the employee boards the train as soon as it arrives at the station

Train Numbers →	T101	T102	T103	T104	T105
Jamshedpur Station	6:00	7:30	10:15	15:00	17:00
Kharagpur Station	7:30	9:05	12:05	16:50	18:25
Howrah Station	9:05	11:10	14:30	18:00	20:30
Train Numbers →	T201	T202	T203	T204	T205
Howrah Station	6:30	8:30	10:30	14:30	16:00
Kharagpur Station	8:15	10:40	12:15	16:15	17:55
Jamshedpur Station	10:20	12:35	14:00	17:45	20:00

39. What will be the minimum time required to deliver a parcel at Kharagpur office from Jamshedpur station and come back to Jamshedpur station?

- A 4 hours 25 minutes
- B 5 hours 5 minutes
- C 6 hours 35 minutes
- D 7 hours 30 minutes
- E None of the above

40. An employee, starting from Howrah station, has to deliver one parcel at Kharagpur office and another parcel at Jamshedpur office. His task starts the moment he boards the train at Howrah station, and gets completed immediately after delivering the second parcel.

Which of the following trains should he board at Howrah station to minimize the time required to complete his task?

- A T201
- B T202
- C T204
- D Both Option A and Option B
- E Both Option B and Option C

41. An employee, starting from Kharagpur station, has to deliver one parcel at Howrah office and another parcel at Jamshedpur office. His task starts the moment he boards the train at Kharagpur station, and gets completed immediately after delivering the second parcel.

Which of the following trains should he board at Kharagpur station to minimize the time required to complete the task?

- A T102
- B T103
- C T202
- D T203
- E Both Option B and Option D

Instructions [42 - 43]

Answer questions 42-43 on the basis of information given in the following situation.

Three persons, A, B and C, lived on an island hill. A lived on the top of the island hill, B occupied the middle portion of the hill and C occupied the bottom of the hill. The top of the hill received good rainfall, the main source of water in the hill, though this portion of the hill had few trees. The middle of the hill however was lush with trees offering timber. The bottom of the hill had a good amount of stones and sand. A, B and C assessed

their wealth in terms of ownership of timber, water, stones and sand available in the island hill only. During heavy rains, stones and sand from the top and middle portion of the hill rolled over to the bottom. When the rains stopped, both A and B claimed that some stones rolled down from their lands to the land occupied by C. They wanted the stones back. But C argued that rolling down of stones is a natural process.

42. All three approached a wise man for the settlement of the ownership dispute.

Which of the following is the best option available for the wise man?

- A** Award ownership of stones to A.
- B** Permit A to build a dam so that B and C are deprived of water.
- C** Award ownership of stones to C, as stones rolled down naturally.
- D** Award equal rights to all three over all the resources.
- E** Award A, ownership of water and C, ownership of stones.

43. Six months later, the three realized that the solution offered by the wise man in the previous question wasn't working to the satisfaction of all, because it did not help them find the appropriate value of resources. Therefore, they reverted to status quo ante. After one year, all three of them wanted to construct a house each, on their respective property. Three types of resources-1.Timber, 2.water and 3.stone & sand- were required to build a house. While each had one resource in abundance none of them had all the three in sufficient quantity. They still could not come to an agreement on how to fairly value and use each other's resources to construct the house. They again approached the wise man for advice.

The wise man studied the situation carefully and proposed the following actions:

1. The governing body of the United Federation of Islands, of which the island hill is a part, should take ownership of all the three properties and construct houses for the three.
2. Each person should own one third of each of the resources.
3. The three persons should arrive at the value of resources by trading the resources among them.

Which of the following is the most appropriate in the best interests of A, B and C?

- A** 1 only
- B** 2 only
- C** 3 only
- D** 1 and 2 only
- E** All of 1, 2 and 3

Instructions [44 - 45]

Answer questions 44-45 on the basis of information given in the following situation.

Ramesh, the owner of an auto-component manufacturing company in Sanand, had just returned after attending the funeral of his employee, Pankaj Kumar, who had died of cancer at the age of 35. Pankaj was a hardworking and sincere employee with impeccable performance record. Pankaj was the sole bread earner for his family with negligible savings and was survived by his wife and two school going children. His wife will get around 8 lakh rupees accrued to Pankaj as social security benefit.

A large number of employees wanted the organization to employ Pankaj's wife on compassionate grounds so that she could support her family. Though Ramesh was sympathetic to the demand, he realized that this could set a precedence, where the organization will have to provide jobs for everyone with similar conditions in the future. In fact, only recently, Ramesh had refused a request for a job to the daughter of an employee, who had died a few months before he was to retire.

44. Ramesh formed a committee to look into this matter and the committee came up with the following suggestions:

1. Create a fund to take care of immediate family expenses.
2. Finance the school and college education of his children.
3. Sponsor the vocational education of his wife and subsequently help her find a job.
4. Purchase insurance for all the family members.
5. Request all employees of the organization to contribute towards the welfare of the family.

Which of the following options, from the above suggestions, will be the most sustainable for Pankaj's family?

- A 1 and 2
- B 2 and 3
- C 3 and 4
- D 4 and 5
- E 3 and 5

45. Ramesh, along with senior managers, was in the process of designing a policy to deal with such issues in the future.

Which of the following policy statements will be the least amenable to misuse in the future?

- A The firm should provide one job to any of direct dependents of the deceased employee.
- B The firm should provide one job to any dependent, if employee dies during the service.
- C The firm should provide one job to any dependent, if the family does not have any other support and employee dies during service.
- D The firm should provide help to the dependent family members in pursuing good education and employment.
- E The firm shall constitute a committee, with fair representation from all stakeholders, to decide on the course of action based on specifics of the case.

Instructions [46 - 47]

Madhuri Apte, a busy professional, rents out her studio apartment located in South Mumbai. Since she stays three hours away from the studio apartment, she uses a networked digital lock to monitor the property remotely. Each customer gets a temporary and unique access code for the digital lock that enables them to enter the studio apartment for the duration of stay. The apartment's entrance door can also be opened with physical keys and Madhuri Apte has two such keys in her possession.

Madhuri Apte has employed a cleaner who has a permanent access code to enter the apartment for cleaning every day. She is available only between 15:00 hrs and 17:00 hrs.

Madhuri Apte's apartment caters largely to international customers. A customer typically stays for 3 days, paying an average rent of \$125 per day.

46. While Madhuri Apte's studio apartment gets good feedback on other aspects, many seem unhappy as they found the operation of the digital lock complicated.

Which of the following options is the best for Madhuri Apte in this context?

- A Madhuri should switch to a physical lock.
- B Madhuri, on request, should send one of the physical keys five days ahead of customer's arrival at an extra charge of \$75.
- C Madhuri should request the cleaner to explain the working of the digital access code to customers for an extra charge.
- D Madhuri should do nothing as digital locks shall be the norm in the future.
- E Madhuri should create a video manual on "how to use the digital access code" and e-mail it to the customers before their arrival.

47. Madhuri's apartment received good feedback from the guests, except with respect to the operation of the digital lock. She decided to leave a spare physical key in the house for her guests. Recently some of the guests had forgotten to leave the key behind during checkout. Making a spare key will cost \$500 and will take about 10 days to arrive. She was confused if she should continue leaving the spare key and was looking for a way out.

Which of the following would be the best way out for her?

- A Keep Digital lock as the only option and communicate to customers.
- B Be present during checkout to ensure the key is returned.
- C Request the cleaner to be present during checkout.
- D Send polite reminders to guests before checkout date and on the day of checkout to leave the key behind.
- E Charge security deposit of \$100 which will be forfeited if the keys are not left behind.

Quant

48. Find the value of the expression: $10 + 10^3 + 10^6 + 10^9$

- A 1010101010
- B 1001000010
- C 1001000110
- D 1001001010
- E 100010001010

49. Abdul, Bimal, Charlie and Dilbar can finish a task in 10, 12, 15 and 18 days respectively. They can either choose to work or remain absent on a particular day. If 50 percent of the total work gets completed after 3 days, then, which of the following options is possible?

- A Each of them worked for exactly 2 days.
- B Bimal and Dilbar worked for 1 day each, Charlie worked for 2 days and Abdul worked for all 3 days.
- C Abdul and Charlie worked for 2 days each, Dilbar worked for 1 day and Bimal worked for all 3 days.
- D Abdul and Dilbar worked for 2 days each, Charlie worked for 1 day and Bimal worked for all 3 days.
- E Abdul and Charlie worked for 1 day each, Bimal worked for 2 days and Dilbar worked for all 3 days.



50. If the diagonals of a rhombus of side 15 cm are in the ratio 3:4, find the area of the rhombus.

- A 54 sq. cm.
- B 108 sq. cm.
- C 144 sq. cm.
- D 200 sq. cm.

E None of the above

51. The price of a product is P. A shopkeeper raises its price by X% and then offers a discount of Y% on the raised price. The discounted price again becomes P. If Y is the difference between X and Y, then find X.

A 20

B 25

C 50

D 100

E None of the above

52. A mixture comprises water and liquids A and B. The volume of water is $\frac{1}{3}$ rd of the total mixture and the volume of liquids A and B are in the ratio 5:3. To remove the water, the mixture is passed through a porous medium which completely absorbs the water and partially absorbs liquid A. Altogether this porous medium absorbs 200 ml of the initial mixture. If the ratio of volume of liquids A and B in the residual concentrated mixture becomes 7:9 then find the volume of water absorbed by the porous medium.

A 60 ml

B $\frac{200}{3}$ ml

C 80 ml

D 100 ml

E 120 ml

53. A coin of radius 3 cm is randomly dropped on a square floor full of square shaped tiles of side 10 cm each. What is the probability that the coin will land completely within a tile? In other words, the coin should not cross the edge of any tile.

A 0.91

B 0.5

C 0.49

D 0.36

E 0.16

54. It takes 2 liters to paint the surface of a solid sphere. If this solid sphere is sliced into 4 identical pieces, how many liters will be required to paint all the surfaces of these 4 pieces.

A 2.2 liters

B 2.5 liters

C 3.0 liters

D 4.0 liters

E None of the above

55. Every day a person walks at a constant speed, V_1 for 30 minutes. On a particular day, after walking for 10 minutes at V_1 , he rested for 5 minutes. He finished the remaining distance of his regular walk at a constant speed, V_2 , in another 30 minutes. On that day, find the ratio of V_2 and his average speed (i.e., total distance covered /total time taken including resting time).

