

**Q1. DIRECTIONS** for questions 1 to 5: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. Yet, without a rich set of socially appropriate durational expectancies, no individual could function successfully.
2. Part of this conditioning consists of building up within the child a series of expectations about the duration of events, processes or relationships.
3. Man's perception of time is closely linked with his internal rhythms.
4. Indeed, one of the most important forms of knowledge that we impart to a child is a knowledge of how things last.
5. But his responses to time are culturally conditioned.

**Your Answer:**35241   **Your answer is correct**

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	147
Avg. time spent on this question by all students	193
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	183
% of students who attempted this question	51.85
% of students who got the question right of those who attempted	33.51

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 3 is a general sentence that begins the paragraph. It introduces the topic of discussion: Man's perception of time is linked with his internal rhythms. Sentences 3 and 5 form a mandatory pair. "Man's perception of time" in sentence 3 parallels "his responses to time" in sentence 5. "linked with his internal rhythms" in sentence 3 contrasts "culturally conditioned" in sentence 5. Sentence 5 is followed by sentence 2. "culturally conditioned" in sentence 5 links with "part of this conditioning" in sentence 2. "building up within the child a series of expectations" in sentence 2 points to "culturally conditioned" in sentence 5. "duration of events, processes or relationships" in sentence 2 points to "man's perception of time" given earlier in sentence 3. Sentences 2 and 4 form a mandatory pair. "building up within the child a series of expectations" in sentence 2 links with "important forms of knowledge that we impart to a child" in sentence 4. Also "knowledge of how things last" in sentence 4 links with "duration of events, processes or relationships" given earlier in sentence 2. Sentences 2 and 4 help explain "culturally conditioned" given in sentence 5. Sentence 4 is followed by sentence 1. The contrast conjunction 'yet' contrasts the point given in sentence 4 (knowledge of how things last). "without a rich set of socially appropriate durational expectancies" in sentence 1 links with "series of expectations about the duration of events, processes or relationships" given in sentence 2. So, 35241.

Ans: (35241)

undefined

**Q2. DIRECTIONS** for questions 1 to 5: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. For example, it has been suggested that the Aswan Dam, far from helping Egyptian agriculture, might someday lead to the salinization of the land on both banks of the Nile.
2. By contrast, the plan to flood the entire interior of Brazil is fraught with such instant and imponderable ecological effects that it should not be permitted at all until adequate monitoring can be done and emergency corrective measures are available.

3. This could prove disastrous.
4. Certain large-scale ecological interventions might be delayed or prohibited altogether - perhaps in line with the principle that if an incursion on nature is too big and sudden for its effects to be monitored and possibly corrected, it should not take place.
5. But such a process would not occur overnight and presumably, therefore, it can be monitored and prevented.

**Your Answer:**43152 □ **Your answer is incorrect**

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>187</b>
Avg. time spent on this question by all students	<b>184</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>191</b>
% of students who attempted this question	<b>42.71</b>
% of students who got the question right of those who attempted	<b>12.27</b>

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 4 is a general sentence that begins the paragraph. It introduces the background or the topic of discussion: Certain large-scale ecological interventions might be delayed or prohibited altogether. Sentence 1 exemplifies the point made in sentence 4 and follows sentence 4. "the Aswan Dam" in sentence 1 points to "large-scale ecological interventions" and "too big an incursion on nature" in sentence 4. Sentence 1 is followed by sentence 3. "This could prove disastrous" in sentence 3 links with "might someday lead to the salinization of the land on both banks of the Nile" in sentence 1. Sentence 3 is contrasted by sentence 5. "But such a process would not occur overnight" in sentence 5 contrasts "This could prove disastrous" in sentence 3. The pronouns "this" and "such (a process)" in sentences 3 and 5 point to "the Aswan Dam" given in sentence 1. So sentence 5 follows sentence 3. "presumably, therefore, it can be monitored and prevented" in sentence 5 links with "effects to be monitored and possibly corrected" given earlier in sentence 4. Sentence 2 contrasts sentence 5. Sentence 2 follows sentence 5. "fraught with such instant and imponderable ecological effects" in sentence 2 contrasts "process would not occur overnight" in sentence 5 and "might someday lead to the salinization of the land" given earlier in sentence 1. "can be monitored and prevented" in sentence 5 contrasts "should not be permitted at all until adequate monitoring can be done and emergency corrective measures are available" in sentence 2. So, 41352. At first glance, 41523 may also be a possibility i.e. The salination of the river banks can be guarded against (41) whereas the flooding of Brazil will have immediate effects that would be disastrous (523). However, in the case of the combination 41523, the 'this' in sentence 3 would have no clear referent in sentence 2. Hence sentence 3 has to be placed after sentence 1. 41352 is the correct answer.

Ans: (41352)

undefined

**Q3. DIRECTIONS for questions 1 to 5:** The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. Increasingly deep cleavages separate one age group from another and a sociologist opines that these differences will become the "conflict equivalent of southerner and northerner, capitalist and worker, immigrant and 'native stock', suffragette and male, white and Negro".
2. There was a time when people were divided roughly into children, teenagers and adults.
3. We now have a classification called "pre-teens" or "sub-teens" that sits perched between childhood and adolescence; we also have "post-teens" and, after that, "young marrieds."
4. Today, this crude, three-way division is clearly inadequate, and we are busy inventing far more specific categories.

5. Each of these terms is a linguistic recognition of the fact that we can no longer usefully lump all "young persons" together.

**Your Answer:**24315 □ **Your answer is incorrect**

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	233
Avg. time spent on this question by all students	147
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	135
% of students who attempted this question	47.1
% of students who got the question right of those who attempted	35.9

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 2 is a general sentence that begins the para. The other sentences cannot begin the para as they need a precedent and more substantiation. Sentence 2 is followed by sentence 4. "Today, this crude, three-way division is clearly inadequate" in sentence 4 points to "There was a time when people were divided roughly into (three categories)" in sentence 2. Sentence 4 is followed by sentence 3. "we are busy inventing far more specific categories" in sentence 4 links with "pre-teens" or "sub-teens" ....; we also have "post-teens" and, after that, "young marrieds" in sentence 3. Sentence 3 is followed by sentence 5. "Each of these terms" in sentence 5 points to "pre-teens" or "sub-teens" that sits perched between childhood and adolescence; we also have "post-teens" and, after that, "young marrieds" in sentence 3. Also, "we can no longer usefully lump all "young persons" together" in sentence 5 links with "three-way division is clearly inadequate" given earlier in sentence 4. Sentence 5 is followed by sentence 1. "increasingly deep cleavages separate one age group from another and a sociologist opines that these differences" in sentence 1 links with "we can no longer usefully lump all "young persons" together" in sentence 5. So, 24351.

Ans: (24351)

undefined

**Q4. DIRECTIONS for questions 1 to 5:** The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. It is a miserable day for a political stunt.
2. Sausages bearing the names of national oligarchs are draped over the garden fence, in an apparent nod to an old Hungarian aphorism that mocks the wealthy.
3. Across the street, Laszlo Szilagy, an election candidate for Dialogue, an opposition party, and a few colleagues have gathered outside Mr Orban's modest cottage.
4. Bescarved fans huddle for warmth as they queue to watch their team, Puscas Academy, take on a local rival.
5. Rain drips ceaselessly from the stands of the cathedral-like stadium in Felscut, the home village of Viktor Orban, Hungary's football-mad prime minister.

**Your Answer:**35241 □ **Your answer is incorrect**

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	85
Avg. time spent on this question by all students	159
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	161

**Time spent / Accuracy Analysis**

% of students who attempted this question	<b>30.46</b>
% of students who got the question right of those who attempted	<b>7.79</b>

[Video Solution](#)[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 1 is the opening sentence of the paragraph. It is a very general sentence that introduces the background: a political stunt. Sentence 1 is followed by sentence 5. "a miserable day" in sentence 1 links with "rain drips ceaselessly...." in sentence 5. Sentence 5 mentions the location of the events discussed in the remaining sentences. Sentence 5 is followed by sentence 4. "Bescarved fans", "team Puscas Academy" and "take on a local rival" in sentence 4 point to "cathedral-like stadium in Felscut, the home village of Viktor Orban, Hungary's football-mad prime minister" in sentence 5. So, 154. Sentence 4 is followed by sentence 3. "Across the street" in sentence 3 links with "cathedral-like stadium (where the football match is being played)" in sentence 5. "few colleagues have gathered outside Mr Orban's modest cottage" in sentence 3 runs parallel to "Felscut, the home village of Viktor Orban, Hungary's football-mad prime minister" given earlier in sentence 5. Sentence 3 is followed by sentence 2. "the garden fence" in sentence 2 points to "outside Mr Orban's modest cottage" in sentence 3. Sentence 2 is the conclusion sentence of the para. "Sausages bearing the names of national oligarchs are draped over the garden fence" in sentence 2 mirrors the introduction. So, 15432.

Ans: (15432)

undefined

**Q5. DIRECTIONS for questions 1 to 5:** The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. That's about as many as we can have a genuinely social relationship with, the kind of relationship that goes with knowing who they are and how they relate to us.
2. The British anthropologist Robin Dunbar has actually developed an equation in which he plugs in what he calls the neocortex ratio of a particular primate species - the size of the neocortex relative to the size of the brain - and the equation spits out the expected maximum group size of the animal.
3. Putting it another way, it's the number of people you would not feel embarrassed about joining uninvited for a drink if you happened to bump into them in a bar.
4. If you plug in the neocortex ratio for Homo sapiens, you get a group estimate of 147.8 or roughly 150.
5. Humans socialize in the largest groups of all primates because we are the only animals with brains large enough to handle the complexities of that social arrangement.

**You did not answer this question** [Show Correct Answer](#)**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>24</b>
Avg. time spent on this question by all students	<b>152</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>150</b>
% of students who attempted this question	<b>36.31</b>
% of students who got the question right of those who attempted	<b>20.37</b>

[Video Solution](#)[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 5 is a general sentence that begins the paragraph. It introduces the background: Humans socialize in the largest group because of their large brain size. Sentence 5 is followed by sentence 2. "we are the only animals with brains large enough ..." in sentence 5 links with " has actually developed an equation in which he plugs in" in sentence 2. Also "only animals with brains large enough to handle the complexities of that social arrangement" in sentence 5 links with "neocortex ratio of a particular primate species – the size of the neocortex relative to the size of the brain" in sentence 2. Also "expected maximum group size of the animal" in sentence 2 links with "Humans socialize in the largest groups of all primates" given in sentence 5. Sentences 2 and 4 form a mandatory pair. "he plugs in what he calls the neocortex ratio of a particular primate species – the size of the neocortex relative to the size of the brain" in sentence 2 links with "If you plug in the neocortex ratio for Homo sapiens" in sentence 4. Also "the equation spits out the expected maximum group size of the animal" in sentence 2 links with "you get a group estimate of 147.8 or roughly 150" in sentence 4. So sentence 4 follows sentence 2. Sentence 4 is followed by sentence 1. "you get a group estimate of 147.8 or roughly 150" in sentence 4 links with "the individuals with whom we can have a genuinely social relationship" in sentence 1. Sentence 3 concludes the para by summarizing the main contents: Putting it another way .... Also "it's the number of people you would not feel embarrassed about joining uninvited" in sentence 3 links with " The individuals with whom we can have a genuinely social relationship" in sentence 1. So, 52413.

Ans: (52413)

undefined

**Q6. DIRECTIONS** for questions 6 and 7: Each of the questions given below has a paragraph which is followed by four alternative summaries. Choose the alternative that best captures the essence of the paragraph.

The temperature change that harmed the corals was not caused by human activity; yet it was a foretaste of what man is now doing to the sea. The effects of overfishing, agricultural pollution and anthropogenic climate change, acting in concert, are devastating marine ecosystems. Though corals are returning to many reefs, there is a fair chance that in just a few decades they will all be destroyed, as ocean temperatures rise owing to global warming. The industrial pollution that is cooking the climate could also cause another problem: carbon dioxide, absorbed by the sea from the atmosphere, turns to carbonic acid, which is a threat to coral, mussels, oysters and any creature with a shell of calcium carbonate. The enormity of the sea's troubles, and their implications for mankind, are mind-boggling. Yet it is equally remarkable how little this is recognised by policymakers - let alone the general public.

- a) The rise in ocean temperatures triggered by global warming is likely to destroy the coral reefs in a few decades. Carbon dioxide released into the atmosphere due to industrial pollution turns to carbonic acid in the sea and poses a threat to marine creatures with a calcium carbonate shell. But neither the policy makers nor the general public seem to recognize the serious implications the sea's problems would have for mankind.
- b) Human activities coupled with anthropogenic climate change are adversely affecting marine ecosystems. The rise in ocean temperatures triggered by global warming is likely to destroy the coral reefs soon. Atmospheric carbon dioxide released due to industrial pollution - turns to carbonic acid which imperils creatures with a calcium carbonate shell. The policy makers and the general public little recognize the serious implications the sea's troubles have for mankind. Had this happened to rainforests - coral's terrestrial equivalent - a sea-change in attitudes to the environment could have been expected.
- c) Humans, through their activities and the changes they have prompted in climate, have caused detriment to marine ecosystems. The world's coral reefs are likely to be destroyed soon. Atmospheric carbon dioxide released due to industrial pollution turns to carbonic acid in the sea which imperils marine animals. Neither the policy makers nor the general public seem to recognize the grave implications the sea's troubles would have for mankind.
- d) **Anthropogenic climate change is adversely affecting marine animals like coral, mussels, oysters and any creature with a calcium carbonate shell. Despite the enormity of the sea's problems which have serious implications for mankind, neither the policy makers nor the general public seem to recognize this.** Your answer is incorrect

Show Correct Answer

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>382</b>
Avg. time spent on this question by all students	<b>231</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>229</b>
% of students who attempted this question	<b>42.98</b>
% of students who got the question right of those who attempted	<b>36.97</b>

[Video Solution](#)

[Text Solution](#)

The main points of the para are:

- (1) Anthropogenic climate change is adversely affecting marine ecosystems.
  - (2) World's coral reefs are likely to be destroyed soon and carbonic acid is jeopardising marine animals.
  - (3) Neither the policy makers nor the general public seem to recognize the seriousness of the problem.
- Option A: Choice A cannot be the best summary because it fails to mention that human activity is responsible for jeopardising marine animals.
- Option B: Choice B is wordy. The last sentence in choice B has not been given in the paragraph.
- Option C: Choice C captures all the main points and is the correct summary of the para.
- Option D: Choice D includes trivial details like examples of marine animals. Further, choice D does not include point 2 and so is incomplete as a summary.

Choice (C)

undefined

**Q7. DIRECTIONS for questions 6 and 7:** Each of the questions given below has a paragraph which is followed by four alternative summaries. Choose the alternative that best captures the essence of the paragraph.

Until recently, economic growth and social policy were thought of separately. Inequalities and social inclusion were viewed as a residual outcome of necessary market-led growth. The development response was to get markets right first and then deal with any remaining pockets of the poor. Persistent poverty and growing social exclusion call the approach into question.

- a) Considering economic growth and social policies as mutually exclusive concepts has resulted in persistent poverty and growing social inclusions.
- b) Persistent poverty and increasing social inequalities confirm that it is wrong to consider economic growth and social policies separately.
- c) Economic growth and social policies are interlinked and thus should not be viewed separately.
- d) **Perpetual poverty and growing social inequalities cause doubt about the validity of considering economic growth and social policies as separate entities.** **Your answer is correct**

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>118</b>
Avg. time spent on this question by all students	<b>133</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>127</b>
% of students who attempted this question	<b>44.41</b>
% of students who got the question right of those who attempted	<b>61.75</b>

[Video Solution](#)

[Text Solution](#)

The main points of the para are:

- (1) Economic growth and social policies has been considered separately until recently.
- (2) The idea is disputable.
- (3) Persistent poverty and growing social exclusion are proof that this concept may not be right.

Option A: Choice A fails to capture the essence of the para correctly. Choice A categorically says that this "has resulted" in persistent poverty which is not true.

Option B: The use of 'confirm' in choice B also makes it categorical. Choice B is not the answer.

Option C: Choice C is incomplete as a summary as it does not include point 3.

Option D: Choice D captures all the main points of the para. "cause doubt about the validity of" in choice D is synonymous with "call the approach into question" given in the para. Choice D is the correct answer.

Choice (D)

undefined

**Q8. DIRECTIONS for questions 8 to 10:** Five sentences related to a topic are given in each question below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. Earlier assassinations may have drastically altered the course of history, too.

2. As Europeans know to their lamentable cost, assassinations can start wars, even world wars.
3. The bomb thrown in 1881 at Tsar Alexander II, who had emancipated the serfs, woefully stymied reform in Russia.
4. Yet an attack does not have to be on a head of state to prove a political shock.
5. A bullet fired by a Serbian nationalist, killing Austria's archduke in June 1914, sparked the calamitous First World War which arguably paved the way to the Second.

**You did not answer this question** [Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>27</b>
Avg. time spent on this question by all students	<b>117</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>113</b>
% of students who attempted this question	<b>53.23</b>
% of students who got the question right of those who attempted	<b>39.03</b>

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 2 is the opening sentence of the paragraph. It introduces, in a very general tone, the topic sentence of the paragraph: Assassinations can start wars, even world wars. The point made in sentence 2 is exemplified in sentence 5. "assassinations" in sentence 2 links with "bullet fired by a Serbian nationalist, killing Austria's archduke in June 1914" in sentence 5. Also "can start wars, even world wars" in sentence 2 links with "sparked the calamitous First World War which arguably paved the way to the Second" in sentence 5. Sentence 1 takes the discussion forward. "Earlier assassinations drastically altered the course of history" in sentence 1 reiterates "assassinations can start wars, even world wars" in sentence 2. Sentence 1 is followed by sentence 3. "The bomb thrown in 1881 at Tsar Alexander II, who had emancipated the serfs" in sentence 3 points to "Earlier assassinations" in sentence 1. Also "woefully stymied reform in Russia" in sentence 3 links with "altered the course of history, too" in sentence 1. So, 2513. Sentence 4 is the odd sentence out. Sentence 4 needs a precedent and "to prove a political shock" in it needs more substantiation. It can be a part of another para.

Ans: (4)

undefined

**Q9. DIRECTIONS for questions 8 to 10:** Five sentences related to a topic are given in each question below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. Amid the cacophony of block-chain-based would-be substitutes for official currencies, central banks from Singapore to Sweden have been pondering whether they should issue digital versions of their own money too.
2. Central bankers focus more on the rise of private crypto-currencies, warning that they are speculative gambles.
3. But a report prepared by central-bank officials from around the world, published by the Bank for International Settlements on March 1<sup>th</sup> - a week before finance ministers and central-bank heads from G20 countries meet in Buenos Aires - offers a guide to how to approach the task.
4. Bitcoin, Ethereum, XRP, Stellar, Cardano: the infant world of cryptography is already mind-bogglingly crowded.
5. None is about to do so.

You did not answer this question [Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>16</b>
Avg. time spent on this question by all students	<b>121</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>124</b>
% of students who attempted this question	<b>48</b>
% of students who got the question right of those who attempted	<b>14.54</b>

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 4 is the opening sentence of the paragraph. It introduces the topic of discussion: the world of cryptography is already mind-bogglingly crowded. Sentence 4 is followed by sentence 1. "the infant world of cryptography is already mind-bogglingly crowded" in sentence 4 links with "Amid the cacophony of block-chain-based would-be substitutes for official currencies" in sentence 1. Also "Bitcoin, Ethereum, XRP, Stellar, Cardano" in sentence 4 points to "block-chain-based would-be substitutes for official currencies" in sentence 1. Sentences 1 and 5 form a mandatory pair. "central banks from Singapore to Sweden have been pondering whether they should issue digital versions of their own money too" in sentence 1 links with "None is about to do so" in sentence 5. So sentence 5 follows sentence 1. Sentence 5 is contrasted by sentence 3. "a report prepared by central-bank officials offers a guide to how to approach the task" in sentence 3 contrasts "None is about to do so" in sentence 5. "central-bank officials from around the world and central-bank heads" in sentence 3 links with "central banks from Singapore to Sweden have been pondering" in sentence 1. Sentence 3 concludes the para. So, 4153. Sentence 2 is the odd sentence out. " private cryptocurrencies" in sentence 2 needs a precedent. Sentence 2 needs more substantiation and it can be a part of another para.

Ans: (2)

undefined

**Q10. DIRECTIONS** for questions 8 to 10: Five sentences related to a topic are given in each question below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. His was caused not by ecclesiastical politicians who preferred obedience to free enquiry, but by muscle-wasting amyotrophic lateral sclerosis.
2. But he did share something with him, other than being a great physicist; he became famous as much for his suffering as for his physics.
3. But once he could no longer write down equations, theories had to be translated into geometry in his head; and after a tracheotomy in 1985, the ocean of his thinking had to be forced through a cumbersome and narrow technological aperture.
4. It was mere coincidence that he was born 300 years to the day after Galileo Galilei died.
5. Predestination was not part of Stephen Hawking's system of belief.

You did not answer this question [Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>9</b>
Avg. time spent on this question by all students	<b>114</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>116</b>
% of students who attempted this question	<b>48.11</b>
% of students who got the question right of those who attempted	<b>30.65</b>

[Video Solution](#)

### [Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 4 is the opening sentence of the paragraph. It introduces the topic of discussion: Predestination not being a part of Stephen Hawking's system of belief. Sentences 5 and 4 form a mandatory pair. "Predestination was not part of Stephen Hawking's system of belief" in sentence 5 links with "mere coincidence that he was born 300 years on the day Galileo Galilei". So, sentence 4 follows sentence 5. Sentence 4 is followed by sentence 2. "mere coincidence" in sentence 4 is contrasted by "but he did share something with him: great physicist who suffered". Sentences 2 and 1 form a mandatory pair. "His was caused by muscle-wasting amyotrophic lateral sclerosis" in sentence 1 links with "became famous as much for his suffering as for his physics" in sentence 2. Sentence 1 concludes the para. So, 5421. Sentence 3 is the odd sentence out. The contrast conjunction 'but' seems out of place if you consider the remaining sentences and there is nothing in the other sentences that is contrasted by the use of "but" in sentence 3. "But once he could no longer write down equations" can only be subsequent to a sequence of events related to the deterioration of the health of Stephen Hawking.

Ans: (3)

undefined

**DIRECTIONS** for questions 11 to 13: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

In his landmark 1969 book, *Sciences of the Artificial*, Nobel Laureate Herbert Simon wrote: "Natural science is knowledge about natural objects and phenomena. We ask whether there cannot also be 'artificial' science - knowledge about artificial objects and phenomena." In line with Simon's vision, we advocate the need for a new, distinct scientific discipline of Machine Behaviour: the scientific study of behaviour exhibited by intelligent machines.

This new discipline is concerned with the scientific study of machines, not as engineering artefacts, but as a new class of actors with their unique behavioural patterns and ecology. Crucially, this field overlaps with, but is distinct from computer science and robotics, as it treats machine behaviour observationally and experimentally, without necessarily appealing to the machine's internal mechanisms. Machine Behaviour is akin to how the fields of animal behaviour - also known as ethology - and behavioural ecology study the behaviour of animals without necessarily focusing on physiology or biochemistry.

Our definition of the new field of Machine Behaviour comes with some caveats. Studying machine behaviour does not imply that AI algorithms have agency - in the sense that they are socially responsible for their actions. If someone's dog bites a bystander, it is the owner of the dog who is held responsible. Nonetheless, it is useful to study - and therefore effectively predict - dog behaviour. Similarly, machines are embedded in a larger socio-technical fabric, with human stakeholders who are responsible for deploying them, and for the harm they may cause to others.

A second caveat is that machines exhibit behaviours that are fundamentally different from animals and humans, so we must avoid any tendency to excessively anthropomorphize or zoomorphize machines. Even if borrowing scientific methods from the study of human and animal behaviour may prove useful for the study of machines, machines may exhibit forms of intelligence and behavioural patterns that are qualitatively different - even alien.

**Q11.** Which of the following is an inference that can be drawn from the passage?

- a) Studying computer science and robotics involves an observational and experimental understanding of the internal mechanisms of a machine.
- b) Robotics and computer science differ from machine behaviour study in that they disregard the internal mechanisms of a machine.
- c) **Studying machine behaviour need not involve understanding the internal mechanisms of a machine.** Your answer is correct
- d) **Robotics and computer science may involve study of machines as engineering artefacts.**

#### **Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>300</b>
Avg. time spent on this question by all students	<b>274</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>265</b>
% of students who attempted this question	<b>50.1</b>
% of students who got the question right of those who attempted	<b>56.84</b>

[Video Solution](#)

### [Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 308

Crucially, this field overlaps with, but is distinct from computer science and robotics, as it treats machine behaviour observationally and experimentally, without necessarily appealing to the machine's internal mechanisms. This sentence implies machine behaviour study does not involve study of machine's internal mechanisms, something that is probably a part of robotics and computer science. Another possible question that could pop up is about the word 'appeal'. Since, 'internal mechanism' is inanimate the word 'appeal' is not taken in its usual sense. Rather, we can understand it as 'involve'.

Option A: While robotics and computer science may involve studying the internal mechanisms of a machine, we don't have enough evidence to justify whether that study would be observational and experimental. Hence, choice A is incorrect.

Option B: Robotics and computer science do not disregard the internal mechanisms of a machine. It is machine behaviour study that probably will avoid the same. Hence, choice B is incorrect.

Option C: The line '*without necessarily appealing to the machine's internal mechanisms*' clearly suggests that choice C is true.

Option D: '*This new discipline is concerned with the scientific study of machines, not as engineering artefacts*' – this line suggests machine behaviour study will not look at machines as objects of human workmanship (artefact). And then the para goes on to explain that the study will not appeal to the internal mechanisms of a machine unlike robotics or computer science. So, there is nothing to link the two thoughts together. Hence, choice D cannot be inferred.

Choice (C)

undefined

**DIRECTIONS for questions 11 to 13:** The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

In his landmark 1969 book, *Sciences of the Artificial*, Nobel Laureate Herbert Simon wrote: "Natural science is knowledge about natural objects and phenomena. We ask whether there cannot also be 'artificial' science - knowledge about artificial objects and phenomena." In line with Simon's vision, we advocate the need for a new, distinct scientific discipline of Machine Behaviour: the scientific study of behaviour exhibited by intelligent machines.

This new discipline is concerned with the scientific study of machines, not as engineering artefacts, but as a new class of actors with their unique behavioural patterns and ecology. Crucially, this field overlaps with, but is distinct from computer science and robotics, as it treats machine behaviour observationally and experimentally, without necessarily appealing to the machine's internal mechanisms. Machine Behaviour is akin to how the fields of animal behaviour - also known as ethology - and behavioural ecology study the behaviour of animals without necessarily focusing on physiology or biochemistry.

Our definition of the new field of Machine Behaviour comes with some caveats. Studying machine behaviour does not imply that AI algorithms have agency - in the sense that they are socially responsible for their actions. If someone's dog bites a bystander, it is the owner of the dog who is held responsible. Nonetheless, it is useful to study - and therefore effectively predict - dog behaviour. Similarly, machines are embedded in a larger socio-technical fabric, with human stakeholders who are responsible for deploying them, and for the harm they may cause to others.

A second caveat is that machines exhibit behaviours that are fundamentally different from animals and humans, so we must avoid any tendency to excessively anthropomorphize or zoomorphize machines. Even if borrowing scientific methods from the study of human and animal behaviour may prove useful for the study of machines, machines may exhibit forms of intelligence and behavioural patterns that are qualitatively different - even alien.

**Q12.** Which of the following best describes the author's approach in presenting his ideas regarding Machine Behaviour?

- a) He analyses various scientific aspects of Machine Behaviour.
- b) He introspects the implications of Machine Behaviour from an ethical perspective.
- c) **He objectively assesses the pros and cons of defining the field of Machine Behaviour.** Your answer is incorrect
- d) He offers a reasoned endorsement of the idea of studying Machine Behaviour.

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	110
Avg. time spent on this question by all students	93
Difficulty Level	M
Avg. time spent on this question by students who got this question right	85

**Time spent / Accuracy Analysis**

% of students who attempted this question	<b>44.29</b>
% of students who got the question right of those who attempted	<b>41.45</b>

[Video Solution](#)[Text Solution](#)**Number of words and Explanatory notes for RC:**

Number of words: 308

Option A: Not much science has been explained in the passage. Analysis needs facts and inferences that could be drawn from those facts. We find neither in this passage. Hence, choice A is not the answer.

Option B: Ethics – right/wrong/morality – has been discussed once in this passage, when the author attributes consequences of machine behaviour to the algorithm-developers. However, the passage overall doesn't discuss/introspect issues based on ethics – what is right and what is wrong. Choice B is not the answer.

Option C – Assessment needs someone to discuss whether something is valid or not. The passage can be said to be doing this as far as studying machine behaviour is concerned. However, the author is biased predominantly towards the opinion that the study is indeed required. That is why, although it is close, choice C is not a better option compared to choice D.

Option D – In the first para, the author clearly mentions, 'In line with Simon's vision, we advocate the need for a new, distinct scientific discipline of Machine Behaviour'. The author then proceeds to explain why it is important. Endorsement is a synonym of 'advocate'. Hence, choice D is the answer.

Choice (D)

undefined

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In his landmark 1969 book, *Sciences of the Artificial*, Nobel Laureate Herbert Simon wrote: "Natural science is knowledge about natural objects and phenomena. We ask whether there cannot also be 'artificial' science - knowledge about artificial objects and phenomena." In line with Simon's vision, we advocate the need for a new, distinct scientific discipline of Machine Behaviour: the scientific study of behaviour exhibited by intelligent machines.

This new discipline is concerned with the scientific study of machines, not as engineering artefacts, but as a new class of actors with their unique behavioural patterns and ecology. Crucially, this field overlaps with, but is distinct from computer science and robotics, as it treats machine behaviour observationally and experimentally, without necessarily appealing to the machine's internal mechanisms. Machine Behaviour is akin to how the fields of animal behaviour - also known as ethology - and behavioural ecology study the behaviour of animals without necessarily focusing on physiology or biochemistry.

Our definition of the new field of Machine Behaviour comes with some caveats. Studying machine behaviour does not imply that AI algorithms have agency - in the sense that they are socially responsible for their actions. If someone's dog bites a bystander, it is the owner of the dog who is held responsible. Nonetheless, it is useful to study - and therefore effectively predict - dog behaviour. Similarly, machines are embedded in a larger socio-technical fabric, with human stakeholders who are responsible for deploying them, and for the harm they may cause to others.

A second caveat is that machines exhibit behaviours that are fundamentally different from animals and humans, so we must avoid any tendency to excessively anthropomorphize or zoomorphize machines. Even if borrowing scientific methods from the study of human and animal behaviour may prove useful for the study of machines, machines may exhibit forms of intelligence and behavioural patterns that are qualitatively different - even alien.

**Q13.** The study of machine behaviour will definitely involve study of which of the following according to the passage?

- a) The qualitative differences between machine behaviour and human and animal behaviours
- b) The uniqueness of machine behavioural patterns **Your answer is correct**
- c) The application of observational and experimental study of machine behaviour.
- d) Scientific methods which can help relate machine behaviour to human and animal behaviours.

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>105</b>
Avg. time spent on this question by all students	<b>104</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>112</b>
% of students who attempted this question	<b>48.83</b>
% of students who got the question right of those who attempted	<b>26.09</b>

[Video Solution](#)[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 308

'This new discipline is concerned with the scientific study of machines, not as engineering artefacts, but as a new class of actors with their unique behavioural patterns and ecology.'

'Even if borrowing scientific methods from the study of human and animal behaviour may prove useful for the study of machines, machines may exhibit forms of intelligence and behavioural patterns that are qualitatively different – even alien.'

Option A: From the second line, given above, while there is a qualitative difference between behaviours of machines and those of humans and animals, the passage doesn't suggest that these differences will definitely be studied. Hence, choice A is not the answer.

Option B: From the first line given above, we can understand that the uniqueness of the behavioural patterns may be studied. There is only one crucial element to be pondered over in this option – Are the two expressions 'uniqueness of machine behavioural patterns' and 'scientific study as a new class of actors with their unique behavioural patterns' the same. Any study that is aware that the behavioural patterns are unique, may have arrived at that conclusion only if it studies the uniqueness. That is because calling something unique (the only one with those qualities) needs one to prove why no one else can have those qualities. Unless we know about those qualities we cannot call something unique. Hence, choice B is the answer.

Option C: The 'application of observational and experimental study of machine behaviour' indicates uses of the study of behaviour. The passage suggests treating machine behaviour observationally and experimentally, which is totally different from what areas the study of machine behaviour will be used in. Hence, choice C is not the answer.

Option D: From the second line stated above, we can understand that some scientific methods from the study of human and animal behaviours could be borrowed to study or analyse machine behaviour. It doesn't mean that those scientific methods should be used to relate machine behaviour with human and animal behaviours. Hence, choice D is not the answer.

Choice (B)

undefined

**DIRECTIONS for questions 14 to 16:** The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

"Breaking the fourth wall" in theater does not mean that a contractor needs to be called to clean up the mess. Instead, it refers to the notion that actors must pretend that the audience simply is not there in order to complete their immersion in the story and maintain suspension of disbelief. The idea is that the three walls of the stage have a "fourth wall" that comes between the actors and the audience, and doing anything to acknowledge the audience or that reminds them they are watching a play "destroys" this barrier.

Breaking the fourth wall is often used as an ironic device meant to trigger laughs. Jokes like "we need to stop singing or we'll never get through this scene" are common lines thrown in by directors. Changing location references in the original scripts to locations the audience would be familiar with during reproductions is another oft-used gag.

Mel Brooks became the king of pitching jokes to the audience during his films and his *The Producers* musical. For example, his villain in *Blazing Saddles* inspires the henchmen by saying: "You will only be risking your lives, while I will be risking an almost certain Academy Award nomination for Best Supporting Actor." By the same token, *Robin Hood Men in Tights* has a moment where everyone pulls out the script to confirm what happens next in the plot.

Uses like these make the breaking of the fourth wall engaging rather than distancing, but they are only successful when wielded carefully. In general, rehearsals will establish whether or not a fourth-wall-breaking device will work with audiences, and only with careful preparation at that.

**Q14.** Which of the following statements, if falsified, will weaken the need for 'breaking the fourth wall'?

- a) Theater at its core needs to keep the audience informed as much as possible about the development of the plot and the characters.
- b) **The absence of direct communication with the audience of a play distances them from the main happenings on the stage.**
- c) **Not every play needs audience engagement in order to be a success.** □ **Your answer is incorrect**
- d) **Directly addressing the audience isn't the only way of engaging the audience.**

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>380</b>
Avg. time spent on this question by all students	<b>248</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>250</b>
% of students who attempted this question	<b>38.57</b>
% of students who got the question right of those who attempted	<b>36.39</b>

[Video Solution](#)

## [Text Solution](#)

### **Number of words and Explanatory notes for RC:**

Number of words: 273

According to the passage, 'Breaking the fourth wall is often used as an ironic device meant to trigger laughs'. This is a reason for breaking the fourth wall and, towards the end of the passage, the author also suggests that, when wielded carefully, this will engage the audience, which is a broader reason for 'breaking the fourth wall'.

Option A: If the statement is false, we understand that theatre doesn't necessarily need to keep the audience informed about plot development. In the passage, plot development isn't addressed as one of the reasons behind 'breaking the fourth wall'. So, choice A will be irrelevant from this perspective, whose falsity doesn't necessarily weaken the argument.

