

DIRECTIONS for questions 1 to 6: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Did the ancient Athenians invent democracy? Or did bugs have it way earlier than the Greeks? Cornell entomologist Tom Seeley knows which option he's voting for. Honeybees regularly split from their mother colony. Seeley wondered, with tens of thousands of bees in a swarm, how do they reach agreement? His answer: simple-majority democracy.

In his 2010 book *Honeybee Democracy*, Seeley described how bees intending to strike out on their own first send scouts in all directions to collect information. On their return, these early scouts buzz and twirl to recruit more scouts. Some gain fans whereas others lose them. Newly deciding scouts go out to look for themselves. After the majority of scouts (which number in the hundreds) have converged on one opinion, the entire swarm takes off for its promised land.

Bees are not alone in using the simple-majority rule - Tibetan macaques do it too. In 2014, my colleagues and I were studying how a group of 12 adult macaques coordinated their collective movements. We noticed that once three or more of them ganged up together, the entire group would often follow suit. The success rate in getting the group into action increased with the number of initiators - those who started the process. When the initiators numbered seven or more, exceeding a simple majority, the success rate reached its maximum: 100 percent.

Democracy in collective decision-making has also been observed in African buffaloes, red deer, baboons, and pigeons. Even single-celled bacteria make collective decisions based on a democratic process known as quorum sensing. Their genes control some aspect of their behavior, like how mobile or virulent they should become, based on how many of their bacterial comrades are already engaging in that behavior. Similar democratic processes are also used by cockroaches and other swarming insects.

Apparently, the 'lofty' principles of our democracy may have a straightforward biological origin, and can emerge without any elaborate design. Simple-majority democracy can safeguard the will of the majority, and, at least judging by the frequency with which it's found in nature, seems to be one of the best ways of resolving conflicting interests among individuals who have to stick together - whether it's a swarm of bees or a band of monkeys. It's no wonder a motley crew of gregarious species, including humans, have evolved to use this same wisdom in making collective decisions.

This remarkable fact is more than a curiosity - it can also be a useful model. It offers the opportunity to evaluate how robust democracy is against deviations from simple-majority rules. Not all voters are well-informed. Some may be ignorant, incompetent, or uninterested in the common good. How can a simple majority work in this case? It's an issue that has concerned thinkers ancient and modern, including Plato, Thomas Hobbes, and John Stuart Mill. Plato was almost paranoid about the prospect of electing fools who are narrowly self-interested and have no philosophical vision. (Today we have plenty of examples.) He decried democracy as nothing more than mob rule, and preferred instead an aristocracy led by a wise "philosopher king." Concerns like this led to the practice of voter literacy tests, which were only ditched in the United States in 1975. But will ignorant voters really jeopardize simple-majority democracy? By looking at animals, we get the hint of an answer. Iain Couzin and colleagues at Princeton University used food to train two groups of golden shiners (a small fish) to swim from one end of a tank to either a yellow or a blue target located on the other end. They then released the two groups of trained fish into a group of naïve fish. The naïve fish tended to follow whichever informed group had more members - the majority. If there were more informed fish pursuing the yellow (or blue) target, the naïve fish also pursued it. What's more, the more naïve fish there were, the stronger the trend became. So, the presence of the ignorant not only failed to undermine the voting of the informed majority, it actually fortified it.

Couzin's fish were binary, however. They were either entirely wise, or completely witless. What if there were manipulators - cheaters who spin false information to lure naïve voters?

Q1. The purpose of this passage is to:

- ☐ a) Discuss the pros and cons of a simple-majority democracy.
- ☐ b) Prove that human beings aren't the only species to follow democracy.
- ☐ c) Discuss democracy as more than an anthropogenic way of reaching a consensus.
- ☐ d) **Evaluate the robustness of a simple-majority democracy when dealing with deviations.** □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	525
Avg. time spent on this question by all students	413
Difficulty Level	D
Avg. time spent on this question by students who got this question right	403
% of students who attempted this question	53.73

Time spent / Accuracy Analysis

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

32.57

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Number of words and Explanatory notes for RC:

Number of words: 696

The main ideas discussed in this passage are: a. animal species which follow simple majority rules b. discussion on whether majority always make the best decision and c. experiment to reveal whether the ignorant mass will tilt the scales towards a bad decision.

Option A: The passage doesn't discuss the advantages or disadvantages of having a simple-majority democracy. It does question, based on the thoughts of certain illustrious thinkers whether democracy always leads to the correct decision. But, that is more an extension of the idea of democracy rather than a discussion of the 'disadvantages' of democracy. Hence, choice A is incorrect.

Option B: Literally, choice B seems to be the right description of the content of the passage. But, the author uses these examples to prove something more insightful than the obvious observation that there are other species that follow the simple-majority rule. Choice B is not the answer.

Option C: The passage discusses democracy in 'nature'. The passage also highlights how consensus is arrived across various species through a simple majority principle. The passage doesn't come to a conclusion, which is why the word 'discuss' is ideal to explain the content. Choice C is therefore correct.

Option D: The author does hint at the robustness of democracy and question whether a simple majority democracy will always work. The above question is partially answered by the golden shiner experiment, leading to a new question – what if the 'informed' that the 'ignorant' follow are manipulators. However, there isn't enough justification in the passage for the word 'evaluate'. 'Evaluation' of the robustness would be valid if the author gives a final opinion on whether democracies work when there are deviations (e.g. manipulators). But, the passage doesn't take the discussion to the logical conclusion. Evaluation would also demand multiple solutions or options be discussed. Choice D is not the answer.

Choice (C)

undefined

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Q2. Which of the following assumptions, if proven wrong, would strengthen the case for ditching voter literacy tests?