A 1:1

B 1:2

C 2:3

D 2:1

E None of the above

56. A boat, stationed at the North of a lighthouse, is making an angle of 30° with the top of the lighthouse. Simultaneously, another boat, stationed at the East of the same lighthouse, is making an angle of 45° with the top of the lighthouse. What will be the shortest distance between these two boats? The height of the lighthouse is 300 feet. Assume both the boats are of negligible dimensions.

A 300 feet

B $\frac{600}{\sqrt{3}}$ feet

C $\frac{300}{\sqrt{3}}$ feet

D 600 feet

E None of the above

57. Two different quadratic equations have a common root. Let the three unique roots of the two equations be A, B and C - all of them are positive integers. If $(A + B + C) = 41$ and the product of the roots of one of the equations is 35, which of the following options is definitely correct?

A The common root is 29.

B The smallest among the roots is 1.

- C One of the roots is 5.
- D Product of the roots of the other equation is 5.
- E All of the above are possible, but none are definitely correct.

58. An antique store has a collection of eight clocks. At a particular moment, the displayed times on seven of the eight clocks were as follows: 1:55 pm, 2:03 pm, 2:11 pm, 2:24 pm, 2:45 pm, 3:19 pm and 4:14 pm. If the displayed times of all eight clocks form a mathematical series, then what was the displayed time on the remaining clock?

- A 1:53 pm
- B 1:58 pm
- C 2:18 pm
- D 3:08 pm
- E 5:08 pm

59. The number of boys in a school was 30 more than the number of girls. Subsequently, a few more girls joined the same school. Consequently, the ratio of boys and girls became 3:5. Find the minimum number of girls, who joined subsequently.

- A 31
- B 51
- C 52
- D 55
- E Solution not possible

60. A girl travels along a straight line, from point A to B at a constant speed, V_1 meters/sec for T seconds. Next, she travels from point B to C along a straight line, at a constant speed of V_2 meters/sec for another T seconds. BC makes an angle 105° with AB. If CA makes an angle 30° with BC, how much time will she take to travel back from point C to A at a constant speed of V_2 meters/sec, if she travels along a straight line from C to A?

- A $0.53(\sqrt{3} - 1)T$
- B T
- C $0.5(\sqrt{3} + 1)T$
- D $\sqrt{3}$
- E None of the above

61. In the final semester, an engineering college offers three elective courses and one mandatory course. A student has to register for exactly three courses: two electives and the mandatory course. The registration in three of the four courses is: 45, 55 and 70. What will be the number of students in the elective with the lowest registration?

- A 35
- B 40
- C 42
- D 45
- E Either B or D

62. X and Y are the digits at the unit's place of the numbers (408X) and (789Y) where $X \neq Y$. However, the digits at the unit's place of the numbers $(408X)^{63}$ and $(789Y)^{85}$ are the same. What will be the possible value(s) of $(X + Y)$?

- A 9
- B 10
- C 11
- D 12
- E None of the above

63. If $2 \leq |x - 1| \times |y + 3| \leq 5$ and both x and y are negative integers, find the number of possible combinations of x and y.

- A 4
- B 5
- C 6
- D 8
- E 10

64. David has an interesting habit of spending money. He spends exactly £X on the Xth day of a month. For example, he spends exactly £5 on the 5th of any month. On a few days in a year, David noticed that his cumulative spending during the last 'four consecutive days' can be expressed as 2^N where N is a natural number. What can be the possible value(s) of N?
- A 5
B 6
C 7
D 8
E N can have more than one value
65. A cone of radius 4 cm with a slant height of 12 cm was sliced horizontally, resulting into a smaller cone (upper portion) and a frustum (lower portion). If the ratio of the curved surface area of the upper smaller cone and the lower frustum is 1:2, what will be the slant height of the frustum?
- A $12 - \sqrt{3}$
B $12 - 2\sqrt{3}$
C $12 - 3\sqrt{3}$
D $12 - 4\sqrt{3}$
E None of the above
66. Two circles with radius $2R$ and $\sqrt{2}R$ intersect each other at points A and B. The centers of both the circles are on the same side of AB. O is the center of the bigger circle and $\angle AOB$ is 60° . Find the area of the common region between two circles.
- A $(\sqrt{3} - \pi - 1)R^2$
B $(\sqrt{3} - \pi)R^2$
C $(\frac{13\pi}{6} + 1 - \sqrt{3})R^2$
D $(\frac{13\pi}{6} + \sqrt{3})R^2$
E None of the above
67. These statements provide data that may help answer the respective questions. Read the questions and the statements and determine if the data provided by the statements is sufficient or insufficient, on their own or together, to answer the questions. Accordingly, choose the appropriate option given below the questions.
- A group of six friends noticed that the sum of their ages is the square of a prime number. What is the average age of the group?
- Statement I: All members are between 50 and 85 years of age.
Statement II: The standard deviation of their ages is 4.6.
- A Statement I alone is sufficient to answer.

- B Statement II alone is sufficient to answer.
- C Either of the statement is sufficient to answer.
- D Both statements are required to answer.
- E Additional information is required.

68. These statements provide data that may help answer the respective questions. Read the questions and the statements and determine if the data provided by the statements is sufficient or insufficient, on their own or together, to answer the questions. Accordingly, choose the appropriate option given below the questions.

Harry and Sunny have randomly picked 5 cards each from a pack of 10 cards, numbered from 1 to 10. Who has randomly picked the card with number 2 written on it?

Statement I: Sum of the numbers on the cards picked by Harry is 5 more than that of Sunny.

Statement II: One has exactly four even numbered cards while the other has exactly four odd numbered cards.

- A Statement I alone is sufficient to answer.
- B Statement II alone is sufficient to answer.
- C Either of the statement is sufficient to answer.
- D Both statements are required to answer.
- E Additional information is required.

Instructions [69 - 71]

Six teams are playing in a hockey tournament where each team is playing against every other team exactly once. At an intermediate stage, the status is as follows:

Teams	No of Matches Played	No of Matches Won	No of Matches Lost	No of Matches Drawn	Goals Scored by the team	Goals Conceded by the team
Team A	2	2	0	0	5	1
Team B	2	1	0	1	5	1
Team C	2	1	0	1	2	0
Team D	2	0	0	2	1	1
Team E	2	0	2	0	1	4
Team F	2	0	2	0	0	7

Notes:

- The team that scores more goals than it concedes wins the match, while if both the teams score the same no. of goals, the match is declared drawn.
- In a match played between Team X and Team Y, if team X scores 1 and concedes none. then the score line would read: Team X – Team Y (1-0)

69. Which of the following matches are yet to be played?

- A Team A - Team B and Team C - Team D
- B Team C - Team D and Team E - Team F
- C Team E - Team F and Team B - Team D
- D Team C - Team D and Team A - Team E

E Team A - Team B and Team E - Team F

70. Which of the following score line is a possible outcome in the tournament?

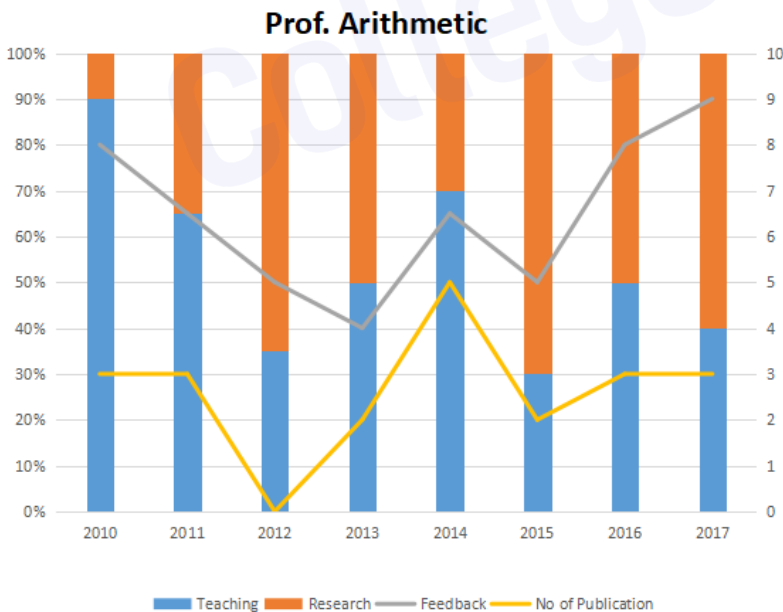
- A Team A - Team D (1-0)
- B Team A - Team E (2-1)
- C Team B - Team D (1-0)
- D Team C - Team F (2-0)
- E None of the above

71. Which of the following score line is not a possible outcome in the tournament?

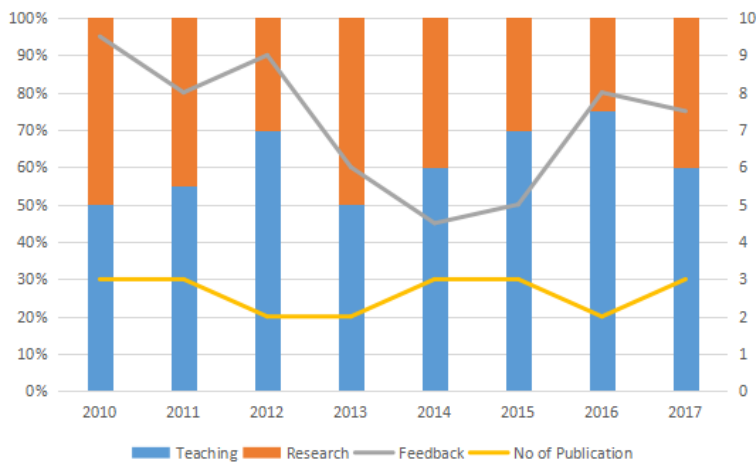
- A Team A - Team F (4-0)
- B Team B - Team F (4-0)
- C Team C - Team D (0-0)
- D Team C - Team E (2-0)
- E All of the above options are possible

Instructions [72 - 74]

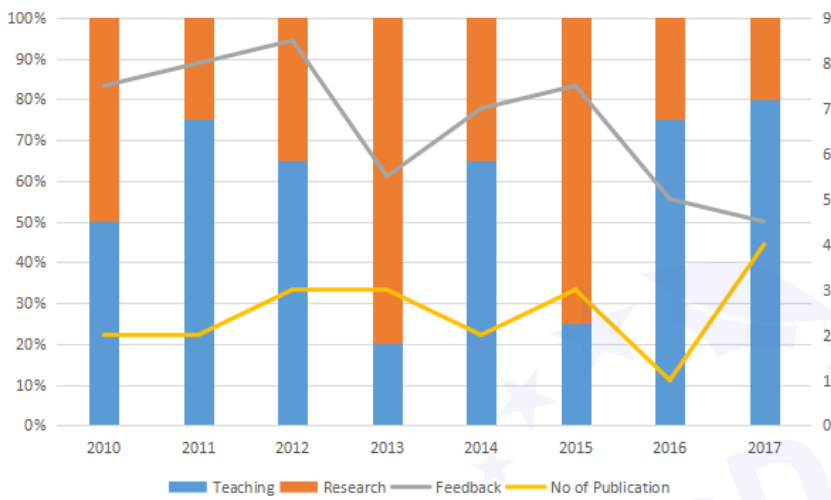
The graph below represent the performance of four professors, across years. measured on four variables: Percentage of time spent on research, teaching, feedback on (a scale of 10. right-hand side) and number of publications (right-hand side). Assume that the cumulative time spent per year on research and teaching activities are sane for all four professors and each of them taught only one course of 90 classroom hours.