Option B: '*Uses like these make the breaking of the fourth wall engaging rather than distancing.*' From this line we can understand that the 'fourth wall' is broken sometimes to engage the audience and stop them from being distanced. If the given statement is false, it means absence of direct communication doesn't distance the audience. That would counter one of the reasons why the 'fourth wall' is broken and thereby, weaken the need for breaking it. Therefore, choice B is the answer.

Option C: Breaking the fourth wall enhances audience engagement as the line '*Uses like these make the breaking of the fourth wall engaging rather than distancing*' suggests. This option when falsified would indicate that every play needs audience engagement in order to be successful. This will strengthen the case for breaking the 'fourth wall'. Choice C is not the answer.

Option D: This sentence when falsified will indicate that directly addressing the audience is the only way of engaging them. So, when falsified, this option strengthens the case for breaking the 'fourth wall' whose primary purpose is to engage the audience. Choice D is not the answer.

Choice (B)

undefined

**DIRECTIONS for questions 14 to 16:** The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

"Breaking the fourth wall" in theater does not mean that a contractor needs to be called to clean up the mess. Instead, it refers to the notion that actors must pretend that the audience simply is not there in order to complete their immersion in the story and maintain suspension of disbelief. The idea is that the three walls of the stage have a "fourth wall" that comes between the actors and the audience, and doing anything to acknowledge the audience or that reminds them they are watching a play "destroys" this barrier.

Breaking the fourth wall is often used as an ironic device meant to trigger laughs. Jokes like "we need to stop singing or we'll never get through this scene" are common lines thrown in by directors. Changing location references in the original scripts to locations the audience would be familiar with during reproductions is another oft-used gag.

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Uses like these make the breaking of the fourth wall engaging rather than distancing, but they are only successful when wielded carefully. In general, rehearsals will establish whether or not a fourth-wall-breaking device will work with audiences, and only with careful preparation at that.

**Q15.** Which of the following cannot be inferred from the first para of the passage?

- a) The fourth wall is only an imaginary screen between the actors and the audience of a play.
- b) **Audiences of a play usually participate vicariously while being a 'fly on the wall'.**
- c) **The fourth wall remains intact as long as the actors on stage ignore the audience.**
- d) **Direct communication between the audience and the actors is not the norm.**

You did not answer this question

[Show Correct Answer](#)

#### **Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>93</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>106</b>
% of students who attempted this question	<b>50.02</b>
% of students who got the question right of those who attempted	<b>21.38</b>

[Video Solution](#)

## [Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 273

It refers to the notion that actors must pretend that the audience simply is not there in order to complete their immersion in the story and maintain suspension of disbelief. The idea is that the three walls of the stage have a "fourth wall" that comes between the actors and the audience, and doing anything to acknowledge the audience or that reminds them they are watching a play "destroys" this barrier.

Option A: *It refers to a notion* (idea) clearly suggests that the Fourth Wall is a metaphorical term. That it is a screen between actors and audience is indicated by '*actors must pretend that the audience simply is not there*'. Therefore, choice A can be inferred. Choice A is not the answer.

Option B: 'Fly on the wall' is an idiomatic expression to refer to someone who is watching things unfold without being noticed. Since, the para clearly says actors must pretend the audience doesn't exist, the audience is like a 'fly on the wall'. 'Vicarious' is justified by the last line of the para which says 'breaking the fourth wall' is like reminding the audience that they are watching a play. So, when the fourth wall exists we can infer the audience has immersed itself in the play. Therefore, choice B can be inferred. Choice B is not the answer.

Option C: The expression '*doing anything to acknowledge the audience*' suggests that the actors pretend to not notice the audience. So, the fourth wall is broken when the actors acknowledge the audience. Since, fourth wall can only be broken by actors, as suggested by '*a "fourth wall" that comes between the actors and the audience*', it remains intact as long as the actors don't break it. So, choice C can be inferred. Choice C is not the answer.

Option D: The para is about what it means to break the 'fourth wall'. Whether breaking the wall is the norm or not has not been mentioned in the para. Therefore, it cannot be inferred whether direct communication between the audience and the actors is the norm or the exception. Choice D is the answer.

Choice (D)

undefined

**DIRECTIONS for questions 14 to 16:** The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

"Breaking the fourth wall" in theater does not mean that a contractor needs to be called to clean up the mess. Instead, it refers to the notion that actors must pretend that the audience simply is not there in order to complete their immersion in the story and maintain suspension of disbelief. The idea is that the three walls of the stage have a "fourth wall" that comes between the actors and the audience, and doing anything to acknowledge the audience or that reminds them they are watching a play "destroys" this barrier.

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Uses like these make the breaking of the fourth wall engaging rather than distancing, but they are only successful when wielded carefully. In general, rehearsals will establish whether or not a fourth-wall-breaking device will work with audiences, and only with careful preparation at that.

**Q16.** Which of the following best depicts the 'irony' referred to in the sentence: 'Breaking the fourth wall is often used as an ironic device meant to trigger laughs.' (Para 2)?

- a) The very actors who are meant to make the audience cry are making them laugh instead.
- b) **Actors should make the audience forget they are watching a play, but instead they remind them of the same.**
- c) **The audience doesn't have the sense of humour to catch subtle wit, thereby requiring literary devices to be engaged.**
- d) **There is a reason why it is called a 'wall' and breaking it counters that reason.** Your answer is incorrect

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	127
Avg. time spent on this question by all students	92
Difficulty Level	M
Avg. time spent on this question by students who got this question right	84
% of students who attempted this question	44.02
% of students who got the question right of those who attempted	68.17

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 273

Irony is defined as 'incongruity between actual result and the expected result'. The irony here is that the 'fourth wall' is an invisible barrier, that is instead used as a medium of communication between the actors and the audience.

Option A: There is no reference in the passage about the assumption that an actor's job is to only make the audience cry. Hence, choice A can be ruled out.

Option B: The stage has three walls. The fourth wall is missing because the audience are watching what is happening on the stage. Yet, there is an invisible barrier between the actors and the audience. It is the job of the actors to ensure the audience aren't aware it is a play that they are watching, to ensure they get an immersive experience. Instead, if the actors themselves communicate with the audience and remind them they are watching a play, they are doing the exact opposite of what is expected of them, traditionally. Hence, this is the irony. Choice B is the answer.

Option C: We cannot remark on the 'sense of humour' of the audience as it hasn't been spoken about. Besides, even if they lacked sense of humour, the use of devices to make them laugh doesn't represent an incongruity between eventual and expected results; it will simply be an improvisation. Hence, choice C can be ruled out.

Option D: Breaking a wall, here is a metaphor. However, it is not an irony. An easy way to understand that is by looking at how many events are involved. In an irony, there is one expected event in opposition to the actual event that unravels (two situations). Breaking a wall – a single event – cannot be ironical. Choice D is not the answer.

Choice (B)

undefined

**DIRECTIONS for questions 17 to 22:** The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

In all of the world's 148 big wild terrestrial herbivorous mammals - the candidates for domestication - only 14 passed the test. Why did the other 134 species fail? To which conditions was Francis Galton referring, when he spoke of those other species as 'destined to perpetual wildness'?

The answer follows from the Anna Karenina principle. To be domesticated, a candidate wild species must possess many different characteristics. Lack of any single required characteristic dooms efforts at domestication, just as it dooms efforts at building a happy marriage. Playing marriage counsellor to the zebra-human couple and other ill-sorted pairs, we can recognize at least six groups of reasons for failed domestication.

Diet. Every time that an animal eats a plant or another animal the conversion of food biomass into the consumer's biomass involves an efficiency of much less than 100 percent: typically, around 10 percent. That is, it takes around 10000 pounds of corn to grow a 1000-pound cow. If instead you want to grow 1000 pounds of carnivore, you have to feed it 10000 pounds of herbivores grown on 100,000 pounds of corn. Even among herbivores and omnivores, many species like koalas, are too finicky in their plant preferences to recommend themselves as farm animals. As a result of this fundamental inefficiency, no mammalian carnivore has ever been domesticated for food.

Growth rate. To be worth keeping, domesticates must also grow quickly. That eliminates gorillas and elephants, even though they are the vegetarians with admirably non-finicky food preferences and represent a lot of meat. What would-be gorilla or elephant rancher would wait 15 years for his herd to reach the adult size?

Problems of captive breeding. Some potentially valuable animal species don't like to mate under the watchful eyes of others. That's what derailed attempts to domesticate cheetahs, the swiftest of all land animals, despite our strong motivation to do so for thousands of years.

Nasty disposition. Naturally, almost any mammal species that is sufficiently large is capable of killing a human. People have been killed by pigs, horses, camels, and cattle. Nevertheless, some large animals have much nastier dispositions and are more incurably dangerous than are others. Tendencies to kill humans have disqualified many otherwise seemingly ideal candidates for domestication. One obvious example is the grizzly bear. Bear meat is an expensive delicacy, grizzlies weigh up to 1700 pounds, they are mainly vegetarians (though formidable hunters), their vegetable diet is very broad, they thrive on human garbage and they grow relatively fast. If they behaved themselves in captivity, grizzlies would be a fabulous meat production animal.

Tendency to panic. Big mammalian herbivore species react to danger from predators or humans in different ways. Some species are nervous, fast, and programmed for instant flight when they perceive a threat. Other species are slower, less nervous, seek protection in herds, stand their ground when threatened, and don't run until necessary. Naturally, the nervous species are difficult to keep in captivity. If put into an enclosure, they are likely to panic, and either die of shock or batter themselves to death against the fence in their attempts to escape.

Social structure. Almost all species of domesticated large mammals prove to be ones whose wild ancestors share three social characteristics: they live in herds; they maintain a well-developed dominance hierarchy among herd members; and the herds occupy overlapping home ranges rather than mutually exclusive territories. When the herd is on the move, its members maintain a stereotyped order so that many adults can coexist in the herd without constant fighting and with each knowing its rank. That social structure is ideal for domestication because humans in effect take over the dominance hierarchy.

Although one of the most puzzling features of animal domestication is the seeming arbitrariness with which some species have been domesticated while their close relatives have not, it turns out that all but a few candidates for domestication have been eliminated by the Anna Karenina principle. Humans and most animal species make an unhappy marriage for one or more of many possible reasons. Thus, Tolstoy would have approved of the insight offered in another context by an earlier author, Saint Matthew: "Many are called, but few are chosen."

**Q17.** The main theme of the passage is:

- a) To illustrate how the Anna Karenina principle can be applied to the animal world. Your answer is incorrect
- b) To bewail the small percentage of animal species which can actually be domesticated out of the large number of potential candidates for domestication.
- c) To highlight the seeming arbitrariness with which some species have been domesticated while their close relatives have not.

d) To summarise the characteristics that explain the method behind the madness that is domestication of wild terrestrial herbivorous animals.

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	574
Avg. time spent on this question by all students	370
Difficulty Level	D
Avg. time spent on this question by students who got this question right	370
% of students who attempted this question	46.01
% of students who got the question right of those who attempted	23.05

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 696

The idea of the passage is to understand the various reasons why animals cannot be domesticated. The author brings all these parameters down to six categories, and failing even one of these six tests can render an animal difficult or rather impossible to domesticate based on evidence.

Option A: While Anna Karenina principle is an integral part of the author's logic, the purpose of the passage is not to see where it applies and where it doesn't. This option is a good example of a statement that is not necessarily false but cannot be picked up as the answer because of the perspective. Choice A is incorrect.

Option B: The author is neither happy nor sad about the numbers. The data and theory have been presented in a very dispassionate way. So, the word 'bewail' which means expressing deep sorrow cannot be justified. Choice B is incorrect.

Option C: While a big part of that option would seem familiar to the reader, the option means the exact opposite of the purpose of the passage. The author isn't highlighting the arbitrariness with which some species have been domesticated. On the contrary, the author is trying to eliminate the arbitrariness by explaining why some species can be domesticated and why some can't be. Choice C is incorrect.

Option D: The 'method behind the madness' is an idiomatic expression referring to a pattern behind the seeming arbitrariness of domestication of some animal species. The passage summarises the characteristics by bringing it down to six aspects that determine whether a species can be domesticated or will present feasibility issues. Hence, D is the answer.

Choice (D)

undefined

**DIRECTIONS** for questions 17 to 22: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

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**Q18.** All of the following can be inferred to be following the Anna Karenina principle EXCEPT:

- a) Good systems must meet a lot of requirements simultaneously in order to function properly.
- b) All happy families are alike while unhappy families may be unhappy in their own way. Your answer is incorrect
- c) All successful companies have done something different, while every failed company is same with respect to the fact that it could not avoid competition.
- d) Men are good in but one way, but bad in many.

Show Correct Answer

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	194
Avg. time spent on this question by all students	121
Difficulty Level	M
Avg. time spent on this question by students who got this question right	120
% of students who attempted this question	33.25
% of students who got the question right of those who attempted	40.76

[Video Solution](#)

[Text Solution](#)

#### Number of words and Explanatory notes for RC:

Number of words: 696

Two sentences give enough evidence to understand the Anna Karenina principle. The answer follows from the Anna Karenina principle. "To be domesticated, a candidate wild species must possess many different characteristics. Lack of any single required characteristic dooms efforts at domestication, just as it dooms efforts at building a happy marriage." Also, "it turns out that all but a few candidates for domestication have been eliminated by the Anna Karenina principle. Humans and most animal species make an unhappy marriage for one or more of many possible reasons." We can understand that the principle is about applying certain characteristic features as selection criteria, failing even one of which would mean a negative result. In other words, a system may fail even if it has fallen short of any one of several criteria while it succeeds only in one way – satisfying all the criteria.

Option A: 'Good systems must meet a lot of requirements simultaneously in order to function properly' – Here, the word 'simultaneously' is the key indicating that we are speaking about systems which must satisfy all the required criteria in order not to fail. Hence, the systems are following the Anna Karenina principle (even one criterion not checked is a negative result). Therefore, choice A is not the answer.

Option B: 'All happy families are alike while unhappy families may be unhappy in their own way' – it suggests that while there are many reasons why a family may be unhappy (the negative result could be due to any of the selection criterion not getting satisfied), a family is happy only in one way – when all the criteria are checked. Hence, choice B follows the Anna Karenina principle and is not the answer.

Option C: 'All successful companies have done something different, while every failed company are same in that they couldn't avoid competition.' – this is antonymous to the Anna Karenina principle. Here, the samples that have failed are said to be similar. This is because the fundamental principle here seems to be the opposite – even if you do one thing differently, you make it as a successful company. But, every company fails because of the same reason (competition) and not because it dissatisfies any of a list of criteria (like the Anna Karenina principle seemingly demands). Hence, choice C is the answer.

Option D: Good in one way, but bad in many – that is the underlying theme of Anna Karenina principle as explained above. Hence, choice D is not the answer.

Choice (C)

undefined

**DIRECTIONS** for questions 17 to 22: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

In all of the world's 148 big wild terrestrial herbivorous mammals - the candidates for domestication - only 14 passed the test. Why did the other 134 species fail? To which conditions was Francis Galton referring, when he spoke of those other species as 'destined to perpetual wildness'?

The answer follows from the Anna Karenina principle. To be domesticated, a candidate wild species must possess many different characteristics. Lack of any single required characteristic dooms efforts at domestication, just as it dooms efforts at building a happy marriage. Playing marriage counsellor to the zebra-human couple and other ill-sorted pairs, we can recognize at least six groups of reasons for failed domestication.

Diet. Every time that an animal eats a plant or another animal the conversion of food biomass into the consumer's biomass involves an efficiency of much less than 100 percent: typically, around 10 percent. That is, it takes around 10000 pounds of corn to grow a 1000-pound cow. If instead you want to grow 1000 pounds of carnivore, you have to feed it 10000 pounds of herbivores grown on 100,000 pounds of corn. Even among herbivores and omnivores, many species like koalas, are too finicky in their plant preferences to recommend themselves as farm animals. As a result of this fundamental inefficiency, no mammalian carnivore has ever been domesticated for food.

Growth rate. To be worth keeping, domesticates must also grow quickly. That eliminates gorillas and elephants, even though they are the vegetarians with admirably non-finicky food preferences and represent a lot of meat. What would-be gorilla or elephant rancher would wait 15 years for his herd to reach the adult size?

Problems of captive breeding. Some potentially valuable animal species don't like to mate under the watchful eyes of others. That's what derailed attempts to domesticate cheetahs, the swiftest of all land animals, despite our strong motivation to do so for thousands of years.

Nasty disposition. Naturally, almost any mammal species that is sufficiently large is capable of killing a human. People have been killed by pigs, horses, camels, and cattle. Nevertheless, some large animals have much nastier dispositions and are more incurably dangerous than are others. Tendencies to kill humans have disqualified many otherwise seemingly ideal candidates for domestication. One obvious example is the grizzly bear. Bear meat is an expensive delicacy, grizzlies weigh up to 1700 pounds, they are mainly vegetarians (though formidable hunters), their vegetable diet is very broad, they thrive on human garbage and they grow relatively fast. If they behaved themselves in captivity, grizzlies would be a fabulous meat production animal.

Tendency to panic. Big mammalian herbivore species react to danger from predators or humans in different ways. Some species are nervous, fast, and programmed for instant flight when they perceive a threat. Other species are slower, less nervous, seek protection in herds, stand their ground when threatened, and don't run until necessary. Naturally, the nervous species are difficult to keep in captivity. If put into an enclosure, they are likely to panic, and either die of shock or batter themselves to death against the fence in their attempts to escape.

Social structure. Almost all species of domesticated large mammals prove to be ones whose wild ancestors share three social characteristics: they live in herds; they maintain a well-developed dominance hierarchy among herd members; and the herds occupy overlapping home ranges rather than mutually exclusive territories. When the herd is on the move, its members maintain a stereotyped order so that many adults can coexist in the herd without constant fighting and with each knowing its rank. That social structure is ideal for domestication because humans in effect take over the dominance hierarchy.

Although one of the most puzzling features of animal domestication is the seeming arbitrariness with which some species have been domesticated while their close relatives have not, it turns out that all but a few candidates for domestication have been eliminated by the Anna Karenina principle. Humans and most animal species make an unhappy marriage for one or more of many possible reasons. Thus, Tolstoy would have approved of the insight offered in another context by an earlier author, Saint Matthew: "Many are called, but few are chosen."

**Q19.** The author uses the example of a grizzly bear to drive home the point that:

- a) Some largely vegetarian animals can be formidable hunters.
- b) Not every vegetarian animal is necessarily inefficient when it comes to diet conversion.
- c) Animals with pernicious temperaments cannot be domesticated. Your answer is correct
- d) Large animals have much nastier dispositions and are more incurably dangerous than are others.

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>93</b>
Avg. time spent on this question by all students	<b>103</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>97</b>
% of students who attempted this question	<b>48.51</b>
% of students who got the question right of those who attempted	<b>27.52</b>

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 696

Tendencies to kill humans have disqualified many otherwise seemingly ideal candidates for domestication. One obvious example is the grizzly bear. Bear meat is an expensive delicacy, grizzlies weigh up to 1700 pounds, they are mainly vegetarians (though formidable hunters), their vegetable diet is very broad, they thrive on human garbage and they grow relatively fast. If they behaved themselves in captivity, grizzlies would be a fabulous meat production animal. The underlined portions explain why the grizzlies could not be domesticated – because they have a nasty disposition.

Option A: Although grizzlies are formidable hunters despite being predominantly vegetarian, that was not the author's main purpose in citing them. It was only a side note. Therefore, choice A is incorrect.

Option B: Grizzlies can thrive on even garbage and offer a massive tonnage of food. But, once again, it is just a side note in the actual discussion which is about why grizzlies, despite checking a lot of boxes are still not ideal for domestication – because they are dangerous and capable of killing humans. Choice B is incorrect.

Option C: Pernicious temperament is synonymous to nasty disposition. This line explains how grizzlies disqualify for domestication, the main idea behind the example. Therefore, choice C is the answer.

Option D: From the passage, 'almost any mammal species that is sufficiently large is capable of killing a human. Nevertheless, some large animals have much nastier dispositions and are more incurably dangerous than are others.' Not all large animals necessarily have nasty dispositions. Some of them are dangerous. But, the example of grizzlies is not a commentary on the disposition of large animals. The grizzlies haven't been called dangerous because of their large size. Hence, choice D is incorrect.

Choice (C)

undefined

**DIRECTIONS** for questions 17 to 22: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

In all of the world's 148 big wild terrestrial herbivorous mammals - the candidates for domestication - only 14 passed the test. Why did the other 134 species fail? To which conditions was Francis Galton referring, when he spoke of those other species as 'destined to perpetual wildness'?

The answer follows from the Anna Karenina principle. To be domesticated, a candidate wild species must possess many different characteristics. Lack of any single required characteristic dooms efforts at domestication, just as it dooms efforts at building a happy marriage. Playing marriage counsellor to the zebra-human couple and other ill-sorted pairs, we can recognize at least six groups of reasons for failed domestication.

Diet. Every time that an animal eats a plant or another animal the conversion of food biomass into the consumer's biomass involves an efficiency of much less than 100 percent: typically, around 10 percent. That is, it takes around 10000 pounds of corn to grow a 1000-pound cow. If instead you want to grow 1000 pounds of carnivore, you have to feed it 10000 pounds of herbivores grown on 100,000 pounds of corn. Even among herbivores and omnivores, many species like koalas, are too finicky in their plant preferences to recommend themselves as farm animals. As a result of this fundamental inefficiency, no mammalian carnivore has ever been domesticated for food.

Growth rate. To be worth keeping, domesticates must also grow quickly. That eliminates gorillas and elephants, even though they are the vegetarians with admirably non-finicky food preferences and represent a lot of meat. What would-be gorilla or elephant rancher would wait 15 years for his herd to reach the adult size?

Problems of captive breeding. Some potentially valuable animal species don't like to mate under the watchful eyes of others. That's what derailed attempts to domesticate cheetahs, the swiftest of all land animals, despite our strong motivation to do so for thousands of years.

Nasty disposition. Naturally, almost any mammal species that is sufficiently large is capable of killing a human. People have been killed by pigs, horses, camels, and cattle. Nevertheless, some large animals have much nastier dispositions and are more incurably dangerous than are others. Tendencies to kill humans have disqualified many otherwise seemingly ideal candidates for domestication. One obvious example is the grizzly bear. Bear meat is an expensive delicacy, grizzlies weigh up to 1700 pounds, they are mainly vegetarians (though formidable hunters), their vegetable diet is very broad, they thrive on human garbage and they grow relatively fast. If they behaved themselves in captivity, grizzlies would be a fabulous meat production animal.

Tendency to panic. Big mammalian herbivore species react to danger from predators or humans in different ways. Some species are nervous, fast, and programmed for instant flight when they perceive a threat. Other species are slower, less nervous, seek protection in herds, stand their ground when threatened, and don't run until necessary. Naturally, the nervous species are difficult to keep in captivity. If put into an enclosure, they are likely to panic, and either die of shock or batter themselves against the fence in their attempts to escape.

Social structure. Almost all species of domesticated large mammals prove to be ones whose wild ancestors share three social characteristics: they live in herds; they maintain a well-developed dominance hierarchy among herd members; and the herds occupy overlapping home ranges rather than mutually exclusive territories. When the herd is on the move, its members maintain a stereotyped order so that many adults can coexist in the herd without constant fighting and with each knowing its rank. That social structure is ideal for domestication because humans in effect take over the dominance hierarchy.

Although one of the most puzzling features of animal domestication is the seeming arbitrariness with which some species have been domesticated while their close relatives have not, it turns out that all but a few candidates for domestication have been eliminated by the Anna Karenina principle. Humans and most animal species make an unhappy marriage for one or more of many possible reasons. Thus, Tolstoy would have approved of the insight offered in another context by an earlier author, Saint Matthew: "Many are called, but few are chosen."

**Q20.** None of the following examples indicates suitability for domestication as can be inferred from the passage, EXCEPT:

- a) Gazelles are prone to bashing themselves against the walls, and can leap nearly 30 feet and run at 50 miles per hour especially when they sense danger.
- b) Zebras have the unpleasant habit of biting a person and not letting go.
- c) Cats and ferrets are territorial mammal species which cannot be herded in large groups.
- d) Herds of wild horses consist of one stallion, up to half a dozen mares, and their foals. Your answer is correct

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	128
Avg. time spent on this question by all students	103
Difficulty Level	M
Avg. time spent on this question by students who got this question right	101
% of students who attempted this question	39.25
% of students who got the question right of those who attempted	50.26

[Video Solution](#)

[Text Solution](#)

#### Number of words and Explanatory notes for RC:

Number of words: 696

Option A: From this line, 'Naturally, the nervous species are difficult to keep in captivity. If put into an enclosure, they are likely to panic, and either die of shock or batter themselves to death against the fence in their attempts to escape', it can be inferred that gazelles which bash themselves against the walls and leap and sprint when they sense danger are way too nervous and panicky to be domesticated. Choice A is incorrect.

Option B: Since Zebras have a biting habit, their disposition does not make them suitable for domestication. This disqualifies them from being successfully domesticated. Choice B is incorrect.

Option C: From the line, 'Almost all species of domesticated large mammals prove to be ones whose wild ancestors share three social characteristics: they live in herds; they maintain a well-developed dominance hierarchy among herd members; and the herds occupy overlapping home ranges rather than mutually exclusive territories', we can infer that animals which cannot live in herds and are territorial (don't share areas) cannot be domesticated. Hence, choice C is incorrect.

Option D: This line describes a hierarchy/herd structure which according to the passage is an important criterion for domestication. 'That social structure is ideal for domestication because humans in effect take over the dominance hierarchy.' This line confirms why horses' social structure is ideal for domestication. Hence, choice D is the answer.

Choice (D)

undefined

**DIRECTIONS** for questions 17 to 22: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

In all of the world's 148 big wild terrestrial herbivorous mammals - the candidates for domestication - only 14 passed the test. Why did the other 134 species fail? To which conditions was Francis Galton referring, when he spoke of those other species as 'destined to perpetual wildness'?

The answer follows from the Anna Karenina principle. To be domesticated, a candidate wild species must possess many different characteristics. Lack of any single required characteristic dooms efforts at domestication, just as it dooms efforts at building a happy marriage. Playing marriage counsellor to the zebra-human couple and other ill-sorted pairs, we can recognize at least six groups of reasons for failed domestication.

Diet. Every time that an animal eats a plant or another animal the conversion of food biomass into the consumer's biomass involves an efficiency of much less than 100 percent: typically, around 10 percent. That is, it takes around 10000 pounds of corn to grow a 1000-pound cow. If instead you want to grow 1000 pounds of carnivore, you have to feed it 10000 pounds of herbivores grown on 100,000 pounds of corn. Even among herbivores and omnivores, many species like koalas, are too finicky in their plant preferences to recommend themselves as farm animals. As a result of this fundamental inefficiency, no mammalian carnivore has ever been domesticated for food.

Growth rate. To be worth keeping, domesticates must also grow quickly. That eliminates gorillas and elephants, even though they are the vegetarians with admirably non-finicky food preferences and represent a lot of meat. What would-be gorilla or elephant rancher would wait 15 years for his herd to reach the adult size?

Problems of captive breeding. Some potentially valuable animal species don't like to mate under the watchful eyes of others. That's what derailed attempts to domesticate cheetahs, the swiftest of all land animals, despite our strong motivation to do so for thousands of years.

Nasty disposition. Naturally, almost any mammal species that is sufficiently large is capable of killing a human. People have been killed by pigs, horses, camels, and cattle. Nevertheless, some large animals have much nastier dispositions and are more incurably dangerous than are others. Tendencies to kill humans have disqualified many otherwise seemingly ideal candidates for domestication. One obvious example is the grizzly bear. Bear meat is an expensive delicacy, grizzlies weigh up to 1700 pounds, they are mainly vegetarians (though formidable hunters), their vegetable diet is very broad, they thrive on human garbage and they grow relatively fast. If they behaved themselves in captivity, grizzlies would be a fabulous meat production animal.

Tendency to panic. Big mammalian herbivore species react to danger from predators or humans in different ways. Some species are nervous, fast, and programmed for instant flight when they perceive a threat. Other species are slower, less nervous, seek protection in herds, stand their ground when threatened, and don't run until necessary. Naturally, the nervous species are difficult to keep in captivity. If put into an enclosure, they are likely to panic, and either die of shock or batter themselves to death against the fence in their attempts to escape.

Social structure. Almost all species of domesticated large mammals prove to be ones whose wild ancestors share three social characteristics: they live in herds; they maintain a well-developed dominance hierarchy among herd members; and the herds occupy overlapping home ranges rather than mutually exclusive territories. When the herd is on the move, its members maintain a stereotyped order so that many adults can coexist in the herd without constant fighting and with each knowing its rank. That social structure is ideal for domestication because humans in effect take over the dominance hierarchy.

Although one of the most puzzling features of animal domestication is the seeming arbitrariness with which some species have been domesticated while their close relatives have not, it turns out that all but a few candidates for domestication have been eliminated by the Anna Karenina principle. Humans and most animal species make an unhappy marriage for one or more of many possible reasons. Thus, Tolstoy would have approved of the insight offered in another context by an earlier author, Saint Matthew: "Many are called, but few are chosen."

**Q21.** Which of the following is not a relevant question that needs to be answered, as per the passage, to understand whether an animal species can be domesticated?

- a) Is the animal species gregarious?
- b) Does the animal species bolt in the face of danger?
- c) Can the courtship ritual of the animal be carried out inside an enclosure?
- d) Are they the source of valuable commodities? Your answer is correct

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	114
Avg. time spent on this question by all students	72
Difficulty Level	E
Avg. time spent on this question by students who got this question right	73
% of students who attempted this question	40.78
% of students who got the question right of those who attempted	49.81

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 696

We are looking for an option that doesn't fit the six criteria listed out in the passage to be considered for domestication: Diet, breeding in captivity, growth speed, nasty disposition, social structure, tendency to panic.

Option A: Gregarious refers to sociability, so can indicate an animal species' proclivity towards being herded. It is one of the six criteria listed above. Hence, choice A is incorrect.

Option B: 'Bolt' means to dash, or sprint. From this line, 'Some species are nervous, fast, and programmed for instant flight when they perceive a threat. Other species are slower, less nervous, seek protection in herds, stand their ground when threatened, and don't run until necessary. Naturally, the nervous species are difficult to keep in captivity', we can understand that an animal that bolts when nervous cannot be domesticated easily. It is important particularly for this option to know the correct interpretation of the word 'bolt'. Hence, choice B is incorrect.

Option C: If an animal's courtship/mating ritual cannot be carried out under 'watchful eyes', it becomes troublesome to domesticate the animal. Hence, choice C is incorrect.

Option D: Whether the animal can be raised for food is a side-consideration. Whether the animal offers valuable commodities (horns/skin/meat, etc.) is not a consideration when discussing domestication. That has more to do with the need/incentive to domesticate the animal. The passage is more to do with when an animal can be domesticated and when it cannot be, irrespective of whatever the incentive may be. Choice D is the answer.

Choice (D)

undefined

**DIRECTIONS** for questions 17 to 22: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

In all of the world's 148 big wild terrestrial herbivorous mammals - the candidates for domestication - only 14 passed the test. Why did the other 134 species fail? To which conditions was Francis Galton referring, when he spoke of those other species as 'destined to perpetual wildness'?

The answer follows from the Anna Karenina principle. To be domesticated, a candidate wild species must possess many different characteristics. Lack of any single required characteristic dooms efforts at domestication, just as it dooms efforts at building a happy marriage. Playing marriage counsellor to the zebra-human couple and other ill-sorted pairs, we can recognize at least six groups of reasons for failed domestication.

Diet. Every time that an animal eats a plant or another animal the conversion of food biomass into the consumer's biomass involves an efficiency of much less than 100 percent: typically, around 10 percent. That is, it takes around 10000 pounds of corn to grow a 1000-pound cow. If instead you want to grow 1000 pounds of carnivore, you have to feed it 10000 pounds of herbivores grown on 100,000 pounds of corn. Even among herbivores and omnivores, many species like koalas, are too finicky in their plant preferences to recommend themselves as farm animals. As a result of this fundamental inefficiency, no mammalian carnivore has ever been domesticated for food.

Growth rate. To be worth keeping, domesticates must also grow quickly. That eliminates gorillas and elephants, even though they are the vegetarians with admirably non-finicky food preferences and represent a lot of meat. What would-be gorilla or elephant rancher would wait 15 years for his herd to reach the adult size?

Problems of captive breeding. Some potentially valuable animal species don't like to mate under the watchful eyes of others. That's what derailed attempts to domesticate cheetahs, the swiftest of all land animals, despite our strong motivation to do so for thousands of years.

Nasty disposition. Naturally, almost any mammal species that is sufficiently large is capable of killing a human. People have been killed by pigs, horses, camels, and cattle. Nevertheless, some large animals have much nastier dispositions and are more incurably dangerous than are others. Tendencies to kill humans have disqualified many otherwise seemingly ideal candidates for domestication. One obvious example is the grizzly bear. Bear meat is an expensive delicacy, grizzlies weigh up to 1700 pounds, they are mainly vegetarians (though formidable hunters), their vegetable diet is very broad, they thrive on human garbage and they grow relatively fast. If they behaved themselves in captivity, grizzlies would be a fabulous meat production animal.

Tendency to panic. Big mammalian herbivore species react to danger from predators or humans in different ways. Some species are nervous, fast, and programmed for instant flight when they perceive a threat. Other species are slower, less nervous, seek protection in herds, stand their ground when threatened, and don't run until necessary. Naturally, the nervous species are difficult to keep in captivity. If put into an enclosure, they are likely to panic,

and either die of shock or batter themselves to death against the fence in their attempts to escape.

Social structure. Almost all species of domesticated large mammals prove to be ones whose wild ancestors share three social characteristics: they live in herds; they maintain a well-developed dominance hierarchy among herd members; and the herds occupy overlapping home ranges rather than mutually exclusive territories. When the herd is on the move, its members maintain a stereotyped order so that many adults can coexist in the herd without constant fighting and with each knowing its rank. That social structure is ideal for domestication because humans in effect take over the dominance hierarchy.

Although one of the most puzzling features of animal domestication is the seeming arbitrariness with which some species have been domesticated while their close relatives have not, it turns out that all but a few candidates for domestication have been eliminated by the Anna Karenina principle. Humans and most animal species make an unhappy marriage for one or more of many possible reasons. Thus, Tolstoy would have approved of the insight offered in another context by an earlier author, Saint Matthew: "Many are called, but few are chosen."

**Q22.** All of the following are true based on the information in the passage EXCEPT:

- a) Gorilla and elephant ranches don't exist because waiting for 15 years for the herd to reach adult size is not economically feasible. Your answer is incorrect
- b) 134 of 148 wild terrestrial herbivorous mammals are destined to perpetual wildness because of the problems in domesticating them.
- c) Grizzlies weigh up to 1700 pounds which makes them extremely dangerous to domesticate.
- d) The Anna Karenina principle does explain why many are called but only few are chosen.

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	130
Avg. time spent on this question by all students	98
Difficulty Level	E
Avg. time spent on this question by students who got this question right	88
% of students who attempted this question	45.32
% of students who got the question right of those who attempted	59.02

[Video Solution](#)

[Text Solution](#)

#### Number of words and Explanatory notes for RC:

Number of words: 696

Option A: "What would-be gorilla or elephant rancher would wait 15 years for his herd to reach the adult size?" This rhetorical question (A question that isn't looking for information, merely making a remark) clearly shows elephants and gorillas are not domesticated because they take too long to grow to adult size. Hence, choice A is true and therefore, not the answer.

Option B: 'In all of the world's 148 big wild terrestrial herbivorous mammals – the candidates for domestication – only 14 passed the test.' This clearly suggests that only 14 of the 148 passed the test as candidates for domestication. Hence, choice B is true, and therefore not the answer.