- ☐ a) An educational degree is a good sign of how rational an individual's decisions are.
- ☐ b) The literates will ensure that a mob rule comes to power.
- ☐ c) An ignorant person is likely to follow the rest of the herd to make decisions.
- ☒ d) **An illiterate person is more likely to make an irrational decision.** **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	218
Avg. time spent on this question by all students	139
Difficulty Level	D
Avg. time spent on this question by students who got this question right	131
% of students who attempted this question	43.08
% of students who got the question right of those who attempted	25.65

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Plato had decried democracy as nothing more than mob rule, and preferred instead an aristocracy led by a wise "philosopher king." Concerns like this led to the practice of voter literacy tests, which were only ditched in the United States in 1975.'

If the voter literacy test was indeed a way of segregating the voters, it was based on the assumption that literacy changes the way people make decisions. We are looking for an option that counters or contradicts this assumption. Concerns like mob rule coming to power led to the voter literacy tests. Which means the assumption made was about the legitimacy of illiterate people voting.

Option A: Choice A talks about an educational degree and not literacy, and they are two different things. Hence, Choice A is irrelevant.

Option B: If 'The literates will ensure that a mob rule comes to power' is proven wrong, it will mean that literates voting will prevent mob rule from coming to power (which is a good thing as per the passage). That will strengthen the case for literacy tests, thereby weakening the argument that literacy tests should be ditched. Choice B is incorrect.

Option C: There are two issues with this option. The difference between an 'ignorant' person and an 'illiterate' person is not tangible. So, the words cannot be interchanged. The second term is 'following the herd'. We cannot say whether that is going to be a good thing or a bad thing. So, proving the statement wrong doesn't help us achieve anything. Choice C is incorrect.

Option D: If an illiterate person is not more likely to make an irrational decision (i.e. if D is proven wrong) then there is no point in conducting a literacy test. In essence, that will strengthen ditching the literacy test. Choice D is the answer. Choice (D)

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exceeding a simple majority, the success rate reached its maximum: 100 percent.

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Q3. The author's conclusion in 'at least judging by the frequency with which it's found in nature, seems to be one of the best ways of resolving conflicting interests among individuals who have to stick together' is based on which of the following assumptions?

- ☐ a) A mechanism is not trustworthy unless there are other instances of it happening in nature.
- ☐ b) Simple majority is the best way of ending conflicts between individuals.
- ☐ c) A good solution to any conflict must always work in nature.
- ☒ d) **A frequently iterated event in nature offers reliable lessons.** ▢Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	125
Avg. time spent on this question by all students	113
Difficulty Level	M
Avg. time spent on this question by students who got this question right	107
% of students who attempted this question	46.91
% of students who got the question right of those who attempted	40.21

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Number of words and Explanatory notes for RC:

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At least judging by the frequency with which it's found in nature – this suggests that the author gives importance to what happens in nature and with what frequency.

Option A: The reverse is not necessarily true (Affirmation of consequent). Something happening often in nature is a good sign – doesn't necessarily translate to 'Something not happening in nature is not a good sign'. Hence, choice A is incorrect.

Option B: This is not an assumption. Rather, it is the conclusion. It has directly been mentioned by the author that simple majority is the best way. The question was about what assumption made the author arrive at this conclusion. Choice B amounts to misdirection.

Option C: The assumption is 'it is a good solution because it works so often in nature'. This is clearly different from saying, 'a good solution must work in nature.' Choice C is not the answer.

Option D: This is the assumption. It should be noted that this line doesn't even talk about conflicts. It talks about 'reliable lessons'. The reasoning of the author isn't specific to resolving conflicts. The assumption is that anything that happens often in nature must be worth observing and adopting. Choice D is the answer. Choice (D)

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Q4. Which of the following, if proven right, will most weaken the conclusions of Couzin's golden shiner experiment in the simple-majority argument made by the author?

- ☐ a) The golden shiner cannot differentiate between colours
- ☒ b) **Golden shiners cannot differentiate between groups of unequal number.** Your answer is correct
- ☐ c) The golden shiners don't really have a mechanism to find out which ones amongst them are informed.
- ☐ d) **Iain Couzin's past experiments with golden shiners have yielded inconsistent results.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	62
Avg. time spent on this question by all students	117
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	108
% of students who attempted this question	45.95
% of students who got the question right of those who attempted	42.2

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Number of words and Explanatory notes for RC:

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The finding of the experiment is that the naïve fish follow the bigger group of informed fish, leading to the conclusion that ignorant people don't sway the vote in a democracy, and only tend to follow the general consensus. The informed fish were the trained fish which knew where to swim to (blue or yellow target).

Option A: Whether the golden shiners differentiate between yellow and blue doesn't matter given that the author talks about training two sets of fish to swim to two different targets. The colour doesn't matter as long as the fish have been trained to swim to the two different targets. Choice A is not the answer.

Option B: If golden shiners cannot differentiate between two unequal groups, then it is hard to establish the conclusion that the study came to. The study was about the bigger group of informed fish attracting the naïve fish. However, if the naïve fish cannot make out which is the bigger group, the whole study falls apart. Hence choice B is the answer.

Option C: As per the study, the naïve fish were only following the bigger group. So, it doesn't matter whether they can find out which ones are informed and which fish aren't informed. In fact, the fish follow the trained ones by number, not because of the cognizance that these are trained fish. Choice C is not the answer.

Option D: When asked to weaken an argument, we need to provide a new idea/fact/counter. Questioning the person rather than the argument is incorrect. (Ad Hominem Fallacy). So, Couzin's past experiments shouldn't have any bearing on the results of the current study. Choice D is incorrect.

Choice (B)

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Q5. The author mentions the example of Tibetan macaques in the passage most likely in order to?

- ☐ a) To indicate that bees aren't the only species to use the simple majority rule. Your answer is incorrect
- ☐ b) To prove that a simple majority rule doesn't literally mean a majority, merely, the biggest group.
- ☐ c) To suggest that a simple majority rule can be implemented only if there are initiators.
- ☐ d) To further demonstrate the collective decision making process in the natural world.