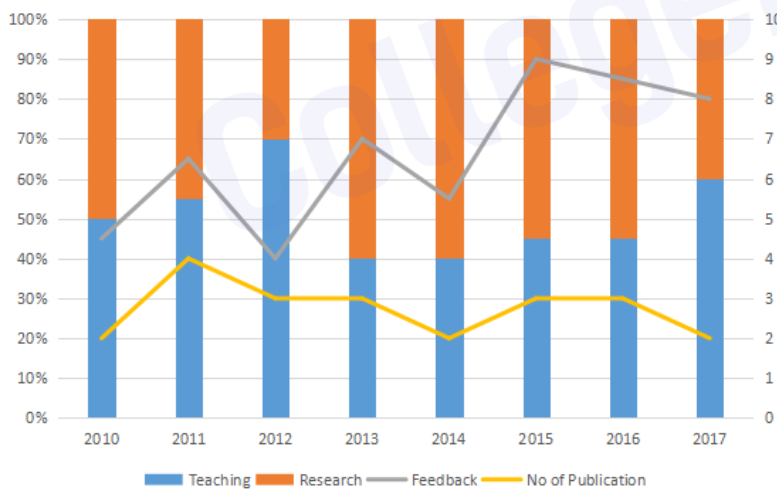
Prof. Algebra



Prof. Geometry



Prof. Calculus



72. Which of the following, shows the maximum year to year percentage growth in feedback?

- A Professor Arithmetic during 2013-2014
- B Professor Algebra during 2015-2016
- C Professor Calculus during 2012-2013
- D Professor Calculus during 2014-2015
- E None of the above

73. Count the number of instances in which "annual decreasing efforts in research" is accompanied with "annual increase in feedback"?
- A 5
 - B 7
 - C 9
 - D 11
 - E None of the above
74. Research efficiency is the ratio of cumulative number of publication for a period of 3 years to the cumulative number of hours spent on research activity in those 3 years. Which of the following professors is the least efficient researcher for the period 2015 to 2017?
- A Professor Arithmetic
 - B Professor Algebra
 - C Professor Geometry
 - D Professor Calculus
 - E Cannot be determined as research is expressed in percentage

General Knowledge

75. Which of the following is not a Cryptocurrency?
- A Bitcoin
 - B Laxmicoin
 - C Ethereum
 - D Paypal
 - E Litecoin
76. Who won the Nobel Prize for Economics in 2017?
- A Richard Thaler
 - B Raghuram Rajan
 - C Jean Tirole
 - D Bengt Holmstrom

E Oliver Hart

77. What is Showrooming?

- A An individual browses the sites of e-retailers for products and then ends up purchasing the product from some brick and mortar store.
- B An individual visiting a brick and mortar store to have a look and feel of the product and then ordering the same product through some e-retailers.
- C An individual visiting a big box retailer to have a look and feel of the product and then purchasing the same product from nearby kirana (Mom and Pop) store.
- D An e-retailer using the kirana (Mom and Pop) stores to keep its stock of goods and meets the orders in the nearby localities.
- E None of the above

78. Which of these have not been included in Government of India Act, 1935?

- A Separation of Burma from India
- B Detachment of Aden from India to establish it as a crown colony
- C Splitting of Bihar and Orissa as two separate provinces
- D Separation of Khyber Pakhtunwala from India
- E Separation of Sindh from Bombay presidency

79. What is Article 35 a: of Indian Constitution?

- A An article empowering Jammu and Kashmir state's legislature to define permanent residents
- B An article empowering Arunachal Pradesh state's legislature to define permanent residents
- C An article providing autonomous status to Jammu and Kashmir
- D An article providing autonomous status to Arunachal Pradesh
- E An article providing autonomous status to Manipur

80. Which of the following is not a landlocked country?

- A Kenya
- B Niger
- C Swaziland
- D Chad
- E Mali

81. Which of the following options is the correct list of core industries as defined by IIP?

- A Shipping, Coal, Natural Gas, Pharmaceuticals
- B Coal, Natural Gas, Crude Oil, Fertilizers
- C Coal, Steel, Cement, Information Technology
- D Refinery, Fertilizers, Crude Oil, Telecommunication
- E Coal, Steel, Crude Oil, Banking

82. Match the surnames of head of states (former or current) to the countries.

Surname of the leader	Country of the leader
a. Kirchner	i. Brazil
b. Lula	ii. Argentina
c. Deng	iii. Venezuela
d. Erdogan	iv. China
e. Chavez	v. Turkey

- A a-i, b-ii, c-iii, d-iv, e-v
- B a-ii, b-i, c-iv, d-v, e-iii
- C a-ii, b-iii, c-i, d-v, e-iv
- D a-iv, b-i, c-ii, d-v, e-iii
- E a-iv, b-ii, c-iii, d-i, e-v

83. Match the following Indus Valley sites to the states:

Indus Valley Site	State
a. Harappa	i. Haryana
b. Lothal	ii. Gujarat
c. Chanhudaro	iii. Punjab (Pakistan)
d. Banawali	iv. Sindh (Pakistan)

- A a-iii, b-ii, c-iv, d-i
- B a-ii, b-i, c-iv, d-iii
- C a-iii, b-ii, c-i, d-iv
- D a-iv, b-i, c-ii, d-ii
- E a-iv, b-ii, c-iii, d-i

84. Which of the following Indian business houses (conglomerate) started its operation with companies like Philips Carbon Black, Asian Cables, Agarpara Jute and Murphy(India)?

- A Aditya Birla
- B C.K. Birla
- C RPG Enterprises
- D K.K.Birla
- E Essar

85. Which of the following spacecrafts, in 2017, plunged into the planet it was exploring?

- A Apollo-8
- B Voyager-2
- C Voyager-1
- D Cassini
- E Pioneer-11

86. The Time magazine's person of the year 2017 is:

- A Donald Trump
- B Emmanuel Macron
- C The Peace Makers
- D Silence Breakers
- E Sarah Huckabee Sanders

87. Which of the following is NOT one of the World Heritage Sites?

- A Mountain Railways of India
- B Jim Corbett National Park
- C Khangchendzonga National Park
- D Historic City of Ahmedabad
- E Great living Chola temples

88. Match the Music festivals to their states:

Music Festival	State
a. Hornbill	i. Arunachal Pradesh
b. Ziro	ii. Nagaland
c. Escape	iii. Maharashtra
d. Enchanted Valley	iv. Rajasthan
e. Magnetic Fields	v. Uttarakhand

- A a-iii, b-ii, c-iv, d-i,e-v
- B a-ii, b-i, c-iv, d-iii,e-v
- C a-ii, b-i, c-v, d-iii,e-iv
- D a-v, b-i, c-iii, d-ii,e-iv
- E a-iv, b-ii, c-iii, d-i,e-v

89. If a company encourages its employees to use its own products to understand customers' perception, then the company is engaging in:

- A Dogfooding
- B Lionhunting
- C Moonlighting
- D Spacetraveling
- E Bikeriding

90. Which of the following is not a video streaming service?

- A Netflix
- B Primevideo
- C Youtube
- D Roku
- E Itunes

91. Which of the following is not a French overseas territory?

- A New Caledonia
- B Guadeloupe
- C Guam
- D Reunion
- E Mayotte

92. Match the rockets/missions to their space agencies:

Rocket / Mission	Space Agency
a. Falcon 9	i. ISRO
b. Mars Rover	ii. ESA
c. Exo Mars trace gas Orbiter	iii. NASA
d. Yinghuo	iv. SpaceX
e. Mangalyaan	v. CNSA

- A a-i, b-ii, c-iii, d-iv, e-v
- B a-iv, b-iii, c-v, d-ii, e-i
- C a-iv, b-iii, c-ii, d-v, e-i
- D a-v, b-iv, c-iii, d-ii, e-i
- E a-iii, b-iv, c-ii, d-v, e-i

93. Who is the independent athlete to win a gold medal at 2016 Summer Olympics?

- A Abdullah Al-Rashidi
- B Fehaid Al-Deehani
- C Jasna Sekaric
- D Yulia Stepanova
- E Darya Klishna

94. Which of the following mobile manufacturing companies DOES NOT have its headquarters in China?

- A Xolo
- B Xiaomi
- C Vivo
- D Oppo
- E Lenovo

95. Name the only Indian (or from Indian origin) to win Abel Prize?

- A Manjul Bhargava
- B Srinivasa Ramanujam
- C S. R. Srinivasa Varadhan
- D Mahan Maharaj (Swami Vidyanathananda)
- E Harishchandra Mehta

96. What is a Hundi?

- A It is a financial instrument
- B It is a utensil used for marriage functions
- C It is a marriage ritual in Tibetan society
- D It is Hyundai's earlier name

E It is the name of the last Hun that ruled China

97. Windhoek, Suva and Ulaanbaatar are the capital cities of:

- A Mongolia, Hungary, Romania
- B Namibia, Fiji and Mongolia
- C Ghana, Fiji, Uruguay
- D Guyana, Fiji, Mongolia
- E Namibia, Guyana, Ghana

98. Which of the following is the most recent club to join ISL?

- A FC Goa
- B Chennaiyin FC
- C North East United FC
- D Jamshedpur FC
- E Delhi Dynamos FC