Option C: Grizzlies are large animals which are dangerous. But, the danger they pose to humans is the reason they are not domesticated. Their weight has got nothing to do with the danger they present. Hence, C is false and therefore, the answer.

Option D: Anna Karenina principle is about how for a system to succeed it has to check all the boxes and cannot afford to fail even in one. With respect to the passage, the line, 'many are called, but only a few are chosen', refers to how very few of the candidates for domestication can actually be domesticated. So, Anna Karenina principle explains why that is so. Hence, D is true, and therefore, not the answer.

Choice (C)

undefined

**DIRECTIONS** for questions 23 to 28: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Who wants to be average? To be average is to be commonplace and unexceptional. It conjures up the mediocre or banal - the consensus, the mass, the run of the mill. But here's the rub: in the right circumstances, the average is the best place to be. Take a competition based on guessing something, such as the number of jellybeans in a barrel or the weight of a cow. In most cases, the average of a crowd's guesses is more likely to be accurate than those of its individual members. Although it may be counter to our intuitions, the masses can be smarter than the solitary expert. So much for mediocrity.

That insight is at the heart of James Surowiecki's intelligent book. What he lays out is a valuable counter-argument to the contempt for the crowd that dates back to the Victorian era. Considering a widening of the franchise and the rapid advancement of the working classes, writers and philosophers on both sides of the Atlantic worried about the effect of unleashing the masses upon the ballot box. Writers such as Thomas Carlyle expected a repeat of the horrors that followed the French revolution in 1789 or the barricades of 1848: mass unrest and disorder, with the newly enfranchised crowd seizing wealth and power. Luckily, Carlyle was wrong, as he was on so many other things. Instead, the interesting question is why the era of mass enfranchisement has seen the less well-off members of society so frequently vote against their own economic interests. Given the breath-taking inequality that exists in many democracies, how is it that the average doesn't choose parties backing economic redistribution?

The answer to that question reveals the limitations on the wisdom of crowds. The average of a sufficient number of guesses will get the number of jellybeans right. But supplying distracting or misleading information can easily skew the individual's responses. Collect enough people on a street corner staring at the sky, and everyone who walks past will look up. Show a voter enough political broadcasts or commentaries and she may be persuaded to vote against her interests.

Given enough encouragement, a large group may even be convinced that black is indeed white. In 1841 the Scottish writer Charles Mackay published Extraordinary Popular Delusions and the Madness of Crowds, a compendium of the cacoethes to which societies succumb, including the Dutch tulip mania of the 1630s, the South Sea bubble, the crusades and long hair. To Mackay's list Surowiecki adds the dotcom boom of the late 1990s, and the less well-known but more amusing bowling bubble of the 1950s, caused by a fanciful calculation that every man, woman and child in the US would bowl for two hours a week, 52 weeks a year. A financial market is a crowd like any other but, to paraphrase JM Keynes, the market can be wrong for longer than you can afford to be right.

Even so, Surowiecki's book is an antidote to the notion that a camel is a horse designed by a committee. The example of the spread of Linux open-source software shows the intelligent crowd in action, able to produce reliable and cheap computer software compared with the alternatives from companies such as Microsoft.

Surowiecki recognises the weaknesses of groups in situations where they would be expected to show their mettle. The Nasa mission team that discussed the risks facing the space shuttle Columbia in 2003 failed to see the damage to the shuttle's wing that caused it to be destroyed on re-entry. Similarly, the intelligence services of the US and Britain failed to consider the possibility that Iraq harboured no weapons of mass destruction. In both cases the result of "group think" was no better than that of an individual. Even groups of experts work properly only when they allow space for dissenting voices to be considered.

The Catholic church was wise to adopt the office of "Advocatus Diaboli" when considering its candidates for sainthood. A group that merely confirms already held opinion serves no useful purpose. A committee that thinks of nothing but camels will surely design one; a committee that frets about weapons of mass destruction everywhere will imagine them anywhere.

**Q23.** Which of the following is indicative of the way in which the author of the passage views the book?

- a) Enthusiastic admiration
- b) Dispassionate analysis
- c) Subtle criticism
- d) Biased optimism

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>66</b>
Avg. time spent on this question by all students	<b>309</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>311</b>
% of students who attempted this question	<b>26.95</b>
% of students who got the question right of those who attempted	<b>26.88</b>

[Video Solution](#)

[Text Solution](#)

#### Number of words and Explanatory notes for RC:

Number of words: 697

"That insight is at the heart of James Surowiecki's intelligent book," "Surowiecki's book is an antidote to the notion that a camel is a horse designed by committee", and "Surowiecki recognises the weaknesses of groups" clearly suggest that the author of the passage agrees with the author of the book on all counts and strongly recommends the book.

Option A: The author applauds the book (agrees and appreciates through lines like above) and agrees almost in its entirety with the opinions of the author of the book, Surowiecki. He doesn't stop at that. He uses positive adjectives to describe the book. Therefore, choice A is the answer.

Option B: Dispassionate analysis would be the tone when the author analyses the book, dissects it and gives evidence for positive and negative opinions on the subject. In this review/critique, the author talks about two things – the content of the book and the author's approach to the content. The author agrees with the entire content (and Surowiecki's analysis) without presenting much of his own. Also, the author's tone is not neutral but positive towards the book and its author. The author was not dispassionate given his obvious admiration. Choice B is not the answer.

Option C: This is a negative option and can be eliminated on tone. There are no negative modifiers in the passage that colour the author of the passage's take on the book. Hence, choice C is incorrect.

Option D: The author is mostly one-sided – positive towards the book. Therefore, 'biased' cannot be ruled out. Nevertheless, the word 'optimism' cannot be justified as one can be optimistic about an event and its outcome, not towards a book. Hence, choice D is incorrect.

Choice (A)

**DIRECTIONS** for questions 23 to 28: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Who wants to be average? To be average is to be commonplace and unexceptional. It conjures up the mediocre or banal - the consensus, the mass, the run of the mill. But here's the rub: in the right circumstances, the average is the best place to be. Take a competition based on guessing something, such as the number of jellybeans in a barrel or the weight of a cow. In most cases, the average of a crowd's guesses is more likely to be accurate than those of its individual members. Although it may be counter to our intuitions, the masses can be smarter than the solitary expert. So much for mediocrity.

That insight is at the heart of James Surowiecki's intelligent book. What he lays out is a valuable counter-argument to the contempt for the crowd that dates back to the Victorian era. Considering a widening of the franchise and the rapid advancement of the working classes, writers and philosophers on both sides of the Atlantic worried about the effect of unleashing the masses upon the ballot box. Writers such as Thomas Carlyle expected a repeat of the horrors that followed the French revolution in 1789 or the barricades of 1848: mass unrest and disorder, with the newly enfranchised crowd seizing wealth and power. Luckily, Carlyle was wrong, as he was on so many other things. Instead, the interesting question is why the era of mass enfranchisement has seen the less well-off members of society so frequently vote against their own economic interests. Given the breath-taking inequality that exists in many democracies, how is it that the average doesn't choose parties backing economic redistribution?

The answer to that question reveals the limitations on the wisdom of crowds. The average of a sufficient number of guesses will get the number of jellybeans right. But supplying distracting or misleading information can easily skew the individual's responses. Collect enough people on a street corner staring at the sky, and everyone who walks past will look up. Show a voter enough political broadcasts or commentaries and she may be persuaded to vote against her interests.

Given enough encouragement, a large group may even be convinced that black is indeed white. In 1841 the Scottish writer Charles Mackay published Extraordinary Popular Delusions and the Madness of Crowds, a compendium of the cacoethes to which societies succumb, including the Dutch tulip mania of the 1630s, the South Sea bubble, the crusades and long hair. To Mackay's list Surowiecki adds the dotcom boom of the late 1990s, and the less well-known but more amusing bowling bubble of the 1950s, caused by a fanciful calculation that every man, woman and child in the US would bowl for two hours a week, 52 weeks a year. A financial market is a crowd like any other but, to paraphrase JM Keynes, the market can be wrong for longer than you can afford to be right.

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The Catholic church was wise to adopt the office of "Advocatus Diaboli" when considering its candidates for sainthood. A group that merely confirms already held opinion serves no useful purpose. A committee that thinks of nothing but camels will surely design one; a committee that frets about weapons of mass destruction everywhere will imagine them anywhere.

**Q24.** Which of the following can be inferred from the passage as a possible solution to what the author points out is a limitation to the wisdom of the crowds?

- a) Group of experts working together are forced to come to a consensus on what needs to be done.
- b) Broadcasts and podcasts to inform the public are made commonplace.
- c) Filtering out the distracting and misleading information floating around.
- d) A healthy dissonance amongst members of a group working together is encouraged.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	100
Difficulty Level	M
Avg. time spent on this question by students who got this question right	97
% of students who attempted this question	30.29
% of students who got the question right of those who attempted	36.1

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 697

The answer to the question (the solution to the limitation to the wisdom of crowds) has been presented by the author of the passage in the last line of the penultimate para – “Even groups of experts work properly only when they allow space for dissenting voices to be considered.” We are looking for an option that is more or less a rephrasing of this sentence. The limitation here is that crowds maybe misled to ‘believe in the popular opinion’.

Option A: ‘Forced to come to a consensus’ is antonymous to the expression mentioned above as the solution – space for dissenting voice. If you are forced to come to a consensus, it may be possible that dissent or disagreement hasn’t been allowed or encouraged. Hence, choice A is incorrect.

Option B: The passage mentions ‘broadcasts’ as a way of misleading the public - *Show a voter enough political broadcasts or commentaries and she may be persuaded to vote against her interests.* It hasn’t been mentioned as a way of improving the general quality of decision-making of a crowd. Hence, choice B is incorrect.

Option C: While, this option may seem true on the surface, two things need to be noted. The crowds are misled because of their inclination to follow the popular opinion. The condition – ‘false information could mislead crowds’ cannot be understood as ‘getting rid of misleading information will lead to better decisions by crowds’ (the reverse cannot always be assumed). Also, the author doesn’t give any evidence to suggest that filtering of information should be done. Without evidence it cannot be inferred. Hence, choice C is incorrect.

Option D: Dissonance is synonymous to ‘dissent’. According to the author dissenting voices must be given some space. Hence, choice D is the right answer.

Choice (D)

undefined

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Given enough encouragement, a large group may even be convinced that black is indeed white. In 1841 the Scottish writer Charles Mackay published Extraordinary Popular Delusions and the Madness of Crowds, a compendium of the cacoethes to which societies succumb, including the Dutch tulip mania of the 1630s, the South Sea bubble, the crusades and long hair. To Mackay’s list Surowiecki adds the dotcom boom of the late 1990s, and the less well-known but more amusing bowling bubble of the 1950s, caused by a fanciful calculation that every man, woman and child in the US would bowl for two hours a week, 52 weeks a year. A financial market is a crowd like any other but, to paraphrase JM Keynes, the market can be wrong for longer than you can afford to be right.

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The Catholic church was wise to adopt the office of "Advocatus Diaboli" when considering its candidates for sainthood. A group that merely confirms already held opinion serves no useful purpose. A committee that thinks of nothing but camels will surely design one; a committee that frets about weapons of mass destruction everywhere will imagine them anywhere.

**Q25.** Which of the following roles was most likely played by the office of Advocatus Diaboli as can be inferred from the last para of the passage?

- a) Reminding the committee considering candidates for sainthood not to be biased.
- b) Advising the committee considering candidates for sainthood not to fret or imagine issues where there are none.
- c) Advocating a viewpoint contrary to the most popular opinion amongst committee members considering candidates for sainthood.
- d) To keep track of the ideas emanating out of 'group think'.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	13
Avg. time spent on this question by all students	108
Difficulty Level	M
Avg. time spent on this question by students who got this question right	100
% of students who attempted this question	28.44
% of students who got the question right of those who attempted	54.95

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 697

The passage says, 'The Catholic church was wise to adopt the office of "Advocatus Diaboli" when considering its candidates for sainthood. A group that merely confirms already held opinion serves no useful purpose.' Advocatus Diaboli is a popular expression that means Devil's Advocate – arguing in favour of the less-favoured side of a debate. However, one doesn't need to understand the meaning of this term (knowing its meaning only makes the job easier) to answer this question. From the second line, it could be inferred that confirming an existing opinion doesn't add any value to a discussion or debate. The church was 'wise' it says – positive. Which means, 'Advocatus Diaboli' did something useful.

Option A: Whether the committee considering candidates for sainthood was biased or not is left to conjecture. It cannot be inferred from the data available. This is a function that doesn't find resonance in the para. Hence, choice A cannot be selected.

Option B: Once again, this is conjecture. Whether there are issues or not and whether the committee is imagining or fretting about issues cannot be understood from the passage. Hence, choice B cannot be selected.

Option C: This line about 'contrary viewpoint' can be inferred from the second line mentioned above - A group that merely confirms already held opinion serves no useful purpose. Therefore, a wise choice would be to make someone responsible to present a counter-opinion. Hence, choice C is the answer.

Option D: There is no evidence to decide whether the committee did keep records of their debates and discussions. Hence, choice D cannot be selected.

Choice (C)

undefined

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Extraordinary Popular Delusions and the Madness of Crowds, a compendium of the cacoethes to which societies succumb, including the Dutch tulip mania of the 1630s, the South Sea bubble, the crusades and long hair. To Mackay's list Surowiecki adds the dotcom boom of the late 1990s, and the less well-known but more amusing bowling bubble of the 1950s, caused by a fanciful calculation that every man, woman and child in the US would bowl for two hours a week, 52 weeks a year. A financial market is a crowd like any other but, to paraphrase JM Keynes, the market can be wrong for longer than you can afford to be right.

Even so, Surowiecki's book is an antidote to the notion that a camel is a horse designed by a committee. The example of the spread of Linux open-source software shows the intelligent crowd in action, able to produce reliable and cheap computer software compared with the alternatives from companies such as Microsoft.

Surowiecki recognises the weaknesses of groups in situations where they would be expected to show their mettle. The Nasa mission team that discussed the risks facing the space shuttle Columbia in 2003 failed to see the damage to the shuttle's wing that caused it to be destroyed on re-entry. Similarly, the intelligence services of the US and Britain failed to consider the possibility that Iraq harboured no weapons of mass destruction. In both cases the result of "group think" was no better than that of an individual. Even groups of experts work properly only when they allow space for dissenting voices to be considered.

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**Q26.** Which of the following examples in the passage does not reveal the limitations on the wisdom of crowds?

- a) Economically backward voters not voting for parties which stand for redistribution of wealth
- b) The spread of the Linux open-source software to compete with software produced by profit-driven companies
- c) Intelligence services of US and UK believing in the idea that Iraq harboured weapons of mass destruction
- d) The Dutch Tulip mania of the 1630s

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	4
Avg. time spent on this question by all students	85
Difficulty Level	E
Avg. time spent on this question by students who got this question right	81
% of students who attempted this question	28.74
% of students who got the question right of those who attempted	70.63

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 697

"The answer to that question reveals the *limitations on the wisdom of crowds*. The average of a sufficient number of guesses will get the number of jellybeans right. But supplying *distracting or misleading information* can easily *skew the individual's responses*. Collect enough people on a street corner staring at the sky, and everyone who walks past will look up. *Show a voter enough political broadcasts* or commentaries and *she may be persuaded to vote against her interests*." From this, it can be understood that the limitation to the wisdom of the crowd is that the responses of individuals in a crowd could be skewed through misleading information, thereby changing the average opinion or response.

Option A: 'She may be persuaded to vote against her interests' – From this, we can establish that voters could be misled through wrong information and that is part of the argument about the limitation to the wisdom of crowds. So, choice A reveals a limitation and is not the answer.

Option B: 'The example of the spread of Linux open-source software shows the intelligent crowd in action.' This line clearly shows that Linux is a positive example to show the benefits of collaborative effort. It does not reveal a limitation. Therefore, B is the answer.

Option C: 'Surowiecki *recognises the weaknesses of groups* in situations where they would be expected to show their mettle. The Nasa mission team that discussed the risks facing the space shuttle Columbia in 2003 failed to see the damage to the shuttle's wing that caused it to be destroyed on re-entry. *Similarly, the intelligence services of the US and Britain failed to consider the possibility* that Iraq harboured no weapons of mass destruction.' From the underlined portions, we can understand that intelligence services of US and UK made a mistake by not looking beyond the obvious. This option, therefore, reveals a limitation. Choice C is not the answer.

Option D: 'Given enough encouragement, a large group may even be convinced that black is indeed white. In 1841 the Scottish writer Charles Mackay published Extraordinary Popular Delusions and the Madness of Crowds, *a compendium of the cacoethes* to which *societies succumb, including the Dutch tulip mania of the 1630s*, the South Sea bubble, the crusades and long hair.' The underlined part shows that Option A has been listed out as one of the 'cacoethes (an insatiable desire)' that society *succumbs* to. So, choice D reveals a limitation.

Choice (B)

undefined

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**Q27.** Which of the following is similar to what the author conveys in, 'A committee that thinks of nothing but camels will surely design one; a committee that frets about weapons of mass destruction everywhere will imagine them anywhere'?

- a) Only when you think can you make things possible.
- b) Things can be made possible only when you think about them.
- c) Things feel possible only if you think they are.
- d) The more you think of something, the more it seems possible.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>67</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>60</b>
% of students who attempted this question	<b>28.98</b>
% of students who got the question right of those who attempted	<b>66.68</b>

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 697

In the given line, the author notes that a committee that is going by pre-established opinions will find some justification or the other for that opinion. In other words, there is always the chance that popular opinions get passed off as the truth, often incorrectly and to disastrous results (like in case of Columbia or Iraq). To summarise, the author indicates that if you believe in something strongly, without considering contrary evidence, you will find something to justify that strong belief (which may not be true). Option A: We are not considering 'making' things possible. The author is only talking about how things 'seem' possible when one strongly and narrow-mindedly believes in it. Hence, choice A is incorrect.

Option B: This option has the same problem A has. The author isn't talking about 'making things possible', leave alone the only way of doing so. Hence, choice B is incorrect.

Option C: C is close and almost similar to D. However, the word 'only' is the deal-breaker. The meaning of this sentence is things won't feel possible unless you think they are possible. There is a difference between 'things feel possible because you are thinking they are' and 'things feel possible only if you think they are'. The former is the rephrasing of the author's sentences. Choice C is not the answer.

Option D: This is the most accurate depiction of the lines. It indicates that intelligence services harboured the thought of finding weapons of mass destruction 'everywhere', and hence imagined them 'anywhere'. Choice D is the answer.      Choice (D)

undefined

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**Q28.** The author of the passage cites the example of Linux to

- a) prove that not all groups can differentiate between 'camels' and 'horses'.
- b) counter the allegation that groups are counter-productive.
- c) indicate that a group will be successful when it produces something reliable and cheap.
- d) demonstrate that too many cooks spoil the broth.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	18
Avg. time spent on this question by all students	72
Difficulty Level	E
Avg. time spent on this question by students who got this question right	67
% of students who attempted this question	29.39
% of students who got the question right of those who attempted	70.29

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 697

'Surowiecki's book is an antidote to the notion that a camel is a horse designed by committee. The example of the spread of Linux open-source software shows the intelligent crowd in action, able to produce reliable and cheap computer software compared with the alternatives from companies such as Microsoft.'

In the given line, the author clearly mentions the Linux example as an antidote, as a positive example of 'group think', a benefit of the crowd working together. The analogy is about how a camel is the unintended end result of a group of people working together. 'Antidote' means the reply, the solution to the poison.

Option A: This line is negative because a good group not only differentiates between camels and horses but also creates horses when it sets out to make horses. Since, Linux has been mentioned as a positive example, choice A can be ruled out.

Option B: Since, the example talks about an 'intelligent' group in action, it does counter the allegation that groups lose productivity. Hence, choice B is the answer.

Option C: While producing something 'reliable and cheap' is a plus, it is very specific to Linux. However, the example shouldn't be taken literally. It is much bigger than that. It is not about the product in itself (reliable, or cheap, or good, or whatever else it could be). It is about how a good product can be created through collaboration. Hence, choice C is incorrect.

Option D: This is once again a negative option, indicating that a group project or a collaborated effort is bound to fail. Hence, choice D is incorrect.      Choice (B)

undefined

**DIRECTIONS** for questions 29 to 34: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

On the biggest steps in early human evolution scientists are in agreement. The first human ancestors appeared between five million and seven million years ago, probably when some apelike creatures in Africa began to walk habitually on two legs. They were flaking crude stone tools by 2.5 million years ago. Then some of them spread from Africa into Asia and Europe after two million years ago.

With somewhat less certainty, most scientists think that people who look like us - anatomically modern Homo sapiens -- evolved by at least 130,000 years ago from ancestors who had remained in Africa. Their brain had reached today's size. They, too, moved out of Africa and eventually replaced nonmodern human species, notably the Neanderthals in Europe.

But agreement breaks down completely on the question of when, where and how these anatomically modern humans began to manifest creative thinking, and become fully human in behavior as well as body? ...

For much of the last century, archaeologists thought that modern behavior flowered relatively recently, 40,000 years ago, and only after Homo sapiens had pushed into Europe. But some rebellious researchers suspected that this theory was a relic of a time when their discipline was ruled by Eurocentrism and said that archaeologists were not looking for earlier creativity in the right places. Several recent discoveries in Africa are providing physical evidence to support an older, more gradual evolution of modern behavior, one not centered in Europe.

The uncertainty over the origin of modern cultural behavior stems from what appears to be a great time lag between the point when the species first looked modern and when it acted modern. "The earliest Homo sapiens probably had the cognitive capability to invent Sputnik," said Dr. Sally McBrearty, an anthropologist at the University of Connecticut. "But they didn't yet have the history of invention or a need for those things."

The foremost proponent of the traditional theory that human creativity appeared suddenly and mainly in Europe is Dr. Richard G. Klein, a Stanford

archaeologist. In his view, 40,000 years ago was the turning point in human creativity, when modern Homo sapiens arrived in Europe and left the first unambiguous artifacts of abstract and symbolic thought. They were making more advanced tools out of bone, burying their dead with ceremony and expressing a new kind of self-awareness with beads and pendants for body ornamentation and in finely wrought figurines of the female form. They mastered long-distance trade and complex stone technology, and had a more varied diet. As time passed, they projected on cave walls something of their lives and minds in splendid paintings of deer, horses and wild bulls seen in caves in Lascaux and Chauvet, France.

As an explanation for this apparently abrupt flowering ('dawn') of creativity, Dr. Klein has proposed a neurological hypothesis. About 50,000 years ago, he contends, a chance genetic mutation in effect rewired the brain in some critical way, possibly allowing for a significant advance in speech which could have enabled people "to model complex natural and social circumstances" and give them "the fully modern ability to invent culture."

Although this transformation, with the genetic change leading to the behavioral change, occurred in Africa, Dr. Klein writes, it allowed "human populations to colonize challenging environments." On reaching Europe, the rewired modern humans (Cro-Magnons), presumably outsmarted the resident Neanderthals, driving them to extinction by 30,000 years ago, and leaving their indelible cultural mark on the land.

Dr. Klein concedes that the idea "fails one important measure of a proper scientific hypothesis -- it cannot be tested or falsified by experiment." Skulls from that time show no change in brain size and are highly unlikely to show a genetic change in the brain's functioning. Although he considers the idea the most straightforward explanation, critics object that such a concept of an abrupt "human revolution" is too simplistic, as well as being unprovable. ....

In the last 30 years, scientists have learned that the Cro-Magnons originated in Africa and the Neanderthals evolved exclusively in Europe. So archaeologists have begun searching more diligently in Africa for attributes of early modern behavior. Based on evidence, Dr. McBrearty at UConn and Dr. Alison S. Brooks of George Washington University said the many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." Exploring a cave at the southern tip of Africa, they concluded that the anatomically modern people there were turning animal bones into awls and finely polished weapon points more than 70,000 years ago.

**Q29.** What is the major point of contention among several archaeologists as can be inferred from the passage?

- a) When did the first human ancestors begin to walk on two legs?
- b) When did the human ancestors begin using stone tools?
- c) When did the anatomically modern humans replace nonmodern human species?
- d) When did the anatomically modern humans begin to manifest modern cultural behaviour?

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>10</b>
Avg. time spent on this question by all students	<b>322</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>325</b>
% of students who attempted this question	<b>42.74</b>
% of students who got the question right of those who attempted	<b>78.46</b>

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 765

Option A: The first human ancestors appeared between five million and seven million years ago, probably when some apelike creatures in Africa began to walk habitually on two legs. Hence choice A is not the point of contention of archaeologists. Choice A represents a big step in early human evolution which scientists are in agreement with. Option B: They were flaking crude stone tools by 2.5 million years ago. Then some of them spread from Africa into Asia and Europe after two million years ago. Choice B is not the relevant answer. Choice B represents a big step in early human evolution and scientists are in agreement about it.

Option C: From the second para of the passage, we know that choice C is not the point of disagreement among archaeologists.

Option D: But agreement breaks down completely on the question of when, where and how these anatomically modern humans began to manifest creative (and symbolic thinking), and become fully human in behavior as well as body? The uncertainty (and confusion) over the origin of modern cultural behavior stem from what appears to be a great time lag between the point when the species first looked modern and when it acted modern. Hence choice D is the answer.

Choice (D)

undefined

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With somewhat less certainty, most scientists think that people who look like us - anatomically modern Homo sapiens -- evolved by at least 130,000 years

ago from ancestors who had remained in Africa. Their brain had reached today's size. They, too, moved out of Africa and eventually replaced nonmodern human species, notably the Neanderthals in Europe.

But agreement breaks down completely on the question of when, where and how these anatomically modern humans began to manifest creative thinking, and become fully human in behavior as well as body? ...

For much of the last century, archaeologists thought that modern behavior flowered relatively recently, 40,000 years ago, and only after Homo sapiens had pushed into Europe. But some rebellious researchers suspected that this theory was a relic of a time when their discipline was ruled by Eurocentrism and said that archaeologists were not looking for earlier creativity in the right places. Several recent discoveries in Africa are providing physical evidence to support an older, more gradual evolution of modern behavior, one not centered in Europe.

The uncertainty over the origin of modern cultural behavior stems from what appears to be a great time lag between the point when the species first looked modern and when it acted modern. "The earliest Homo sapiens probably had the cognitive capability to invent Sputnik," said Dr. Sally McBrearty, an anthropologist at the University of Connecticut. "But they didn't yet have the history of invention or a need for those things."

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Dr. Klein concedes that the idea "fails one important measure of a proper scientific hypothesis -- it cannot be tested or falsified by experiment." Skulls from that time show no change in brain size and are highly unlikely to show a genetic change in the brain's functioning. Although he considers the idea the most straightforward explanation, critics object that such a concept of an abrupt "human revolution" is too simplistic, as well as being unprovable. ...

In the last 30 years, scientists have learned that the Cro-Magnons originated in Africa and the Neanderthals evolved exclusively in Europe. So archaeologists have begun searching more diligently in Africa for attributes of early modern behavior. Based on evidence, Dr. McBrearty at UConn and Dr. Alison S. Brooks of George Washington University said the many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." Exploring a cave at the southern tip of Africa, they concluded that the anatomically modern people there were turning animal bones into awls and finely polished weapon points more than 70,000 years ago.

**Q30.** Which of the following, if true, weakens the comment: "The earliest Homo sapiens probably had the cognitive capability to invent Sputnik but they didn't yet have ... a need for those things." (para 5)?

- a) The need for creativity and invention arose gradually with the passage of time due to fundamental shifts in brain wiring seen in modern humans.
- b) The capacity for modern behavior bore a positive correlation with the passage of time but began to develop after a series of genetic transformations.
- c) Human beings emerged as a distinct species, different from apes, after they exhibited bipedalism.
- d) The first modern Homo sapiens emerged with a latent capacity for modern creativity which needed to be displayed later, when environmental changes and competition from nonmodern human species threatened their survival.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	2
Avg. time spent on this question by all students	141
Difficulty Level	M
Avg. time spent on this question by students who got this question right	144
% of students who attempted this question	28.29
% of students who got the question right of those who attempted	32.83

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 765

Option A: There was a great time lag between the point when the species first looked modern and when it acted modern. So there is uncertainty among archaeologists about the origin of modern cultural behaviour. So, if the need for creativity and invention arose due to fundamental shifts in brain wiring, then it would strengthen "they didn't yet have the history of invention or a need for those things" mentioned in the comment given in the question. Choice A is not the answer.

Option B: If the capacity for modern behavior bore a positive correlation with the passage of time but developed later due to genetic transformations, then it would weaken the view "The earliest Homo sapiens probably had the cognitive capability to invent sputnik" ----- mentioned in the comment given in the question. Choice B is the answer.

Option C: Choice C goes off tangent to the discussion. The first human ancestors appeared between five million and seven million years ago, probably when some apelike creatures in Africa began to walk habitually on two legs. Choice C is not related to the "need for invention or creativity". It does not strengthen or weaken comment in the question. Choice C is not the answer.

Option D: If the capacity for modern creativity was latent and inventiveness was displayed later in survival related circumstances such as environmental changes or competition from nonmodern human species, then it would strengthen the claim made in para 5 of the passage. Choice D is not the answer.

Choice (B)

undefined

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**Q31.** Which of the following are the specific attributes of early modern behaviour mentioned in the passage?

Identify all that apply and enter the corresponding number in the input box given below. You must enter your answer in increasing order only. For example, if you think that (1) and (4) apply, then enter 14 (but not 41) in the input box.

1. Self-ornamentation

2. The conversion of animal bones into awls and finely polished weapon points
3. The signature cave paintings displaying animals
4. The practice of witchcraft
5. Advanced stone technology
6. The introduction of marriage ceremonies

**You did not answer this question** [Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>2</b>
Avg. time spent on this question by all students	<b>150</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>144</b>
% of students who attempted this question	<b>36.33</b>
% of students who got the question right of those who attempted	<b>49.27</b>

[Video Solution](#)

[Text Solution](#)

#### Number of words and Explanatory notes for RC:

Number of words: 765

Modern Homo sapiens arrived in Europe and left the first unambiguous artifacts of abstract and symbolic thought. They were making more advanced tools out of bone, burying their dead with ceremony and expressing a new kind of self-awareness with beads and pendants for body ornamentation and in finely wrought figurines of the female form. They mastered long-distance trade and complex stone technology, and had a more varied diet. As time passed, they projected on cave walls something of their lives and minds in splendid paintings of deer, horses and wild bulls seen in caves in Lascaux and Chauvet, France. .... So archaeologists have begun searching more diligently in Africa for what they generally agree are attributes of early modern behavior. .... they found evidence that the anatomically modern people there were turning animal bones into awls and finely polished weapon points more than 70,000 years ago.

Hence 1, 2, 3 and 5 apply.

The practice of witchcraft has not been mentioned in the passage. So 4 does not apply.

The passage mentions "burying their dead with ceremony" and not "the introduction of marriage ceremonies". So 6 does not apply.

Ans: (1235)

undefined

**DIRECTIONS** for questions 29 to 34: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

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Although this transformation, with the genetic change leading to the behavioral change, occurred in Africa, Dr. Klein writes, it allowed "human populations to colonize challenging environments." On reaching Europe, the rewired modern humans (Cro-Magnons), presumably outsmarted the resident Neanderthals, driving them to extinction by 30,000 years ago, and leaving their indelible cultural mark on the land.

Dr. Klein concedes that the idea "fails one important measure of a proper scientific hypothesis -- it cannot be tested or falsified by experiment." Skulls from that time show no change in brain size and are highly unlikely to show a genetic change in the brain's functioning. Although he considers the idea the most straightforward explanation, critics object that such a concept of an abrupt "human revolution" is too simplistic, as well as being unprovable. ...

In the last 30 years, scientists have learned that the Cro-Magnons originated in Africa and the Neanderthals evolved exclusively in Europe. So archaeologists have begun searching more diligently in Africa for attributes of early modern behavior. Based on evidence, Dr. McBrearty at UConn and Dr. Alison S. Brooks of George Washington University said the many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." Exploring a cave at the southern tip of Africa, they concluded that the anatomically modern people there were turning animal bones into awls and finely polished weapon points more than 70,000 years ago.

**Q32.** What do the findings of Dr. McBrearty and Dr. Alison S. Brooks, as mentioned in the last para of the passage, suggest?

- a) A sudden assembling of the package of modern human behaviors took place in Africa and was probably transported to other regions of the Old World later.
- b) Modern behavior flowered suddenly and relatively recently in Europe and was later exported to other regions of the Old World.
- c) A gradual assembling of the packaging of modern human culture took place in Africa.
- d) The quest towards demystifying the origin of modern human culture has a long way to go.

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>106</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>101</b>
% of students who attempted this question	<b>36.69</b>
% of students who got the question right of those who attempted	<b>64.97</b>

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 765

Several recent discoveries in Africa are providing the first physical evidence to support an older, more gradual evolution of modern behavior, one not centered in Europe.

Option A: Many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." So 'sudden assembling ...' in choice A is incorrect. Further from the findings of Dr. Mc Brearty and Dr. Alison S. Brooks, one cannot infer "probably transported to other regions of the old world later".

Option B: Dr. Richard G. Klein believed that 40,000 years ago was the turning point in human creativity, when modern Homo sapiens arrived in Europe and left the first unambiguous artifacts of abstract and symbolic thought. Choice B cannot be said to be a view or conclusion based on the findings of Dr. McBrearty and Dr. Alison S. Brooks. Further "suddenly and relatively recently" in choice B is incorrect. Choice B is not the answer.

Option C: Critics object that such a concept of an abrupt "human revolution" is too simplistic, as well as being unprovable. ... Archaeologists have begun searching more diligently in Africa for what they generally agree are attributes of early modern behavior. In a comprehensive study two years ago, Dr. McBrearty at UConn and Dr. Alison S. Brooks of George Washington University said the many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." This makes choice C the correct answer.

Option D: Choice D sounds negative in tone. It is not specific to the findings of Dr. McBrearty and Dr. Alison S. Brooks – the many artifacts indicative of modern behavior in Africa, the evidence seen in a cave at the southern tip of Africa – given in the last para of the passage.

Choice (C)

undefined

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**Q33.** According to the passage, which of the following undermines Dr. Richard Klein's claim that human creativity first exploded on the scene in Europe?

- a) Paleoanthropologists who have examined the relevant human fossils at that time agree that there is no increase in the brain size of the Cro-Magnons when compared to that of the native Neanderthals.
- b) Human anatomical and behavioural changes have always proceeded in tandem in the course of evolution.
- c) Fundamental shifts in brain wiring and changes in the conditions of human life were evident at the time the modern humans entered Europe.
- d) Few archaeologists had investigated sites of human creativity in Africa and the little they found could not match the artistic magnificence of Lascaux and Chauvet.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	1
Avg. time spent on this question by all students	117
Difficulty Level	M
Avg. time spent on this question by students who got this question right	109
% of students who attempted this question	24.5
% of students who got the question right of those who attempted	45.94

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 765

Refer to paras 7, 8 and 9 of the passage.

Option A: On reaching Europe, the rewired modern humans (Cro-Magnons), presumably outsmarted the resident Neanderthals, driving them to extinction by 30,000 years ago, and leaving their indelible cultural mark on the land. Dr. Klein concedes that the idea "fails one important measure of a proper scientific hypothesis -- it cannot be tested or falsified by experiment." Skulls from that time show no change in brain size and are highly unlikely to show a genetic change in the brain's functioning. Hence choice A is the correct answer.

Option B: Even if choice B is true, it is not sufficient to weaken the theory of Dr. Richard Klein that human creativity first exploded on the scene in Europe. Choice B is not the answer.