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question

187

Avg. time spent on this question by all students

89

Time spent / Accuracy Analysis

Difficulty Level	D
Avg. time spent on this question by students who got this question right	85
% of students who attempted this question	53.58
% of students who got the question right of those who attempted	37.08

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Number of words and Explanatory notes for RC:

Number of words: 696

The author uses a series of animal species to establish the idea of democracy as it occurs in nature. Macaques are one of those.

Option A: If we take the example literally, this seems like the most likely answer. But, the purpose of the macaques is not to demonstrate that bees are not the only species to follow democracy. The purpose of the macaques is to add to the list of species which follow democracy. This can be established by the fact that the author doesn't stop at discussing just macaques. The author goes on to discuss other species as well. Choice A, though close, is not the answer.

Option B: While groups of three or more may influence the final decision, the passage establishes that *'When the initiators numbered seven or more, exceeding a simple majority, the success rate reached its maximum: 100 percent'*. From this we can understand that simple majority did matter, quite literally. Hence, choice B is incorrect.

Option C: In the example, the author says, 'The success rate in getting the group into action increased with the number of initiators'. The author doesn't discuss a scenario where there are no initiators. The example tackles consensus building but doesn't address how the first initiator makes a move, whether it is the example of macaques or fish. Hence, choice C is incorrect.

Option D: The author's purpose in introducing the example of macaques is twofold. One purpose is to reiterate that humans are not an exceptional case in following democracy. (Macaques along with bees and other animal species are examples picked by the author to explain, 'Apparently, the lofty principles of our democracy may have a *straightforward biological origin, and can emerge without any elaborate design*'.) The other purpose is to explore how the collective decision making process occurs in the natural world. The trick is in understanding that macaques are one amongst many examples, and hence the sentence, 'Bees are not alone in using the simple-majority rule – Tibetan macaques do it too', shouldn't be taken literally. Choice D is correct.

Choice (D)

undefined

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In his 2010 book *Honeybee Democracy*, Seeley described how bees intending to strike out on their own first send scouts in all directions to collect information. On their return, these early scouts buzz and twirl to recruit more scouts. Some gain fans whereas others lose them. Newly deciding scouts go out to look for themselves. After the majority of scouts (which number in the hundreds) have converged on one opinion, the entire swarm takes off for its promised land.

Bees are not alone in using the simple-majority rule - Tibetan macaques do it too. In 2014, my colleagues and I were studying how a group of 12 adult macaques coordinated their collective movements. We noticed that once three or more of them ganged up together, the entire group would often follow suit. The success rate in getting the group into action increased with the number of initiators - those who started the process. When the initiators numbered seven or more, exceeding a simple majority, the success rate reached its maximum: 100 percent.

Democracy in collective decision-making has also been observed in African buffaloes, red deer, baboons, and pigeons. Even single-celled bacteria make collective decisions based on a democratic process known as quorum sensing. Their genes control some aspect of their behavior, like how mobile or virulent they should become, based on how many of their

bacterial comrades are already engaging in that behavior. Similar democratic processes are also used by cockroaches and other swarming insects.

Apparently, the 'lofty' principles of our democracy may have a straightforward biological origin, and can emerge without any elaborate design. Simple-majority democracy can safeguard the will of the majority, and, at least judging by the frequency with which it's found in nature, seems to be one of the best ways of resolving conflicting interests among individuals who have to stick together - whether it's a swarm of bees or a band of monkeys. It's no wonder a motley crew of gregarious species, including humans, have evolved to use this same wisdom in making collective decisions.

This remarkable fact is more than a curiosity - it can also be a useful model. It offers the opportunity to evaluate how robust democracy is against deviations from simple-majority rules. Not all voters are well-informed. Some may be ignorant, incompetent, or uninterested in the common good. How can a simple majority work in this case? It's an issue that has concerned thinkers ancient and modern, including Plato, Thomas Hobbes, and John Stuart Mill. Plato was almost paranoid about the prospect of electing fools who are narrowly self-interested and have no philosophical vision. (Today we have plenty of examples.) He decried democracy as nothing more than mob rule, and preferred instead an aristocracy led by a wise "philosopher king." Concerns like this led to the practice of voter literacy tests, which were only ditched in the United States in 1975. But will ignorant voters really jeopardize simple-majority democracy? By looking at animals, we get the hint of an answer. Iain Couzin and colleagues at Princeton University used food to train two groups of golden shiners (a small fish) to swim from one end of a tank to either a yellow or a blue target located on the other end. They then released the two groups of trained fish into a group of naïve fish. The naïve fish tended to follow whichever informed group had more members - the majority. If there were more informed fish pursuing the yellow (or blue) target, the naïve fish also pursued it. What's more, the more naïve fish there were, the stronger the trend became. So, the presence of the ignorant not only failed to undermine the voting of the informed majority, it actually fortified it.

Couzin's fish were binary, however. They were either entirely wise, or completely witless. What if there were manipulators - cheaters who spin false information to lure naïve voters?

Q6. What is the tone used by the author in the statement, "The 'lofty' principles of our democracy may have a straightforward biological origin, and can emerge without any elaborate design." (para 5)?

- ☐ a) **Sarcastic**
- ☒ b) **Informative** Your answer is incorrect
- ☐ c) Analytical
- ☐ d) **Philosophical**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	49
Avg. time spent on this question by all students	67
Difficulty Level	M
Avg. time spent on this question by students who got this question right	55
% of students who attempted this question	46.74
% of students who got the question right of those who attempted	48.51

[Video Solution](#)

[Text Solution](#)

Number of words: 696

Option A: The author uses the word 'lofty', but contrasts it by saying there is a 'straightforward' biological origin to what we call lofty. The author reiterates it by saying 'an elaborate design' was not required for democracy to emerge. Hence, the tone is sarcastic – looking to praise democracy, but actually doing the opposite. Choice A is the answer.