99. Match the brands with the companies:

Brand	Company
a. Gillete	i. Godrej
b. Surf Excel	ii. ITC
c. Saffola	iii. Hindustan Unilever
d. Aashirvaad Atta	iv. P&G
e. Good Knight	v. Marico

- A a-i, b-ii, c-iii, d-iv, e-v
- B a-iv, b-iii, c-v, d-ii, e-i
- C a-iv, b-iii, c-ii, d-v, e-i
- D a-v, b-iv, c-iii, d-v, e-ii
- E a-iv, b-i, c-ii, d-v, e-iii

Answers

English

1.B	2.E	3.D	4.E	5.A	6.C	7.B	8.B
9.E	10.D	11.B	12.E	13.D	14.A	15.C	16.D
17.D	18.A	19.C	20.A	21.B	22.E	23.E	24.C
25.C	26.A						

Decision Making

27.E	28.A	29.C	30.A	31.B	32.A	33.D	34.D
35.C	36.C	37.E	38.A	39.B	40.E	41.C	42.D
43.C	44.B	45.E	46.E	47.E			

Quant

48.D	49.E	50.E	51.D	52.E	53.E	54.D	55.A
56.D	57.C	58.B	59.C	60.C	61.E	62.B	63.E
64.B	65.D	66.C	67.A	68.D	69.E	70.B	71.A
72.C	73.C	74.A					

General Knowledge

75.D	76.A	77.B	78.D	79.A	80.A	81.B	82.B
83.A	84.C	85.D	86.D	87.B	88.C	89.A	90.D
91.C	92.C	93.B	94.A	95.C	96.A	97.B	98.D
99.B							

Collegedekho

Explanations

English

1. B

In the passage the author reiterates the fact that studying history widens our vision and the penultimate sentence of the passage states that by studying the accidental chain of events that led us here, we realise how our thoughts and dreams took shape and we begin to think and dream differently. Hence, if every street in India were to display a plaque that lists all its previous names, it would help us realise how our very own thoughts and dreams took shape and thereby, help us begin to think and dream differently. Therefore, only option B would be the most appropriate for the citizens to learn history. Options A and C restrict themselves only to British names of streets and do not speak about the history of India prior to British rule and hence they can be eliminated. Options D and E fail to explain why it would be appropriate for citizens to learn history so they can be eliminated to.

2. E

Refer to lines 9 and 10 of the passage - "Scholars in all fields....This is especially true of history" - and the last four lines of the passage, from which it can be understood that studying history helps us to think and dream differently and it gives us more options. Hence it can be said that option E is closest to the main idea which the author intends to convey. Option A can be understood from the passage but it does not bring out the main idea of the passage. Options B, C and D are too generalised statements.

3. D

Statements 4 and 6 are contradicted by the lines 4 to 6 of the passage. Statement 3 does not contradict the author's view because the author encourages the study of history, as studying history broadens our perspective. Hence it cannot be categorically stated that studying the past leads to dismal performance. Hence option D is the correct answer.

4. E

Refer to the lines 5 and 6 of paragraph 2 "Peirce defines a belief subjectively as something of which we are aware and which appeases the doubt." From this it can be inferred that a doubt may lead to a belief. The word "subjectively" suggests that a doubt may lead to a belief. Hence it cannot be said categorically that a doubt always leads to a belief.

5. A

It is stated in the passage that once we achieve a belief, we can take the necessary action to reach our destination. From this it is explicit that a candidate believes that he/she has faith in the application process and that is the reason why he/she has applied for XAT. A candidate's trust in the application process leads him or her to apply for the exam that is the main reason which prompts him or her to apply for the exam. Hence option (A) is the best answer to this question.

6. C

The word "dilettantism" means amateurism or inexpertness. Pierce acknowledges that some people like to think about things or argue about them without caring to find a true belief, but he asserts that such dilettantism does not constitute thought. By referring to people who don't care to find out a true belief, it can be understood that Pierce is referring to people who indulge in mere guess work. Hence, from the given options the word "guess" is closest in meaning to the word dilettante.

7. B

It is stated in the second paragraph of the passage that Pierce acknowledges that some people like to think about things or argue about them without caring to find a true belief, but he asserts that such dilettantism does not constitute thought. From this it can be inferred that a person thinks that he/she has to keep awake for

twenty hours in a day to score well in an examination, but is awake for only fifteen hours, that the person is merely holding a thought without caring to find a true belief. Hence option B is the appropriate answer to this question.

8. B

The author argues throughout the passage that materialists cannot solve the hard problem of consciousness, which is backed by Galileo's observations. Option A is a minor point. Option C is not true according to the passage. Option D is far-fetched. Option E has been disapproved in the passage.

9. E

"The problem is that no one knows why these correlations hold. It seems perfectly conceivable that ventromedial hypothalamus stimulation could do its job in the brain without giving rise to any kind of feeling at all. No one has even the beginnings of an explanation of why some physical systems, such as the human brain, have experiences. This is the difficulty David Chalmers famously called 'the hard problem of consciousness'."

Thus, it can be inferred that the questions related to the human brain having experiences are the hard problem of consciousness.

Now, out of the above options, option B and E comes close.

But since option E is framed as a problem while B is a general statement,

The correct option is E.

10. D

Option A is denied by 'Explaining complex behaviour in an important scientific endeavor. But the hard problem of consciousness cannot be solved by changing the subject'. Option B is denied by 'But the hard problem of consciousness cannot be solved by changing the subject'. Option C is denied by 'philosophers have declared that certain phenomena are too special to be explained by physical science... only to be subsequently proven wrong by the relentless march of scientific progress'. Option E is denied by 'It is sometimes said that consciousness is a mystery in the sense that we have no idea what it is. This is clearly not true'. Option D is supported by the last sentence of the passage! Refer to 'I created physical science by taking consciousness out of the physical world'

11. B

The paragraph begins with the question statement and justifies it towards the end of the passage - 'not in accord with its own (labor's) will.... but in accord with the movement (will) of capital'. Option A and D are untrue. C and E are out of context. Basically, the passage argues that while there are similarities between labor and capital, they are very different, because capital controls labor.

12. E

Option E is supported by 'living labor which is purchased by the capitalist.... That portion.... is the portion.... upon which the latter (labor) subsists'.

13. D

Option D is supported by 'Before it is anything else... the working class is the... part which will set in motion the process that yields to the total capital its increment of surplus value. As such, the working class is first of all, raw material for exploitation'. Option A is not substantiated, it could mean anything under the sun. Option B does not mention capital accumulation. Option c is out of context. Option E is not true, the passage mentions 'working class is....raw material for exploitation' , not 'capital'.

14. A

3-1-4 forms a logical sequence as the "its" in 1 refers to the hyperspace theory mentioned in 3. The ten dimensions mentioned in 1 are explained in brief in 4.

5-2 forms a pair as 2 explains the popularity of the theory among the scientific community even though it has not been proven in a laboratory, as mentioned in 5.

Hence, the answer is option A.

15. **C**

2-1-4 forms a logical sequence as it tells us to examine why the perpetrators may have committed the crime and the moral danger it puts us in.

3-5 forms a pair as it mentions the victims of a crime.

Hence, option C is the answer.

16. **D**

Arti's long term goals include working towards improving the lives of under- represented populations. It was natural that she would search for a college that was dedicated to producing compassionate (tender or gentle or caring) leaders. She as any other student would have done - choose her college since its mission was similar to hers. Thus, option D is the correct choice. The other choices talk about cost, personalised attention from professors etc and are, therefore, irrelevant.

17. **D**

The sentence is written in a negative tone. Hence, option C is eliminated.

In option A, small and insignificant have similar meanings and thus, won't be used together. Hence, A is eliminated.

In option B, the word "productivity" is not suitable for the given sentence, as the sentence indicates some form of payment made for education. Hence, option B is eliminated.

Among options C and D, D is most suitable as for the predictor to be useless/irrelevant; it has to be random and not predictable.

18. **A**

The first blank should be either "fewer" or "less". Since gold is uncountable here and the army is mentioned as 10000(countable), the adjective "less" will be used with gold and "fewer" with the army. Hence, options B, D and E are eliminated.

"some time" is used when a period of unspecified time is mentioned. Hence, it will be used in the third blank.

"sometime" is used to denote an uncertain time in past or future. Hence, it will be used for the fourth blank.

Hence, the answer is option A.

19. **C**

'unique from' is the incorrect form and 'different from' is the correct expression to be used. Therefore, options A and D are eliminated. Option E is incorrect as the conjunction 'but' conveys the idea correctly. Among the options B and C, option B is incorrect as the '...but he hadn't expected no criticism from her' is illogical.

Answer is option C.

20. **A**

The poem explicitly mentions 'dissolving the will' and 'escaped the question of free will and fate', hence one can safely deduce that all the three words in question are used more or less synonymously. The three words arise in the context of answering the question 'what is love?', hence one can garner that one has to dump 'will', 'free will', and 'fate' to answer this question. Option A is further strengthened by - 'Be foolish in love, because love is all there is'.

21. **B**

Option A is eliminated by 'Be clear like mirror holding nothing'; 'profundity of knowledge' is thus irrelevant. Option C is eliminated by 'Be pure emptiness'; 'freedom from emptiness' would thus be antonymous. Option D is eliminated by 'Contain all human faces in your own without any judgement of them'; 'being a fine judge of human quality' is thus antonymous to the received wisdom. Option E is neglected by 'this love path has no expectations'. 'Silence is all' fortifies option B.

22. E

The relation can be depicted as follows(Variables -----> Function):

The velocity of the wind and of fetch, the length of the surface of the water subject to those winds -----> Size of oceanic waves

Size of the waves and the shape of the sea bottom ----->The average impact of waves against a coastline

The average impact of waves against a coastline, the geologic composition of the coastline -----> The degree of erosion on the coastline

Since only option E is following the flow, the correct option is E.

23. E

The central idea of the given paragraph is that Indian religious and ethical space is different from that of the western countries. The remaining part of the paragraph explains how Indian religious works placed emphasis on the concept of Dharma. The author is trying to promote Dharma as something unique to the Indian culture. Therefore, any idea that challenges this assumption will make the paragraph redundant. Option E states that the western culture also places emphasis on human values and dharma, taking away the uniqueness of Indian culture. Therefore, option E is the right answer.

24. C

Option A: Since a group of employees attended the program, a change in the openness of only one participant does not give much incentive to the CEO to give the approval. Thus, this is not the correct option.

Option B: Although this option does speak good about the programme, this does not give any consolidation to the efficacy of the program. Thus, this is not the correct option.