Option C: Choice C could serve as a hypothesis of Dr. Richard Klein's theory that human creativity first exploded on the scene in Europe. Choice C does not weaken his claim.

Option D: As time passed, they projected on cave walls something of their lives and minds in splendid paintings of deer, horses and wild bulls seen in caves in Lascaux and Chauvet, France. Choice D, if true, would strengthen the case that human creativity was at its glorious heights for the first time in Europe. Choice D is not the answer.

Choice (A)

undefined

**DIRECTIONS** for questions 29 to 34: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

On the biggest steps in early human evolution scientists are in agreement. The first human ancestors appeared between five million and seven million years ago, probably when some apelike creatures in Africa began to walk habitually on two legs. They were flaking crude stone tools by 2.5 million years ago. Then some of them spread from Africa into Asia and Europe after two million years ago.

With somewhat less certainty, most scientists think that people who look like us - anatomically modern Homo sapiens -- evolved by at least 130,000 years ago from ancestors who had remained in Africa. Their brain had reached today's size. They, too, moved out of Africa and eventually replaced nonmodern human species, notably the Neanderthals in Europe.

But agreement breaks down completely on the question of when, where and how these anatomically modern humans began to manifest creative thinking, and become fully human in behavior as well as body? ...

For much of the last century, archaeologists thought that modern behavior flowered relatively recently, 40,000 years ago, and only after Homo sapiens had pushed into Europe. But some rebellious researchers suspected that this theory was a relic of a time when their discipline was ruled by Eurocentrism and said that archaeologists were not looking for earlier creativity in the right places. Several recent discoveries in Africa are providing physical evidence to support an older, more gradual evolution of modern behavior, one not centered in Europe.

The uncertainty over the origin of modern cultural behavior stems from what appears to be a great time lag between the point when the species first looked modern and when it acted modern. "The earliest Homo sapiens probably had the cognitive capability to invent Sputnik," said Dr. Sally McBrearty, an anthropologist at the University of Connecticut. "But they didn't yet have the history of invention or a need for those things."

The foremost proponent of the traditional theory that human creativity appeared suddenly and mainly in Europe is Dr. Richard G. Klein, a Stanford archaeologist. In his view, 40,000 years ago was the turning point in human creativity, when modern Homo sapiens arrived in Europe and left the first unambiguous artifacts of abstract and symbolic thought. They were making more advanced tools out of bone, burying their dead with ceremony and expressing a new kind of self-awareness with beads and pendants for body ornamentation and in finely wrought figurines of the female form. They mastered long-distance trade and complex stone technology, and had a more varied diet. As time passed, they projected on cave walls something of their lives and minds in splendid paintings of deer, horses and wild bulls seen in caves in Lascaux and Chauvet, France.

As an explanation for this apparently abrupt flowering ('dawn') of creativity, Dr. Klein has proposed a neurological hypothesis. About 50,000 years ago, he contends, a chance genetic mutation in effect rewired the brain in some critical way, possibly allowing for a significant advance in speech which could have enabled people "to model complex natural and social circumstances" and give them "the fully modern ability to invent culture."

Although this transformation, with the genetic change leading to the behavioral change, occurred in Africa, Dr. Klein writes, it allowed "human populations to colonize challenging environments." On reaching Europe, the rewired modern humans (Cro-Magnons), presumably outsmarted the resident Neanderthals, driving them to extinction by 30,000 years ago, and leaving their indelible cultural mark on the land.

Dr. Klein concedes that the idea "fails one important measure of a proper scientific hypothesis -- it cannot be tested or falsified by experiment." Skulls from that time show no change in brain size and are highly unlikely to show a genetic change in the brain's functioning. Although he considers the idea the most straightforward explanation, critics object that such a concept of an abrupt "human revolution" is too simplistic, as well as being unprovable. ...

In the last 30 years, scientists have learned that the Cro-Magnons originated in Africa and the Neanderthals evolved exclusively in Europe. So archaeologists have begun searching more diligently in Africa for attributes of early modern behavior. Based on evidence, Dr. McBrearty at UConn and Dr. Alison S. Brooks of George Washington University said the many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." Exploring a cave at the southern tip of Africa, they concluded that the anatomically modern people there were turning animal bones into awls and finely polished weapon points more than 70,000 years ago.

**Q34.** Three of the following statements can be attributed to the "human revolution model" and the views in support of it, as seen in the context of the passage. Pick the exception.

- a) The human revolution model and the theory of Eurocentrism share a common principle.
- b) The genetic change leading to the behavioral change in modern humans occurred in Europe and this was responsible for the abrupt evolution of human creativity.
- c) An abrupt spark of creativity was seen in modern humans colonizing the challenging environments of Europe, about 40000 years ago, possibly due to a rewiring of the human brain.
- d) The human revolution model does not support an older, more gradual evolution of modern behavior at locations widely separated in space and time.

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	1
Avg. time spent on this question by all students	177
Difficulty Level	D
Avg. time spent on this question by students who got this question right	201
% of students who attempted this question	22.88
% of students who got the question right of those who attempted	18.46

[Video Solution](#)

[Text Solution](#)

**Number of words and Explanatory notes for RC:**

Number of words: 765

Option A: Archaeologists thought that modern behavior flowered relatively recently, 40,000 years ago, and only after Homo sapiens had pushed into Europe. But some rebellious researchers suspected that this theory was a relic of a time when their discipline was ruled by Eurocentrism. Here Eurocentrism would refer to the view that modern human culture originated in Europe. On reaching Europe, the rewired modern humans (Cro-Magnons), presumably outsmarted the resident Neanderthals, driving them to extinction by 30,000 years ago, and leaving their indelible cultural mark on the land. The human revolution model also speaks about the apparently abrupt flowering of creativity, a "creative explosion" in Europe. Hence choice A is true and is not the answer.

Option B: Choice B is incorrect. About 50,000 years ago, he contends, a chance genetic mutation in effect rewired the brain in some critical way, possibly allowing for a significant advance in speech which could have enabled people "to model complex natural and social circumstances" and give them "the fully modern ability to invent culture." Although this transformation, with the genetic change leading to the behavioral change, occurred in Africa, Dr. Klein writes, it allowed "human populations to colonize challenging environments." Choice B is false and is the answer.

Option C: Archaeologists thought that modern behavior flowered relatively recently, 40,000 years ago, and only after Homo sapiens had pushed into Europe. As an explanation for this apparently abrupt flowering of creativity, Dr. Klein has proposed a neurological hypothesis. About 50,000 years ago, he contends, a chance genetic mutation in effect rewired the brain in some critical way, possibly allowing for a significant advance in speech. Choice C would help characterize the "human revolution model" explained in the passage. Choice C is not the answer.

Option D: Several recent discoveries in Africa are providing the first physical evidence to support an older, more gradual evolution of modern behavior, one not centered in Europe. Many artifacts indicative of modern behavior in Africa did "not occur suddenly together, as predicted by the 'human revolution' model, but at sites that are widely separated in space and time." Choice D is true of the 'human revolution' model and is not the answer.

Choice (B)

undefined

**DIRECTIONS for questions 1 to 4:** Answer the questions on the basis of the information given below.

Five teams – Hungry Hippos, Raging Rhinos, Crazy Camels, Angry Antelopes and Bouncing Bonobos – participated in a hockey tournament in which each team played against each of the other teams exactly once.

In the tournament,

- Hungry Hippos did not win any matches but drew exactly two matches.
- Raging Rhinos won exactly one match and lost exactly one match.
- Crazy Camels won exactly three matches but did not draw any match.
- Angry Antelopes won exactly two matches and did not lose any match.
- Bouncing Bonobos lost exactly three matches and did not draw any match.

The first table below provides the ten highest number of goals scored by a team in any match and the second table provides the ten lowest number of goals scored by a team in any match.

Team	Goals Scored
Crazy Camels	11
Hungry Hippos	9
Crazy Camels	8
Bouncing Bonobos	7
Bouncing Bonobos	7
Hungry Hippos	6
Crazy Camels	6
Angry Antelopes	5
Raging Rhinos	4
Bouncing Bonobos	4

Team	Goals Scored
Raging Rhinos	0
Raging Rhinos	0
Angry Antelopes	0
Bouncing Bonobos	1
Angry Antelopes	1
Hungry Hippos	1
Raging Rhinos	2
Crazy Camels	2
Angry Antelopes	3
Hungry Hippos	4

**Q1. DIRECTIONS** for questions 1 to 4: Type in your answer in the input box provided below the question.

How many goals were scored by Crazy Camels against Bouncing Bonobos?

**Your Answer:** 6   Your answer is incorrect

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	74
Avg. time spent on this question by all students	644
Difficulty Level	D
Avg. time spent on this question by students who got this question right	771
% of students who attempted this question	27.18
% of students who got the question right of those who attempted	55.58

[Video Solution](#)

[Text Solution](#)

Let HH, RR, CC, AA and BB represent the five teams.

From the given information, the following table can be populated which provides the number of matches won, lost and drawn by each team in the tournament:

Team	Win	Loss	Draw
HH	0	2	2
RR	1	1	2
CC	3	1	0
AA	2	0	2
BB	1	3	0

Since HH, RR and AA each have two draws, the matches that these three teams played against each other must all be draws.

Since AA has two wins, AA must have won against CC and BB.

Since HH has two losses, HH must have lost against CC and BB.

Since CC has only one loss and three wins, CC must have won against HH, RR and BB.

Since RR has only one loss (which was against CC), RR must have won against BB.

The table provides twenty instances. Since a total of 20 matches were played, these twenty instances represent all the goals scored by all the teams in all the matches.

HH, RR and AA drew the matches that they played against each other.

The goals scored by HH are 9, 6, 4 and 1.

The goals scored by RR are 4, 2, 0 and 0.

The goals scored by AA are 5, 3, 1 and 0.

In the match between HH and AA the two teams must have scored equal number of

In the match between AA and HH, the two teams must have scored equal number of goals. This is possible only if AA and HH both scored 1 goal each.

In the match between RR and HH, the two teams must have scored 4 goals each.

In the match between AA and RR, the two teams must have scored 0 goals each.

HH scored 9 goals and 6 goals in the other two matches against CC and BB and lost both these matches.

CC scored 11, 8, 6 and 2 goals. BB scored 7, 7, 4 and 1 goals.

For HH to lose a match after scoring 9 goals in a match, the only possibility is HH scoring 9 goals against CC and CC scoring 11 goals in that match.

Hence, against BB, HH must have scored 6 goals and BB must have scored 7 goals.

RR should have won against BB. RR scored 2 and 0 goals in the other two matches against BB and CC.

For RR to win the match against BB, the only possibility is RR scoring 2 goals in that match and BB scoring 1 goal.

RR must not have scored any goals against CC.

AA scored 3 and 5 goals against CC and BB (in any order) and won the two matches.

For AA to score 3 goals against CC or BB and win, the only possibility is it played against CC, which scored 2 goals.

In the match between AA and BB, AA scored 5 goals and BB must have scored 4 goals.

In the match between CC and BB, CC won. Further, BB must have scored 7 goals (the only remaining number). Hence, CC must have scored 8 goals in this match.

In the match between CC and RR (in which RR did not score any goals), CC must have scored 6 goals.

The following table provides the number of goals scored by the two teams in each match of the tournament:

Match	Result	Score
HH – RR	Draw	4 – 4
HH – CC	CC wins	9 – 11
HH – AA	Draw	1 – 1
HH – BB	BB wins	6 – 7
RR – CC	CC wins	0 – 6
RR – AA	Draw	0 – 0
RR – BB	RR wins	2 – 1
CC – AA	AA wins	2 – 3
CC – BB	CC wins	8 – 7
AA – BB	AA wins	5 – 4

Crazy Camels scored 8 goals against Bouncing Bonobos.

Ans: (8)

undefined

**DIRECTIONS** for questions 1 to 4: Answer the questions on the basis of the information given below.

Five teams – Hungry Hippos, Raging Rhinos, Crazy Camels, Angry Antelopes and Bouncing Bonobos – participated in a hockey tournament in which

each team played against each of the other teams exactly once.

In the tournament,

- Hungry Hippos did not win any matches but drew exactly two matches.
- Raging Rhinos won exactly one match and lost exactly one match.
- Crazy Camels won exactly three matches but did not draw any match.
- Angry Antelopes won exactly two matches and did not lose any match.
- Bouncing Bonobos lost exactly three matches and did not draw any match.

The first table below provides the ten highest number of goals scored by a team in any match and the second table provides the ten lowest number of goals scored by a team in any match.

Team	Goals Scored
Crazy Camels	11
Hungry Hippos	9
Crazy Camels	8
Bouncing Bonobos	7
Bouncing Bonobos	7
Hungry Hippos	6
Crazy Camels	6
Angry Antelopes	5
Raging Rhinos	4
Bouncing Bonobos	4

Team	Goals Scored
Raging Rhinos	0
Raging Rhinos	0
Angry Antelopes	0
Bouncing Bonobos	1
Angry Antelopes	1
Hungry Hippos	1
Raging Rhinos	2
Crazy Camels	2
Angry Antelopes	3
Hungry Hippos	4

**Q2. DIRECTIONS** for questions 1 to 4: Type in your answer in the input box provided below the question.

What is the highest margin of victory, i.e., the difference between the goals scored by the winning team and that by the losing team, in any match?

**Your Answer:**10 □ **Your answer is incorrect**

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	37
Avg. time spent on this question by all students	121
Difficulty Level	D
Avg. time spent on this question by students who got this question right	151
% of students who attempted this question	25.61
% of students who got the question right of those who attempted	31.61

[Video Solution](#)

[Text Solution](#)

Let HH, RR, CC, AA and BB represent the five teams.

From the given information, the following table can be populated which provides the number of matches won, lost and drawn by each team in the tournament:

Team	Win	Loss	Draw
HH	0	2	2
RR	1	1	2
CC	2	4	0

CC	S	I	U
AA	2	0	2
BB	1	3	0

Since HH, RR and AA each have two draws, the matches that these three teams played against each other must all be draws.

Since AA has two wins, AA must have won against CC and BB.

Since HH has two losses, HH must have lost against CC and BB.

Since CC has only one loss and three wins, CC must have won against HH, RR and BB.

Since RR has only one loss (which was against CC), RR must have won against BB.

The table provides twenty instances. Since a total of 20 matches were played, these twenty instances represent all the goals scored by all the teams in all the matches.

HH, RR and AA drew the matches that they played against each other.

The goals scored by HH are 9, 6, 4 and 1.

The goals scored by RR are 4, 2, 0 and 0.

The goals scored by AA are 5, 3, 1 and 0.

In the match between HH and AA, the two teams must have scored equal number of goals. This is possible only if AA and HH both scored 1 goal each.

In the match between RR and HH, the two teams must have scored 4 goals each.

In the match between AA and RR, the two teams must have scored 0 goals each.

HH scored 9 goals and 6 goals in the other two matches against CC and BB and lost both these matches.

CC scored 11, 8, 6 and 2 goals. BB scored 7, 7, 4 and 1 goals.

For HH to lose a match after scoring 9 goals in a match, the only possibility is HH scoring 9 goals against CC and CC scoring 11 goals in that match.

Hence, against BB, HH must have scored 6 goals and BB must have scored 7 goals.

RR should have won against BB. RR scored 2 and 0 goals in the other two matches against BB and CC.

For RR to win the match against BB, the only possibility is RR scoring 2 goals in that match and BB scoring 1 goal.

RR must not have scored any goals against CC.

AA scored 3 and 5 goals against CC and BB (in any order) and won the two matches.

For AA to score 3 goals against CC or BB and win, the only possibility is it played against CC, which scored 2 goals.

In the match between AA and BB, AA scored 5 goals and BB must have scored 4 goals.

In the match between CC and BB, CC won. Further, BB must have scored 7 goals (the only remaining number). Hence, CC must have scored 8 goals in this match.

In the match between CC and RR (in which RR did not score any goals), CC must have scored 6 goals.

The following table provides the number of goals scored by the two teams in each match of the tournament:

Match	Result	Score
HH – RR	Draw	4 – 4
HH – CC	CC wins	9 – 11
HH – AA	Draw	1 – 1
HH – BB	BB wins	6 – 7
RR – CC	CC wins	0 – 6

RR – AA	Draw	0 – 0
RR – BB	RR wins	2 – 1
CC – AA	AA wins	2 – 3
CC – BB	CC wins	8 – 7
AA – BB	AA wins	5 – 4

The highest margin of victory was 6 goals, between Raging Rhinos and Crazy Camels.

Ans: (6)

undefined

**DIRECTIONS** for questions 1 to 4: Answer the questions on the basis of the information given below.

Five teams – Hungry Hippos, Raging Rhinos, Crazy Camels, Angry Antelopes and Bouncing Bonobos – participated in a hockey tournament in which each team played against each of the other teams exactly once.

In the tournament,

- Hungry Hippos did not win any matches but drew exactly two matches.
- Raging Rhinos won exactly one match and lost exactly one match.
- Crazy Camels won exactly three matches but did not draw any match.
- Angry Antelopes won exactly two matches and did not lose any match.
- Bouncing Bonobos lost exactly three matches and did not draw any match.

The first table below provides the ten highest number of goals scored by a team in any match and the second table provides the ten lowest number of goals scored by a team in any match.

Team	Goals Scored
Crazy Camels	11
Hungry Hippos	9
Crazy Camels	8
Bouncing Bonobos	7
Bouncing Bonobos	7
Hungry Hippos	6
Crazy Camels	6
Angry Antelopes	5
Raging Rhinos	4
Bouncing Bonobos	4

Team	Goals Scored
Raging Rhinos	0
Raging Rhinos	0
Angry Antelopes	0
Bouncing Bonobos	1
Angry Antelopes	1
Hungry Hippos	1
Raging Rhinos	2
Crazy Camels	2
Angry Antelopes	3
Hungry Hippos	4

**Q3. DIRECTIONS** for questions 1 to 4: Type in your answer in the input box provided below the question.

What is the highest number of goals scored by the two teams combined in a single match?

**Your Answer:**20 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question

**Time spent / Accuracy Analysis**

Avg. time spent on this question by all students	<b>45</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>39</b>
% of students who attempted this question	<b>25.66</b>

% of students who got the question right of those who attempted      **65.19**

[Video Solution](#)

[Text Solution](#)

Let HH, RR, CC, AA and BB represent the five teams.

From the given information, the following table can be populated which provides the number of matches won, lost and drawn by each team in the tournament:

Team	Win	Loss	Draw
HH	0	2	2
RR	1	1	2
CC	3	1	0
AA	2	0	2
BB	1	3	0

Since HH, RR and AA each have two draws, the matches that these three teams played against each other must all be draws.

Since AA has two wins, AA must have won against CC and BB.

Since HH has two losses, HH must have lost against CC and BB.

Since CC has only one loss and three wins, CC must have won against HH, RR and BB.

Since RR has only one loss (which was against CC), RR must have won against BB.

The table provides twenty instances. Since a total of 20 matches were played, these twenty instances represent all the goals scored by all the teams in all the matches.

HH, RR and AA drew the matches that they played against each other.

The goals scored by HH are 9, 6, 4 and 1.

The goals scored by RR are 4, 2, 0 and 0.

The goals scored by AA are 5, 3, 1 and 0.

In the match between HH and AA, the two teams must have scored equal number of goals. This is possible only if AA and HH both scored 1 goal each.

In the match between RR and HH, the two teams must have scored 4 goals each.

In the match between AA and RR, the two teams must have scored 0 goals each.

HH scored 9 goals and 6 goals in the other two matches against CC and BB and lost both these matches.

CC scored 11, 8, 6 and 2 goals. BB scored 7, 7, 4 and 1 goals.

For HH to lose a match after scoring 9 goals in a match, the only possibility is HH scoring 9 goals against CC and CC scoring 11 goals in that match.

Hence, against BB, HH must have scored 6 goals and BB must have scored 7 goals.

RR should have won against BB. RR scored 2 and 0 goals in the other two matches against BB and CC.

For RR to win the match against BB, the only possibility is RR scoring 2 goals in that match and BB scoring 1 goal.

RR must not have scored any goals against CC.

AA scored 3 and 5 goals against CC and BB (in any order) and won the two matches.

For AA to score 3 goals against CC or BB and win, the only possibility is it played against CC, which scored 2 goals.

In the match between AA and BB, AA scored 5 goals and BB must have scored 4

goals.

In the match between CC and BB, CC won. Further, BB must have scored 7 goals (the only remaining number). Hence, CC must have scored 8 goals in this match.

In the match between CC and RR (in which RR did not score any goals), CC must have scored 6 goals.

The following table provides the number of goals scored by the two teams in each match of the tournament:

Match	Result	Score
HH – RR	Draw	4 – 4
HH – CC	CC wins	9 – 11
HH – AA	Draw	1 – 1
HH – BB	BB wins	6 – 7
RR – CC	CC wins	0 – 6
RR – AA	Draw	0 – 0
RR – BB	RR wins	2 – 1
CC – AA	AA wins	2 – 3
CC – BB	CC wins	8 – 7
AA – BB	AA wins	5 – 4

The highest number of goals scored in any match is 20 (in the match between Hungry Hippos and Crazy Camels).

Ans: (20)

undefined

**DIRECTIONS for questions 1 to 4:** Answer the questions on the basis of the information given below.

Five teams – Hungry Hippos, Raging Rhinos, Crazy Camels, Angry Antelopes and Bouncing Bonobos – participated in a hockey tournament in which each team played against each of the other teams exactly once.

In the tournament,

- Hungry Hippos did not win any matches but drew exactly two matches.
- Raging Rhinos won exactly one match and lost exactly one match.
- Crazy Camels won exactly three matches but did not draw any match.
- Angry Antelopes won exactly two matches and did not lose any match.
- Bouncing Bonobos lost exactly three matches and did not draw any match.

The first table below provides the ten highest number of goals scored by a team in any match and the second table provides the ten lowest number of goals scored by a team in any match.

Team	Goals Scored
Crazy Camels	11
Hungry Hippos	9
Crazy Camels	8
Bouncing Bonobos	7
Bouncing Bonobos	7
Hungry Hippos	6
Crazy Camels	6
Angry Antelopes	5
Raging Rhinos	4
Bouncing Bonobos	4

Team	Goals Scored
Raging Rhinos	0
Raging Rhinos	0
Angry Antelopes	0
Bouncing Bonobos	1
Angry Antelopes	1
Hungry Hippos	1
Raging Rhinos	2
Crazy Camels	2
Angry Antelopes	3
Hungry Hippos	4

**Q4. DIRECTIONS** for questions 1 to 4: Type in your answer in the input box provided below the question.

In how many matches in the tournament were at least ten goals scored by the two teams combined?

**Your Answer:** 8   Your answer is incorrect

Show Correct Answer

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	35
Avg. time spent on this question by all students	82
Difficulty Level	D
Avg. time spent on this question by students who got this question right	76
% of students who attempted this question	21.91
% of students who got the question right of those who attempted	43.61

[Video Solution](#)

[Text Solution](#)

Let HH, RR, CC, AA and BB represent the five teams.

From the given information, the following table can be populated which provides the number of matches won, lost and drawn by each team in the tournament:

Team	Win	Loss	Draw
HH	0	2	2
RR	1	1	2
CC	3	1	0
AA	2	0	2
BB	1	3	0

Since HH, RR and AA each have two draws, the matches that these three teams played against each other must all be draws.

Since AA has two wins, AA must have won against CC and BB.

Since HH has two losses, HH must have lost against CC and BB.

Since CC has only one loss and three wins, CC must have won against HH, RR and BB.

Since RR has only one loss (which was against CC), RR must have won against BB.

The table provides twenty instances. Since a total of 20 matches were played, these twenty instances represent all the goals scored by all the teams in all the matches.

HH, RR and AA drew the matches that they played against each other.

The goals scored by HH are 9, 6, 4 and 1.

The goals scored by RR are 4, 2, 0 and 0.

The goals scored by AA are 5, 3, 1 and 0.

In the match between HH and AA the two teams must have scored equal number of

In the match between AA and HH, the two teams must have scored equal number of goals. This is possible only if AA and HH both scored 1 goal each.

In the match between RR and HH, the two teams must have scored 4 goals each.

In the match between AA and RR, the two teams must have scored 0 goals each.

HH scored 9 goals and 6 goals in the other two matches against CC and BB and lost both these matches.

CC scored 11, 8, 6 and 2 goals. BB scored 7, 7, 4 and 1 goals.

For HH to lose a match after scoring 9 goals in a match, the only possibility is HH scoring 9 goals against CC and CC scoring 11 goals in that match.

Hence, against BB, HH must have scored 6 goals and BB must have scored 7 goals.

RR should have won against BB. RR scored 2 and 0 goals in the other two matches against BB and CC.

For RR to win the match against BB, the only possibility is RR scoring 2 goals in that match and BB scoring 1 goal.

RR must not have scored any goals against CC.

AA scored 3 and 5 goals against CC and BB (in any order) and won the two matches.

For AA to score 3 goals against CC or BB and win, the only possibility is it played against CC, which scored 2 goals.

In the match between AA and BB, AA scored 5 goals and BB must have scored 4 goals.

In the match between CC and BB, CC won. Further, BB must have scored 7 goals (the only remaining number). Hence, CC must have scored 8 goals in this match.

In the match between CC and RR (in which RR did not score any goals), CC must have scored 6 goals.

The following table provides the number of goals scored by the two teams in each match of the tournament:

Match	Result	Score
HH – RR	Draw	4 – 4
HH – CC	CC wins	9 – 11
HH – AA	Draw	1 – 1
HH – BB	BB wins	6 – 7
RR – CC	CC wins	0 – 6
RR – AA	Draw	0 – 0
RR – BB	RR wins	2 – 1
CC – AA	AA wins	2 – 3
CC – BB	CC wins	8 – 7
AA – BB	AA wins	5 – 4

In three matches of the tournament (HH – CC, HH – BB, CC – BB) at least 10 goals were scored by the two teams combined.

Ans: (3)

undefined

**DIRECTIONS** for questions 5 to 8: Answer the questions on the basis of the information given below.

Seven persons, A through G, ranked three cities – Delhi, Bangalore and Chennai – from 1 to 3 based on their preference for each city.

The following information is known about the rank of each city:

- i. F, who gave the same rank to Chennai as C gave to Bangalore, gave a numerically higher rank to Delhi than what A gave, while the rank that E gave to Chennai was the same as the rank that D gave to Delhi.
- ii. The number of persons who gave a first rank to Bangalore was the same as the number of persons who gave the second rank to Delhi.
- iii. The sum of the ranks that the seven persons gave to Delhi was five more than the sum of the ranks that the seven persons gave to Chennai, which in turn was two more than the sum of the ranks that the seven persons gave to Bangalore.

**Q5. DIRECTIONS** for questions 5 to 8: Select the correct alternative from the given choices.

Who among the following gave first rank to Bangalore?

- a) D
- b) G
- c) F
- d) A

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	280
Avg. time spent on this question by all students	633
Difficulty Level	D
Avg. time spent on this question by students who got this question right	696
% of students who attempted this question	14.43
% of students who got the question right of those who attempted	38.56

[Video Solution](#)

[Text Solution](#)

Since each person would have given 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ranks to the three cities, the sum of the ranks of that each person gave will be  $1 + 2 + 3 = 6$ . Across the seven persons, the sum of the ranks for the three cities will be  $6 \times 7 = 42$ .

Let x be the sum of the ranks given by the seven persons to Bangalore. From (iii), the sum of the ranks given to Chennai will be  $x + 2$  and the sum of the ranks given to Delhi will be  $x + 7$ .

$$\text{Hence, } x + x + 2 + x + 7 = 42 \Rightarrow x = 11$$

The sum of the ranks given to Bangalore will be 11, the sum of the ranks given to Chennai will be 13 and the sum of the ranks given to Delhi will be 18.

The number of persons who gave a first rank to Bangalore must be a minimum of 3 (if 3 persons gave first rank, then the other 4 persons must have given 2<sup>nd</sup> rank).

The number of persons who gave second rank to Delhi can be a maximum of 3 (if 3 persons gave 2<sup>nd</sup> rank, the other 4 persons must have given 3<sup>rd</sup> rank).

From (ii), the number of persons who gave second rank to Delhi must be 3 and the number of persons who gave first rank to Bangalore must be 3. This is the only case in which the two will be equal.

Hence, for Bangalore, 3 persons gave 1<sup>st</sup> rank. This implies that the other 4 persons must have given 2<sup>nd</sup> rank.

For Delhi, 3 persons gave 2<sup>nd</sup> rank. This implies that the other 4 persons must have given 3<sup>rd</sup> rank.

Since the seven of them together gave 7 first ranks, 7 second ranks and 7 third ranks, for Chennai, the seven persons must have given 4 first ranks and 3 third ranks.

From (i), F gave the same rank to Chennai as C gave to Bangalore.

This is only possible if both of them gave 1<sup>st</sup> rank to Chennai and Bangalore respectively.

Since F gave 1<sup>st</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Bangalore (since no one gave 3<sup>rd</sup> rank to Bangalore). He must have given 3<sup>rd</sup> rank to Delhi.

Since C gave 1<sup>st</sup> rank to Bangalore, he must have given 3<sup>rd</sup> rank to Chennai (since no one gave 2<sup>nd</sup> rank to Chennai). He must have given 2<sup>nd</sup> rank to Delhi.

From (i), F gave a numerically higher rank to Delhi than what A gave. Hence, A must have given a rank of 2 to Delhi. Since A gave 2<sup>nd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Bangalore and 3<sup>rd</sup> rank to Chennai.

Also, from (i), E gave the same rank to Chennai as D did to Delhi.

Hence, E must have given 3<sup>rd</sup> rank to Chennai and D must have given 3<sup>rd</sup> rank to Delhi.

Since E gave 3<sup>rd</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Delhi and 1<sup>st</sup> rank to Bangalore.

Since D gave 3<sup>rd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Chennai and 2<sup>nd</sup> rank to Bangalore.

Three persons have already given 2<sup>nd</sup> rank to Delhi (A, C and E). Hence, all the others would have given 3<sup>rd</sup> rank to Delhi. In the same way as above, we can find the ranks given by these persons to Bangalore and Chennai.

The following table provides the ranks given by each person to each city:

Person	Delhi	Bangalore	Chennai
A	2	1	3
B	3	2	1
C	2	1	3
D	3	2	1
E	2	1	3
F	3	2	1
G	3	2	1

A gave first rank to Bangalore.

Choice (D)

undefined

**DIRECTIONS** for questions 5 to 8: Answer the questions on the basis of the information given below.

Seven persons, A through G, ranked three cities – Delhi, Bangalore and Chennai – from 1 to 3 based on their preference for each city.

The following information is known about the rank of each city:

- i. F, who gave the same rank to Chennai as C gave to Bangalore, gave a numerically higher rank to Delhi than what A gave, while the rank that E gave to Chennai was the same as the rank that D gave to Delhi.
- ii. The number of persons who gave a first rank to Bangalore was the same as the number of persons who gave the second rank to Delhi.
- iii. The sum of the ranks that the seven persons gave to Delhi was five more than the sum of the ranks that the seven persons gave to Chennai, which in turn was two more than the sum of the ranks that the seven persons gave to Bangalore.

**Q6. DIRECTIONS** for questions 5 to 8: Select the correct alternative from the given choices.

Who among the following gave first rank to Chennai and second rank to Bangalore?

a) A

- b) B
- c) C
- d) None of the above

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	21
Avg. time spent on this question by all students	88
Difficulty Level	D
Avg. time spent on this question by students who got this question right	82
% of students who attempted this question	12.73
% of students who got the question right of those who attempted	32.13

[Video Solution](#)

[Text Solution](#)

Since each person would have given 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ranks to the three cities, the sum of the ranks of that each person gave will be  $1 + 2 + 3 = 6$ . Across the seven persons, the sum of the ranks for the three cities will be  $6 \times 7 = 42$ .

Let  $x$  be the sum of the ranks given by the seven persons to Bangalore. From (iii), the sum of the ranks given to Chennai will be  $x + 2$  and the sum of the ranks given to Delhi will be  $x + 7$ .

$$\text{Hence, } x + x + 2 + x + 7 = 42 \Rightarrow x = 11$$

The sum of the ranks given to Bangalore will be 11, the sum of the ranks given to Chennai will be 13 and the sum of the ranks given to Delhi will be 18.

The number of persons who gave a first rank to Bangalore must be a minimum of 3 (if 3 persons gave first rank, then the other 4 persons must give 2<sup>nd</sup> rank).

The number of persons who gave second rank to Delhi can be a maximum of 3 (if 3 persons gave 2<sup>nd</sup> rank, the other 4 persons must have given 3<sup>rd</sup> rank).

From (ii), the number of persons who gave second rank to Delhi must be 3 and the number of persons who gave first rank to Bangalore must be 3. This is the only case in which the two will be equal.

Hence, for Bangalore, 3 persons gave 1<sup>st</sup> rank. This implies that the other 4 persons must have given 2<sup>nd</sup> rank.

For Delhi, 3 persons gave 2<sup>nd</sup> rank. This implies that the other 4 persons must have given 3<sup>rd</sup> rank.

Since the seven of them together gave 7 first ranks, 7 second ranks and 7 third ranks, for Chennai, the seven persons must have given 4 first ranks and 3 third ranks.

From (i), F gave the same rank to Chennai as C gave to Bangalore.

This is only possible if both of them gave 1<sup>st</sup> rank to Chennai and Bangalore respectively.

Since F gave 1<sup>st</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Bangalore (since no one gave 3<sup>rd</sup> rank to Bangalore). He must have given 3<sup>rd</sup> rank to Delhi.

Since C gave 1<sup>st</sup> rank to Bangalore, he must have given 3<sup>rd</sup> rank to Chennai (since no one gave 2<sup>nd</sup> rank to Chennai). He must have given 2<sup>nd</sup> rank to Delhi.

From (i), F gave a numerically higher rank to Delhi than what A gave. Hence, A must have given a rank of 2 to Delhi. Since A gave 2<sup>nd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Bangalore and 3<sup>rd</sup> rank to Chennai.

Also, from (i), E gave the same rank to Chennai as D did to Delhi.

Hence, E must have given 3<sup>rd</sup> rank to Chennai and D must have given 3<sup>rd</sup> rank to Delhi.

Since E gave 3<sup>rd</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Delhi and 1<sup>st</sup> rank to Bangalore.

Since D gave 3<sup>rd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Chennai and 2<sup>nd</sup> rank to

Bangalore.

Three persons have already given 2<sup>nd</sup> rank to Delhi (A, C and E). Hence, all the others would have given 3<sup>rd</sup> rank to Delhi. In the same way as above, we can find the ranks given by these persons to Bangalore and Chennai.

The following table provides the ranks given by each person to each city:

Person	Delhi	Bangalore	Chennai
A	2	1	3
B	3	2	1
C	2	1	3
D	3	2	1
E	2	1	3
F	3	2	1
G	3	2	1

B gave first rank to Chennai and second rank to Bangalore.

Choice (B)

undefined

**DIRECTIONS for questions 5 to 8:** Answer the questions on the basis of the information given below.

Seven persons, A through G, ranked three cities – Delhi, Bangalore and Chennai – from 1 to 3 based on their preference for each city.

The following information is known about the rank of each city:

- i. F, who gave the same rank to Chennai as C gave to Bangalore, gave a numerically higher rank to Delhi than what A gave, while the rank that E gave to Chennai was the same as the rank that D gave to Delhi.
- ii. The number of persons who gave a first rank to Bangalore was the same as the number of persons who gave the second rank to Delhi.
- iii. The sum of the ranks that the seven persons gave to Delhi was five more than the sum of the ranks that the seven persons gave to Chennai, which in turn was two more than the sum of the ranks that the seven persons gave to Bangalore.