Option C: An analytical tone involves analysis of facts, in a neutral or objective way. Since the sentence is an inference (an opinion) and doesn't speak about facts or the derivations of facts, it cannot be analytical. Choice C is incorrect.

Choice (A)

DIRECTIONS for questions 7 to 9: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

But first, let's get a refresher on the layers of the earth. The part of the planet we deal with most of the time is the crust, the uppermost layer that's about 30 miles thick at its biggest. Beneath that is the mantle, which is itself made of three different sub-layers: the upper mantle, the transition zone, and the lower mantle. Together, they're about 1,800 miles thick, and they make up about 84 percent of the planet's volume. Down beneath the mantle is the core, but it's in the mantle that you'll find our secret sixth ocean.

One thing we should probably make clear: just because there is so much water underground, that doesn't mean it's necessarily sloshing around like it does here on the surface. Instead, much of it may be trapped in ringwoodite like the chunk that researchers found. But we do know exactly where in the mantle it's located. It's widely accepted that the upper and lower mantles are bone-dry, but the wateriness of the transition zone has been the subject of some debate. Now, scientists are quite certain that the transition zone is about as wet as it could be.

Q7. Which of the following is the main theme of the passage?

- ☐ a) To throw light on the ongoing debate around the wateriness of the transition zone inside the mantle.
- ☐ b) To discuss the theory of the presence of a large amount of water inside the earth.
- ☐ c) To discuss how the formation of diamonds can give clues about the inner layers of the earth.
- ☐ d) To highlight the presence of a large body of water below the crust. ▫ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	278
Avg. time spent on this question by all students	236
Difficulty Level	M
Avg. time spent on this question by students who got this question right	224
% of students who attempted this question	63.1
% of students who got the question right of those who attempted	50.13

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 334

The main theme of the passage is highlighted by the following lines: 'There's as much water inside the earth as there is in all of the oceans. That's the conclusion...' and 'Now, scientists are quite certain that the transition zone is about as wet as it could be'. Between these lines, the author gives a refresher on what's inside the earth and the inferences that have led to the above conclusion.

Option A: The passage doesn't discuss/debate the wateriness of the transition zone inside the mantle. It mentions that debate as a passing thought and confirms that it is true. If it were a debate, there will be counter arguments as well. Hence, choice A is incorrect.

Option B: The starting and ending lines of the passage mentioned above describe the main idea behind the passage – that water has been confirmed to be present in a large quantity in the transition zone based on a diamond unearthed. Hence, choice B is the answer.

Option C: While the formation of the diamond was discussed as an important aspect to arrive at the conclusion (Water present in large amount inside the earth), there is a difference between 'conclusion (water being present)' and 'evidence used to arrive at the conclusion (diamond formation)'. The main idea is the conclusion and not the evidence that has been used to arrive at the conclusion, although the latter is a significant sub-idea. Hence, choice C is incorrect.

Option D: 'One thing we should probably make clear: just because there is so much water underground, that doesn't mean it's necessarily sloshing around like it does here on the surface. Instead, much of it may be trapped in ringwoodite like the chunk that researchers found.' From this, two things can be understood. The presence of water is exciting. There isn't much clarity on how it is present, and the hypothesis is that it could be present inside ringwoodite, a mineral. That ensures this usage – 'but it's in the mantle that you'll find our secret sixth ocean' is more an indicator of extent of trapped moisture and not that the water is present in lakes or seas, it's not 'sloshing around'. Hence, choice D is incorrect.

Choice (B)

undefined

DIRECTIONS for questions 7 to 9: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

There's as much water inside the earth as there is in all of the oceans. That's the conclusion that scientists are reaching after a 2014 discovery planted the seed of the idea.

But first, let's get a refresher on the layers of the earth. The part of the planet we deal with most of the time is the crust, the uppermost layer that's about 30 miles thick at its biggest. Beneath that is the mantle, which is itself made of three different sub-layers: the upper mantle, the transition zone, and the lower mantle. Together, they're about 1,800 miles thick, and they make up about 84 percent of the planet's volume. Down beneath the mantle is the core, but it's in the mantle that you'll find our secret sixth ocean.

So, how'd they find the ocean? The clue came in the form of a brown diamond that formed about 400 miles (644 kilometers) beneath the crust. That's not where they found it, though. Sometime in the past, volcanic forces had pushed the diamond to the surface, where a team discovered it in Mato Grosso, Brazil. Within that diamond, they found another mineral, ringwoodite, which is notable for its tendency to absorb surrounding water. The chunk of ringwoodite was comprised about 1.5 percent water. That particular chunk of stone won't quench your thirst, but it suggests that wherever it came from, there's a whole lot more to be found.

One thing we should probably make clear: just because there is so much water underground, that doesn't mean it's necessarily sloshing around like it does here on the surface. Instead, much of it may be trapped in ringwoodite like the chunk that researchers found. But we do know exactly where in the mantle it's located. It's widely accepted that the upper and lower mantles are bone-dry, but the wateriness of the transition zone has been the subject of some debate. Now, scientists are quite certain that the transition zone is about as wet as it could be.

Q8. Which of the following is NOT a likely inference which can be drawn from the passage?

- ☐ a) **The mantle comprises of a wet sub-layer sandwiched between two bone-dry sub-layers.** □ Your answer is incorrect
- ☐ b) **Subterranean water may not be in free-flowing form.**
- ☐ c) Scientists think that the 'secret sixth ocean' is as big as the other five combined.
- ☐ d) **The information about where a diamond is found isn't as useful as the information about where it was formed.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	301
Avg. time spent on this question by all students	109
Difficulty Level	M
Avg. time spent on this question by students who got this question right	108
% of students who attempted this question	60.4
% of students who got the question right of those who attempted	37.1

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 334

Option A: From the two lines - 'Beneath that is the mantle, which is itself made of three different sub-layers: the upper mantle, the transition zone, and the lower mantle' and 'It's widely accepted that the upper and lower mantles are bone-dry...Now, scientists are quite certain that the transition zone is about as wet as it could be' – it can be inferred that the three sub-layers of the mantle include two dry layers, the upper and lower mantle and a transition zone filled with water. Hence, choice A can be inferred. Choice A is not the answer.