Option C: Since this option provides consolidation to the efficacy of the program, this is the correct answer.

Option D: Giving his CEO an ultimatum is not a good idea for the approval. Thus, this is not the correct option.

Option E: Emotional appeal will have a similar effect as that of the previous option. Thus, this is not the correct option.

Thus, the correct option is E.

25. C

Statement 1: This is a distorted inference drawn from the passage and hence is not a correct statement.

Statement 2: Since vocalists are not inside the scope of the paragraph, this is not a correct statement.

Statement 3: *"Unlike brain games, playing an instrument is a rich and complex experience. This is because it's integrating information from senses like vision, hearing, and touch, along with fine movements."*

From the above lines, it can be inferred that playing brain games does not integrate various senses and movements as much as playing a musical instrument.

Thus, this is a correct statement.

Statement 4: This is a distorted inference as it is nowhere mentioned or implied that the five senses are critical in the business world and hence is not a correct statement.

Thus, the correct option is C.

26. A

The last part of the sentence, "made him talk back," indicates that he considered himself a calm person. Among the options, nonchalant means calm and relaxed. Thus, the first blank will be filled with "nonchalant".

Thus, the possible answers are A and E.

By the context of the passage, the last blank must have a word meaning a feeling of emptiness or dissatisfaction. Thus, the perfect choice for the blank is "ennui".

Hence, the answer is option A.

Decision Making

27. E

We cannot predict the future performance using the past records. Therefore, any option that stresses on the track record to allay the fear can be eliminated.

Options A, B, C, and D use the past performance as a tool to assert that the person will perform well. Therefore, we can eliminate these options. Only option E states that Sayed has an option to exclude the new joinee's performance. Even if Palani fails to perform, Sayed will not have to bear the brunt for the same. Therefore, option E will encourage Sayed to provide Palani with a chance and hence, option E is the right answer.

28. A

Option A provides a justification why Palani's expenses are on a higher side. Also, the other options involve a level of subjectivity. The truth in the claims cannot be verified in the other options and hence, a decision cannot be arrived. Option A talks about a quantifiable reason and hence, Satyendar can make a decision. Therefore, option A is the right answer.

29. C

To make a decision, there must be a factor that encourages/discourages the distribution of territories to his subordinates.

Options A shows that Sayed has been a good performer, and can be allotted a fair share of the territories. Option B shows that Sayed is in a tight spot, and hence can be allowed to focus more on his territory and not assign him significantly more territories.

Similarly, Options D and E provide info as to how the performance of Godwin has been. They would help Satyender to decide to assign more territories or fewer territories according to the performance of Godwin over the past years.

Note that C provides no such factor of consideration. It merely states that there is a new territory that faces stiff competition. What about the other territories, what should be their distribution? Even we are unsure about this territory. Let us say Palani's performance is poor. But should this territory be assigned to Godwin or Sayed, who is a better performer? Hence, C does not lead us anywhere.

30. A

As per the information provided in the question we need to look for a case that provides the required assurance of how the current and the future prospects may turn out.

Since a financial institution that acts as an independent researcher has a very positive outlook towards the loss-making company's prospects in the future. This provides the required assurance for not just Sudarshan but for all the key stakeholders. Hence is very crucial to understand how things stand currently for the company.

It will be appropriate that it was handed over to professionals but unless any results are provided from the professional advice this might not be significant enough to assure Sudarshan.

The huge success in one industry cannot be translated or expected to compensate for the loss in the other two industries.

We are not aware if the replaced employees are incompetent or poorly performing employees. Hence this does not hold significance in assuring the required confidence.

If people are leaving at a much higher rate compared to the industry average then this becomes a matter of concern and hence is not correct.

31. B

We need to find the option where we can say that the senior employees are misguiding Sudarshan, which is best explained in option B. The senior employees were given respected positions that means they were being valued which contradicts the senior person's claims. The other options can be eliminated.

32. A

The leakage of information should be prevented. Sudharsan Lal is supposed to know the proceedings of the company but it should be through a formal communication channel.

We can eliminate option B since it proposes an immature course of action.

Option C can be eliminated as well since it proposes no step to curb the leak of information.

We can eliminate option D since it does not propose any course of action.

Option E can be eliminated as well since it spoils the relationship between him and the business heads. Also, it fails to find out the person responsible for leaking the information and even if someone is fired, there is no way to know whether Chhaganlal has fired the right person.

Chhaganlal should request Sudharsan to be patient till he gives out the information. This will ensure that Sudharsan will not have the need to depend on second-hand information and hence, will address the root cause of the issue. Therefore, option A is the right answer.

33. D

Emily and Rose together are more powerful than Jonathan. By attacking Jonathan they will be able to engage him in war and delay by diverting his resources towards war. Thus option D would delay Jonathan's plan.

34. D

Rose and Emily would not help Jonathan in annexing K as it may make him stronger. Hence, neither option A nor B can be the answer. It is not indicated if Rose and Emily have any intentions of attacking Jonathan. Even if a rift is created between Emily and Rose, they would realise the intentions of Jonathan when he attempts to annex K. Thus, Jonathan should secretly double his army so that neither Emily nor Rose would know about it. Hence, option D is the best option.

35. C

Eliminating the tribes is not a viable option as it will further aggravate the problem so option B can be eliminated. Option A cannot be the answer as Jonathan may become a threat in future. Option D further aggravates the problem. Option E does not help in controlling the tribes. Option C is the best option for King Summer Sault to focus on economic development.

36. C

The goal is to find a solution that will immediately stem the falling stock prices.

Here, the options A, D and E will not help and can even exacerbate the problem and hence are eliminated.

Option B could help, but the committee's investigation might take a considerable time, and we want an immediate solution.

Option C will show the consumers that the company prioritises quality. Their openness to letting people scrutinise the relevant documents will show that the company has nothing to hide.

Hence, this option has the best chance of solving the problem and is the answer.

37. E

We need a solution that will show all the employees that the decision to exonerate Bhushan was based on facts and his merit and not nepotism.

Options A, C and D, will have the opposite effect, as doing nothing and sacking the employees will increase the people's suspicions and give rise to even more rumours.

Option B suggests forcing Bhushan to resign temporarily, but doing so will show that Ava does not have confidence in the committee's decision.

Option E is the best among these. A town hall meeting, open to all employees, will show that the committee and Ava are not afraid to answer any questions that may arise and demonstrates their willingness to be transparent about their decision, with their employees.

Hence, option E is the answer.

38. A

Here we require actions that show that some action is being taken against the accused and that someone takes responsibility for letting the wrongdoings happen.

Response 3's suggestion of denying all the financial irregularities will cause suspicions to rise among the employees regarding the morals of Ava and the presumed nepotism that led to Bhushan's appointment and promotion.

Response 4 tries to avoid blame by stating the good financial performance of the company.

Thus, these two options will be eliminated.

Responses 1 (taking responsibility), 2 (taking action against the accused) and 5 (reason for Bhushan's appointment and promotion) are the most appropriate actions.

Thus option A, containing all these responses, is the correct answer.

39. B

Let's consider the case where the employee takes the T102 train.

(S) He leaves the Jamshedpur station at 7:30 and arrives at Kharagpur station at 9:05. It takes them $40+10+40 = 90$ mins to deliver the package and returns to the station at 10:35.

(S) He then takes the T202 train from the Kharagpur station and arrives at the Jamshedpur station at 12:35.

Thus, the total journey takes place between 7:30 and 12:35, i.e., 5 hours and 5 minutes.

Hence, option B is the answer.

40. E

T201: Howrah station to Kharagpur station (6:30 - 8:15) --> Delivery (8:16 - 9:45) --> Kharagpur to Jamshedpur via T202 (10:40 - 12:35) --> Delivery (12:35 - 13:25). Thus, a total of 6hr 55mins.

T202: Howrah station to Kharagpur station (8:30 - 10:45) --> Delivery (10:46 - 12:10) --> Kharagpur to Jamshedpur via T203 (12:15 - 14:00) --> Delivery (14:01 - 14:50). Thus, a total of 6hr 20mins.

T204: Howrah station to Kharagpur station (14:30 - 16:15) --> Delivery (16:16 - 17:45) --> Kharagpur to Jamshedpur via T205 (17:55 - 20:00) --> Delivery (20:01 - 20:50). Thus, a total of 6hr 20mins.

Thus, T202 and T204 require the least amount of time.

Hence, option E is the answer.

41. C

T102: Kharagpur to Howrah station (9:05 - 11:10) --> Delivery (11:11 - 12:40) --> Howrah to Jamshedpur station (14:30 - 17:45) via T204 --> Delivery (18:35). Thus, a total of 9hr 30mins.

T103: Kharagpur to Howrah station (12:05 - 14:30) --> Delivery (14:31 - 16:00) --> Howrah to Jamshedpur station (16:00 - 20:00) via T205 --> Delivery (20:50). Thus, a total of 8hr 45mins.

T202: Kharagpur to Jamshedpur station (10:40 - 12:35) --> Delivery (12:35 - 14:05) --> Jamshedpur to Howrah station (15:00 - 18:00) via T104 --> Delivery (18:50). Thus, a total of 8hr 10mins.

T203: Kharagpur to Jamshedpur station (12:15 - 14:00) --> Delivery (14:01 - 15:30) --> Jamshedpur to Howrah station (17:00 - 20:30) via T105 --> Delivery (20:30 - 21:20). Thus, a total of 9hr 05mins.

Thus, T202 requires the least amount of time.

Hence, option C is the answer.

42. **D**

The dispute is regarding the ownership of stones. Neither option A nor C is a fair decision as not every stone is rolled down. Moreover, some of the stones rolled down form B's region also. Option B is irrelevant as there is no issue with ownership of water and neither there is a necessity to cause hardship to B. Rolling down of stones does not lead to transfer of ownership. Thus option D is the best among the given options.

43. **C**

Option C is the best option as they have to optimize the resources based on the individual demand.

Option A all the three lose control over the problems.

Option B again may not lead to sufficiency for construction of each of the house.

44. **B**

Suggestion 5 cannot be a part of the correct solution as the employees themselves have requested the organisation for help.

Suggestion 4 is the matter concerning the private life of the employee family.

Suggestion 1 is to set up a precautionary fund covering expected expenditure for all such employees, which may be costly.

45. **E**

When all the stake holders are involved, there would be checks and balances and hence the scope of misuse is the least. Therefore, option E is the best choice here.