**Q7. DIRECTIONS for questions 5 to 8:** Select the correct alternative from the given choices.

Which of the following pairs of persons gave the same rank to each of the three cities?

- a) B, C
- b) E, G
- c) B, G
- d) None of the above

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	48
Avg. time spent on this question by all students	65
Difficulty Level	D
Avg. time spent on this question by students who got this question right	60
% of students who attempted this question	9.67
% of students who got the question right of those who attempted	48.3

[Video Solution](#)

[Text Solution](#)

Since each person would have given 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ranks to the three cities, the sum of the ranks of that each person gave will be  $1 + 2 + 3 = 6$ . Across the seven persons, the sum of the ranks for the three cities will be  $6 \times 7 = 42$ .

Let  $x$  be the sum of the ranks given by the seven persons to Bangalore. From (iii), the sum of the ranks given to Chennai will be  $x + 2$  and the sum of the ranks given to Delhi will be  $x + 7$ .

$$\text{Hence, } x + x + 2 + x + 7 = 42 \Rightarrow x = 11$$

The sum of the ranks given to Bangalore will be 11, the sum of the ranks given to Chennai will be 13 and the sum of the ranks given to Delhi will be 18.

The number of persons who gave a first rank to Bangalore must be a minimum of 3 (if 3 persons gave first rank, then the other 4 persons must give 2<sup>nd</sup> rank).

The number of persons who gave second rank to Delhi can be a maximum of 3 (if 3 persons gave 2<sup>nd</sup> rank, the other 4 persons must have given 3<sup>rd</sup> rank).

From (ii), the number of persons who gave second rank to Delhi must be 3 and the number of persons who gave first rank to Bangalore must be 3. This is the only case in which the two will be equal.

Hence, for Bangalore, 3 persons gave 1<sup>st</sup> rank. This implies that the other 4 persons must have given 2<sup>nd</sup> rank.

For Delhi, 3 persons gave 2<sup>nd</sup> rank. This implies that the other 4 persons must have given 3<sup>rd</sup> rank.

Since the seven of them together gave 7 first ranks, 7 second ranks and 7 third ranks, for Chennai, the seven persons must have given 4 first ranks and 3 third ranks.

From (i), F gave the same rank to Chennai as C gave to Bangalore.

This is only possible if both of them gave 1<sup>st</sup> rank to Chennai and Bangalore respectively.

Since F gave 1<sup>st</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Bangalore (since no one gave 3<sup>rd</sup> rank to Bangalore). He must have given 3<sup>rd</sup> rank to Delhi.

Since C gave 1<sup>st</sup> rank to Bangalore, he must have given 3<sup>rd</sup> rank to Chennai (since no one gave 2<sup>nd</sup> rank to Chennai). He must have given 2<sup>nd</sup> rank to Delhi.

From (i), F gave a numerically higher rank to Delhi than what A gave. Hence, A must have given a rank of 2 to Delhi. Since A gave 2<sup>nd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Bangalore and 3<sup>rd</sup> rank to Chennai.

Also, from (i), E gave the same rank to Chennai as D did to Delhi.

Hence, E must have given 3<sup>rd</sup> rank to Chennai and D must have given 3<sup>rd</sup> rank to Delhi.

Since E gave 3<sup>rd</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Delhi and 1<sup>st</sup> rank to Bangalore.

Since D gave 3<sup>rd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Chennai and 2<sup>nd</sup> rank to Bangalore.

Three persons have already given 2<sup>nd</sup> rank to Delhi (A, C and E). Hence, all the others would have given 3<sup>rd</sup> rank to Delhi. In the same way as above, we can find the ranks given by these persons to Bangalore and Chennai.

The following table provides the ranks given by each person to each city:

Person	Delhi	Bangalore	Chennai
A	2	1	3
B	3	2	1
C	2	1	3
-	-	-	-

D	3	2	1
E	2	1	3
F	3	2	1
G	3	2	1

B and G gave the same rank to each of the three cities.

Choice (C)

undefined

**DIRECTIONS** for questions 5 to 8: Answer the questions on the basis of the information given below.

Seven persons, A through G, ranked three cities – Delhi, Bangalore and Chennai – from 1 to 3 based on their preference for each city.

The following information is known about the rank of each city:

- i. F, who gave the same rank to Chennai as C gave to Bangalore, gave a numerically higher rank to Delhi than what A gave, while the rank that E gave to Chennai was the same as the rank that D gave to Delhi.
- ii. The number of persons who gave a first rank to Bangalore was the same as the number of persons who gave the second rank to Delhi.
- iii. The sum of the ranks that the seven persons gave to Delhi was five more than the sum of the ranks that the seven persons gave to Chennai, which in turn was two more than the sum of the ranks that the seven persons gave to Bangalore.

**Q8. DIRECTIONS** for questions 5 to 8: Select the correct alternative from the given choices.

How many of the seven persons gave a numerically lower rank to Bangalore as compared to Delhi?

- a) 0
- b) 3
- c) 4
- d) 7

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	124
Avg. time spent on this question by all students	66
Difficulty Level	D
Avg. time spent on this question by students who got this question right	68
% of students who attempted this question	10.17
% of students who got the question right of those who attempted	29.63

[Video Solution](#)

[Text Solution](#)

Since each person would have given 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ranks to the three cities, the sum of the ranks of that each person gave will be  $1 + 2 + 3 = 6$ . Across the seven persons, the sum of the ranks for the three cities will be  $6 \times 7 = 42$ .

Let  $x$  be the sum of the ranks given by the seven persons to Bangalore. From (iii), the sum of the ranks given to Chennai will be  $x + 2$  and the sum of the ranks given to Delhi will be  $x + 7$ .

$$\text{Hence, } x + x + 2 + x + 7 = 42 \Rightarrow x = 11$$

The sum of the ranks given to Bangalore will be 11, the sum of the ranks given to Chennai will be 13 and the sum of the ranks given to Delhi will be 18.

The number of persons who gave a first rank to Bangalore must be a minimum of 3 (if 3 persons gave first rank, then the other 4 persons must have given 2<sup>nd</sup> rank).

The number of persons who gave second rank to Delhi can be a maximum of 3 (if 3 persons gave 2<sup>nd</sup> rank, the other 4 persons must have given 3<sup>rd</sup> rank).

From (ii), the number of persons who gave second rank to Delhi must be 3 and the number of persons who gave first rank to Bangalore must be 3. This is the only case in which the two will be equal.

Hence, for Bangalore, 3 persons gave 1<sup>st</sup> rank. This implies that the other 4 persons must have given 2<sup>nd</sup> rank.

For Delhi, 3 persons gave 2<sup>nd</sup> rank. This implies that the other 4 persons must have given 3<sup>rd</sup> rank.

Since the seven of them together gave 7 first ranks, 7 second ranks and 7 third ranks, for Chennai, the seven persons must have given 4 first ranks and 3 third ranks.

From (i), F gave the same rank to Chennai as C gave to Bangalore.

This is only possible if both of them gave 1<sup>st</sup> rank to Chennai and Bangalore respectively.

Since F gave 1<sup>st</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Bangalore (since no one gave 3<sup>rd</sup> rank to Bangalore). He must have given 3<sup>rd</sup> rank to Delhi.

Since C gave 1<sup>st</sup> rank to Bangalore, he must have given 3<sup>rd</sup> rank to Chennai (since no one gave 2<sup>nd</sup> rank to Chennai). He must have given 2<sup>nd</sup> rank to Delhi.

From (i), F gave a numerically higher rank to Delhi than what A gave. Hence, A must have given a rank of 2 to Delhi. Since A gave 2<sup>nd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Bangalore and 3<sup>rd</sup> rank to Chennai.

Also, from (i), E gave the same rank to Chennai as D did to Delhi.

Hence, E must have given 3<sup>rd</sup> rank to Chennai and D must have given 3<sup>rd</sup> rank to Delhi.

Since E gave 3<sup>rd</sup> rank to Chennai, he must have given 2<sup>nd</sup> rank to Delhi and 1<sup>st</sup> rank to Bangalore.

Since D gave 3<sup>rd</sup> rank to Delhi, he must have given 1<sup>st</sup> rank to Chennai and 2<sup>nd</sup> rank to Bangalore.

Three persons have already given 2<sup>nd</sup> rank to Delhi (A, C and E). Hence, all the others would have given 3<sup>rd</sup> rank to Delhi. In the same way as above, we can find the ranks given by these persons to Bangalore and Chennai.

The following table provides the ranks given by each person to each city:

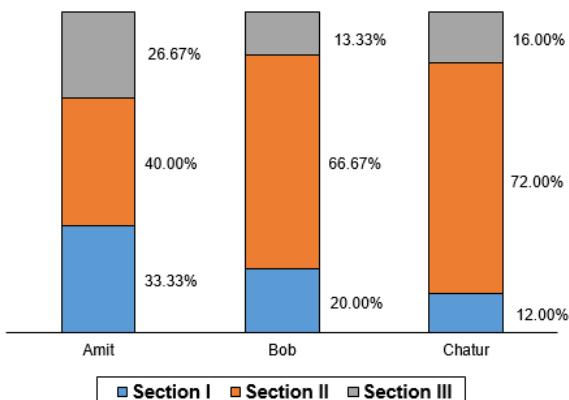
Person	Delhi	Bangalore	Chennai
A	2	1	3
B	3	2	1
C	2	1	3
D	3	2	1
E	2	1	3
F	3	2	1
G	3	2	1

All the seven persons gave a numerically lower rank to Bangalore as compared to Delhi.  
Choice (D)

**DIRECTIONS** for questions 9 to 12: Answer the questions on the basis of the information given below.

An exam has three sections – Section I, Section II and Section III. Each section has exactly 20 questions. For each question in Section I, three marks were awarded for every correct answer, while one mark was deducted for every wrong answer. For each question in Section II, six marks were awarded for every correct answer, while two marks were deducted for every wrong answer. For each question in Section III, two marks were awarded for every correct answer, while one mark was deducted for every wrong answer. In any section, no marks were either awarded or deducted for any question left unattempted.

Exactly three students, Amit, Bob and Chatur, attempted the exam and each student attempted all the questions in the exam. Further, the total marks scored by any student in any section were positive. The following bar chart provides the marks scored by each student in each section as a percentage of the total marks scored by the student, rounded off to two decimal places:



**Q9. DIRECTIONS** for questions 9 to 12: Select the correct alternative from the given choices.

What is the minimum number of questions attempted correctly by any of the three students?

- a) 25
- b) 30
- c) 35
- d) 40

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	46
Avg. time spent on this question by all students	499
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	524
% of students who attempted this question	11.94
% of students who got the question right of those who attempted	36.19

[Video Solution](#)

[Text Solution](#)

Let  $p$ ,  $q$  and  $r$  be the number of correct answers of a student in Section I, Section II and Section III respectively.

Since the three students answered all the questions, the marks scored by any student in Section I =  $3p - (20 - p) = 4p - 20$

The marks scored by any student in Section II =  $6q - 2 \times (20 - q) = 8q - 40$

The marks scored by any student in Section III =  $2r - (20 - r) = 3r - 20$

Consider Amit.

We know the ratio of the marks scored by Amit in the three sections.

Comparing his marks in Section I and Section II, we get

$$\frac{4p-20}{8q-40} = \frac{\frac{100}{3}}{\frac{40}{6}} = \frac{5}{6}$$

$$\Rightarrow 24p - 120 = 40q - 200 \Rightarrow p = \frac{5q-10}{3}$$

However,  $p$  and  $q$  are both integers. Hence, for  $p$  to be an integer,  $q$  can be 2, 5, 8, 11, 14, 17 or 20. In each case,  $p$  can be 0, 5, 10, 15, 20, 25 or 30 respectively.

Since no student scored negative marks in a section, the value of p, q and r must be a minimum of 5, 5 and 7 respectively. Also, p, q and r can be a maximum of 20 each. Hence, the values of q can be 5, 8, 11 or 14.

For q = 5, total score in section II = 0. This is not possible.

For q = 8, total score in section II = 24. In this case, p = 10. Score in Section I = 20.

Total score in test =  $24/0.4 = 60$ . Score in Section III =  $60 - 24 - 20 = 16$ . It is possible to score 16 in section III if r = 12. This is possible.

For q = 11, total score in section II = 48. In this case, p = 15. Score in Section I = 40.

Total score in test =  $48/0.4 = 120$ . Score in Section III =  $120 - 48 - 40 = 32$ . It is not possible to score 32 marks in section III (as it cannot be expressed as  $3r - 20$ ).

For q = 14, total score in section II = 72. Score in Section I = 60.

Total score in test =  $72/0.4 = 180$ . Score in Section III =  $180 - 72 - 60 = 48$ . However, it is not possible to score more than 40 in section III. Hence, this is not possible.

Hence, **r must be 12, p must be 10 and q must be 8.**

Consider Bob.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{20}{\left(\frac{200}{3}\right)} \Rightarrow p = \frac{3q+10}{5}$$

For p to be an integer, q can be 5, 10, 15 or 20. In these cases, p will be 5, 8, 11 or 14.

If q = 5, score in Section II = 0. This is not possible.

If q = 10, score in Section II = 40. Score in Section I = 12. Score in Section III =  $60 - 40 - 12 = 8$ . The value of r will not be an integer in this case.

If q = 15, score in Section II = 80. Score in Section I = 24. Score in Section III =  $120 - 80 - 24 = 16$ . In this case, r = 12.

If q = 20, score in Section II = 120. Score in Section I = 36. Score in Section III =  $180 - 120 - 36 = 24$ . The value of r will not be an integer in this case.

Hence, **p = 11, q = 15 and r = 12.**

Consider Chatur.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{12}{72} \Rightarrow p = \frac{q+10}{3}$$

For p to be an integer, q can be 5, 8, 11, 14, 17 or 20. In these cases, p will be 5, 6, 7, 8, 9 or 10.

Comparing section I and section III, we get

$$\frac{4p-20}{3r-20} = \frac{12}{16} \Rightarrow p = \frac{9r+20}{16}$$

The only value for which p is an integer for  $r \leq 20$  is if r = 12. Hence, **p = 8, q = 14 and r = 12.**

The following table provides the number of questions attempted correctly by each student in each section:

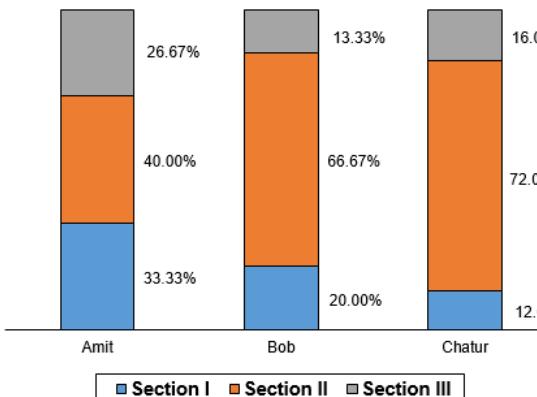
Student	Section I	Section II	Section III
Amit	10	8	12
Bob	11	15	12
Chatur	8	14	12

The minimum number of questions attempted correctly by any student = 30 (by Amit)  
Choice (B)

**DIRECTIONS** for questions 9 to 12: Answer the questions on the basis of the information given below.

An exam has three sections – Section I, Section II and Section III. Each section has exactly 20 questions. For each question in Section I, three marks were awarded for every correct answer, while one mark was deducted for every wrong answer. For each question in Section II, six marks were awarded for every correct answer, while two marks were deducted for every wrong answer. For each question in Section III, two marks were awarded for every correct answer, while one mark was deducted for every wrong answer. In any section, no marks were either awarded or deducted for any question left unattempted.

Exactly three students, Amit, Bob and Chatur, attempted the exam and each student attempted all the questions in the exam. Further, the total marks scored by any student in any section were positive. The following bar chart provides the marks scored by each student in each section as a percentage of the total marks scored by the student, rounded off to two decimal places:



**Q10. DIRECTIONS** for questions 9 to 12: Select the correct alternative from the given choices.

Who scored the maximum marks in Section I?

- a) Amit
- b) Bob
- c) Chatur
- d) Cannot be determined

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	71
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	98
% of students who attempted this question	22.72
% of students who got the question right of those who attempted	10.48

[Video Solution](#)

[Text Solution](#)

Let  $p$ ,  $q$  and  $r$  be the number of correct answers of a student in Section I, Section II and Section III respectively.

Since the three students answered all the questions, the marks scored by any student in Section I =  $3p - (20 - p) = 4p - 20$

The marks scored by any student in Section II =  $6q - 2 \times (20 - q) = 8q - 40$

The marks scored by any student in Section III =  $2r - (20 - r) = 3r - 20$

Consider Amit.

We know the ratio of the marks scored by Amit in the three sections.

Comparing his marks in Section I and Section II, we get

$$\frac{4p-20}{8q-40} = \frac{\frac{100}{3}}{\frac{40}{6}} = \frac{5}{6}$$

$$\Rightarrow 24p - 120 = 40q - 200 \Rightarrow p = \frac{5q-10}{3}$$

However,  $p$  and  $q$  are both integers. Hence, for  $p$  to be an integer,  $q$  can be 2, 5, 8, 11,

14, 17 or 20. In each case, p can be 0, 5, 10, 15, 20, 25 or 30 respectively. Since no student scored negative marks in a section, the value of p, q and r must be a minimum of 5, 5 and 7 respectively. Also, p, q and r can be a maximum of 20 each. Hence, the values of q can be 5, 8, 11 or 14.

For q = 5, total score in section II = 0. This is not possible.

For q = 8, total score in section II = 24. In this case, p = 10. Score in Section I = 20.

Total score in test =  $24/0.4 = 60$ . Score in Section III =  $60 - 24 - 20 = 16$ . It is possible to score 16 in section III if r = 12. This is possible.

For q = 11, total score in section II = 48. In this case, p = 15. Score in Section I = 40.

Total score in test =  $48/0.4 = 120$ . Score in Section III =  $120 - 48 - 40 = 32$ . It is not possible to score 32 marks in section III (as it cannot be expressed as  $3r - 20$ ).

For q = 14, total score in section II = 72. Score in Section I = 60.

Total score in test =  $72/0.4 = 180$ . Score in Section III =  $180 - 72 - 60 = 48$ . However, it is not possible to score more than 40 in section III. Hence, this is not possible.

Hence, **r must be 12, p must be 10 and q must be 8.**

Consider Bob.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{20}{\left(\frac{200}{3}\right)} \Rightarrow p = \frac{3q+10}{5}$$

For p to be an integer, q can be 5, 10, 15 or 20. In these cases, p will be 5, 8, 11 or 14.

If q = 5, score in Section II = 0. This is not possible.

If q = 10, score in Section II = 40. Score in Section I = 12. Score in Section III =  $60 - 40 - 12 = 8$ . The value of r will not be an integer in this case.

If q = 15, score in Section II = 80. Score in Section I = 24. Score in Section III =  $120 - 80 - 24 = 16$ . In this case, r = 12.

If q = 20, score in Section II = 120. Score in Section I = 36. Score in Section III =  $180 - 120 - 36 = 24$ . The value of r will not be an integer in this case.

Hence, **p = 11, q = 15 and r = 12.**

Consider Chatur.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{12}{72} \Rightarrow p = \frac{q+10}{3}$$

For p to be an integer, q can be 5, 8, 11, 14, 17 or 20. In these cases, p will be 5, 6, 7, 8, 9 or 10.

Comparing section I and section III, we get

$$\frac{4p-20}{3r-20} = \frac{12}{16} \Rightarrow p = \frac{9r+20}{16}$$

The only value for which p is an integer for  $r \leq 20$  is if r = 12. Hence, **p = 8, q = 14 and r = 12.**

The following table provides the number of questions attempted correctly by each student in each section:

<b>Student</b>	<b>Section I</b>	<b>Section II</b>	<b>Section III</b>
Amit	10	8	12
Bob	11	15	12
Chatur	8	14	12

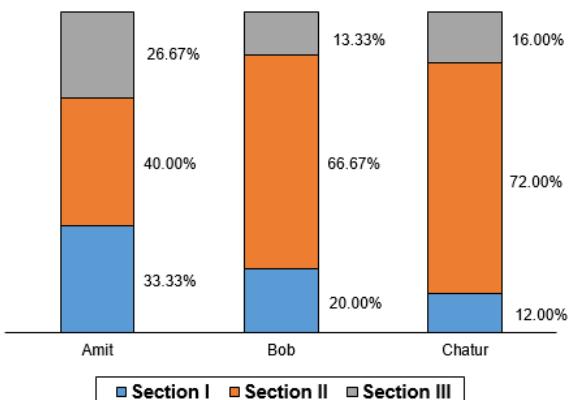
Bob scored the maximum marks in Section I.

Choice (B)

**DIRECTIONS** for questions 9 to 12: Answer the questions on the basis of the information given below.

An exam has three sections – Section I, Section II and Section III. Each section has exactly 20 questions. For each question in Section I, three marks were awarded for every correct answer, while one mark was deducted for every wrong answer. For each question in Section II, six marks were awarded for every correct answer, while two marks were deducted for every wrong answer. For each question in Section III, two marks were awarded for every correct answer, while one mark was deducted for every wrong answer. In any section, no marks were either awarded or deducted for any question left unattempted.

Exactly three students, Amit, Bob and Chatur, attempted the exam and each student attempted all the questions in the exam. Further, the total marks scored by any student in any section were positive. The following bar chart provides the marks scored by each student in each section as a percentage of the total marks scored by the student, rounded off to two decimal places:



**Q11. DIRECTIONS** for questions 9 to 12: Select the correct alternative from the given choices.

If, for each student, the *net marks per question* is defined as the ratio of the total marks obtained by that student to the number of questions correctly attempted by that student, what is the highest *net marks per question* for any student? (rounded off to two decimal places)

- a) 2.94
- b) 3
- c) 3.16
- d) 3.38

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	0
Avg. time spent on this question by all students	129
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	114
% of students who attempted this question	5.83
% of students who got the question right of those who attempted	48.5

[Video Solution](#)

[Text Solution](#)

Let  $p$ ,  $q$  and  $r$  be the number of correct answers of a student in Section I, Section II and Section III respectively.

Since the three students answered all the questions, the marks scored by any student in Section I =  $3p - (20 - p) = 4p - 20$

The marks scored by any student in Section II =  $6q - 2 \times (20 - q) = 8q - 40$

The marks scored by any student in Section III =  $2r - (20 - r) = 3r - 20$

Consider Amit.

We know the ratio of the marks scored by Amit in the three sections.

Comparing his marks in Section I and Section II, we get

$$\frac{4p-20}{8q-40} = \frac{\frac{100}{3}}{\frac{40}{6}} = \frac{5}{6}$$

$$\Rightarrow 24p - 120 = 40q - 200 \Rightarrow p = \frac{5q-10}{3}$$

However,  $p$  and  $q$  are both integers. Hence, for  $p$  to be an integer,  $q$  can be 2, 5, 8, 11,

14, 17 or 20. In each case, p can be 0, 5, 10, 15, 20, 25 or 30 respectively. Since no student scored negative marks in a section, the value of p, q and r must be a minimum of 5, 5 and 7 respectively. Also, p, q and r can be a maximum of 20 each. Hence, the values of q can be 5, 8, 11 or 14.

For q = 5, total score in section II = 0. This is not possible.

For q = 8, total score in section II = 24. In this case, p = 10. Score in Section I = 20.

Total score in test =  $24/0.4 = 60$ . Score in Section III =  $60 - 24 - 20 = 16$ . It is possible to score 16 in section III if r = 12. This is possible.

For q = 11, total score in section II = 48. In this case, p = 15. Score in Section I = 40.

Total score in test =  $48/0.4 = 120$ . Score in Section III =  $120 - 48 - 40 = 32$ . It is not possible to score 32 marks in section III (as it cannot be expressed as  $3r - 20$ ).

For q = 14, total score in section II = 72. Score in Section I = 60.

Total score in test =  $72/0.4 = 180$ . Score in Section III =  $180 - 72 - 60 = 48$ . However, it is not possible to score more than 40 in section III. Hence, this is not possible.

Hence, **r must be 12, p must be 10 and q must be 8.**

Consider Bob.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{20}{\left(\frac{200}{3}\right)} \Rightarrow p = \frac{3q+10}{5}$$

For p to be an integer, q can be 5, 10, 15 or 20. In these cases, p will be 5, 8, 11 or 14.

If q = 5, score in Section II = 0. This is not possible.

If q = 10, score in Section II = 40. Score in Section I = 12. Score in Section III =  $60 - 40 - 12 = 8$ . The value of r will not be an integer in this case.

If q = 15, score in Section II = 80. Score in Section I = 24. Score in Section III =  $120 - 80 - 24 = 16$ . In this case, r = 12.

If q = 20, score in Section II = 120. Score in Section I = 36. Score in Section III =  $180 - 120 - 36 = 24$ . The value of r will not be an integer in this case.

Hence, **p = 11, q = 15 and r = 12.**

Consider Chatur.

Comparing section I and section III, we get

$$\frac{4p-20}{3r-20} = \frac{12}{16} \Rightarrow p = \frac{q+10}{3}$$

For p to be an integer, q can be 5, 8, 11, 14, 17 or 20. In these cases, p will be 5, 6, 7, 8, 9 or 10.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{12}{72} \Rightarrow p = \frac{9r+20}{16}$$

The only value for which p is an integer for  $r \leq 20$  is if r = 12. Hence, **p = 8, q = 14 and r = 12.**

The following table provides the number of questions attempted correctly by each student in each section:

Student	Section I	Section II	Section III
Amit	10	8	12
Bob	11	15	12
Chatur	8	14	12

$$\text{Net marks per question for Amit} = \frac{60}{30} = 2$$

$$\text{Net marks per question for Bob} = \frac{120}{38} = 3.16$$

$$\text{Net marks per question for Chatur} = \frac{100}{34} = 2.94$$

Highest net marks = 3.16.

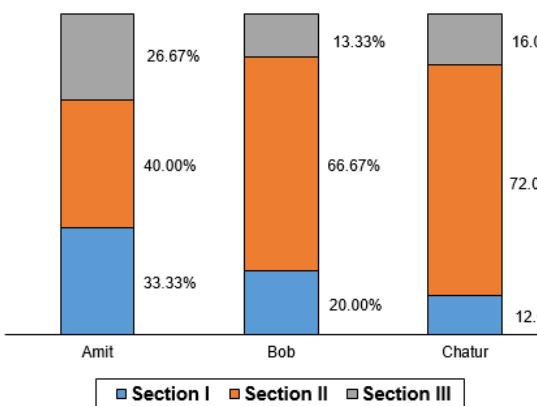
Choice (C)

undefined

**DIRECTIONS** for questions 9 to 12: Answer the questions on the basis of the information given below.

An exam has three sections – Section I, Section II and Section III. Each section has exactly 20 questions. For each question in Section I, three marks were awarded for every correct answer, while one mark was deducted for every wrong answer. For each question in Section II, six marks were awarded for every correct answer, while two marks were deducted for every wrong answer. For each question in Section III, two marks were awarded for every correct answer, while one mark was deducted for every wrong answer. In any section, no marks were either awarded or deducted for any question left unattempted.

Exactly three students, Amit, Bob and Chatur, attempted the exam and each student attempted all the questions in the exam. Further, the total marks scored by any student in any section were positive. The following bar chart provides the marks scored by each student in each section as a percentage of the total marks scored by the student, rounded off to two decimal places:



**Q12. DIRECTIONS** for questions 9 to 12: Select the correct alternative from the given choices.

What are the minimum marks scored by any student in Section II?

- a) 24
- b) 40
- c) 56
- d) 64

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	102
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	111
% of students who attempted this question	11.7
% of students who got the question right of those who attempted	37.96

[Video Solution](#)

[Text Solution](#)

Let p, q and r be the number of correct answers of a student in Section I, Section II and Section III respectively.

Since the three students answered all the questions, the marks scored by any student in Section I =  $3p - (20 - p) = 4p - 20$

The marks scored by any student in Section II =  $6q - 2 \times (20 - q) = 8q - 40$

The marks scored by any student in Section III =  $2r - (20 - r) = 3r - 20$

Consider Amit.

We know the ratio of the marks scored by Amit in the three sections

We know the ratio of the marks scored by Amit in the three sections.

Comparing his marks in Section I and Section II, we get

$$\frac{4p-20}{8q-40} = \frac{\frac{100}{3}}{40} = \frac{5}{6}$$

$$\Rightarrow 24p - 120 = 40q - 200 \Rightarrow p = \frac{5q-10}{3}$$

However, p and q are both integers. Hence, for p to be an integer, q can be 2, 5, 8, 11, 14, 17 or 20. In each case, p can be 0, 5, 10, 15, 20, 25 or 30 respectively.

Since no student scored negative marks in a section, the value of p, q and r must be a minimum of 5, 5 and 7 respectively. Also, p, q and r can be a maximum of 20 each.

Hence, the values of q can be 5, 8, 11 or 14.

For q = 5, total score in section II = 0. This is not possible.

For q = 8, total score in section II = 24. In this case, p = 10. Score in Section I = 20.

Total score in test =  $24/0.4 = 60$ . Score in Section III =  $60 - 24 - 20 = 16$ . It is possible to score 16 in section III if r = 12. This is possible.

For q = 11, total score in section II = 48. In this case, p = 15. Score in Section I = 40.

Total score in test =  $48/0.4 = 120$ . Score in Section III =  $120 - 48 - 40 = 32$ . It is not possible to score 32 marks in section III (as it cannot be expressed as  $3r - 20$ ).

For q = 14, total score in section II = 72. Score in Section I = 60.

Total score in test =  $72/0.4 = 180$ . Score in Section III =  $180 - 72 - 60 = 48$ . However, it is not possible to score more than 40 in section III. Hence, this is not possible.

Hence, **r must be 12, p must be 10 and q must be 8**.

Consider Bob.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{20}{\left(\frac{200}{3}\right)} \Rightarrow p = \frac{3q+10}{5}$$

For p to be an integer, q can be 5, 10, 15 or 20. In these cases, p will be 5, 8, 11 or 14.

If q = 5, score in Section II = 0. This is not possible.

If q = 10, score in Section II = 40. Score in Section I = 12. Score in Section III =  $60 - 40 - 12 = 8$ . The value of r will not be an integer in this case.

If q = 15, score in Section II = 80. Score in Section I = 24. Score in Section III =  $120 - 80 - 24 = 16$ . In this case, r = 12.

If q = 20, score in Section II = 120. Score in Section I = 36. Score in Section III =  $180 - 120 - 36 = 24$ . The value of r will not be an integer in this case.

Hence, **p = 11, q = 15 and r = 12**.

Consider Chatur.

Comparing section I and section II, we get

$$\frac{4p-20}{8q-40} = \frac{12}{72} \Rightarrow p = \frac{q+10}{3}$$

For p to be an integer, q can be 5, 8, 11, 14, 17 or 20. In these cases, p will be 5, 6, 7, 8, 9 or 10.

Comparing section I and section III, we get

$$\frac{4p-20}{3r-20} = \frac{12}{16} \Rightarrow p = \frac{9r+20}{16}$$

The only value for which p is an integer for  $r \leq 20$  is if r = 12. Hence, **p = 8, q = 14 and r = 12**.

The following table provides the number of questions attempted correctly by each student in each section:

Student	Section I	Section II	Section III
Amit	10	8	12
Bob	11	15	12
Chatur	8	14	12

The minimum marks scored by any student in Section II = 24 (scored by Amit).  
Choice (A)

undefined

**DIRECTIONS** for questions 13 to 16: Answer the questions on the basis of the information given below.

Raghu, a school teacher, conducted five tests – Test 1 through Test 5 – in that order, for the students in his class. There are exactly five students, A through E, in his class and all the five students attempted all the five tests.

After the five tests, Raghu ranked the five students based on their performance in each test. No two students received the same rank in any test. After the five tests, he made a table, provided below, which indicates the direction of the change in the rank of a student in any test (from Test 2 through Test 5) as compared to his rank in the previous test.

In the table, a ↑ indicates a numerical increase in the rank, a ↓ indicates a numerical decrease in the rank, while ↔ indicates that the rank was unchanged.

Student	Test 2	Test 3	Test 4	Test 5
A	↑	↔	↓	↓
B	↓	↔	↓	↓
C	↓	↓	↑	↑
D	↔	↓	↑	↓
E	↓	↑	↓	↔

**Q13. DIRECTIONS** for questions 13 to 16: Select the correct alternative from the given choices.

Who received the fifth rank in Test 1?

- a) **B**
- b) **C**
- c) **D**
- d) **E**

You did not answer this question

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	277
Avg. time spent on this question by all students	495
Difficulty Level	D
Avg. time spent on this question by students who got this question right	638
% of students who attempted this question	29.35
% of students who got the question right of those who attempted	26.09

[Video Solution](#)

[Text Solution](#)

Given that the rank of A increased in Test 2 as compared to his rank in Test 1. Hence, in Test 2, A's rank can be 2/3/4/5. In Test 1, his rank can be 1/2/3/4.

In Test 3, his rank remained unchanged. Hence, in Test 3, his rank can be 2/3/4/5.

In Test 4, his rank decreased. Hence, his rank in Test 4 can be 1/2/3/4.

In Test 5, his rank decreased again. However, if his rank in Test 4 was 1, it cannot decrease further. Hence, his rank in Test 4 cannot be 1. Also, in Test 3, his rank cannot be 2 because it cannot decrease further in Test 4. Hence, A' rank in Test 2 and Test 3 must be 3/4/5.

In Test 4, it must be 2/3/4. In Test 5, it must be 1/2/3.

B's rank decreased in Test 2, Test 4 and Test 5 and remained the same in Test 3.

B's rank in Test 2 (and Test 3) must be at least 3 (only then it can decrease in Test 4 as well as Test 5).

as well as Test 5).

B's rank in Test 2 can be 3/4 (it cannot be 5 since it decreased in Test 2). In Test 3 also, B's rank can be 3/4.

In Test 4, B's rank can be 2/3. In Test 5, B's rank can be 1/2.

C's rank decreased in Test 2 and Test 3. Hence, C's rank in Test 2 can be 2/3/4. In Test 1, it must be 3/4/5. In Test 3, C's rank can be 1/2/3.

C's rank increased in Test 4 and Test 5. Hence, in Test 4, C's rank can be 2/3/4. In Test 5, C's rank can be 3/4/5.

D's rank decreased in Test 3. Hence, D's rank in Test 3 can be 1/2/3/4. In Test 1 and Test 2, D's rank can be 2/3/4/5.

In Test 4, D's rank can be 2/3/4/5. In Test 5, D's rank can be 1/2/3/4.

E's rank in Test 2 can be 1/2/3/4. In Test 3, it must be 2/3/4/5. In Test 4, it must be 1/2/3/4. In Test 5 also, it must be 1/2/3/4.

The following table provides the possible ranks of the students in the tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1/2/3/4	3/4/5	3/4/5	2/3/4	1/2/3
B	4/5	3/4	3/4	2/3	1/2
C	3/4/5	2/3/4	1/2/3	2/3/4	3/4/5
D	2/3/4/5	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4
E	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4	1/2/3/4

In Test 4, E is the only person who can have rank 1. Hence, E's rank in Test 4 must be 1. Since E's rank remained unchanged in Test 5, it must also be 1 in Test 5.

In Test 5, B's rank cannot be 1. Hence, B's rank in Test 5 must be 2. In Test 4, B's rank must be 3 (since the rank of B decreased in Test 5, this is the only possibility). In Test 3, B's rank must be 4. In Test 2, B's rank must be 4. In Test 1, it must be 5.