Option B: One of the meanings of 'Subterranean' is underground. From 'that doesn't mean it's necessarily sloshing around like it does here on the surface. Instead, much of it may be trapped in ringwoodite like the chunk that researchers found' it can be inferred that most of the water isn't in free-flowing form. Hence, choice B can be inferred. Choice B is not the answer.

Option C: From 'There's as much water inside the earth as there is in all of the oceans. That's the conclusion that scientists are reaching' it can be inferred the water present underground is almost equal in volume as the water in all the oceans. This water has been referred to as the 'secret sixth ocean' by the author in 'it's in the mantle that you'll find our secret sixth ocean'. Hence, choice C can be inferred. Choice C is not the answer.

Option D: While the hypothesis about water in the passage was based on where the diamond was formed, we cannot infer that the information about where any diamond is formed isn't useful, or quantify it, or compare it as the passage does not discuss the utility of information about where diamonds are found. Hence, choice D cannot be inferred. Choice D is the answer.

Choice (D)

undefined

DIRECTIONS for questions 7 to 9: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

There's as much water inside the earth as there is in all of the oceans. That's the conclusion that scientists are reaching after a 2014 discovery planted the seed of the idea.

But first, let's get a refresher on the layers of the earth. The part of the planet we deal with most of the time is the crust, the uppermost layer that's about 30 miles thick at its biggest. Beneath that is the mantle, which is itself made of three different sub-layers: the upper mantle, the transition zone, and the lower mantle. Together, they're about 1,800 miles thick, and they make up about 84 percent of the planet's volume. Down beneath the mantle is the core, but it's in the mantle that you'll find our secret sixth ocean.

So, how'd they find the ocean? The clue came in the form of a brown diamond that formed about 400 miles (644 kilometers) beneath the crust. That's not where they found it, though. Sometime in the past, volcanic forces had pushed the diamond to the surface, where a team discovered it in Mato Grosso, Brazil. Within that diamond, they found another mineral,

ringwoodite, which is notable for its tendency to absorb surrounding water. The chunk of ringwoodite was comprised about 1.5 percent water. That particular chunk of stone won't quench your thirst, but it suggests that wherever it came from, there's a whole lot more to be found.

One thing we should probably make clear: just because there is so much water underground, that doesn't mean it's necessarily sloshing around like it does here on the surface. Instead, much of it may be trapped in ringwoodite like the chunk that researchers found. But we do know exactly where in the mantle it's located. It's widely accepted that the upper and lower mantles are bone-dry, but the wateriness of the transition zone has been the subject of some debate. Now, scientists are quite certain that the transition zone is about as wet as it could be.

Q9. Which of the following is NOT an assumption made in the various arguments presented in the passage?

- ☐ a) 1.5 percent water for ringwoodite is a lot of water.
- ☐ b) The water composition of ringwoodite inside the diamond did not change once the latter has been formed
- ☒ c) If there is water inside a diamond containing ringwoodite, there must be water outside it. Your answer is correct
- ☐ d) The transition zone can be found at around 400 miles from the crust.

Time spent / Accuracy Analysis

Time taken by you to answer this question	237
Avg. time spent on this question by all students	122
Difficulty Level	M
Avg. time spent on this question by students who got this question right	124
% of students who attempted this question	57.82
% of students who got the question right of those who attempted	15.28

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 334

Within that diamond, they found another mineral, ringwoodite, which is notable for its tendency to absorb surrounding water. The chunk of ringwoodite was comprised of about 1.5 percent water. That particular chunk of stone won't quench your thirst, but it suggests that wherever it came from, there's a whole lot more to be found.

Assumption – An unstated piece of information that the author has used to arrive at a conclusion. It must not be confused with an 'inference' which is an opinion deduced from other known pieces of information.

Option A: From the fact that there is 1.5 percent in a chunk of ringwoodite, it was inferred by the scientists that there is a lot of water present outside that chunk. This could be done only if 1.5 percent, the number, has a quantified significance. The assumption here is that 1.5 must be a big number indicating a lot of water outside. Hence, choice A is an assumption. Choice A is not the answer.

Option B: Since, the scientists concluded that the water inside the diamond indicates the presence of water inside mantle, where the diamond was formed, even though the diamond wasn't exactly found where it was formed, the assumption is that once formed, the water composition hasn't been changed by the new surroundings (where the diamond was unearthed). Hence, choice B is an assumption. Choice B is not the answer.

Option C: 'Within that diamond, they found another mineral, ringwoodite, which is notable for its tendency to absorb surrounding water' – In this sentence, it is directly mentioned that ringwoodite absorbs surrounding water. So, 'if there is indeed water inside, it must have come from outside' is not an assumption; rather an inference that can be drawn from the presence of water inside the diamond. Hence, choice C is not an assumption. Therefore, choice C is the answer.