46. **E**

Switching to physical lock will be a retrograde step. Digital lock provides Madhuri with an option to monitor her apartment remotely and a physical lock will not allow her to do the same. Therefore, we can eliminate option A.

We can eliminate option B too since it suffers from the same flaw as option A.

It has been given that the cleaner will be available only for a limited period every day. Therefore, the cleaner cannot be asked to explain the working of digital lock and hence, we can eliminate option C as well.

Madhuri cannot afford to be indifferent. Doing so will result in unsatisfied customers. Therefore, we can eliminate option D as well.

Option E states that Madhuri should educate her customers using a video on how to operate the digital lock. Releasing such a tutorial will ensure that the grievance of the customers get redressed. Also, Madhuri can continue using the digital lock as well. Therefore, option E is the right answer.

47. **E**

Option A is limiting the choices, not the best solution in this case.

Option B is incorrect as it increases operational effort for Madhuri.

Option C is ruled out as cleaner cannot stay whenever guests leave the apartment.

Option D is not an effective solution as customers may still not leave their keys behind despite the polite reminders given to the customers.

Option E addresses the concerns that customers don't leave the keys behind, as well gave an option to recover a portion of the cost, if such incidents still occur.

Option E is correct.

Quant

48. **D**

$$10 + 10^3 + 10^6 + 10^9 = 10 + 1000 + 1000000 + 1000000000$$

$$= 1001001010$$

Therefore, option D is the right answer.

49. E

Let us assume the amount of work to be finished = LCM of {10, 12, 15, 18} = 180 units.

The amount of work which Abdul can complete in a day = $\frac{180}{10} = 18$ units.

The amount of work which Bimal can complete in a day = $\frac{180}{12} = 15$ units.

The amount of work which Charlie can complete in a day = $\frac{180}{15} = 12$ units.

The amount of work which Dilbar can complete in a day = $\frac{180}{18} = 10$ units.

It is given that 50 percent of the total work gets completed after 3 days. Therefore, we can say that 90 units of work was completed in 3 days.

Let us check options.

Option A: Each of them worked for exactly 2 days.

In this case amount of work completed = $2*(10+15+12+18) = 110$ units.

Option B: Bimal and Dilbar worked for 1 day each, Charlie worked for 2 days and Abdul worked for all 3 days.

In this case amount of work completed = $1*(10+15)+2*(12)+3*(18) = 103$ units.

Option C: Abdul and Charlie worked for 2 days each, Dilbar worked for 1 day and Bimal worked for all 3 days.

In this case amount of work completed = $1*(10)+3*(15)+2*(18+12) = 115$ units.

Option D: Abdul and Dilbar worked for 2 days each, Charlie worked for 1 day and Bimal worked for all 3 days.

In this case amount of work completed = $1*(12)+3*(15)+2*(18+10) = 113$ units.

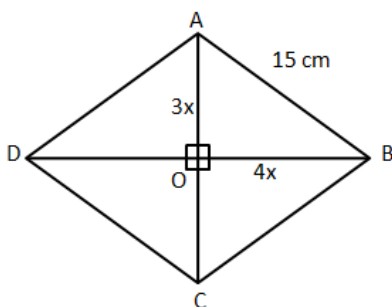
Option E: Abdul and Charlie worked for 1 day each, Bimal worked for 2 days and Dilbar worked for all 3 days.

In this case amount of work completed = $1*(18+12)+2*(15)+3*(10) = 90$ units.

Therefore, we can say that option E is the correct answer.

50. E

It is given that the length of the diagonals are in 3:4. Let '3x', and '4x' be the lengths of semi-diagonals as shown in the figure. We know that diagonals of a rhombus intersect each other perpendicularly.



In right angle triangle AOB,

$$AB^2 = AO^2 + BO^2$$

$$\Rightarrow AB = \sqrt{AO^2 + BO^2}$$

$$\Rightarrow AB = \sqrt{(3x)^2 + (4x)^2}$$

$$\Rightarrow 15 = 5x$$

$$\Rightarrow x = 3\text{cm.}$$

Therefore, we can say that the length of diagonals = $6x$ and $8x$ or 18 and 24 cm.

Hence, the area of the rhombus = $\frac{1}{2} * 18 * 24 = 216 \text{ cm}^2$. Therefore, option E is the correct answer.

51. D

Let the cost price of the article be Rs.100.

The shopkeeper raises the price by $x\%$ and then decreases it by $y\%$.

As a result, he reaches the cost price of the article.

Also, it has been given that y is the difference between $y\%$ and $x\%$.

$$y = x - y$$

$$2y = x$$

We know that $(1 + 2y)(1 - y) * 100 = 100$

$$(1 + 2y)(1 - y) = 1$$

$$1 - y + 2y - 2y^2 = 1$$

$$2y^2 - y = 0$$

$$2y = 1$$

$$y = 1/2 \text{ or } 0.5$$

$$x = 2y$$

$$\Rightarrow x = 1 \text{ or } x = 100\%$$

Therefore, option D is the right answer.

52. E

Liquids A and B are in the ratio 5:3. The volume of water is one-third the total mixture.

Let us assume the volume of the total mixture to be $24x$.

Volume of liquid A = $10x$

Volume of liquid B = $6x$

Volume of water = $8x$

The mixture is passed through some medium that absorbs water completely and some quantity of liquid A.

Water absorbed = $8x$

Let the amount of liquid A absorbed be y .

$$8x + y = 200$$

$$\Rightarrow y = 200 - 8x \text{ ----(1)}$$

It has been given that $(10x - y)/6x = 7/9$

Substituting (1), we get,

$$(10x - 200 + 8x)/6x = 7/9$$

$$(18x - 200)/6x = 7/9$$

$$162x - 1800 = 42x$$

$$120x = 1800$$

$$\Rightarrow x = 1800/120$$

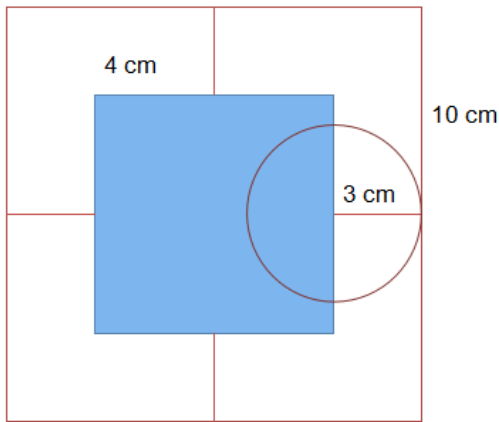
Amount of water absorbed = $8 * 1800/120 = 120$ ml.

Therefore, option E is the right answer.

53. E

The radius of the coin is 3 cm.

So, if the coin should not cross the edge, the centre of the coin should at least be 3 cm away from the edge of the tile.



In the given diagram the center of the circle should lie in the blue region. As we can see, the area in which the centre of the coin can fall is a square of side $10 - 3 - 3 = 4$ cm.

Therefore, the area in which the centre of the coin can fall is 16 square cm.

Area of the tile = 100 square cm.

Required probability = $16/100 = 0.16$.

Therefore, option E is the right answer.

54. **D**

2 litres are required to paint the surface of a solid sphere.

Surface area of the solid sphere = $4\pi * r^2$

Now, the solid sphere is cut into 4 identical parts. This is possible only when the sphere is cut into 4 quarter spheres.

After making the first cut, 2 hemispheres will be formed. 2 circles of area $\pi * r^2$ will get exposed in addition to the surface area of the sphere (the base surface of the bottom hemisphere and the base of the top hemisphere).

Now, another perpendicular cut will be made along the diameter of the sphere. 2 additional surfaces will get exposed again (one on left hemisphere and the another on the right hemisphere).

$$\begin{aligned} \text{Area exposed after making 4 identical pieces} &= 4 * \pi * r^2 + 2 * \pi * r^2 + 2 * \pi * r^2 \\ &= 8 * \pi * r^2 \end{aligned}$$

2 litres of paint is required to paint an area of $4\pi * r^2$

=> 4 litres of paint will be required to paint an area of $8 * \pi * r^2$.

Therefore, option D is the right answer.

55. **A**

The man walks with a speed of V_1 for 30 minutes.

=> Distance covered = $30 * V_1$.

On a particular day, he walks for 10 minutes at V_1 , takes a rest of 5 minutes, and then covers the distance by walking at V_2 for 30 minutes.

=> $10 * V_1 + 30 * V_2 = 30 * V_1$

$20 * V_1 = 30 * V_2$

$V_1 = 1.5V_2$ -----(1)

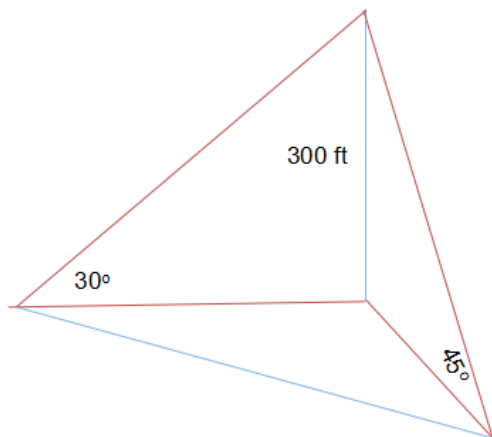
=> Total distance = $30 * 1.5 * V_2 = 45V_2$.

Now, we know that the person took $10 + 5 + 30 = 45$ minutes to cover the entire distance.

=> Average speed = $45V/45 = V$.
 Ratio of V and the average speed = 1:1.
 Therefore, option A is the right answer.

56. D

One boat is stationed to the North of the light house and the other boat is stationed to the East of the light house.



The boat stationed to the East subtends an angle of 45 degrees and the boat stationed to the North subtends an angle of 30 degrees.

Now, distance between the boat stationed to the East and the light house, $d_1 = \tan 45$

$$300/d_1 = 1$$

$$\Rightarrow d_1 = 300 \text{ feet}$$

Distance between the boat stationed to the North and the light house, $d_2 = \tan 30$

$$300/d_2 = 1/\sqrt{3}$$

$$\Rightarrow d_2 = 300\sqrt{3}$$

$$\begin{aligned} \text{Shortest distance between the 2 boats} &= \sqrt{300^2 + (300\sqrt{3})^2} \\ &= 300 * \sqrt{4} \\ &= 600 \text{ feet.} \end{aligned}$$

Therefore, option C is the right answer.

57. C

It has been given that $A+B+C = 41$.

Let the common root be B.