In Test 5, A's rank cannot be 1 or 2. Hence, A's rank must be 3. A's rank in Test 4 must be 4 (since A's rank decreased in Test 5). In Test 3, A's rank must be 5. In Test 2, A's rank must be 5. In Test 1, it can be 1/2/3/4.

In Test 5, only C can have a rank of 5. Hence, C's rank in Test 5 must be 5. D's rank in Test 5 must be 4.

In Test 4, C's rank can only be 2 (since A and B are ranked 4 and 3 respectively). D's rank must be 5 in Test 4.

C's rank in Test 4 increased as compared to his rank in Test 3. Hence, C's rank must be 1 in Test 3. Rank of D and E in Test 3 can be 2/3 in any order.

In Test 2, the only person who can have a rank of 1 is E. Hence, E's rank in Test 2 is 1. The rank of C and D in Test 2 can be 2/3 in any order. But D's rank decreased in Test 3 as compared to his rank in Test 2. Hence, D's rank in Test 2 must be 3 and his rank in Test 3 must be 2. E's rank in Test 3 must be 3. C's rank in Test 2 must be 2.

D's rank in Test 1 is the same as his rank in Test 2. Hence, D's rank in Test 1 is 3. C's rank in Test 1 must be 4 (since B and D are ranked 5 and 3 respectively). In Test 1, E's rank must be 2 and A's rank must be 1.

The following table provides the ranks of each of the five students in each of the five tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1	5	5	4	3

B	5	4	4	3	2
C	4	2	1	2	5
D	3	3	2	5	4
E	2	1	3	1	1

B received the fifth rank in Test 1.

Choice (A)

undefined

**DIRECTIONS** for questions 13 to 16: Answer the questions on the basis of the information given below.

Raghu, a school teacher, conducted five tests – Test 1 through Test 5 – in that order, for the students in his class. There are exactly five students, A through E, in his class and all the five students attempted all the five tests.

After the five tests, Raghu ranked the five students based on their performance in each test. No two students received the same rank in any test. After the five tests, he made a table, provided below, which indicates the direction of the change in the rank of a student in any test (from Test 2 through Test 5) as compared to his rank in the previous test.

In the table, a ↑ indicates a numerical increase in the rank, a ↓ indicates a numerical decrease in the rank, while ↔ indicates that the rank was unchanged.

Student	Test 2	Test 3	Test 4	Test 5
A	↑	↔	↓	↓
B	↓	↔	↓	↓
C	↓	↓	↑	↑
D	↔	↓	↑	↓
E	↓	↑	↓	↔

**Q14. DIRECTIONS** for questions 13 to 16: Select the correct alternative from the given choices.

What is the rank of D in Test 2?

- a) 2
- b) 3
- c) 4
- d) Cannot be determined

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	2
Avg. time spent on this question by all students	107
Difficulty Level	D
Avg. time spent on this question by students who got this question right	136
% of students who attempted this question	22.81
% of students who got the question right of those who attempted	10.11

[Video Solution](#)

[Text Solution](#)

Given that the rank of A increased in Test 2 as compared to his rank in Test 1. Hence, in Test 2, A's rank can be 2/3/4/5. In Test 1, his rank can be 1/2/3/4.

In Test 3, his rank remained unchanged. Hence, in Test 3, his rank can be 2/3/4/5.

In Test 4, his rank decreased. Hence, his rank in Test 4 can be 1/2/3/4.

In Test 5, his rank decreased again. However, if his rank in Test 4 was 1, it cannot

decrease further. Hence, his rank in Test 4 cannot be 1. Also, in Test 3, his rank cannot be 2 because it cannot decrease further in Test 4. Hence, A's rank in Test 2 and Test 3 must be 3/4/5.

In Test 4, it must be 2/3/4. In Test 5, it must be 1/2/3.

B's rank decreased in Test 2, Test 4 and Test 5 and remained the same in Test 3.

B's rank in Test 2 (and Test 3) must be at least 3 (only then it can decrease in Test 4 as well as Test 5).

B's rank in Test 2 can be 3/4 (it cannot be 5 since it decreased in Test 2). In Test 3 also, B's rank can be 3/4.

In Test 4, B's rank can be 2/3. In Test 5, B's rank can be 1/2.

C's rank decreased in Test 2 and Test 3. Hence, C's rank in Test 2 can be 2/3/4. In Test 1, it must be 3/4/5. In Test 3, C's rank can be 1/2/3.

C's rank increased in Test 4 and Test 5. Hence, in Test 4, C's rank can be 2/3/4. In Test 5, C's rank can be 3/4/5.

D's rank decreased in Test 3. Hence, D's rank in Test 3 can be 1/2/3/4. In Test 1 and Test 2, D's rank can be 2/3/4/5.

In Test 4, D's rank can be 2/3/4/5. In Test 5, D's rank can be 1/2/3/4.

E's rank in Test 2 can be 1/2/3/4. In Test 3, it must be 2/3/4/5. In Test 4, it must be 1/2/3/4. In Test 5 also, it must be 1/2/3/4.

The following table provides the possible ranks of the students in the tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1/2/3/4	3/4/5	3/4/5	2/3/4	1/2/3
B	4/5	3/4	3/4	2/3	1/2
C	3/4/5	2/3/4	1/2/3	2/3/4	3/4/5
D	2/3/4/5	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4
E	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4	1/2/3/4

In Test 4, E is the only person who can have rank 1. Hence, E's rank in Test 4 must be 1. Since E's rank remained unchanged in Test 5, it must also be 1 in Test 5.

In Test 5, B's rank cannot be 1. Hence, B's rank in Test 5 must be 2. In Test 4, B's rank must be 3 (since the rank of B decreased in Test 5, this is the only possibility). In Test 3, B's rank must be 4. In Test 2, B's rank must be 4. In Test 1, it must be 5.

In Test 5, A's rank cannot be 1 or 2. Hence, A's rank must be 3. A's rank in Test 4 must be 4 (since A's rank decreased in Test 5). In Test 3, A's rank must be 5. In Test 2, A's rank must be 5. In Test 1, it can be 1/2/3/4.

In Test 5, only C can have a rank of 5. Hence, C's rank in Test 5 must be 5. D's rank in Test 5 must be 4.

In Test 4, C's rank can only be 2 (since A and B are ranked 4 and 3 respectively). D's rank must be 5 in Test 4.

C's rank in Test 4 increased as compared to his rank in Test 3. Hence, C's rank must be 1 in Test 3. Rank of D and E in Test 3 can be 2/3 in any order.

In Test 2, the only person who can have a rank of 1 is E. Hence, E's rank in Test 2 is 1. The rank of C and D in Test 2 can be 2/3 in any order. But D's rank decreased in Test 3 as compared to his rank in Test 2. Hence, D's rank in Test 2 must be 3 and his rank in Test 3 must be 2. E's rank in Test 3 must be 3. C's rank in Test 2 must be 2.

D's rank in Test 1 is the same as his rank in Test 2. Hence, D's rank in Test 1 is 3. C's rank in Test 1 must be 4 (since B and D are ranked 5 and 3 respectively). In Test 1, E's rank must be 2 and A's rank must be 1.

The following table provides the ranks of each of the five students in each of the five tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1	5	5	4	3
B	5	4	4	3	2
C	4	2	1	2	5
D	3	3	2	5	4
E	2	1	3	1	1

D's rank in Test 2 is 3.

Choice (B)

undefined

**DIRECTIONS** for questions 13 to 16: Answer the questions on the basis of the information given below.

Raghu, a school teacher, conducted five tests – Test 1 through Test 5 – in that order, for the students in his class. There are exactly five students, A through E, in his class and all the five students attempted all the five tests.

After the five tests, Raghu ranked the five students based on their performance in each test. No two students received the same rank in any test. After the five tests, he made a table, provided below, which indicates the direction of the change in the rank of a student in any test (from Test 2 through Test 5) as compared to his rank in the previous test.

In the table, a ↑ indicates a numerical increase in the rank, a ↓ indicates a numerical decrease in the rank, while ↔ indicates that the rank was unchanged.

Student	Test 2	Test 3	Test 4	Test 5
A	↑	↔	↓	↓
B	↓	↔	↓	↓
C	↓	↓	↑	↑
D	↔	↓	↑	↓
E	↓	↑	↓	↔

**Q15. DIRECTIONS** for questions 13 to 16: Select the correct alternative from the given choices.

How many students received a numerically higher rank than E in at least four tests?

- a) 1
- b) 2
- c) 3
- d) 4

You did not answer this question

Show Correct Answer

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	1
Avg. time spent on this question by all students	99
Difficulty Level	D
Avg. time spent on this question by students who got this question right	109
% of students who attempted this question	11.61
% of students who got the question right of those who attempted	14.53

[Video Solution](#)

Given that the rank of A increased in Test 2 as compared to his rank in Test 1. Hence, in Test 2, A's rank can be 2/3/4/5. In Test 1, his rank can be 1/2/3/4.

In Test 3, his rank remained unchanged. Hence, in Test 3, his rank can be 2/3/4/5.

In Test 4, his rank decreased. Hence, his rank in Test 4 can be 1/2/3/4.

In Test 5, his rank decreased again. However, if his rank in Test 4 was 1, it cannot decrease further. Hence, his rank in Test 4 cannot be 1. Also, in Test 3, his rank cannot be 2 because it cannot decrease further in Test 4. Hence, A's rank in Test 2 and Test 3 must be 3/4/5.

In Test 4, it must be 2/3/4. In Test 5, it must be 1/2/3.

B's rank decreased in Test 2, Test 4 and Test 5 and remained the same in Test 3.

B's rank in Test 2 (and Test 3) must be at least 3 (only then it can decrease in Test 4 as well as Test 5).

B's rank in Test 2 can be 3/4 (it cannot be 5 since it decreased in Test 2). In Test 3 also, B's rank can be 3/4.

In Test 4, B's rank can be 2/3. In Test 5, B's rank can be 1/2.

C's rank decreased in Test 2 and Test 3. Hence, C's rank in Test 2 can be 2/3/4. In Test 1, it must be 3/4/5. In Test 3, C's rank can be 1/2/3.

C's rank increased in Test 4 and Test 5. Hence, in Test 4, C's rank can be 2/3/4. In Test 5, C's rank can be 3/4/5.

D's rank decreased in Test 3. Hence, D's rank in Test 3 can be 1/2/3/4. In Test 1 and Test 2, D's rank can be 2/3/4/5.

In Test 4, D's rank can be 2/3/4/5. In Test 5, D's rank can be 1/2/3/4.

E's rank in Test 2 can be 1/2/3/4. In Test 3, it must be 2/3/4/5. In Test 4, it must be 1/2/3/4. In Test 5 also, it must be 1/2/3/4.

The following table provides the possible ranks of the students in the tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1/2/3/4	3/4/5	3/4/5	2/3/4	1/2/3
B	4/5	3/4	3/4	2/3	1/2
C	3/4/5	2/3/4	1/2/3	2/3/4	3/4/5
D	2/3/4/5	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4
E	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4	1/2/3/4

In Test 4, E is the only person who can have rank 1. Hence, E's rank in Test 4 must be 1. Since E's rank remained unchanged in Test 5, it must also be 1 in Test 5.

In Test 5, B's rank cannot be 1. Hence, B's rank in Test 5 must be 2. In Test 4, B's rank must be 3 (since the rank of B decreased in Test 5, this is the only possibility). In Test 3, B's rank must be 4. In Test 2, B's rank must be 4. In Test 1, it must be 5.

In Test 5, A's rank cannot be 1 or 2. Hence, A's rank must be 3. A's rank in Test 4 must be 4 (since A's rank decreased in Test 5). In Test 3, A's rank must be 5. In Test 2, A's rank must be 5. In Test 1, it can be 1/2/3/4.

In Test 5, only C can have a rank of 5. Hence, C's rank in Test 5 must be 5. D's rank in Test 5 must be 4.

In Test 4, C's rank can only be 2 (since A and B are ranked 4 and 3 respectively). D's rank must be 5 in Test 4.

C's rank in Test 4 increased as compared to his rank in Test 3. Hence, C's rank must be 1 in Test 3. Rank of D and E in Test 3 can be 2/3 in any order.

In Test 2, the only person who can have a rank of 1 is E. Hence, E's rank in Test 2 is

1. The rank of C and D in Test 2 can be 2/3 in any order. But D's rank decreased in Test 3 as compared to his rank in Test 2. Hence, D's rank in Test 2 must be 3 and his rank in Test 3 must be 2. E's rank in Test 3 must be 3. C's rank in Test 2 must be 2. D's rank in Test 1 is the same as his rank in Test 2. Hence, D's rank in Test 1 is 3. C's rank in Test 1 must be 4 (since B and D are ranked 5 and 3 respectively). In Test 1, E's rank must be 2 and A's rank must be 1.

The following table provides the ranks of each of the five students in each of the five tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1	5	5	4	3
B	5	4	4	3	2
C	4	2	1	2	5
D	3	3	2	5	4
E	2	1	3	1	1

All the remaining 4 students received a higher rank than E in at least four of the five tests.  
Choice (D)

undefined

**DIRECTIONS** for questions 13 to 16: Answer the questions on the basis of the information given below.

Raghu, a school teacher, conducted five tests – Test 1 through Test 5 – in that order, for the students in his class. There are exactly five students, A through E, in his class and all the five students attempted all the five tests.

After the five tests, Raghu ranked the five students based on their performance in each test. No two students received the same rank in any test. After the five tests, he made a table, provided below, which indicates the direction of the change in the rank of a student in any test (from Test 2 through Test 5) as compared to his rank in the previous test.

In the table, a ↑ indicates a numerical increase in the rank, a ↓ indicates a numerical decrease in the rank, while ↔ indicates that the rank was unchanged.

Student	Test 2	Test 3	Test 4	Test 5
A	↑	↔	↓	↓
B	↓	↔	↓	↓
C	↓	↓	↑	↑
D	↔	↓	↑	↓
E	↓	↑	↓	↔

**Q16. DIRECTIONS** for questions 13 to 16: Select the correct alternative from the given choices.

What is the maximum sum of the ranks of any student across the five tests combined?

- a) 19
- b) 18
- c) 17
- d) 16

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	2
Avg. time spent on this question by all students	89
Difficulty Level	D
Avg. time spent on this question by students who got this question right	84
% of students who attempted this question	10.08
% of students who got the question right of those who attempted	38.63

[Video Solution](#)

[Text Solution](#)

Given that the rank of A increased in Test 2 as compared to his rank in Test 1. Hence, in Test 2, A's rank can be 2/3/4/5. In Test 1, his rank can be 1/2/3/4.

In Test 3, his rank remained unchanged. Hence, in Test 3, his rank can be 2/3/4/5.

In Test 4, his rank decreased. Hence, his rank in Test 4 can be 1/2/3/4.

In Test 5, his rank decreased again. However, if his rank in Test 4 was 1, it cannot decrease further. Hence, his rank in Test 4 cannot be 1. Also, in Test 3, his rank cannot be 2 because it cannot decrease further in Test 4. Hence, A's rank in Test 2 and Test 3 must be 3/4/5.

In Test 4, it must be 2/3/4. In Test 5, it must be 1/2/3.

B's rank decreased in Test 2, Test 4 and Test 5 and remained the same in Test 3.

B's rank in Test 2 (and Test 3) must be at least 3 (only then it can decrease in Test 4 as well as Test 5).

B's rank in Test 2 can be 3/4 (it cannot be 5 since it decreased in Test 2). In Test 3 also, B's rank can be 3/4.

In Test 4, B's rank can be 2/3. In Test 5, B's rank can be 1/2.

C's rank decreased in Test 2 and Test 3. Hence, C's rank in Test 2 can be 2/3/4. In Test 1, it must be 3/4/5. In Test 3, C's rank can be 1/2/3.

C's rank increased in Test 4 and Test 5. Hence, in Test 4, C's rank can be 2/3/4. In Test 5, C's rank can be 3/4/5.

D's rank decreased in Test 3. Hence, D's rank in Test 3 can be 1/2/3/4. In Test 1 and Test 2, D's rank can be 2/3/4/5.

In Test 4, D's rank can be 2/3/4/5. In Test 5, D's rank can be 1/2/3/4.

E's rank in Test 2 can be 1/2/3/4. In Test 3, it must be 2/3/4/5. In Test 4, it must be 1/2/3/4. In Test 5 also, it must be 1/2/3/4.

The following table provides the possible ranks of the students in the tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1/2/3/4	3/4/5	3/4/5	2/3/4	1/2/3
B	4/5	3/4	3/4	2/3	1/2
C	3/4/5	2/3/4	1/2/3	2/3/4	3/4/5
D	2/3/4/5	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4
E	2/3/4/5	1/2/3/4	2/3/4/5	1/2/3/4	1/2/3/4

In Test 4, E is the only person who can have rank 1. Hence, E's rank in Test 4 must be 1. Since E's rank remained unchanged in Test 5, it must also be 1 in Test 5.

In Test 5, B's rank cannot be 1. Hence, B's rank in Test 5 must be 2. In Test 4, B's rank must be 3 (since the rank of B decreased in Test 5, this is the only possibility). In Test 3, B's rank must be 4. In Test 2, B's rank must be 4. In Test 1, it must be 5.

In Test 5, A's rank cannot be 1 or 2. Hence, A's rank must be 3. A's rank in Test 4 must be 4 (since A's rank decreased in Test 5). In Test 3, A's rank must be 5. In Test

must be 4 (since A's rank decreased in Test 3). In Test 3, A's rank must be 3. In Test 2, A's rank must be 5. In Test 1, it can be 1/2/3/4.

In Test 5, only C can have a rank of 5. Hence, C's rank in Test 5 must be 5. D's rank in Test 5 must be 4.

In Test 4, C's rank can only be 2 (since A and B are ranked 4 and 3 respectively). D's rank must be 5 in Test 4.

C's rank in Test 4 increased as compared to his rank in Test 3. Hence, C's rank must be 1 in Test 3. Rank of D and E in Test 3 can be 2/3 in any order.

In Test 2, the only person who can have a rank of 1 is E. Hence, E's rank in Test 2 is 1. The rank of C and D in Test 2 can be 2/3 in any order. But D's rank decreased in Test 3 as compared to his rank in Test 2. Hence, D's rank in Test 2 must be 3 and his rank in Test 3 must be 2. E's rank in Test 3 must be 3. C's rank in Test 2 must be 2.

D's rank in Test 1 is the same as his rank in Test 2. Hence, D's rank in Test 1 is 3. C's rank in Test 1 must be 4 (since B and D are ranked 5 and 3 respectively). In Test 1, E's rank must be 2 and A's rank must be 1.

The following table provides the ranks of each of the five students in each of the five tests:

Student	Test 1	Test 2	Test 3	Test 4	Test 5
A	1	5	5	4	3
B	5	4	4	3	2
C	4	2	1	2	5
D	3	3	2	5	4
E	2	1	3	1	1

The maximum sum of the ranks (for A and B) is 18.

Choice (B)

undefined

**DIRECTIONS** for questions 17 to 20: Answer the questions on the basis of the information given below.

In a hotel, there were exactly 20 rooms spread across five rows and four columns, all on the same floor, with the rows along the East-West direction. Twenty friends, A through T, stayed in these 20 rooms for exactly five days, Day 1 through Day 5. The figure below shows the layout of the rooms along with the respective names of the 20 friends who stayed in each room on Day 1. From Day 2 onwards, at the beginning of each day, some of the friends exchanged the rooms that they were staying in.

The table given alongside the figure provides all the pairs of persons, each in parentheses, who exchanged their rooms, in that order, on each day.

L	C	Q	D
T	P	K	A
H	B	E	I
F	G	R	S
M	J	O	N

Day	Persons who exchanged rooms
Day 2	(A, S); (B, C); (G, L); (E, R); (D, I); (M, P); (Q, T)
Day 3	(I, H); (B, S); (C, F); (E, G); (L, K); (N, P);
Day 4	(F, N); (E, I); (H, M); (G, O); (A, B); (J, L);
Day 5	(I, T); (A, O); (B, R); (L, E); (P, Q); (F, S); (K, J);

On any day, for any person, say X, any person who stayed in the room to the immediate East, West, North or South of the room in which X stayed is said to be a neighbour of X on that day.

**Q17. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

Who among the following was a neighbour of B on Day 5 but not on Day 3?

- a) L
- b) D
- c) J
- d) A

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	23
Avg. time spent on this question by all students	525
Difficulty Level	M
Avg. time spent on this question by students who got this question right	550
% of students who attempted this question	25.34
% of students who got the question right of those who attempted	74.76

[Video Solution](#)

[Text Solution](#)

We can identify the rooms that each person stayed on each day based on the given information. This is presented in the following tables:

Day 1				Day 2				Day 3			
L	C	Q	D	G	B	T	I	E	S	T	H
T	P	K	A	Q	M	K	S	Q	M	L	B
H	B	E	I	H	C	R	D	I	F	R	D
F	G	R	S	F	L	E	A	C	K	G	A
M	J	O	N	P	J	O	N	N	J	O	P

Day 4				Day 5			
I	S	T	M	T	F	I	M
Q	H	J	A	P	H	K	O
E	N	R	D	L	N	B	D
C	K	O	B	C	J	A	R
F	L	G	P	S	E	G	Q

Neighbours of B on Day 3 are H, L and D.

Neighbours of B on Day 5 are K, A, N and D.

Hence, among the given options, A was a neighbour of B on Day 5 but not on Day 3.

Choice (D)

undefined

**DIRECTIONS** for questions 17 to 20: Answer the questions on the basis of the information given below.

In a hotel, there were exactly 20 rooms spread across five rows and four columns, all on the same floor, with the rows along the East-West direction. Twenty friends, A through T, stayed in these 20 rooms for exactly five days, Day 1 through Day 5. The figure below shows the layout of the rooms along with the respective names of the 20 friends who stayed in each room on Day 1. From Day 2 onwards, at the beginning of each day, some of the friends exchanged their rooms that they were staying in.

The table given alongside the figure provides all the pairs of persons, each in parentheses, who exchanged their rooms, in that order, on each day.

L	C	Q	D	Day	
T	P	K	A	Day 2	(A, S); (B, C); (G, L); (E, R); (D, I); (M, P); (Q, T)
H	B	E	I	Day 3	(I, H); (B, S); (C, F); (E, G); (L, K); (N, P);
F	G	R	S	Day 4	(F, N); (E, I); (H, M); (G, O); (A, B); (J, L);
M	J	O	N	Day 5	(I, T); (A, O); (B, R); (L, E); (P, Q); (F, S); (K, J);

On any day, for any person, say X, any person who stayed in the room to the immediate East, West, North or South of the room in which X stayed is said to be a neighbour of X on that day.

**Q18. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

For how many persons can it be said that they were a neighbour of T for at least two consecutive days during the given period?

- a) 0

b) 1

c) 2

d) More than 2

You did not answer this question

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>91</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>89</b>
% of students who attempted this question	<b>24.85</b>
% of students who got the question right of those who attempted	<b>68.92</b>

[Video Solution](#)

[Text Solution](#)

We can identify the rooms that each person stayed on each day based on the given information. This is presented in the following tables:

Day 1				Day 2				Day 3			
L	C	Q	D	G	B	T	I	E	S	T	H
T	P	K	A	Q	M	K	S	Q	M	L	B
H	B	E	I	H	C	R	D	I	F	R	D
F	G	R	S	F	L	E	A	C	K	G	A
M	J	O	N	P	J	O	N	N	J	O	P

Day 4				Day 5			
I	S	T	M	T	F	I	M
Q	H	J	A	P	H	K	O
E	N	R	D	L	N	B	D
C	K	O	B	C	J	A	R
F	L	G	P	S	E	G	Q

Neighbours of T on Day 1 are L, P and H.

Neighbours of T on Day 2 are B, K and J.

Neighbours of T on Day 3 are H, L and S.

Neighbours of T on Day 4 are J, M and S.

Neighbours of T on Day 5 are F and P.

Hence, only one person, S, was a neighbour of T for two consecutive days.

Choice (B)

undefined

**DIRECTIONS** for questions 17 to 20: Answer the questions on the basis of the information given below.

In a hotel, there were exactly 20 rooms spread across five rows and four columns, all on the same floor, with the rows along the East-West direction. Twenty friends, A through T, stayed in these 20 rooms for exactly five days, Day 1 through Day 5. The figure below shows the layout of the rooms along with the respective names of the 20 friends who stayed in each room on Day 1. From Day 2 onwards, at the beginning of each day, some of the friends exchanged the rooms that they were staying in.

The table given alongside the figure provides all the pairs of persons, each in parentheses, who exchanged their rooms, in that order, on each day.

				Day	Persons who exchanged rooms
L	C	Q	D	Day 2	(A, S); (B, C); (G, L); (E, R); (D, I); (M, P); (Q, T)
T	P	K	A	Day 3	(I, H); (B, S); (C, F); (E, G); (L, K); (N, P);
H	B	E	I	Day 4	(F, N); (E, I); (H, M); (G, O); (A, B); (J, L);
F	G	R	S	Day 5	(I, T); (A, O); (B, R); (L, E); (P, Q); (F, S); (K, J);
M	J	O	N		

On any day, for any person, say X, any person who stayed in the room to the immediate East, West, North or South of the room in which X stayed is said to be a neighbour of X on that day.

**Q19. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

How many persons stayed in the same room for at least 3 days during the given period?

a) 8

b) 7

c) 6

d) 5

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	198
Difficulty Level	M
Avg. time spent on this question by students who got this question right	236
% of students who attempted this question	20.62
% of students who got the question right of those who attempted	33.44

[Video Solution](#)

[Text Solution](#)

We can identify the rooms that each person stayed on each day based on the given information. This is presented in the following tables:

Day 1				Day 2				Day 3			
L	C	Q	D	G	B	T	I	E	S	T	H
T	P	K	A	Q	M	K	S	Q	M	L	B
H	B	E	I	H	C	R	D	I	F	R	D
F	G	R	S	F	L	E	A	C	K	G	A
M	J	O	N	P	J	O	N	N	J	O	P

Day 4				Day 5			
I	S	T	M	T	F	I	M
Q	H	J	A	P	H	K	O
E	N	R	D	L	N	B	D
C	K	O	B	C	J	A	R
F	L	G	P	S	E	G	Q

By observation, we can see that C stayed in the same room on Day 3, Day 4 and Day 5.

D stayed in the same room on Day 2, Day 3, Day 4 and Day 5.

J stayed in the same room on Day 1, Day 2 and Day 3.

K stayed in the same room on Day 1, Day 2 and Day 5.

O stayed in the same room on Day 1, Day 2 and Day 3.

Q stayed in the same room on Day 2, Day 3 and Day 4.

R stayed in the same room on Day 2, Day 3 and Day 4.

T stayed in the same room on Day 2, Day 3 and Day 4.

Hence, a total of 8 persons stayed in the same room for at least 3 days.

Choice (A)

undefined

**DIRECTIONS** for questions 17 to 20: Answer the questions on the basis of the information given below.

In a hotel, there were exactly 20 rooms spread across five rows and four columns, all on the same floor, with the rows along the East-West direction. Twenty friends, A through T, stayed in these 20 rooms for exactly five days, Day 1 through Day 5. The figure below shows the layout of the rooms along with the respective names of the 20 friends who stayed in each room on Day 1. From Day 2 onwards, at the beginning of each day, some of the friends exchanged the rooms that they were staying in.

The table given alongside the figure provides all the pairs of persons, each in parentheses, who exchanged their rooms, in that order, on each day.

L	C	Q	D
T	P	K	A
H	B	E	I
F	G	R	S
M	J	O	N



Day	Persons who exchanged rooms
Day 2	(A, S); (B, C); (G, L); (E, R); (D, I); (M, P); (Q, T)
Day 3	(I, H); (B, S); (C, F); (E, G); (L, K); (N, P);
Day 4	(F, N); (E, I); (H, M); (G, O); (A, B); (J, L);
Day 5	(I, T); (A, O); (B, R); (L, E); (P, Q); (F, S); (K, J);

On any day, for any person, say X, any person who stayed in the room to the immediate East, West, North or South of the room in which X stayed is said to be a neighbour of X on that day.

**Q20. DIRECTIONS** for questions 17 to 20: Select the correct alternative from the given choices.

How many persons had 19 different neighbours during the given period?

a) 0

- b) 1
- c) 2
- d) 3

You did not answer this question

Show Correct Answer

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>182</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>218</b>
% of students who attempted this question	<b>11.41</b>
% of students who got the question right of those who attempted	<b>63.81</b>

[Video Solution](#)

[Text Solution](#)

We can identify the rooms that each person stayed on each day based on the given information. This is presented in the following tables:

Day 1				Day 2				Day 3			
L	C	Q	D	G	B	T	I	E	S	T	H
T	P	K	A	Q	M	K	S	Q	M	L	B
H	B	E	I	H	C	R	D	I	F	R	D
F	G	R	S	F	L	E	A	C	K	G	A
M	J	O	N	P	J	O	N	N	J	O	P

Day 4				Day 5			
I	S	T	M	T	F	I	M
Q	H	J	A	P	H	K	O
E	N	R	D	L	N	B	D
C	K	O	B	C	J	A	R
F	L	G	P	S	E	G	Q

For a person to have 19 different neighbours, he must have 4 new neighbours for 4 days and 3 new neighbours on 1 day.

Any person who stays in the corner rooms on any day will have only 2 neighbours on that day. Hence, they can be ruled out.

Therefore, D, E, F, G, H, I, L, M, N, P, Q, S and T cannot have 19 different neighbours. Further, any person who stayed in a room along the edge will have only 3 neighbours. Hence, any person who stayed along the edge for at least 2 days cannot have 19 new neighbours.

Hence, A, B, C, J and O also cannot have 19 neighbours.

Only K and R are remaining. Among K and R, K can have a same neighbour on at most two days, while R cannot have the same neighbour on any two days. By observation, K has C and O as neighbours on two days each, while R has D (among others) as his neighbour on two days.

(We can also see that K does not have D as his neighbour on any day and R does not have B, H, I, M, P and T as neighbours on any day)

Hence, for none of the persons, the given condition is satisfied.

Choice (A)

undefined

**DIRECTIONS** for questions 21 to 24: Answer the questions on the basis of the information given below.

Suresh wrote an exam in which the question paper comprised five questions – Q1 to Q5. Suresh had to answer all the questions in the paper and each question had four answer choices – A, B, C and D – from which Suresh had to select only one answer choice. However, each question by itself did not have any correct or incorrect answer choice and, instead, the answer choices to the five questions were interdependent such that all the responses of any student would be deemed correct if and only if all his responses were consistent among themselves. When the results were declared, Suresh found out that all his responses were deemed correct. The question paper of the exam is presented below:

Q1. The answer to this question is

- A. A.      B. B.      C. C.      D. D.

Q2. The number of questions in this question paper for which choice B is marked as the answer is

- A. 1.      B. 2.      C. 3.      D. 0.

Q3. The answer to this question is the same as the answer to Q1 but it is not the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q4. The answer to this question is not choice B but it is the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q5. The number of questions in this question paper for which choice A is marked as the answer is

- A. 3.      B. 0.      C. 1.      D. 2.

**Q21. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

Suresh could NOT have marked his answer as choice B for which of the following questions?

- a) **Q5**
- b) **Q3**
- c) **Q2** Your answer is correct
- d) **Q1**

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>238</b>
Avg. time spent on this question by all students	<b>323</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>332</b>
% of students who attempted this question	<b>33.32</b>
% of students who got the question right of those who attempted	<b>80.07</b>

[Video Solution](#)

[Text Solution](#)

Let the answer to Q1 be choice A. The answer to Q3 must also be A. The answer to Q2 can be B, C or D. But it cannot be B because Q4 must also have the same answer. Hence, the answer to Q2 can be C or D. If the answer to Q2 is C, then three questions must have choice B as the answer, which is not possible. Therefore, the answer to Q2 has to be D. The answer to Q4 will also be D. Two questions (Q1 and Q3) have an answer as A. Hence, the answer to Q5 can be A or D. This is possible.

Let the answer to Q1 be B. The answer to Q3 must also be B. The answer to Q2 can be A, C or D. But it cannot be A or D as Q1 and Q3 have B as the answer. Hence, the answer to Q2 can only be C. If this is C, the answer to Q4 must also be C. The answer to Q5 has to be B (since three questions must have choice B as the answer and also because there are no questions for which the answer is choice A). Hence, this is one possible case.

Let the answer to Q1 be C. The answer to Q3 must also be C. The answer to Q2 can be A or D. If it is A, the answer to Q4 is also A. The answer to Q5 must be B (since there has to be 1 choice B as answer). But this is not possible, since two questions (Q2 and Q4) have choice A as the answer. If the answer to Q2 is D, the answer to Q4 must also be D. The answer to Q5 cannot be B (since 0 questions have answer as choice B from Q2). But the answer to Q5 has to be B since no question has an answer as choice A. Therefore, this case is not possible due to this contradiction.

Let the answer to Q1 be D. The answer to Q3 must also be D. The answer to Q2 can be A or C. The answer to Q2 cannot be C since three questions cannot have their answer as choice B. If the answer to Q2 is A, the answer to Q4 must also be A. In this case, the answer to Q5 must be B (since 1 question must have B as answer from Q2). But the answer to Q5 must also be A since three questions (Q2, Q4 and Q5) will have A as the answer choice. Therefore, this case is also not possible.

Hence, there are only two possible cases and they are listed in the following table:

Question	Answer	
	Case 1	Case 2
Q1	A	B
Q2	D	C
Q3	A	B
Q4	D	C
Q5	A/D	B

Suresh could not have marked his answer as choice B for Q2.

Choice (C)

undefined

**DIRECTIONS for questions 21 to 24:** Answer the questions on the basis of the information given below.

Suresh wrote an exam in which the question paper comprised five questions – Q1 to Q5. Suresh had to answer all the questions in the paper and each question had four answer choices – A, B, C and D – from which Suresh had to select only one answer choice. However, each question by itself did not have any correct or incorrect answer choice and, instead, the answer choices to the five questions were interdependent such that all the responses of any student would be deemed correct if and only if all his responses were consistent among themselves. When the results were declared, Suresh found out that all his responses were deemed correct. The question paper of the exam is presented below:

Q1. The answer to this question is

- A. A.      B. B.      C. C.      D. D.

Q2. The number of questions in this question paper for which choice B is marked as the answer is

- A. 1.      B. 2.      C. 3.      D. 0.

Q3. The answer to this question is the same as the answer to Q1 but it is not the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q4. The answer to this question is not choice B but it is the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q5. The number of questions in this question paper for which choice A is marked as the answer is

- A. 3.      B. 0.      C. 1.      D. 2.

**Q22. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

What is the maximum number of questions for which Suresh could have marked choice D as his answer?

- a) 1
- b) 2
- c) 3 Your answer is correct
- d) 4

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>298</b>
Avg. time spent on this question by all students	<b>113</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>118</b>
% of students who attempted this question	<b>31</b>
% of students who got the question right of those who attempted	<b>61.96</b>

[Video Solution](#)

[Text Solution](#)

Let the answer to Q1 be choice A. The answer to Q3 must also be A. The answer to Q2 can be B, C or D. But it cannot be B because Q4 must also have the same answer. Hence, the answer to Q2 can be C or D. If the answer to Q2 is C, then three questions must have choice B as the answer, which is not possible. Therefore, the answer to Q2 has to be D. The answer to Q4 will also be D. Two questions (Q1 and Q3) have an answer as A. Hence, the answer to Q5 can be A or D. This is possible.