Option D: From 'The clue came in the form of a brown diamond that formed about 400 miles beneath the crust', 'That particular chunk of stone won't quench your thirst, but it suggests that wherever it came from, there's a whole lot more to be found' and 'Now, scientists are quite certain that the transition zone is about as wet as it could be', it can be understood that the diamond was formed in the transition zone which is assumed to be 400 miles beneath the crust. Hence, choice D is not the answer. Choice (C)

undefined

DIRECTIONS for questions 10 to 15: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

How could Germany of all countries have become a paragon, politically stable and economically successful, of democratic capitalism in the 1970s - 'Modell Deutschland' - and later, in the 2000s, Europe's uncontested economic and political superpower? Any explanation must have recourse to a Braudelian *longue durée*, concentrating on all-but-permanent or slowly evolving structures, in which destruction can be progress - utter devastation turned into a lasting blessing - because capitalist progress *is* destruction, of a creative sort. In 1945 unconditional surrender forced Germany, or what was left of its western part, into a 'second round of capitalist transformation' of the sort no other European country has ever had to undergo. Germany's bout was a violent - sharp and short - push forward into social and economic 'modernity', driving it for ever from the halfway house of Weimar, in a painful dismantling of structures of political domination and social solidarity, feudal fetters which had held back the country's capitalist progress and which, in locally different manifestations, continue to block capitalist rationalisation in many other European countries.

First among the events that put West Germany on the path to what it would later become was the arrival of ten million refugees and expellees from the East, who made up roughly one in five inhabitants of a devastated territory less than half the size of the pre-war Reich. While some of them remained isolated, depressed and poor for the rest of their lives, others had brought with them as their only possession a determination to fit in and succeed in what was for them in many ways a foreign country. Their arrival disrupted forever, the fabric of what had been until then a largely traditional society divided between urban and rural, Catholic and Protestant, left and right. Centuries-old parochial ways of life and socio-cultural milieu were broken up, often in the face of adamant resistance. But, ultimately, the skills and hard work the newcomers contributed to their new homeland forced the locals to give them a chance to establish themselves. As a result, West Germany became a uniquely competitive and meritocratic society.

This was far from all, the two forces that had between them worn down the Weimar Republic - the eastern aristocracy (the Junkers whom Max Weber had identified as the Reich's main roadblock to capitalist modernity) and the Communist opposition - had disappeared. Both wings, reactionary and potentially progressive, of one time resistance to capital were thus eliminated, leaving only the Social Democrats (SPD) and Christian Democrats (CDU) in the middle. The CDU, a descendant of the Catholic Zentrumspartei of the Weimar period, appealed to Christians irrespective of denomination, in

keeping with the postwar break-up of homogeneous local confessional communities. Add to this the disappearance of the Nazis as an organised political force and the incarceration of Germany's industrial tycoons by the Allies (albeit soon to be released to help with the Korean War), and the result was a vastly simplified political landscape and an economic geography shorn of the parasitic manorialism of Prussia, now dominated instead by what would become the highly productive dualism of a small-firm economy in the south, south-west and Rhineland, and the huge industrial complexes in the Ruhr. While the industrialists were in custody, the British had introduced robust rights for unions and workers' participation in management, particularly of coal and steel companies.

Unconditional surrender and the carving up of the Reich helped the German economy in other ways too. German industry had always been dependent on foreign markets for sale of its manufactured goods and for the raw materials it needed. Fear of being denied access to these markets, especially by the British, was an old German nightmare, which the Nazis tried to end through imperial conquest and autarky. The small, wholly defeated, semi-sovereign West Germany did not have such options. In the event, integration into the American-led post-Bretton Woods free-trade regime, and later into the EEC, offered a vastly superior alternative, not least because under the regime's fixed exchange rates the new West German currency became increasingly undervalued over time. In the 1950s and 1960s, this laid the foundation for a uniquely strong, heavily export-dependent, quality-driven industrial sector, which, continuing older traditions, became the centre of gravity of the West German and later the German political economy.

Q10. The author's central concern in this passage is to:

- ☐ a) Highlight how West Germany's journey to become a paragon of democratic capitalism demonstrates Braudelian *longue durée*.
- ☐ b) Enumerate the factors which led to modernisation of a tradition-heavy West Germany.
- ☐ c) Discuss the most likely causes behind West Germany turning into a democratic capitalistic European superpower in the 21st century.
- ☐ d) Explore the various steps taken by West Germany to turn into a politically and economically stable powerhouse.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	20
Avg. time spent on this question by all students	394
Difficulty Level	D
Avg. time spent on this question by students who got this question right	390
% of students who attempted this question	28.49
% of students who got the question right of those who attempted	41.2

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 705

'How could *Germany of all countries* have become a paragon, politically stable and economically successful, of democratic capitalism in the 1970s – 'Modell Deutschland' – and later, in the 2000s, *Europe's uncontested economic and political superpower*? Any explanation must have recourse...' – the author starts with this line and then goes on to list out the reasons he thinks Germany became a superpower. Those events are: a. the influx of refugees, some of whom were hardworking and tried to fit in b. Simplification of political landscape and c. Germany's predominant export-driven industrial sector.

Option A: The main idea of the passage is to discuss the transformation of Germany and in doing so, it points out how the discussion of the transformation '*must have recourse to a Braudelian longue durée, concentrating on all-but-permanent or slowly evolving structures*'. So, the idea is to show West Germany's change as an evolving structure (longue durée focusses on events that occur nearly imperceptibly over a long period of time). The idea is not to discuss Germany as an example of longue durée, which this option seems to suggest. West Germany's journey to become a paragon of democratic capitalism demonstrates Braudelian *longue durée* – this line seems to say that the main idea is to demonstrate Braudelian *longue durée*, which is not true. Choice A is incorrect.

Option B: Modernisation is in fact one of the events discussed in the passage. While West Germany did move away from traditional circles, the main idea of the passage is not 'modernisation' of a traditional country. The option doesn't highlight what kind of modernisation (political and economic) has been discussed in the passage. Hence, choice B is not the answer.

Option C: The passage discusses what led to Germany becoming the paragon of democratic capitalism, politically and economically stable, and a European superpower. Choice C lists out all these highlights. Hence, choice C is the answer.

Option D: The passage discusses how Germany became an economically and politically stable powerhouse. However, not all events listed in the passage were necessarily voluntary decisions. Some were thrust on Germany. We can say that 'steps taken' is incorrect. Hence, D is not the answer.