All the roots are positive integers.

The product of the roots of one of the equations is 35.

35 can be obtained only in 2 ways - either as $5*7$ or $35*1$.

$$A+B+C = 41.$$

If A and B are 5 and 7 in any order, then $C = 41 - 5 - 7 = 29$.

If A and B are 35 and 1 in any order, then $C = 41 - 35 - 1 = 5$.

As we can see, in either case, 5 is one of the 3 roots.

Therefore, option C is the right answer.

58. B

Let us find out the difference between the times given to figure out the pattern.

The times given are 1:55 pm, 2:03 pm, 2:11 pm, 2:24 pm, 2:45 pm, 3:19 pm and 4:14 pm.

The difference between 2 consecutive times given are 8 minutes, 8 minutes, 13 minutes, 21 minutes, 34 minutes, and 55 minutes.

We can observe that the difference between the times are in the Fibonacci series.

$$8 + 13 = 21$$

$$21 + 13 = 34$$

$$34 + 21 = 55$$

The Fibonacci series is as follows:

1,1,2,3,5,8,13,21,34,55.

But the first difference in the times given is 8.

Therefore, the missing time must be such that it divides the interval of 8 minutes into 3 minutes and 5 minutes.

The missing time should be 1:58 pm and hence, option B is the right answer.

59. C

Let the number of girls in the school be G.

$$\Rightarrow \text{Number of boys} = G + 30.$$

Some girls joined the class and the number of boys and girls became 3:5.

Let the number of girls who joined the class be 'X'.

$$\text{It has been given that } (G + 30) / (G + X) = 3/5$$

$$5G + 150 = 3G + 3X$$

$$2G + 150 = 3X$$

$$\Rightarrow X = (2G/3) + 50.$$

2G has to be divisible by 3.

Therefore, the least value that G can take is 3.

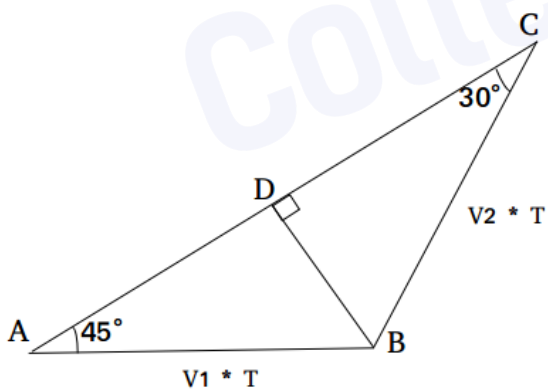
$$\text{When } G = 3, X = 2 + 50$$

$$X = 52.$$

The least number of girls who could have joined is 52.

Therefore, option E is the right answer.

60. C



We draw BD perpendicular to AC.

In right angled triangle BDC, $BD / BC = \sin 30^\circ$

$$\text{or, } BD = (V2 * T) / 2 \dots\dots(i)$$

In right angled triangle BDA, $BD / BA = \sin 45^\circ$

$$\text{Or, } BD = (V1 * T) / \sqrt{2} \dots\dots(ii)$$

From (i) and (ii), we get

$$V2 / V1 = \sqrt{2}$$

$$\text{Total distance to be travelled from C to A} = CD + DA = \sqrt{3}BD + BD$$

$$= BD(1 + \sqrt{3})$$

Replacing $BD = (V2 * T) / 2$ in the above equation,

$$CA = \frac{(V_2 * T)}{2} (1 + \sqrt{3})$$

Time taken at speed $V_2 = 0.5(\sqrt{3} + 1)T$

Hence, option C is the correct answer.

61. E

The number of candidates registered for 3 of the 4 courses is 45, 55, and 70.

There are 2 cases.

70 can be the total number of students registered in an elective or the mandatory course.

Case (i):

70 students have registered in an elective.

Each student will choose 2 elective.

=> Total number of electives chosen = 2* total number of students.

$45+55+70 = 2*\text{number of students.}$

Number of students = $170/2 = 85.$

In this case, at least 45 students would have selected an elective.

Case (ii):

70 students have registered in the mandatory class.

=> $45+55+x = 2*70$

=> $x = 40.$

As we can see, the number of students registered in an elective can be 40 or 45. Therefore, option E is the right answer.

62. B

All numbers from 1 to 9 repeat their last digits over a cycle of 4.

63 can be written as $4k+3.$

85 can be written as $4k+1.$

Some number's third power should yield the first digit as some number's first power.

2^3 will yield 8 as the last digit (2 and 8 is a possible solution). $X+Y = 10$

3^3 will yield 7 as the last digit (3 and 7 is a possible solution). $X + Y = 10$

4^3 will yield 4 as the last digit and hence, can be eliminated.

5 and 6 yield 5 and 6 respectively as the last digit for any power and hence, can be eliminated.

7^3 will yield 3 as the last digit (7 and 3 is a possible solution). $X+Y=10.$

8^3 will yield 2 as the last digit. $8+2 = 10.$

As we can see, $X+Y = 10$ in all the cases. Therefore, option B is the right answer.

63. E

$$2 \leq |x - 1| \times |y + 3| \leq 5$$

The product of two positive number lies between 2 and 5.

As x is a negative integer, the minimum value of $|x - 1|$ will be 2 and the maximum value of $|x - 1|$ will be 5 as per the question.

When, $|x - 1| = 2$, $|y + 3|$ can be either 1 or 2

So, for $x = -1$, y can be -4 or -2 or -5 or -1.

Thus, we get 4 pairs of (x, y)

When $|x - 1| = 3$, $|y + 3|$ can be 1 only

So, for $x = -2$, y can be -4 or -2

Thus, we get 2 pairs of the values of (x, y)

When $|x - 1| = 4$, $|y + 3|$ can be 1 only

So, for $x = -3$, y can be -4 or -2

Thus, we get 2 pairs of the values of (x, y)

When $|x - 1| = 5$, $|y + 3|$ can be 1 only

So, for $x = -4$, y can be -4 or -2

Thus, we get 2 pairs of the values of (x, y)

Therefore, we get a total of 10 pairs of the values of (x, y)

Hence, option E is the correct answer.

64. B

The sum of 4 consecutive numbers should be a power of 2.

The powers of 2 are 1, 2, 4, 8, 16, 32, 64, 128. The maximum possible value that 4 consecutive days can take is $28 + 29 + 30 + 31 = 118$.

We can eliminate 1, 2, 4, and 8 since sum of 4 consecutive integers is always greater than 9.

Let the first day be x .

$$x + x + 1 + x + 2 + x + 3 = 16$$

$$\Rightarrow 4x = 10$$

$$x = 2.5$$

We can eliminate 16.

Let us check for 32.

$$x + x + 1 + x + 2 + x + 3 = 32$$

$$4x = 26.$$

x is not an integer.

Let us check the case in which x is the last day of the month.

Even in the month of February, the least value that x can take is 28.

$$28 + 1 + 2 + 3 = 34 > 32.$$

We can eliminate 32 as well.

Let us check for 64.

$$4x + 6 = 64$$

$$4x = 58$$

The sum of no 4 consecutive days in the same month can be expressed as $4k + 6$.

Let us check the cases in which 2 months are involved.

$$29 + 30 + 1 + 2 = 62 < 64.$$

$$30 + 31 + 1 + 2 = 64. \text{ This is a possible combination.}$$

There are 7 months with 31 days in a year. We have to eliminate December since 1 will spill over to the 1st of January of the next year.

Therefore, in a year, there will be 6 such instances. Therefore, option B is the right answer.

65. D

The ratio of the curved surface area of the upper cone to the lower frustum is 1:2.

\Rightarrow the ratio of the curved surface area of the upper cone to the total cone = 1:3.

Curved surface area (CSA) of a cone = $\pi * r * l$

For the given cone, the slant height, $l = 12\text{cm}$

$$\text{CSA of the cone} = 48 * \pi$$

$$\text{CSA of the smaller cone} = 16 * \pi$$

Both the slant height and the radius would have been reduced by the same ratio. Let that ratio be x .

$$x^2 * 48 * \pi = 16\pi$$

$$\Rightarrow x^2 = \frac{1}{3}$$

$$x = \frac{1}{\sqrt{3}}$$

$$\text{Slant height of the smaller cone} = \frac{12}{\sqrt{3}}$$

$$\text{Slant height of the frustum} = 12 - \frac{12}{\sqrt{3}}$$

$$= 12 * \frac{\sqrt{3}-1}{\sqrt{3}}$$

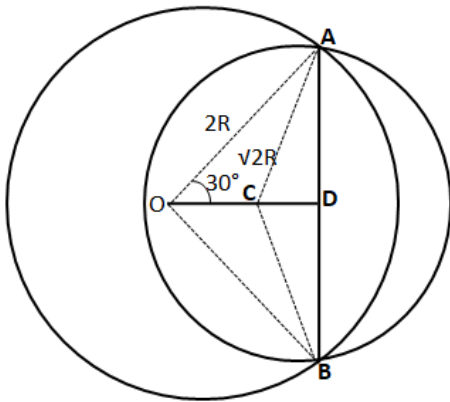
$$= 12 * \frac{(3-\sqrt{3})}{3}$$

$$= 12 - 4\sqrt{3}$$

Therefore, option D is the right answer.