Let the answer to Q1 be B. The answer to Q3 must also be B. The answer to Q2 can be A, C or D. But it cannot be A or D as Q1 and Q3 have B as the answer. Hence, the answer to Q2 can only be C. If this is C, the answer to Q4 must also be C. The answer to Q5 has to be B (since three questions must have choice B as the answer and also because there are no questions for which the answer is choice A). Hence, this is one possible case.

Let the answer to Q1 be C. The answer to Q3 must also be C. The answer to Q2 can be A or D. If it is A, the answer to Q4 is also A. The answer to Q5 must be B (since there has to be 1 choice B as answer). But this is not possible, since two questions (Q2 and Q4) have choice A as the answer. If the answer to Q2 is D, the answer to Q4 must also be D. The answer to Q5 cannot be B (since 0 questions have answer as choice B from Q2). But the answer to Q5 has to be B since no question has an answer as choice A. Therefore, this case is not possible due to this contradiction.

Let the answer to Q1 be D. The answer to Q3 must also be D. The answer to Q2 can be A or C. The answer to Q2 cannot be C since three questions cannot have their answer as choice B. If the answer to Q2 is A, the answer to Q4 must also be A. In this case, the answer to Q5 must be B (since 1 question must have B as answer from Q2). But the answer to Q5 must also be A since three questions (Q2, Q4 and Q5) will have A as the answer choice. Therefore, this case is also not possible.

Hence, there are only two possible cases and they are listed in the following table:

Question	Answer	
	Case 1	Case 2
Q1	A	B
Q2	D	C
Q3	A	B
Q4	D	C
Q5	A/D	B

Suresh could have marked choice D as his answer for 3 questions.

Choice (C)

undefined

**DIRECTIONS** for questions 21 to 24: Answer the questions on the basis of the information given below.

Suresh wrote an exam in which the question paper comprised five questions – Q1 to Q5. Suresh had to answer all the questions in the paper and each question had four answer choices – A, B, C and D – from which Suresh had to select only one answer choice. However, each question by itself did not have any correct or incorrect answer choice and, instead, the answer choices to the five questions were interdependent such that all the responses of any student would be deemed correct if and only if all his responses were consistent among themselves. When the results were declared, Suresh found out that all his responses were deemed correct. The question paper of the exam is presented below:

Q1. The answer to this question is

- A. A.      B. B.      C. C.      D. D.

Q2. The number of questions in this question paper for which choice B is marked as the answer is

- A. 1.      B. 2.      C. 3.      D. 0.

Q3. The answer to this question is the same as the answer to Q1 but it is not the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q4. The answer to this question is not choice B but it is the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q5. The number of questions in this question paper for which choice A is marked as the answer is

- A. 3.      B. 0.      C. 1.      D. 2.

**Q23. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

Which of the following cannot be the answer to Q5?

- a) **A**
- b) **B**
- c) **D**
- d) **None of the above** Your answer is correct

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>395</b>
Avg. time spent on this question by all students	<b>93</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>109</b>
% of students who attempted this question	<b>29.53</b>
% of students who got the question right of those who attempted	<b>31.79</b>

[Video Solution](#)

[Text Solution](#)

Let the answer to Q1 be choice A. The answer to Q3 must also be A. The answer to Q2 can be B, C or D. But it cannot be B because Q4 must also have the same answer. Hence, the answer to Q2 can be C or D. If the answer to Q2 is C, then three questions must have choice B as the answer, which is not possible. Therefore, the answer to Q2 has to be D. The answer to Q4 will also be D. Two questions (Q1 and Q3) have an answer as A. Hence, the answer to Q5 can be A or D. This is possible.

Let the answer to Q1 be B. The answer to Q3 must also be B. The answer to Q2 can be A, C or D. But it cannot be A or D as Q1 and Q3 have B as the answer. Hence, the answer to Q2 can only be C. If this is C, the answer to Q4 must also be C. The answer to Q5 has to be B (since three questions must have choice B as the answer and also because there are no questions for which the answer is choice A). Hence, this is one possible case.

Let the answer to Q1 be C. The answer to Q3 must also be C. The answer to Q2 can be A or D. If it is A, the answer to Q4 is also A. The answer to Q5 must be B (since there has to be 1 choice B as answer). But this is not possible, since two questions (Q2 and Q4) have choice A as the answer. If the answer to Q2 is D, the answer to Q4 must also be D. The answer to Q5 cannot be B (since 0 questions have answer as choice B from Q2). But the answer to Q5 has to be B since no question has an answer as choice A. Therefore, this case is not possible due to this contradiction.

Let the answer to Q1 be D. The answer to Q3 must also be D. The answer to Q2 can be A or C. The answer to Q2 cannot be C since three questions cannot have their answer as choice B. If the answer to Q2 is A, the answer to Q4 must also be A. In this case, the answer to Q5 must be B (since 1 question must have B as answer from Q2). But the answer to Q5 must also be A since three questions (Q2, Q4 and Q5) will have A as the answer choice. Therefore, this case is also not possible.

Hence, there are only two possible cases and they are listed in the following table:

Question	Answer	
	Case 1	Case 2
Q1	A	B
Q2	D	C
Q3	A	B
Q4	D	C
Q5	A/D	B

The answer to Q5 cannot be C. As this is not in the options, the answer is none of the above.  
Choice (D)

undefined

**DIRECTIONS** for questions 21 to 24: Answer the questions on the basis of the information given below.

Suresh wrote an exam in which the question paper comprised five questions – Q1 to Q5. Suresh had to answer all the questions in the paper and each question had four answer choices – A, B, C and D – from which Suresh had to select only one answer choice. However, each question by itself did not have any correct or incorrect answer choice and, instead, the answer choices to the five questions were interdependent such that all the responses of any student would be deemed correct if and only if all his responses were consistent among themselves. When the results were declared, Suresh found out that all his responses were deemed correct. The question paper of the exam is presented below:

Q1. The answer to this question is

- A. A.      B. B.      C. C.      D. D.

Q2. The number of questions in this question paper for which choice B is marked as the answer is

- A. 1.      B. 2.      C. 3.      D. 0.

Q3. The answer to this question is the same as the answer to Q1 but it is not the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q4. The answer to this question is not choice B but it is the same as the answer choice marked for Q2.

- A. A      B. B      C. C      D. D

Q5. The number of questions in this question paper for which choice A is marked as the answer is

- A. 3.      B. 0.      C. 1.      D. 2.

**Q24. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

In how many ways could Suresh have answered the question paper?

- a) 2
- b) 3
- c) 5
- d) 32 Your answer is incorrect

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>544</b>
Avg. time spent on this question by all students	<b>85</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>87</b>
% of students who attempted this question	<b>20.52</b>
% of students who got the question right of those who attempted	<b>31.5</b>

[Video Solution](#)

[Text Solution](#)

Let the answer to Q1 be choice A. The answer to Q3 must also be A. The answer to Q2 can be B, C or D. But it cannot be B because Q4 must also have the same answer. Hence, the answer to Q2 can be C or D. If the answer to Q2 is C, then three questions must have choice B as the answer, which is not possible. Therefore, the answer to Q2 has to be D. The answer to Q4 will also be D. Two questions (Q1 and Q3) have an answer as A. Hence, the answer to Q5 can be A or D. This is possible.

Let the answer to Q1 be B. The answer to Q3 must also be B. The answer to Q2 can be A, C or D. But it cannot be A or D as Q1 and Q3 have B as the answer. Hence, the answer to Q2 can only be C. If this is C, the answer to Q4 must also be C. The answer to Q5 has to be B (since three questions must have choice B as the answer and also because there are no questions for which the answer is choice A). Hence, this is one possible case.

Let the answer to Q1 be C. The answer to Q3 must also be C. The answer to Q2 can be A or D. If it is A, the answer to Q4 is also A. The answer to Q5 must be B (since there has to be 1 choice B as answer). But this is not possible, since two questions (Q2 and Q4) have choice A as the answer. If the answer to Q2 is D, the answer to Q4 must also be D. The answer to Q5 cannot be B (since 0 questions have answer as choice B from Q2). But the answer to Q5 has to be B since no question has an answer as choice A. Therefore, this case is not possible due to this contradiction.

Let the answer to Q1 be D. The answer to Q3 must also be D. The answer to Q2 can be A or C. The answer to Q2 cannot be C since three questions cannot have their answer as choice B. If the answer to Q2 is A, the answer to Q4 must also be A. In this case, the answer to Q5 must be B (since 1 question must have B as answer from Q2). But the answer to Q5 must also be A since three questions (Q2, Q4 and Q5) will have A as the answer choice. Therefore, this case is also not possible.

Hence, there are only two possible cases and they are listed in the following table:

Question	Answer	
	Case 1	Case 2
Q1	A	B
Q2	D	C
Q3	A	B
Q4	D	C
Q5	A/D	B

Suresh could have answered the question paper in three ways.

Choice (B)

undefined

**DIRECTIONS for questions 25 to 28:** Answer the questions on the basis of the information given below.

A certain number of unit cubes were used to form a large cube of side  $n$  units (where  $n$  is a natural number). Each of the unit cubes is numbered with a positive integer and they were arranged to form the large cube in the following manner:

- The unit cube at the bottom left corner towards the front of the large cube is numbered 1 and this is the only unit cube numbered 1.
- The number on any other unit cube in the large cube is one more than the least number on any of the unit cubes with which it shares a face.

**Q25. DIRECTIONS for questions 25 and 26:** Type in your answer in the input box provided below the question.

If  $n = 9$ , what is the sum of the numbers on the unit cubes that lie along the diagonal connecting the unit cube on the bottom right corner towards the front of the large cube to the unit cube on the top left corner towards the front of the large cube?

**Your Answer:81 Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	359
Avg. time spent on this question by all students	244
Difficulty Level	D
Avg. time spent on this question by students who got this question right	285
% of students who attempted this question	10.45
% of students who got the question right of those who attempted	28.08

[Video Solution](#)

[Text Solution](#)

We can try building a cube of side 3 following the given conditions. We can divide the cube into three horizontal layers (each of one unit height).  
The following diagrams represent the numbers on the unit cubes on the three layers of the large cube:

Bottom Layer			Middle Layer			Top Layer		
3	4	5	4	5	6	5	6	7
2	3	4	3	4	5	4	5	6
1	2	3	2	3	4	3	4	5

From the above figure, we can see that the unit cubes on the front face of the larger cube will have the same distribution of the unit cubes as the bottom layer (in the figure above). This is because the unit cubes on the front face of the cube will have the cubes on the bottom row (in the figure above) in the bottom layer (i.e., cubes numbered 1, 2 and 3), cubes on the bottom row (in the figure above) in the middle layer (i.e., cubes numbered 2, 3, 4) and cubes on the bottom row (in the figure above) in the top layer (i.e., cubes numbered 3, 4, 5). This is the same as the distribution of cubes in the bottom layer.

Hence, for  $n = 9$ , all the unit cubes along the diagonal connecting the unit cube on the bottom right corner towards the front of the larger cube to the unit cube on the top left corner towards the front of the larger cube will be numbered 9.

Since there will be 9 such cubes, the required sum =  $9 \times 9 = 81$ .

Ans: (81)

undefined

**DIRECTIONS** for questions 25 to 28: Answer the questions on the basis of the information given below.

A certain number of unit cubes were used to form a large cube of side  $n$  units (where  $n$  is a natural number). Each of the unit cubes is numbered with a positive integer and they were arranged to form the large cube in the following manner:

- The unit cube at the bottom left corner towards the front of the large cube is numbered 1 and this is the only unit cube numbered 1.
- The number on any other unit cube in the large cube is one more than the least number on any of the unit cubes with which it shares a face.

**Q26. DIRECTIONS** for questions 25 and 26: Type in your answer in the input box provided below the question.

If  $n = 7$ , what is the sum of the numbers on the unit cubes that lie along the body diagonal connecting the unit cube on the bottom left corner towards the front of the large cube to the unit cube on the top right corner towards the back of the large cube?

**Your Answer:70 Your answer is correct**

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	172
Avg. time spent on this question by all students	100
Difficulty Level	D
Avg. time spent on this question by students who got this question right	196
% of students who attempted this question	8.07
% of students who got the question right of those who attempted	12.02

[Video Solution](#)

[Text Solution](#)

We can try building a cube of side 3 following the given conditions. We can divide the cube into three horizontal layers (each of one unit height).  
The following diagrams represent the numbers on the unit cubes on the three layers of the large cube:

Bottom Layer	Middle Layer	Top Layer
3 4 5	4 5 6	5 6 7
2 3 4	3 4 5	4 5 6
1 2 3	2 3 4	3 4 5

The question asks for the sum of the numbers on the unit cubes that lie along the body diagonal connecting the unit cube on the bottom left corner towards the front of the large cube to the unit cube on the top right corner towards the back of the large cube.

The number on the unit cube on the bottom left corner towards the front of the large cube is 1.

In the figure above (for  $n = 3$ ), the next number along this diagonal is 4 (i.e., the cube at the centre of the middle layer).

The next number along this diagonal is 7 (i.e., the cube at the top right (in the figure above) of the top layer).

We can see that for  $n = 4$ , the next number along this diagonal will be 10 (i.e., 3 more than the previous number).

Hence, for  $n = 7$ , the required sum will be  $1 + 4 + 7 + 10 + 13 + 16 + 19 = 70$

Ans: (70)

undefined

**DIRECTIONS** for questions 25 to 28: Answer the questions on the basis of the information given below.

A certain number of unit cubes were used to form a large cube of side  $n$  units (where  $n$  is a natural number). Each of the unit cubes is numbered with a positive integer and they were arranged to form the large cube in the following manner:

- o The unit cube at the bottom left corner towards the front of the large cube is numbered 1 and this is the only unit cube numbered 1.
- o The number on any other unit cube in the large cube is one more than the least number on any of the unit cubes with which it shares a face.

**Q27. DIRECTIONS** for question 27: Select the correct alternative from the given choices.

If, in the large cube of size  $n$  units, the highest number on any unit cube is  $x$ , which of the following cannot be the value of  $x$  for any  $n$ ?

- a) 10
- b) 49
- c) 70
- d) 120 Your answer is correct

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	303
Avg. time spent on this question by all students	96
Difficulty Level	D
Avg. time spent on this question by students who got this question right	125
% of students who attempted this question	4.73
% of students who got the question right of those who attempted	22.29

[Video Solution](#)

### [Text Solution](#)

We can try building a cube of side 3 following the given conditions. We can divide the cube into three horizontal layers (each of one unit height).  
The following diagrams represent the numbers on the unit cubes on the three layers of the large cube:

Bottom Layer	Middle Layer	Top Layer
3 4 5	4 5 6	5 6 7
2 3 4	3 4 5	4 5 6
1 2 3	2 3 4	3 4 5

As we have seen in the above question, for  $n = 2$ , the highest value on any unit cube is 4.

For  $n = 3$ , the highest value on any unit cube is 7.

For  $n = 4$ , the highest value on any unit cube is 10.

Hence, for any  $n$ , the highest value on any unit cube is  $3n - 2$ .

Among the given options, 120 cannot be expressed in the form of  $3n - 2$ . Hence, this cannot be the highest number on any unit cube. Choice (D)

undefined

### **DIRECTIONS for questions 25 to 28:** Answer the questions on the basis of the information given below.

A certain number of unit cubes were used to form a large cube of side  $n$  units (where  $n$  is a natural number). Each of the unit cubes is numbered with a positive integer and they were arranged to form the large cube in the following manner:

- The unit cube at the bottom left corner towards the front of the large cube is numbered 1 and this is the only unit cube numbered 1.
- The number on any other unit cube in the large cube is one more than the least number on any of the unit cubes with which it shares a face.

### **Q28. DIRECTIONS for question 28:** Type in your answer in the input box provided below the question.

If, for the large cube of side  $n$  units, where  $n$  is odd, the difference between the number on the unit cube at the centre of the topmost layer of the large cube and the number on the unit cube at the bottom right corner towards the front of the large cube is 16, what is the value of  $n$ ?

### **Your Answer:17 Your answer is correct**

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	237
Avg. time spent on this question by all students	92
Difficulty Level	D
Avg. time spent on this question by students who got this question right	202
% of students who attempted this question	4.77
% of students who got the question right of those who attempted	12.34

### [Video Solution](#)

### [Text Solution](#)

We can try building a cube of side 3 following the given conditions. We can divide the cube into three horizontal layers (each of one unit height).  
The following diagrams represent the numbers on the unit cubes on the three layers of the large cube:

Bottom Layer	Middle Layer	Top Layer
3 4 5	4 5 6	5 6 7
2 3 4	3 4 5	4 5 6
1 2 3	2 3 4	3 4 5

For a cube of size  $n$ , the number on the unit cube at the front right corner of the bottom most layer is  $n$  itself.

In the top layer, the number on the unit cube at the front left corner is also  $n$ .

The number on the unit cube at the back right corner is  $3n - 2$ .

The number at the centre of the cube will be the average of these two values (since the highest and lowest values change by 1 when we move towards the centre). Hence, the number at the centre of the topmost layer will be  $2n - 1$ .

The difference between the two numbers =  $2n - 1 - n = n - 1$

Given that  $n - 1 = 16$ . Hence,  $n = 17$ .

Ans: (17)

undefined

**DIRECTIONS** for questions 29 to 32: Answer the questions on the basis of the information given below.

Two persons – John and Paul – were playing a game of cards, in each round of which, each player draws a card from a standard deck of 52 cards. At the beginning of the game, each player had the same amount of money. After picking up the cards, they pay each other in each round based only on the following criteria:

- If they both drew cards of the same colour (black or red), Paul pays John \$40.
- If they both drew cards of different colours, John pays Paul \$20.
- If they both drew letter cards (Jack, Queen, King or Ace), Paul pays John \$80.
- If they both drew number cards (2 to 10), John pays Paul \$20.

At the end of each round, the players make all the payments corresponding to all the criteria that are satisfied in that round.

Note: Each deck of 52 cards comprises four suites – Hearts, Diamonds, Spades and Clubs – of 13 cards eachviz., 2, 3, 4, ... 10, Jack, Queen, King and Ace. Hearts and Diamonds are both red (i.e., belong to the same colour), while Clubs and Spades are both black.

**Q29. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

If John and Paul drew cards of the same colour in each of the first three rounds, which of the following is true regarding the maximum amount of money that Paul can have after the end of the three rounds?

- a) It will be the same as what Paul had at the beginning of the game.
- b) It will be \$20 less than what Paul had at the beginning of the game.
- c) It will be \$60 less than what Paul had at the beginning of the game.
- d) It will be \$20 more than what Paul had at the beginning of the game.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	46
Avg. time spent on this question by all students	257
Difficulty Level	M
Avg. time spent on this question by students who got this question right	257
% of students who attempted this question	22.98
% of students who got the question right of those who attempted	80.05

[Video Solution](#)

[Text Solution](#)

In each round of the game, the two of them can draw cards of different colours, or same colours, and two number cards, two letter cards or one letter and one number card.

The table below provides the amount that they have to pay in each case. Each cell in the table represents a different case and a positive value implies that Paul has to pay John, while a negative value indicates that John has to pay Paul.

	Same Coloured Cards	Different Coloured Cards
Both Number cards	20	-40
Both Letter cards	120	60
One Letter and one Number card	40	-20

If they drew cards of the same colour, then Paul has to pay a minimum of \$20 to John.

After three rounds, Paul would have paid a minimum of \$60 to John.

Hence, Paul would have had at least \$60 less than what he had at the beginning of the game.  
Choice (C)

undefined

**DIRECTIONS** for questions 29 to 32: Answer the questions on the basis of the information given below.

Two persons – John and Paul – were playing a game of cards, in each round of which, each player draws a card from a standard deck of 52 cards. At the beginning of the game, each player had the same amount of money. After picking up the cards, they pay each other in each round based only on the following criteria:

- If they both drew cards of the same colour (black or red), Paul pays John \$40.
- If they both drew cards of different colours, John pays Paul \$20.
- If they both drew letter cards (Jack, Queen, King or Ace), Paul pays John \$80.
- If they both drew number cards (2 to 10), John pays Paul \$20.

At the end of each round, the players make all the payments corresponding to all the criteria that are satisfied in that round.

Note: Each deck of 52 cards comprises four suites – Hearts, Diamonds, Spades and Clubs – of 13 cards eachviz., 2, 3, 4, ... 10, Jack, Queen, King and Ace. Hearts and Diamonds are both red (i.e., belong to the same colour), while Clubs and Spades are both black.

**Q30. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

If, after  $n$  rounds, Paul and John ended up with the same amount of money that they started with, where  $n$  is an odd number, what is the minimum possible value of  $n$ ?

- a) 3
- b) 5
- c) 7
- d) 9

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	118
Difficulty Level	M
Avg. time spent on this question by students who got this question right	116
% of students who attempted this question	18.21
% of students who got the question right of those who attempted	71.52

[Video Solution](#)

#### Text Solution

In each round of the game, the two of them can draw cards of different colours, or same colours, and two number cards, two letter cards or one letter and one number card.

The table below provides the amount that they have to pay in each case. Each cell in the table represents a different case and a positive value implies that Paul has to pay John, while a negative value indicates that John has to pay Paul.

	Same Coloured Cards	Different Coloured Cards
Both Number cards	20	-40
Both Letter cards	120	60
One Letter and one Number card	40	-20

The value of n cannot be 1 because it is not possible for no money to have been exchanged in any round.

It is possible to satisfy the given condition in three rounds in multiple ways. One way is if they drew different coloured cards in each of the three rounds and drew two number cards, two letter cards and one number and one letter card in the three rounds.

Choice (A)

undefined

#### DIRECTIONS for questions 29 to 32: Answer the questions on the basis of the information given below.

Two persons – John and Paul – were playing a game of cards, in each round of which, each player draws a card from a standard deck of 52 cards. At the beginning of the game, each player had the same amount of money. After picking up the cards, they pay each other in each round based only on the following criteria:

- If they both drew cards of the same colour (black or red), Paul pays John \$40.
- If they both drew cards of different colours, John pays Paul \$20.
- If they both drew letter cards (Jack, Queen, King or Ace), Paul pays John \$80.
- If they both drew number cards (2 to 10), John pays Paul \$20.

At the end of each round, the players make all the payments corresponding to all the criteria that are satisfied in that round.

Note: Each deck of 52 cards comprises four suites – Hearts, Diamonds, Spades and Clubs – of 13 cards eachviz., 2, 3, 4, ... 10, Jack, Queen, King and Ace. Hearts and Diamonds are both red (i.e., belong to the same colour), while Clubs and Spades are both black.

**Q31. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

If, after two rounds, John had \$x more than Paul, how many of the following cannot be the value of x?

- I. 480
- II. 200
- III. 0
- IV. 400

- a) 0
- b) 1
- c) 2
- d) More than 2

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	0
Avg. time spent on this question by all students	157
Difficulty Level	M
Avg. time spent on this question by students who got this question right	170
% of students who attempted this question	16.79
% of students who got the question right of those who attempted	14.87

[Video Solution](#)

[Text Solution](#)

In each round of the game, the two of them can draw cards of different colours, or same colours, and two number cards, two letter cards or one letter and one number card.

The table below provides the amount that they have to pay in each case. Each cell in the table represents a different case and a positive value implies that Paul has to pay John, while a negative value indicates that John has to pay Paul.

	Same Coloured Cards	Different Coloured Cards
Both Number cards	20	-40
Both Letter cards	120	60
One Letter and one Number card	40	-20

After two rounds, since John has \$x more than Paul, we need to identify if the given options can be expressed as a sum of values in any two cells in the table.

After two rounds, it is possible that Paul paid \$240 to John (\$120 in each round). Hence, John can have \$480 more than Paul.

It is possible that Paul paid \$120 in one round and received \$20 in the other round. In this case, John will have \$200 more than Paul.

It is possible that Paul paid \$20 or \$40 in one round and received \$20 or \$40 respectively in the other round. Hence, x can also be 0.

For x to be 400, Paul must have paid John \$200 across the two rounds. By observation, we can see that this is not possible.

Hence, x can be 480 or 200 or 0 and x cannot be 400.

Choice (B)

undefined

**DIRECTIONS** for questions 29 to 32: Answer the questions on the basis of the information given below.

Two persons – John and Paul – were playing a game of cards, in each round of which, each player draws a card from a standard deck of 52 cards. At the beginning of the game, each player had the same amount of money. After picking up the cards, they pay each other in each round based only on the following criteria:

- If they both drew cards of the same colour (black or red), Paul pays John \$40.
- If they both drew cards of different colours, John pays Paul \$20.
- If they both drew letter cards (Jack, Queen, King or Ace), Paul pays John \$80.
- If they both drew number cards (2 to 10), John pays Paul \$20.

At the end of each round, the players make all the payments corresponding to all the criteria that are satisfied in that round.

Note: Each deck of 52 cards comprises four suites – Hearts, Diamonds, Spades and Clubs – of 13 cards eachviz., 2, 3, 4, ... 10, Jack, Queen, King and Ace. Hearts and Diamonds are both red (i.e., belong to the same colour), while Clubs and Spades are both black.

**Q32. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

It is known that the cards that John and Paul drew in the first two rounds were the two of Clubs, King of Hearts, Five of Diamonds and Jack of Spades, in any order. If by the end of the second round John had a total of \$20 more than what he began with, which of the following pairs of cards could have been drawn in the same round?

- a) Jack of Spades and Two of Clubs
- b) King of Hearts and Two of Clubs
- c) King of Hearts and Jack of Spades
- d) More than one of the above

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	0
Avg. time spent on this question by all students	330
Difficulty Level	M
Avg. time spent on this question by students who got this question right	325
% of students who attempted this question	12.43
% of students who got the question right of those who attempted	51.24

[Video Solution](#)

[Text Solution](#)

In each round of the game, the two of them can draw cards of different colours, or same colours, and two number cards, two letter cards or one letter and one number card.

The table below provides the amount that they have to pay in each case. Each cell in the table represents a different case and a positive value implies that Paul has to pay John, while a negative value indicates that John has to pay Paul.

	Same Coloured Cards	Different Coloured Cards
Both Number cards	20	-40
Both Letter cards	120	60
One Letter and one Number card	40	-20

Since John had \$20 more than what he had at the beginning of the game, Paul must have paid John \$20 across the two rounds.

This is possible if Paul pays \$40 in one round and receives \$20 in the other round OR if Paul pays \$60 in one round and receives \$40 in the other round.

In the first case, for Paul to pay \$40 in one round, they must have drawn same coloured cards but one number card and one letter card.

In this round, they could have drawn Jack of Spades and two of Clubs.

In the other round, they must have drawn King of Hearts and Five of Diamonds. In this round, Paul has to pay John \$40. But this is not possible because John cannot have \$20 more than what he had at the beginning of the game.

In the second case, for Paul to pay \$60 in one round, they must have drawn different coloured cards and both letter cards. Hence, they could have drawn Jack of Spades and King of Hearts in this round.

In the other round, they must have drawn Two of Clubs and Five of Diamonds. Since the cards are of different colours and both are numbers, John has to pay Paul \$40.

Hence, this case is possible. In one round, they drew Jack of Spades and King of Hearts. In the other round, they drew Two of Clubs and Five of Diamonds.

Choice (C)

undefined

**Q1. DIRECTIONS** for questions 1 to 3: Type in your answer in the input box provided below the question.

The LCM and HCF of two numbers A and B are 420 and 14 respectively. How many ordered pairs (A, B) are possible?

**Your Answer:8 Your answer is correct**

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	372
Avg. time spent on this question by all students	171

**Time spent / Accuracy Analysis**

Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>149</b>
% of students who attempted this question	<b>31.66</b>
% of students who got the question right of those who attempted	<b>15.62</b>

[Video Solution](#)**Text Solution**

Let  $A = 14a$  and  $B = 14b$   
 $\Rightarrow \text{LCM}(A, B) = 14ab = 420 \Rightarrow ab = 30$   
Since,  $a$  and  $b$  are relatively prime (i.e., HCF of  $a$  and  $b$  is 1) ( $a, b$ ) can be  $(1, 30), (2, 15), (3, 10), (5, 6), (6, 5), (10, 3), (15, 2), (30, 1)$   
 $\therefore$  There are 8 possible ordered pairs for  $(A, B)$ . Ans: (8)

undefined

**Q2. DIRECTIONS for questions 1 to 3:** Type in your answer in the input box provided below the question.

The selling price of an article when increased by 25% equals the marked price of the article. If the cost price of the article is half its marked price, then the percentage of profit on selling the article is

**Your Answer:60 Your answer is correct****Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>172</b>
Avg. time spent on this question by all students	<b>133</b>
Difficulty Level	<b>VE</b>
Avg. time spent on this question by students who got this question right	<b>123</b>
% of students who attempted this question	<b>53</b>
% of students who got the question right of those who attempted	<b>60</b>

[Video Solution](#)**Text Solution**

Let the selling price of the article be  $x$ . Then marked price =  $1.25x$  and the cost price =  $0.625x$ .  
 $\therefore$  Percentage of profit on selling the article  
 $= \frac{0.375x}{0.625x} (100\%) = 60\%$  Ans: (60)

undefined

**Q3. DIRECTIONS for questions 1 to 3:** Type in your answer in the input box provided below the question.

A vessel was filled with milk to its capacity. 10% of its contents were withdrawn and replaced with water. This procedure was carried out repeatedly. Find the minimum number of times the procedure must be carried out for the concentration of milk in the vessel to fall below 50%.

**Your Answer:7 Your answer is correct****Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>176</b>
Avg. time spent on this question by all students	<b>174</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>180</b>
% of students who attempted this question	<b>39.58</b>
% of students who got the question right of those who attempted	<b>55.72</b>

[Video Solution](#)**Text Solution**

Let the capacity of the vessel be 100 litres  
 Quantity withdrawn each time = 10% (100) = 10 litres  
 Ratio of milk in the vessel to the total solution in it after the procedure is carried out N times

$$= \left( \frac{100 - 10}{100} \right)^N = (0.9)^N$$

Required value = Min (N) such that  $(0.9)^N \leq 0.5$   
 When N = 3,  $(0.9)^3 = 0.729$   
 When N = 4,  $(0.9)^4 = 0.729 (0.9) = 0.6561$   
 When N = 5,  $(0.9)^5 = 0.6561 (0.9) \approx 0.66 (0.9) = 0.604$   
 $\approx 0.60$   
 When N = 6,  $(0.9)^6 \approx 0.60 (0.9) \approx 0.54$   
 When N = 7,  $(0.9)^7 = 0.54 (0.9) \approx 0.486$  which is  $\leq 0.5$

$\therefore \text{Min (N)} = 7$

Ans: (7)

undefined

**Q4. DIRECTIONS** for questions 4 and 5: Select the correct alternative from the given choices.

X	1	2	3	4	5
Y	3	7	13	21	31

For a suitable choice of the values of a, b and c, which one of the following best describes the relation between the values of x and y given in the table above?

- a)  $y = a \log (bx + c)$
- b)  $y = bx + a$
- c)  $y = ax^2 + bx + c$
- d)  $y = e^{ax} + b$

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	54
Avg. time spent on this question by all students	138
Difficulty Level	E
Avg. time spent on this question by students who got this question right	138
% of students who attempted this question	25.08
% of students who got the question right of those who attempted	69.82

[Video Solution](#)

[Text Solution](#)

From the given table, we observe the following pattern :

$$\begin{aligned} 3 &= 1 \times 1 + 1 + 1 \\ 7 &= 2 \times 2 + 2 + 1 \\ 21 &= 3 \times 3 + 3 + 1 \\ 31 &= 5 \times 5 + 5 + 1 \\ \therefore y &= x^2 + x + 1 \end{aligned}$$

Hence, choice (C) is the right option with a = 1, b = 1 and c = 1.

Choice (C)

undefined

**Q5. DIRECTIONS** for questions 4 and 5: Select the correct alternative from the given choices.

The area (in sq. units) of the region bounded by the lines  $2x - y + 2 = 0$ ,  $2x + y - 2 = 0$  and the x-axis is

- a) **1/2.**
- b) **1.**
- c) **2.** Your answer is correct

d) 4.

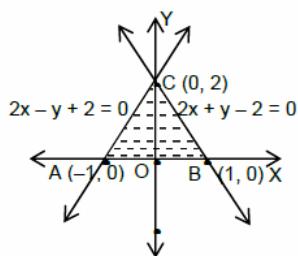
#### Time spent / Accuracy Analysis

Time taken by you to answer this question	121
Avg. time spent on this question by all students	128
Difficulty Level	E
Avg. time spent on this question by students who got this question right	123
% of students who attempted this question	37.61
% of students who got the question right of those who attempted	75.79

[Video Solution](#)

[Text Solution](#)

The graph of the given lines is as follows:



$\Delta ABC$  is the required region.  
 $\therefore$  The area of the required region is  

$$\frac{1}{2} \times AB \times OC = \frac{1}{2} \times 2 \times 2 = 2$$
 sq units

Choice (C)

undefined

**Q6. DIRECTIONS for question 6:** Type in your answer in the input box provided below the question.

A sum amounts to three times its initial amount in three years at a certain rate of interest, compounded annually. If in nine years the amount becomes K times the initial amount, then K is

**Your Answer:27 Your answer is correct**

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	106
Avg. time spent on this question by all students	130
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	120
% of students who attempted this question	37.71
% of students who got the question right of those who attempted	65

[Video Solution](#)

[Text Solution](#)

Let the principal, amount, rate of interest and number of years be P, A, r and n respectively.

Given,  $A = 3P$

where  $R = \left(1 + \frac{r}{100}\right)$  i.e.,  $3P = PR^3$

$$\therefore R = 3^{\frac{1}{3}} \Rightarrow R^9 = \left(3^{\frac{1}{3}}\right)^9 = 3^3 \Rightarrow R^9 = 27$$

$$\therefore PR^9 = 27P$$

Ans: (27)

undefined

**Q7. DIRECTIONS for question 7:** Select the correct alternative from the given choices.

From a solid cylinder of diameter 30 cm and height 20 cm, a cube of the largest possible volume is chiselled out. Find the volume the cube.

- a)  $7500\sqrt{2}\text{ cm}^3$
- b) **8000 cm<sup>3</sup>** Your answer is correct
- c)  $3375\sqrt{2}\text{ cm}^3$
- d)  $400\sqrt{2}\text{ cm}^3$

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>130</b>
Avg. time spent on this question by all students	<b>175</b>
Difficulty Level	<b>VE</b>
Avg. time spent on this question by students who got this question right	<b>157</b>
% of students who attempted this question	<b>24.09</b>
% of students who got the question right of those who attempted	<b>66.8</b>

[Video Solution](#)

[Text Solution](#)

The side of the cube is limited by the lesser of the two values

$$\left( \frac{\text{diameter of cylinder}}{\sqrt{2}} \right) \text{ or height of cylinder.}$$

$$\text{We see that } \frac{30}{\sqrt{2}} > 20$$

$$\Rightarrow \text{maximum side of cube} = 20 \text{ cm and its volume} = 8000 \text{ cm}^3.$$

Choice (B)

undefined

**Q8. DIRECTIONS** for questions 8 to 10: Type in your answer in the input box provided below the question.

Starting with the number 0, all the non-negative integers are written from left to right, one after the other, in the increasing order. What is the 3888<sup>th</sup> digit that will be written?

**You did not answer this question** [Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>92</b>
Avg. time spent on this question by all students	<b>125</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>188</b>
% of students who attempted this question	<b>31.93</b>
% of students who got the question right of those who attempted	<b>21.22</b>

[Video Solution](#)

[Text Solution](#)

From 0 to 9 =  $10 \cdot 1 = 10 \cdot 1 = 10$  digits

From 10 to 99 =  $90 \cdot 2 = 180$  digits

From 100 to 999 =  $900 \cdot 3 = 2700$

From 1000 to 9999 =  $9000 \cdot 4 = 36000$

Total = 38,890 digits

That means last number is 9999 and the 3888<sup>th</sup> digits is 9.