Choice (C)

undefined

DIRECTIONS for questions 10 to 15: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

How could Germany of all countries have become a paragon, politically stable and economically successful, of democratic capitalism in the 1970s - 'Modell Deutschland' - and later, in the 2000s, Europe's uncontested economic and political superpower? Any explanation must have recourse to a Braudelian *longue durée*, concentrating on all-but-permanent or slowly evolving structures, in which destruction can be progress - utter devastation turned into a lasting blessing - because capitalist progress *is* destruction, of a creative sort. In 1945 unconditional surrender forced Germany, or what was left of its western part, into a 'second round of capitalist transformation' of the sort no other European country has ever had to undergo. Germany's bout was a violent - sharp and short - push forward into social and economic 'modernity', driving it for ever from the halfway house of Weimar, in a painful dismantling of structures of political domination and social solidarity,

feudal fetters which had held back the country's capitalist progress and which, in locally different manifestations, continue to block capitalist rationalisation in many other European countries.

First among the events that put West Germany on the path to what it would later become was the arrival of ten million refugees and expellees from the East, who made up roughly one in five inhabitants of a devastated territory less than half the size of the pre-war Reich. While some of them remained isolated, depressed and poor for the rest of their lives, others had brought with them as their only possession a determination to fit in and succeed in what was for them in many ways a foreign country. Their arrival disrupted forever, the fabric of what had been until then a largely traditional society divided between urban and rural, Catholic and Protestant, left and right. Centuries-old parochial ways of life and socio-cultural milieu were broken up, often in the face of adamant resistance. But, ultimately, the skills and hard work the newcomers contributed to their new homeland forced the locals to give them a chance to establish themselves. As a result, West Germany became a uniquely competitive and meritocratic society.

This was far from all, the two forces that had between them worn down the Weimar Republic - the eastern aristocracy (the Junkers whom Max Weber had identified as the Reich's main roadblock to capitalist modernity) and the Communist opposition - had disappeared. Both wings, reactionary and potentially progressive, of one time resistance to capital were thus eliminated, leaving only the Social Democrats (SPD) and Christian Democrats (CDU) in the middle. The CDU, a descendant of the Catholic Zentrumspartei of the Weimar period, appealed to Christians irrespective of denomination, in keeping with the postwar break-up of homogeneous local confessional communities. Add to this the disappearance of the Nazis as an organised political force and the incarceration of Germany's industrial tycoons by the Allies (albeit soon to be released to help with the Korean War), and the result was a vastly simplified political landscape and an economic geography shorn of the parasitic manorialism of Prussia, now dominated instead by what would become the highly productive dualism of a small-firm economy in the south, south-west and Rhineland, and the huge industrial complexes in the Ruhr. While the industrialists were in custody, the British had introduced robust rights for unions and workers' participation in management, particularly of coal and steel companies.

Unconditional surrender and the carving up of the Reich helped the German economy in other ways too. German industry had always been dependent on foreign markets for sale of its manufactured goods and for the raw materials it needed. Fear of being denied access to these markets, especially by the British, was an old German nightmare, which the Nazis tried to end through imperial conquest and autarky. The small, wholly defeated, semi-sovereign West Germany did not have such options. In the event, integration into the American-led post-Bretton Woods free-trade regime, and later into the EEC, offered a vastly superior alternative, not least because under the regime's fixed exchange rates the new West German currency became increasingly undervalued over time. In the 1950s and 1960s, this laid the foundation for a uniquely strong, heavily export-dependent, quality-driven industrial sector, which, continuing older traditions, became the centre of gravity of the West German and later the German political economy.

Q11. Which of the following best summarises West Germany's transformation since the war?

- ☐ a) **The immigration of war refugees into West Germany, undervaluation of its currency driving up exports, and the disappearance of the two extreme reactionary wings in politics led to West Germany's capitalist democratisation.**
- ☐ b) **West Germany's strong, heavily export-dependent industry opened new doors for the country to become a robust economy with a stable political situation carved out by the disappearance of aristocracy and the communist opposition.**
- ☐ c) **An influx of isolated, depressed and poor refugees, a simplified political landscape and opening up of foreign markets to cheaper West German goods helped West Germany recover rapidly from the war.**
- ☐ d) **West Germany achieved political stabilisation after war thanks to the disappearance of some political parties, and economic stabilisation thanks to increased focus on its traditional strength of exports aided by the influx of hardworking refugees.**

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	146
Difficulty Level	D
Avg. time spent on this question by students who got this question right	144
% of students who attempted this question	26.6
% of students who got the question right of those who attempted	40.87

[Video Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 705

West Germany's transformation can be seen in three aspects: a. The social scene where immigrants change the social fabric but were absorbed into the initially reluctant German society b. The political landscape where Germany lost the extreme wings and was only left with the two parties in the middle c. The opening up of opportunities for Germany as far as its export-driven industrial sector is concerned.

Option A: The immigration of war refugees into West Germany, undervaluation of its currency and the disappearance of the two extreme reactionary wings in politics led to West Germany's capitalist democratisation. All three aspects discussed above have been mentioned in this option. Undervaluation of currency driving up exports for example, led to the export boom. Please note democratic capitalism and capitalist democratisation are not different enough for one to eliminate this option although, even such differences must be noticed by an observant reader. Hence, choice A is the answer.

Option B: West Germany's strong, heavily export-dependent industry opened new doors for the country to become a robust economy with a stable political situation carved out by the disappearance of aristocracy and the communist opposition. This option talks about two aspects of the transformation – exports and politics but not about the immigration. Hence, choice B is not the answer.