66. C

Let us draw the diagram according to the given info,



We can see that $AD = AO * \cos 60^\circ = 2R * \frac{1}{2} = R$

In triangle, ACD

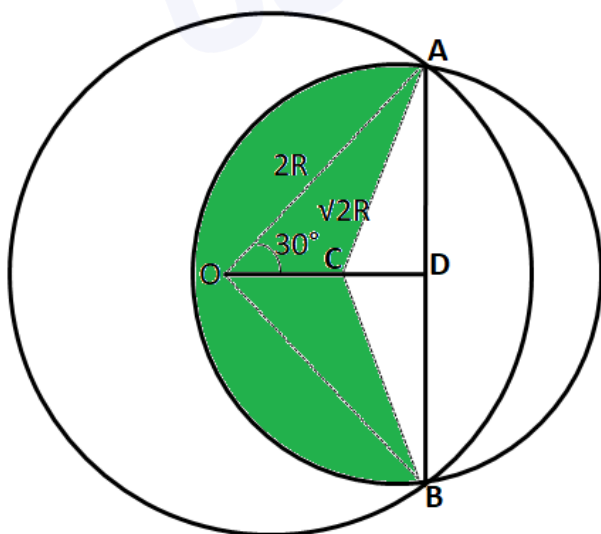
$$\Rightarrow \sin ACD = \frac{AD}{AC}$$

$$\Rightarrow \sin ACD = \frac{R}{\sqrt{2} * R} = \frac{1}{\sqrt{2}}$$

$$\Rightarrow \angle ACD = 45^\circ$$

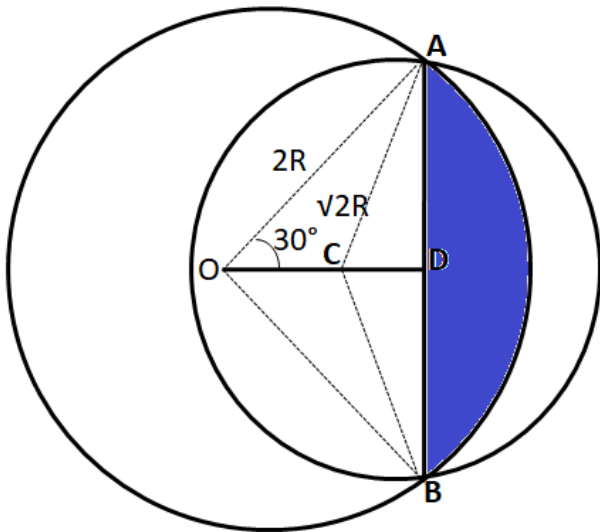
By symmetry we can say that $\angle BCD = 45^\circ$

Therefore we can say that $\angle ACB = 90^\circ$



Hence, the area colored by green color = $\frac{270^\circ}{360^\circ} * \pi * (\sqrt{2}R)^2 = \frac{3}{2} * \pi * R^2 \dots (1)$

Area of triangle ACB = $\frac{1}{2} * R * 2R = R^2 \dots (2)$



$$\text{Area shown in blue color} = \frac{60^\circ}{360^\circ} * \pi * (2R)^2 - \frac{\sqrt{3}}{4} * (2R)^2 = \frac{2}{3} * \pi * R^2 - \sqrt{3} * R^2 \dots (3)$$

By adding (1) + (2) + (3)

$$\text{Therefore, the area of the common region between two circles} = \frac{3}{2} * \pi * R^2 + R^2 + \frac{2}{3} * \pi * R^2 - \sqrt{3} * R^2$$

$$\Rightarrow \left(\frac{13\pi}{6} + 1 - \sqrt{3}\right)R^2$$

Hence, option C is the correct answer.

67. **A**

Sum of the ages of the 6 friends is the square of a prime number.

Statement I states that all the members were aged between 50 and 85 years. There are 6 friends in total.

Therefore, the sum of the ages can vary from 6*50 to 6*85.

Sum of the ages of the 6 persons should lie between 300 and 510.

361 is the only square of a prime number (19) in the given range. Therefore, statement I alone is sufficient to answer the question.

Statement II states that the standard deviation of their ages is 4.6. SD gives us how much the values deviate from the mean. We cannot obtain the mean using the SD. Therefore, statement II alone is insufficient to answer the question without knowing the values in the data set.

Therefore, option A is the right answer.

68. **D**

Harry and Sunny have cards numbered from 1 to 10.

Sum of the number of cards picked by them = 1+2+3+...+10 = 55.

Sum of the numbers on the cards picked by Harry is 5 more than that of Sunny.

Let x be the sum of the numbers picked by Sunny.

$$x+x+5 = 55$$

$$x = 25$$

25 can be written as 10+9+1+2+3 or 9+7+5+1+3 etc. (There are many such combinations). We cannot determine the person who has card number 2.

Statement I alone is insufficient.

Statement II states that one of the 2 persons has exactly 4 even-numbered cards.

The person with 4 even-numbered cards might or might not contain card number 2. Therefore, statement II alone is insufficient.

Combining both the statements, we know that the sum of the numbers on the cards with Harry is 5 more than the sum of the number on the cards with Sunny. Therefore, the sum of the number of cards with Sunny should be 25 and Harry should be 30.

Sum of the 5 even numbers = $2+4+6+8+10 = 30$.

Sum of the 5 odd numbers = $1+3+5+7+9 = 25$.

By replacing one of the odd numbers with even numbers, we have to make the sums 30 and 25. We cannot replace an odd number with an even number and still get the sum as 25. Therefore, the set with 4 odd numbers must add up to 30 and the set with 4 even numbers must add up to 25. We can interchange 1 with 6 or 3 with 8 or 5 with 10. The card with number 2 will always remain with the person with 4 even cards. The card with number 25 will always remain with Sunny. Therefore, we can determine the answer using both the statements together and hence, option D is the right answer.

Explanation [69 - 71]:

Team A has won both its matches and scored 5 goals while conceding 1. Thus, the possible scorelines for team A are (4-1) & (1-0), (3-1) & (2-0), (2-1) & (3-0).

Similarly, the possible outcomes for others teams are as follows:

B: (5-1) & (0-0) and (4-0) & (1-1)

C: (2-0) & (0-0) and (1-0) & (1-1)

D: (0-0) & (1-1)

E: (0-2) & (1-2) and (0-1) & (1-3)

F: (0-1) & (0-6), (0-2) & (0-5) and so on.

By carefully observing the above scorelines, the following table can be obtained.

69. E

Matches	Score-line
Team A - Team E	2 - 1
Team A - Team F	3 - 0
Team B - Team D	1 - 1
Team B - Team F	4 - 0
Team C - Team D	0 - 0
Team C - Team E	2 - 0

Thus, the matches Team A - Team B and Team E - Team F are yet to take place.

Hence, option E is the answer.

70. B

Matches	Score-line
Team A - Team E	2 - 1
Team A - Team F	3 - 0
Team B - Team D	1 - 1
Team B - Team F	4 - 0
Team C - Team D	0 - 0
Team C - Team E	2 - 0

The above table shows that Team A - Team E match has the score-line (2 - 1).

Hence, option B is the answer.

71. A

Matches	Score-line
Team A - Team E	2 - 1
Team A - Team F	3 - 0
Team B - Team D	1 - 1
Team B - Team F	4 - 0
Team C - Team D	0 - 0
Team C - Team E	2 - 0

From the above table, we can see that options B, C and D are possible and option A is not.

Hence, option A is the answer.

72. C

Let the required percentage be P.

$$\text{Option A: } P_A = (6.5 - 4) * 100 / 4 = 62.5\%$$

$$\text{Option B: } P_B = (8 - 5) * 100 / 5 = 60\%$$

$$\text{Option C: } P_C = (7 - 4) * 100 / 4 = 75\%$$

$$\text{Option D: } P_D = (9 - 5.5) * 100 / 5.5 = 63.63\%$$

Thus, option C shows the maximum year-on-year growth and is the answer.

73. C

Prof. Arithmetic: There are two such instances, during 2013-14 and 2015-16

Prof. Algebra: There are three such instances, during 2011-12, 2014-15 and 2015-16

Prof. Geometry: There are two such instances, during 2010-11 and 2013-14

Prof. Calculus: There are two such instances, during 2010-11 and 2014-15

Thus, there are $2+3+2+2 = 9$ such instances.

Hence, option C is the answer.

74. A

Research efficiency = (total number of publications)/(total time spent in research)

$$\text{Prof. Arithmetic: RE} = (8) / [90*(0.7 + 0.5 + 0.6)] = 8 / (18 * 9)$$

$$\text{Prof. Algebra: RE} = (8) / [90*(0.3 + 0.4 + 0.25)] = 8 / (9.5 * 9)$$

$$\text{Prof. Geometry: RE} = (8) / [90*(0.75 + 0.25 + 2)] = 8 / (12 * 9)$$

$$\text{Prof. Calculus: RE} = (8) / [90*(0.55 + 0.55 + 0.4)] = 8 / (15 * 9)$$

Thus, we can observe that Prof. Arithmetic has the lowest efficiency.

Hence, option A is the answer.

General Knowledge

77. B

Showrooming is the process in which an individual visits a showroom to know how a product looks and feels before buying it online at a discount. Therefore, option B is the right answer.

81. B

IIP (Index of Industrial Production) defined 8 core industries in India. They are

1.Coal

2. Crude oil
3. Natural gas
4. Refinery products
5. Fertilizers
6. Steel
7. Cement
8. Electricity

Therefore, option B is the right answer.

82. **B**

Cristina Elisabet Fernández de **Kirchner** was the former President of Argentina.

Luiz Inácio Lula da Silva was the former President of Brazil.

Deng Xiaoping is the former President of China.

Recep Tayyip Erdogan is the President of Turkey.

Hugo Chavez is the former President of Venezuela.

Therefore, option B is the right answer.

83. **A**

Harappa is located in the Punjab province of Pakistan.

Lothal is located in Gujarat in India.

Chanhudaro is located in the Sindh province of Pakistan.

Banawali is located in Haryana.

Therefore, option A is the right answer.

84. **C**

The RPG group was founded by R.P.Goenka. The group initially started with companies such as Philips Carbon Black, Asian Cables, Agarpara Jute and Murphy. Therefore, option C is the right answer.

88. **C**

Hornbill is the music festival held in Nagaland.

Ziro is the name of the town in the Arunachal Pradesh where the musical festival is held.

Escape is the musical festival held in Uttarakhand.

Enchanted Valley carnival is held in Aamby valley, Maharashtra.

Magnetic fields is the music festival held at Alsisar Mahal, Rajasthan.

Therefore, option C is the right answer.

92. **C**

Falcon 9 is owned by Space X, the company founded by Elon Musk.

NASA owns the Mars rover mission.

Exo Mars Trace Gas orbiter is a project of the European Space Agency (ESA).

Yinghuo-I is the Chinese Mars exploration probe developed by China National Space Administration (CNSA).

Mangalyaan is the Mars Orbiter Mission developed by ISRO, India.

Therefore, option C is the right answer.

93. **B**

Fehaid Al-Deehani is from Kuwait. Al-Deehani had won the bronze medal twice for Kuwait in Men's double trap shooting in 2000 and 2012. Kuwait was banned from Olympics in 2016 and hence, Al-Deehani participated as an independent athlete and won gold in the event. Therefore, option B is the right answer.

99. **B**

Gillete is a subsidiary of Procter and Gamble (P&G).

Surf Excel is a brand owned by Hindustan Unilever.

Saffola oil is owned by Marico India.

Aashirvaad atta is owned by ITC.

Good Knight is owned by Godrej.

Therefore, option B is the right answer.


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