Ans: (9)

undefined

**Q9. DIRECTIONS** for questions 8 to 10: Type in your answer in the input box provided below the question.

If  $2^x - 3 + 3^{2y} - 4 = 97$ , where x and y are integers, find the value of  $2^{2x} - 6 + 3^{3y} - 8$ .

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>188</b>
Avg. time spent on this question by all students	<b>177</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>174</b>
% of students who attempted this question	<b>26.79</b>
% of students who got the question right of those who attempted	<b>75.12</b>

[Video Solution](#)

[Text Solution](#)

Let  $x - 3 = a$  and  $2y - 4 = b$   
Now, since  $2^a + 3^b = 97$ , both  $2^a$  and  $3^b$  must be positive integers and greater than 1.  
 $\therefore 2^a \leq 96, 3^b \leq 96$ .  
By trial and error we get the only possibility as  $a = 4$  and  $b = 4$   
 $\Rightarrow x = 7$  and  $y = 4 \Rightarrow 2x - 6 = 8$  and  $3y - 8 = 4$   
 $\Rightarrow 2^{2x-6} + 3^{3y-8} = 2^8 + 3^4 = 256 + 81 = 337$ .  
Ans: (337)

undefined

**Q10. DIRECTIONS** for questions 8 to 10: Type in your answer in the input box provided below the question.

In how many ways can five boys and six girls be seated in a row such that Nagarjuna, one of the boys, is seated at one of the extreme ends and no two boys are adjacent to each other?

Your Answer:30 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>234</b>
Avg. time spent on this question by all students	<b>175</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>193</b>
% of students who attempted this question	<b>31.46</b>
% of students who got the question right of those who attempted	<b>6.7</b>

[Video Solution](#)

[Text Solution](#)

Six girls can be seated in  $6!$  ways.  
Out of the seven gaps, Nagarjuna can be seated in 2 ways (at any of the extremes).  
In the remaining six gaps four boys can be seated in  ${}^6P_4$  ways.  
 $\therefore$  Total number of ways  
 $= 720 \times 2 \times 6 \times 5 \times 4 \times 3$   
 $= 720 \times 720 = 518400$   
Ans: (518400)

undefined

**Q11. DIRECTIONS** for questions 11 and 12: Select the correct alternative from the given choices.

If  $x, y, z$  are positive irrational numbers and  $9x^2 + 29y^2 + 9z^2 = 30xy + 12yz$ , which of the following is true?

- a)  $y = 1.5x$
- b)  $x = 1.5y$
- c)  $x = 0.6y$
- d)  $y = 1.5z$

You did not answer this question

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>4</b>
Avg. time spent on this question by all students	<b>141</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>152</b>
% of students who attempted this question	<b>7.14</b>
% of students who got the question right of those who attempted	<b>59.71</b>

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}9x^2 - 30xy + 25y^2 + 4y^2 - 12yz + 9z^2 &= 0 \\ \Rightarrow (3x - 5y)^2 + (2y - 3z)^2 &= 0 \Rightarrow 3x = 5y \text{ and } 2y = 3z \\ \therefore y &= 0.6x \text{ and } y = 1.5z \\ \text{Therefore only choice (D) is necessarily true.}\end{aligned}$$

Choice (D)

undefined

**Q12. DIRECTIONS** for questions 11 and 12: Select the correct alternative from the given choices.

If  $\log_y x + \log_x y = \log_b a$ , then the ordered pair  $(a, b)$  can take which of the following values?

- a) (33, 8)
- b) (8, 33)
- c) (15, 8)
- d) (10, 3)

You did not answer this question

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>77</b>
Avg. time spent on this question by all students	<b>114</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>117</b>
% of students who attempted this question	<b>8.74</b>
% of students who got the question right of those who attempted	<b>50.46</b>

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}\log_y x &= \frac{1}{\log_x y} \\ \therefore \log_y x + \log_x y &= \log_y x + \frac{1}{\log_y x} \\ \text{Let } \log_y x \text{ be } k \\ \text{Thus the number is } k + \frac{1}{k} \\ \left| k + \frac{1}{k} \right| &\text{ will always be greater than or equal to 2.} \\ \text{Thus } |\log_b a| &\geq 2 \\ \therefore \text{If } b \geq 1, \text{ then } a &\geq b^2 \text{ OR } a \leq b^{-2} \\ \text{The condition is satisfied only in option D.}\end{aligned}$$

Choice (D)

undefined

**Q13. DIRECTIONS** for question 13: Type in your answer in the input box provided below the question.

A book has exactly 300 pages, numbered from 1 through 300. If all the papers on which there is a page number that is a multiple of 4 are torn out and

destroyed, what is the total of all the page numbers on the pages that remain?

Your Answer:33750 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	214
Avg. time spent on this question by all students	162
Difficulty Level	E
Avg. time spent on this question by students who got this question right	256
% of students who attempted this question	44.94
% of students who got the question right of those who attempted	3.52

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned} \text{Total no of sheets} &= 300/2 = 150 \\ \text{The sheet with numbers } 1 \& 2 \text{ is not destroyed but the sheet with numbers } 3 \text{ and } 4 \text{ is} \\ \text{destroyed. The sheet with numbers } 5 \text{ and } 6 \text{ is not destroyed and so on.} \\ \text{Numbers on the sheets which are not destroyed are} \\ (1 + 2) + (5 + 6) + (9 + 10) + \dots + (297 + 298) \\ &= 3 + 11 + 19 + \dots + 595 \\ \text{No. of sheets torn } \frac{150}{2} &= 75 \\ \text{No.of sheets remaining is } \frac{150}{2} &= 75 \\ \text{Sum of all the numbers on the remaining sheets} \\ &= 75 \times \left( \frac{595+3}{2} \right) = 22,425 \end{aligned}$$

Ans: (22425)

undefined

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Your Answer:33750 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	214
Avg. time spent on this question by all students	162
Difficulty Level	E
Avg. time spent on this question by students who got this question right	256
% of students who attempted this question	44.94
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[Video Solution](#)

[Text Solution](#)

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Ans: (22425)

undefined

**Q14. DIRECTIONS for question 14:** Select the correct alternative from the given choices.

At 7:00 a.m., Anil started from P towards Q and Bhanu started from Q towards P. At 9:00 a.m. they crossed each other and continued towards their respective destinations. If the total time taken by Anil to reach his destination is three hours more than that taken by Bhanu, what is the ratio of Anil's speed to Bhanu's speed?

- a) 1 : 2
- b) 2 : 5
- c) 2 : 3
- d) Cannot be determined

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>166</b>
Avg. time spent on this question by all students	<b>191</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>220</b>
% of students who attempted this question	<b>33.59</b>
% of students who got the question right of those who attempted	<b>31.48</b>

[Video Solution](#)

[Text Solution](#)

Let Anil's and Bhanu's speeds be  $a$  kmph and  $b$  kmph respectively. Anil and Bhanu cover  $2a$  and  $2b$  km, respectively, by the time they meet.

$$\text{Given, } \frac{2a}{b} + 3 = \frac{2b}{a}$$

$$\Rightarrow \left[ \frac{b}{a} - \frac{a}{b} \right] = \frac{3}{2}$$

Solving the above equation, we get  $\frac{b}{a} = 2$  (since the ratio is not -ve)

$$\Rightarrow a : b = 1 : 2$$

Choice (A)

undefined

**Q15. DIRECTIONS for question 15:** Type in your answer in the input box provided below the question.

Ramesh has 12 dollars and 5 euros. Suresh has 8 dollars and 4 euros. Dinesh, who had no money, borrowed money equivalent to 24 rupees and 8 rupees from Ramesh and Suresh respectively. If the value of the money with each of the three is now the same, then one euro is worth how many rupees?

Your Answer:16 □ Your answer is incorrect

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>212</b>
Avg. time spent on this question by all students	<b>212</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>207</b>
% of students who attempted this question	<b>27.03</b>
% of students who got the question right of those who attempted	<b>63.18</b>

[Video Solution](#)

[Text Solution](#)

As Dinesh got  $24 + 8 = 32$  rupees and now all of three have equal amount.

Total amount =  $32 \times 3 = 96$  rupees

Total amount =  $(12D + 5E) + (8D + 4E) = 20D + 9E$

$\therefore 20D + 9E = 96 \rightarrow (1)$

Also after giving 8 rupees to Dinesh, Suresh is left with 32 rupees.

$\Rightarrow 8D + 4E - 8 = 32$

$\Rightarrow 2D + E = 10 \rightarrow (2)$

Solving (1) and (2), we get  $D = 3$  and  $E = 4$ .

Ans: (4)

undefined

**Q16. DIRECTIONS** for questions 16 and 17: Select the correct alternative from the given choices.

Find the number of ordered integer pairs  $(a, b)$  which satisfy the equation  $ab = 2(a + b)$ .

- a) 4
- b) 5
- c) 6
- d) 7

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	18
Avg. time spent on this question by all students	158
Difficulty Level	M
Avg. time spent on this question by students who got this question right	159
% of students who attempted this question	12.37
% of students who got the question right of those who attempted	23.46

[Video Solution](#)

[Text Solution](#)

$$ab = 2(a + b)$$

$$ab - 2a - 2b = 0$$

Adding 4 on both sides, we get  $(a - 2)(b - 2) = 4$

As  $a$  and  $b$  are integers,  $a - 2$  and  $b - 2$  must be factors of 4.

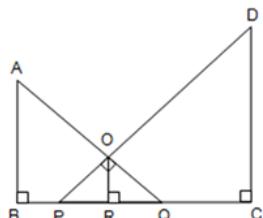
$\therefore (a - 2, b - 2)$  can be  $(-4, -1), (-2, -2), (-1, -4), (1, 4), (2, 2)$  or  $(4, 1)$ .

$\therefore (a, b)$  has 6 possibilities.

Choice (C)

undefined

**Q17. DIRECTIONS** for questions 16 and 17: Select the correct alternative from the given choices.



In the above figure,  $P$  and  $Q$  are points on the line joining  $B$  and  $C$ , while  $\angle ABC = \angle BCD = \angle POQ = 90^\circ$ , where  $O$  is the point of intersection of  $AQ$  and  $DP$ .  $R$  is a point on  $BC$  such that  $OR \perp BC$ . If  $BP = PQ = QC$  and  $AB = \frac{1}{4}(DC) = 5$  cm, what is the length of  $OR$ ?

- a) 3 cm
- b) 2.5 cm

c) 2 cm

d) 1.5 cm

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question 142

Avg. time spent on this question by all students 233

Difficulty Level E

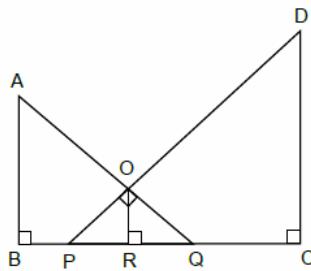
Avg. time spent on this question by students who got this question right 247

% of students who attempted this question 11.66

% of students who got the question right of those who attempted 38.07

[Video Solution](#)

[Text Solution](#)



$\angle ORQ = \angle ABC = \angle DCB = 90^\circ$ ,  $\angle OPQ = \angle DPC$  and  $\angle OQP = \angle AQB$ .  
Hence  $\triangle ABQ \approx \triangle ORQ$  and  $\triangle DPC \approx \triangle OPR$ .

$$\text{Therefore } \frac{DC}{OR} = \frac{PC}{PR} \text{ and } \frac{AB}{OR} = \frac{BQ}{RQ}$$

$$\Rightarrow \frac{OR}{DC} + \frac{OR}{AB} = \frac{PR}{CP} + \frac{QR}{BQ}$$

$$\Rightarrow \frac{OR}{20} + \frac{OR}{5} = \frac{PQ}{2PQ} \quad (\because CP = BQ = 2(PR + QR))$$

$$\Rightarrow OR = 2 \text{ cm}$$

Choice (C)

undefined

**Q18. DIRECTIONS** for question 18: Type in your answer in the input box provided below the question.

The number of cricket balls with three persons, X, Y and Z, are in the ratio 2 : 3 : 5. If Y and Z give 36 balls each to X, then X will have two-thirds as many balls as Y and Z together have. What is the total number of cricket balls that the three have?

**Your Answer:360 Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question 126

Avg. time spent on this question by all students 166

Difficulty Level E

Avg. time spent on this question by students who got this question right 154

% of students who attempted this question 39.76

% of students who got the question right of those who attempted 58

[Video Solution](#)

[Text Solution](#)

Let the number of cricket balls X, Y and Z have be  $2a$ ,  $3a$  and  $5a$  respectively.

$$\text{we have, } 2a + 36 + 36 = \frac{2}{3} (3a + 5a - 72) \quad \text{--- (i)}$$

Solving (i) we get  $a = 36$

$$\therefore \text{Total number of cricket balls} = 2a + 3a + 5a \\ = 10a = 360.$$

Ans: (360)

undefined

**Q19. DIRECTIONS** for questions 19 to 24: Select the correct alternative from the given choices.

A metal wall has its thickness denoted by T. The heat flow across it is denoted by H. Its surface area is denoted by S. The temperature difference between its ends is denoted by D.

The following relations hold true.

H varies inversely with T when S and D are constant.

H varies directly with S when T and D are constant.

H varies directly with D when S and T are constant.

$W_1$  is a square metal wall and  $W_2$  is a rectangular metal wall. Both have equal surface areas. The heat flow across  $W_1$  is 20% more than that across  $W_2$ . If, the thickness of  $W_1$  is  $33\frac{1}{3}\%$  more than that of  $W_2$ , the temperature difference across  $W_2$  is less than that across  $W_1$  by

- a) **20%**
- b) **37.5%**
- c) **12.5%**
- d) **10%**

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>15</b>
Avg. time spent on this question by all students	<b>225</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>237</b>
% of students who attempted this question	<b>11.28</b>
% of students who got the question right of those who attempted	<b>69.34</b>

[Video Solution](#)

[Text Solution](#)

The given relationships imply that

$$H = K \frac{SD}{T} \text{ where } k \text{ is a constant.}$$

$$\therefore \frac{H_1}{H_2} = \frac{S_1 D_1}{T_1} / \frac{S_2 D_2}{T_2} \text{ i.e., } \frac{H_1}{H_2} = \frac{S_1}{S_2} \frac{D_1}{D_2} \frac{T_2}{T_1} \quad \dots(1)$$

$$H_1 = H_2 \left( 1 + \frac{20}{100} \right), T_1 = T_2 \left( 1 + \frac{33\frac{1}{3}}{100} \right) \text{ and } S_1 = S_2$$

$$\text{i.e., } H_1 = \frac{6}{5} H_2, T_1 = \frac{4}{3} T_2 \text{ and } S_1 = S_2$$

$$(1) \Rightarrow \frac{6}{5} = 1 \left( \frac{D_1}{D_2} \right) \left( \frac{3}{4} \right)$$

$$\frac{D_1}{D_2} = \frac{8}{5} \text{ i.e., } \frac{D_2}{D_1} = \frac{5}{8}$$

$\therefore D_2$  is less than  $D_1$  by 37.5%

#### Alternative solution:

Given  $H \propto D$

$H \propto S$

$$H \propto \frac{1}{T}$$

$$\Rightarrow H \propto \frac{DS}{T}. \text{ Given surface area } S \text{ is same.}$$

$\Rightarrow D \propto HT$

$$33\frac{1}{3}\% = \frac{1}{3} \text{ and } 20\% = \frac{1}{5} f^2$$

$$\begin{array}{rcl} \therefore \frac{W_1}{H} & & \frac{W_2}{T} \\ \frac{6}{4} & & \frac{5}{3} \\ HT & 24 & 15 \end{array}$$

$$\therefore \% \text{ by which } D_2 \text{ is less than } D_1 = \frac{15 - 24}{24} = \frac{-3}{8} = -37.5\%$$

Choice (B)

undefined

**Q20. DIRECTIONS** for questions 19 to 24: Select the correct alternative from the given choices.

If  $\theta$  lies in the first quadrant and  $27 \left( 1 + \cos \theta + \cos^2 \theta + \cos^3 \theta + \dots \right) = 9^3$ , then find the value of  $\theta$  (in radians).

a)  $\frac{\pi}{6}$

- b)  $\frac{\pi}{4}$
- c)  $\frac{\pi}{3}$  Your answer is correct
- d)  $\frac{\pi}{2}$

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>253</b>
Avg. time spent on this question by all students	<b>113</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>110</b>
% of students who attempted this question	<b>21.71</b>
% of students who got the question right of those who attempted	<b>69.07</b>

[Video Solution](#)

[Text Solution](#)

Given  $27^{1+\cos\theta+\cos^2\theta+\cos^3\theta+\dots} = 9^3$

$$\Rightarrow 3^{3[1+\cos\theta+\cos^2\theta+\cos^3\theta+\dots]} = 3^6$$

$$\Rightarrow 1 + \cos\theta + \cos^2\theta + \cos^3\theta + \dots = 2$$

This is in G.P. with common ratio  $\cos\theta$  and  $0 < \cos\theta < 1$  ( $\because \theta$  is in first quadrant)

We can use the formula for sum to infinite terms.

$$\Rightarrow \frac{1}{1-\cos\theta} = 2 \Rightarrow 1 - \cos\theta = \frac{1}{2}$$

$$\Rightarrow \cos\theta = \frac{1}{2} \Rightarrow \theta = 60^\circ = \frac{\pi}{3}$$

Choice (C)

undefined

**Q21. DIRECTIONS** for questions 19 to 24: Select the correct alternative from the given choices.

$f(x) = x^3 - 5x + a;$

$f(0)$  and  $f(1)$  have opposite signs. Which of the following is necessarily true?

- a)  $0 < a < 4$
- b)  $1 < a < 5$
- c)  $-2 < a < 2$
- d)  $-3 < a < 1$

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>76</b>
Avg. time spent on this question by all students	<b>93</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>92</b>
% of students who attempted this question	<b>33.96</b>
% of students who got the question right of those who attempted	<b>84.72</b>

[Video Solution](#)

[Text Solution](#)

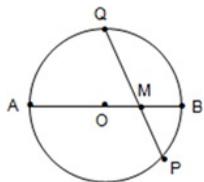
$f(0) = a$   
 $f(1) = a - 4$   
As  $a$  and  $a - 4$  have opposite signs,  $a > 0$  and  $a - 4 < 0$ , i.e.  $a < 4$ .  
 $\therefore 0 < a < 4$ .  
Only Choice (A) is necessarily true.

Choice (A)

undefined

**Q22. DIRECTIONS** for questions 19 to 24: Select the correct alternative from the given choices.

In the figure below, the diameter AB of a circle, with center O, intersects another chord PQ of the circle at M. If  $\angle BMP = 79^\circ$ ,  $OQ = QM$  and R is a point on the circle, which of the following is not a possible value of  $\angle ORM$ ?



- a) **18°**
- b) **15°**
- c) **12°**
- d) **24°**

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>100</b>
Avg. time spent on this question by all students	<b>148</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>156</b>
% of students who attempted this question	<b>10.92</b>
% of students who got the question right of those who attempted	<b>74.89</b>

[Video Solution](#)

**Text Solution**

Since  $OQ = QM$ , Q lies on the perpendicular bisector of OM and  $\triangle OQM$  is isosceles.  
 $\angle QOM = \angle QMO = 79^\circ$ .  
 $\Rightarrow \angle OQM = 180^\circ - (79 \times 2)^\circ = 22^\circ$ . We can now imagine R to be moving on the circle.  
 $\angle ORM$  will be greatest when R coincides with Q, i.e.,  $\angle ORM$  can be at most equal to  $\angle OQM$  which is  $22^\circ$ .  
 $\angle ORM$  can't be  $24^\circ$ .

**Alternate solution:**

Instinctively,  $\angle ORM$  can easily be made zero when R coincides with either A or B. Hence there can only be an upper limit on  $\angle ORM$ , and only the largest value among the choices will be the answer.  
Choice (D)

undefined

**Q23. DIRECTIONS** for questions 19 to 24: Select the correct alternative from the given choices.

Let A, B and C be three sets defined in  $\mu$ , the universal set. An operation '\*' is defined on any two sets in  $\mu$  as  $X * Y = X^c \cap Y^c$ , where,  $X^c$  is the complement of set X, i.e.,  $X^c = \mu - X$ . Study the statements I and II given below and identify the ones that are true.

- I.  $(A * B) \cup (B * C)$  is a subset of  $A * C$ .
- II.  $(A * B) \cap (A * C) = A * (B \cup C)$

- a) **Only I**
- b) **Only II**
- c) **Both I and II**
- d) **None of these**

You did not answer this question

[Show Correct Answer](#)

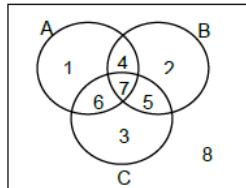
#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>24</b>
Avg. time spent on this question by all students	<b>142</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>154</b>
% of students who attempted this question	<b>8.05</b>
% of students who got the question right of those who attempted	<b>49.84</b>

[Video Solution](#)

[Text Solution](#)

Consider the given Venn diagram:



$$\begin{aligned}
 A * B &= A^c \cap B^c \\
 &= \{2, 3, 5, 8\} \cap \{1, 3, 6, 8\} = \{3, 8\} \quad \text{--- (1)} \\
 B * C &= B^c \cap C^c \\
 &= \{1, 3, 6, 8\} \cap \{1, 2, 4, 8\} = \{1, 8\} \quad \text{--- (2)} \\
 A * C &= A^c \cap C^c = \{2, 3, 5, 8\} \cap \{1, 2, 4, 8\} \\
 &= \{2, 8\} \quad \text{--- (3)} \\
 \text{From (1), (2) and (3)} \\
 (A * B) \cup (B * C) &\neq A * C \\
 \text{and as } (A * B) \cap (A * C) &= \{8\} \\
 \text{and } A * (B \cup C) &= A^c \cap (B \cup C)^c \\
 &= \{2, 3, 5, 8\} \cap \{1, 8\} = \{8\} \\
 \text{Hence only II statement is true.}
 \end{aligned}$$

Choice (B)

undefined

**Q24. DIRECTIONS** for questions 19 to 24: Select the correct alternative from the given choices.

Which of the following is true for any real values of  $a$  and  $b$ ?

a)

$$|a + b| = |a| + |b|$$

b)

$$|a - b| = |a| - |b|$$

c)

$$|a \cdot b| = |a| \cdot |b|$$

Your answer is correct

d)

$$|a^b| = |a| \cdot |b|$$

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>96</b>
Avg. time spent on this question by all students	<b>55</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>56</b>
% of students who attempted this question	<b>35.65</b>
% of students who got the question right of those who attempted	<b>84.72</b>

[Video Solution](#)

### [Text Solution](#)

Counter examples for (A), (B) and (D)

(A)  $|2| + (-3)| = 1$

$|2| + |-3| = 5$

(B)  $|3 - 10| = 7$

$|3| - |10| = -7$

(D)  $|2^{-3}| = 1/8$

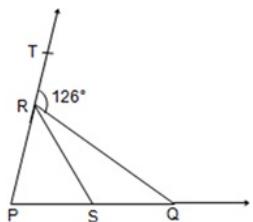
$|2|^{-3} = 8$

Choice (C)

undefined

**Q25. DIRECTIONS** for question 25: Type in your answer in the input box provided below the question.

In the figure below (not to scale),  $RP = RS = SQ$  and  $\angle TRQ = 126^\circ$ , find  $\angle RPQ$  (in degrees).



$$|a - b| = |a| - |b|$$

$$|a \cdot b| = |a| \cdot |b|$$

$$|a^b| = |a|^{|\cdot b|}$$

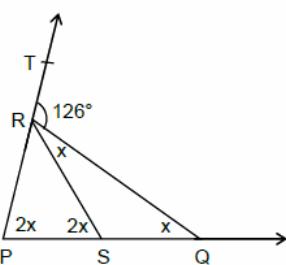
**You did not answer this question** [Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	14
Avg. time spent on this question by all students	171
Difficulty Level	E
Avg. time spent on this question by students who got this question right	185
% of students who attempted this question	28.57
% of students who got the question right of those who attempted	42.83

### [Video Solution](#)

### [Text Solution](#)



As  $SR = SQ$ ,  $\angle SQR = \angle SRQ = x$  (say)  $= \angle RSP = 2x$

As  $RP = RS$ ,  $\angle RPS = \angle RSP = 2x$

$\therefore \angle QRT = \angle P + \angle Q = 3x = 126^\circ \Rightarrow x = 42^\circ$

$\therefore \angle P = 2x = 84^\circ$

Ans: (84)

undefined

**Q26. DIRECTIONS** for questions 26 and 27: Select the correct alternative from the given choices.

If  $f(x) = \log\left(\frac{1-x}{1+x}\right)$ , then  $f(x) + f(y) =$

a)  $f\left(\frac{x+y}{1+xy}\right)$ .

b)  $f\left(\frac{x-y}{1-xy}\right)$ .

c)  $f\left(\frac{x+y}{1-xy}\right)$ .

d)  $f\left(\frac{x-y}{1+xy}\right)$ .

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	5
Avg. time spent on this question by all students	131
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>139</b>
% of students who attempted this question	<b>17.58</b>
% of students who got the question right of those who attempted	<b>62.96</b>

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}
 f(x) &= \log\left(\frac{1-x}{1+x}\right) \\
 f(y) &= \log\left(\frac{1-y}{1+y}\right) \\
 f(x) + f(y) &= \log\left(\frac{1-x}{1+x}\right) + \log\left(\frac{1-y}{1+y}\right) \\
 &= \log\left[\left(\frac{1-x}{1+x}\right)\left(\frac{1-y}{1+y}\right)\right] \\
 &= \log\left(\frac{1-x-y+xy}{1+x+y+xy}\right) \\
 &= \log\left(\frac{1+xy-(x+y)}{1+xy+(x+y)}\right) \\
 &= \log\left(\frac{1-(x+y)}{1+(x+y)}\right) \\
 &= \log\left(\frac{1-\frac{x+y}{1+xy}}{1+\frac{x+y}{1+xy}}\right) \\
 &= f\left(\frac{x+y}{1+xy}\right)
 \end{aligned}$$

Choice (A)

undefined

**Q27. DIRECTIONS** for questions 26 and 27: Select the correct alternative from the given choices.

The perimeter of an isosceles trapezium is 16 cm and the shorter parallel side is one-third of the longer parallel side. If the sum of the lengths of the opposite sides of the trapezium are equal, find the area (in sq.cm) of the trapezium.

a)  $4\sqrt{3}$

b)  $8\sqrt{3}$

c)

$12\sqrt{3}$

d)

16 $\sqrt{3}$

You did not answer this question

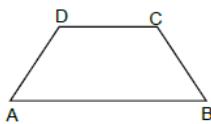
Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	4
Avg. time spent on this question by all students	167
Difficulty Level	M
Avg. time spent on this question by students who got this question right	169
% of students who attempted this question	16.31
% of students who got the question right of those who attempted	76.41

[Video Solution](#)

[Text Solution](#)



Let ABCD be the isosceles trapezium.  
Given that sum of opposite sides is equal.

$$\Rightarrow DC + AB = AD + BC = \frac{1}{2} \times \text{perimeter}$$

Also, in isosceles trapezium,  $AD = BC$

Hence, each of its non = parallel sides equal to  $\frac{1}{4}$  (perimeter of trapezium).

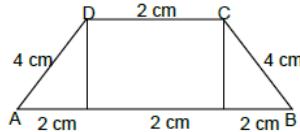
$$AD = BC = \frac{1}{4} (16) = 4 \text{ cm.}$$

$$AB + CD = 16 - (AD + BC) = 8 \text{ cm.}$$

$$\Rightarrow CD + 3AD = 8 \text{ cm}$$

$$\Rightarrow CD = 2 \text{ cm and } AD = 6 \text{ cm}$$

$$CD = 6 \text{ cm}$$



$$\text{Height of trapezium} = \sqrt{4^2 - 2^2} = 2\sqrt{3} \text{ cm}$$

$$\text{Area of the trapezium} = \frac{1}{2} (2\sqrt{3}) (2+6) = 8\sqrt{3} \text{ sq.cm.}$$

Choice (B)

undefined

**Q28. DIRECTIONS** for questions 28 and 29: Type in your answer in the input box provided below the question.

Ten points are marked on a plane such that no three points are collinear. How many triangles can be formed by joining these points?

12 $\sqrt{3}$

16 $\sqrt{3}$

**Your Answer:**120 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	58
Avg. time spent on this question by all students	63
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	55

**Time spent / Accuracy Analysis**

% of students who attempted this question	<b>31.19</b>
% of students who got the question right of those who attempted	<b>64.07</b>

[Video Solution](#)[Text Solution](#)

Every three non-collinear points in a plane form a triangle.  
Hence, the number of triangles that can be formed by using the 10 points is  ${}^{10}C_3 = 120$ .  
Ans: (120)

undefined

**Q29. DIRECTIONS** for questions 28 and 29: Type in your answer in the input box provided below the question.

A man purchased a certain number of strawberries for Rs.20 per dozen. But a certain percentage of the strawberries get spoilt due to a pest attack. If the man sells the remaining strawberries for Rs.30 per dozen he makes a profit of 5%. What percentage of the strawberries were not spoilt?

12 $\sqrt{3}$ 16 $\sqrt{3}$ **Your Answer:75** □ **Your answer is incorrect**[Show Correct Answer](#)**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>176</b>
Avg. time spent on this question by all students	<b>170</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>164</b>
% of students who attempted this question	<b>23.55</b>
% of students who got the question right of those who attempted	<b>48.54</b>

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Let there be  $x$  dozens of strawberries.  
Let  $S\%$  of them have got spoilt.  
Total value of the initial lot of strawberries = ₹20x  
Amount for which the unspoilt strawberries were sold =  $\left(x - \frac{Sx}{100}\right)30$   
Profit made =  $\left(x - \frac{Sx}{100}\right)30 - 20x$   
Profit percentage =  $\frac{\left(x - \frac{Sx}{100}\right)30 - 20x}{20x} \times 100 = 5$   
 $\Rightarrow S = 30$   
So, 70% of the strawberries are unspoilt.

Ans: (70)

undefined

**Q30. DIRECTIONS** for questions 30 and 31: Select the correct alternative from the given choices.

Which of the following points  $(x, y)$  in the co-ordinate plane does not lie on the line  $3x + 13y - 75 = 0$ ?

- a) (2, 1)
- b) (-11, 32)

c) (-24, 63)

d) (-37, 95) Your answer is correct

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>27</b>
Avg. time spent on this question by all students	<b>106</b>
Difficulty Level	<b>VE</b>
Avg. time spent on this question by students who got this question right	<b>111</b>
% of students who attempted this question	<b>31.33</b>
% of students who got the question right of those who attempted	<b>84.04</b>

[Video Solution](#)

#### Text Solution

Given equation  $31x + 13y = 75$ .

(A) (2, 1) satisfies the given equation  $31(2) + 13(1) = 75$ .

Any pair (x, y) satisfying the equation can be expressed in the form  $(2 - 13K, 31K + 1)$  where k is an integer.

∴ When K = 1  $(2 - 13(1), 31 + 1) = (-11, 32)$

When K = 2  $(2 - 13(2), 31(2) + 1) = (-24, 63)$

When K = 3  $(2 - 13(3), 31(3) + 1) = (-37, 94)$

∴ Option (D) does not satisfy the given equation.

Choice (D)

undefined

**Q31. DIRECTIONS** for questions 30 and 31: Select the correct alternative from the given choices.

If  $H(a, b, c, d) = 2a + 3bc + 4c^2d$ , and a, b, c and d increase by 80%, 50%, 20% and 25% respectively, what is the percentage increase in  $H(a, b, c, d)$ ?

a) 80%

b) 92%

c) 160%

d) Cannot be determined

You did not answer this question

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>13</b>
Avg. time spent on this question by all students	<b>133</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>156</b>
% of students who attempted this question	<b>19.63</b>
% of students who got the question right of those who attempted	<b>56.28</b>

[Video Solution](#)

#### Text Solution

The increased value of  $H(a, b, c, d) = 2a(1.8) + 3b(1.5) c(1.2) + 4c^2(1.2)^2 d(1.25)$   
 $= 1.8(2a + 3bc + 4c^2d) = 1.8$  times the original value of  $H(a, b, c, d)$

⇒ Percentage increase is  $H(a, b, c, d) = 80\%$ .

Choice (A)

undefined

**Q32. DIRECTIONS** for question 32: Type in your answer in the input box provided below the question.

If train A crosses train B, the length of which is thrice the length of A, in 90 seconds when the two trains are travelling in opposite directions with equal speeds, find the time taken (in seconds) by train A to cross a stationary pole (in seconds).

Your Answer:45 Your answer is correct

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>97</b>
Avg. time spent on this question by all students	<b>112</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>108</b>
% of students who attempted this question	<b>25.15</b>
% of students who got the question right of those who attempted	<b>64.52</b>

[Video Solution](#)

[Text Solution](#)

Let the length of the first train be  $L$  m and the speed of the train be  $S$  m/s. The length of the second train is  $3L$ .

$$\text{Given, } \frac{L+3L}{S+S} = 90, \frac{L}{S} = 45$$

When a train crosses a stationary pole, it travels its own length. Hence time taken by it to cross a stationary pole =  $\frac{L}{S} = 45$  seconds. Ans: (45)

undefined

**Q33. DIRECTIONS** for questions 33 and 34: Select the correct alternative from the given choices.

Two articles were bought for the same price. One was sold at 40% profit and the other was sold at 30% loss. Find the overall percentage of profit/loss made.

- a) 10% profit Your answer is incorrect
- b) 10% loss
- c) 5% profit
- d) 5% loss

[Show Correct Answer](#)

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>18</b>
Avg. time spent on this question by all students	<b>65</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>65</b>
% of students who attempted this question	<b>37.89</b>
% of students who got the question right of those who attempted	<b>69.07</b>

[Video Solution](#)

[Text Solution](#)

Let the price at which each article was bought be  $x$ .

One was sold at a profit of  $0.4x$  and the other was sold at a loss of  $0.3x$ .

Profit made on one of the articles exceeds the loss made on the other article.  $\therefore$

Overall, a profit was made.

$$\text{Overall profit} = 0.4x - 0.3x = 0.1x$$

$$\text{Overall profit percent} = \frac{0.1x}{2x} (100\%) = 5\%. \quad \text{Choice (C)}$$

undefined

**Q34. DIRECTIONS** for questions 33 and 34: Select the correct alternative from the given choices.

If the sum of the 4<sup>th</sup> and the 20<sup>th</sup> terms of an arithmetic progression equals the sum of the 6<sup>th</sup>, 12<sup>th</sup> and 16<sup>th</sup> terms, which term of the progression is necessarily zero?

- a) 8<sup>th</sup>

b) 10<sup>th</sup> **Your answer is correct**

c) 11<sup>th</sup>

d) 9<sup>th</sup>

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>20</b>
Avg. time spent on this question by all students	<b>106</b>
Difficulty Level	<b>VE</b>
Avg. time spent on this question by students who got this question right	<b>100</b>
% of students who attempted this question	<b>21</b>
% of students who got the question right of those who attempted	<b>77.72</b>

[Video Solution](#)

[Text Solution](#)

Let the first term and the common difference be  $a$  and  $d$  respectively.

$$\therefore (a + 3d) + (a + 19d) = (a + 5d) + (a + 11d) + (a + 15d)$$

$$\Rightarrow 0 = a + 9d$$

$\therefore$  the 10<sup>th</sup> term is necessarily zero

Choice (B)