Option C: An influx of isolated, depressed and poor refugees, a simplified political landscape and opening up of foreign markets to cheaper West German goods helped West Germany recover violently fast from the war. While this option mentions all the aspects of transformation, some of the facts have been misrepresented. For example, West German goods are not cheaper. In fact, from 'In the 1950s and 1960s, this laid the foundation for a uniquely strong, heavily export-dependent, quality-driven industrial sector' we can understand that only the quality of the goods has been spoken about. Also, in the first underlined portion, 'isolated, depressed and poor' are the words that mislead a reader from understanding the true essence of the arrival of the immigrants – a positive influence, given some of them at least, were hardworking and skilful.

Hence, choice C is not the answer.

Option D: West Germany achieved political stabilisation after war thanks to the disappearance of some political parties, and economic stabilisation thanks to increased focus on its traditional strength of exports aided by the influx of hardworking refugees. This option is a good example of how the structure of a sentence can be misread and hence, be misleading. For example, this option highlights only two out of the three aspects highlighted in the para – political stabilisation and economic stabilisation thanks to exports. While influx of refugees has been mentioned, it must be noted that the line suggests that economic stabilisation through exports was aided by influx of refugees. As per the passage, influx of refugees is a different aspect and export-driven industry is a different aspect. Hence, choice D is not the answer.

Choice (A)

undefined

DIRECTIONS for questions 10 to 15: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

How could Germany of all countries have become a paragon, politically stable and economically successful, of democratic capitalism in the 1970s - 'Modell Deutschland' - and later, in the 2000s, Europe's uncontested economic and political superpower? Any explanation must have recourse to a Braudelian *longue durée*, concentrating on all-but-permanent or slowly evolving structures, in which destruction can be progress - utter devastation turned into a lasting blessing - because capitalist progress *is* destruction, of a creative sort. In 1945 unconditional surrender forced Germany, or what was left of its western part, into a 'second round of capitalist transformation' of the sort no other European country has ever had to undergo. Germany's bout was a violent - sharp and short - push forward into social and economic 'modernity', driving it for ever from the halfway house of Weimar, in a painful dismantling of structures of political domination and social solidarity, feudal fetters which had held back the country's capitalist progress and which, in locally different manifestations, continue to block capitalist rationalisation in many other European countries.

First among the events that put West Germany on the path to what it would later become was the arrival of ten million refugees and expellees from the East, who made up roughly one in five inhabitants of a devastated territory less than half the size of the pre-war Reich. While some of them remained isolated, depressed and poor for the rest of their lives, others had brought with them as their only possession a determination to fit in and succeed in what was for them in many ways a

foreign country. Their arrival disrupted forever, the fabric of what had been until then a largely traditional society divided between urban and rural, Catholic and Protestant, left and right. Centuries-old parochial ways of life and socio-cultural milieu were broken up, often in the face of adamant resistance. But, ultimately, the skills and hard work the newcomers contributed to their new homeland forced the locals to give them a chance to establish themselves. As a result, West Germany became a uniquely competitive and meritocratic society.

This was far from all, the two forces that had between them worn down the Weimar Republic - the eastern aristocracy (the Junkers whom Max Weber had identified as the Reich's main roadblock to capitalist modernity) and the Communist opposition - had disappeared. Both wings, reactionary and potentially progressive, of one time resistance to capital were thus eliminated, leaving only the Social Democrats (SPD) and Christian Democrats (CDU) in the middle. The CDU, a descendant of the Catholic Zentrumspartei of the Weimar period, appealed to Christians irrespective of denomination, in keeping with the postwar break-up of homogeneous local confessional communities. Add to this the disappearance of the Nazis as an organised political force and the incarceration of Germany's industrial tycoons by the Allies (albeit soon to be released to help with the Korean War), and the result was a vastly simplified political landscape and an economic geography shorn of the parasitic manorialism of Prussia, now dominated instead by what would become the highly productive dualism of a small-firm economy in the south, south-west and Rhineland, and the huge industrial complexes in the Ruhr. While the industrialists were in custody, the British had introduced robust rights for unions and workers' participation in management, particularly of coal and steel companies.

Unconditional surrender and the carving up of the Reich helped the German economy in other ways too. German industry had always been dependent on foreign markets for sale of its manufactured goods and for the raw materials it needed. Fear of being denied access to these markets, especially by the British, was an old German nightmare, which the Nazis tried to end through imperial conquest and autarky. The small, wholly defeated, semi-sovereign West Germany did not have such options. In the event, integration into the American-led post-Bretton Woods free-trade regime, and later into the EEC, offered a vastly superior alternative, not least because under the regime's fixed exchange rates the new West German currency became increasingly undervalued over time. In the 1950s and 1960s, this laid the foundation for a uniquely strong, heavily export-dependent, quality-driven industrial sector, which, continuing older traditions, became the centre of gravity of the West German and later the German political economy.

Q12. Which of the following statements, if true, most undermines the author's theory on why Germany turned into 'Europe's uncontested economic and political superpower'?

- ☐ a) **The strength of post-war West Germany's industry lay not in numbers but in the indigenous skill that was available at its disposal.**
- ☐ b) **The West German society is a diverse landscape, a milieu of several integrated communities all focused on a common goal, to belong.**
- ☐ c) **West Germany's rise owes itself to the rise of American free-market capitalism which aided in creating a buzzing ecosystem for the West German industry.**
- ☐ d) **The post-war West Germany was looking for redemption and excelling in the industrial sector was one way of doing it.**

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	3
Avg. time spent on this question by all students	109
Difficulty Level	D
Avg. time spent on this question by students who got this question right	109
% of students who attempted this question	17.91
% of students who got the question right of those who attempted	21.64

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 705

The author has given three reasons as to how and why Germany turned into Europe's uncontested economic and political superpower – political stabilisation, export-driven economics, and transformation of the German society because of arrival of war refugees. To be specially noted is the interchangeability of Germany and West Germany, as the author starts out with the story of West Germany in the post-World War but doesn't shy away from extrapolating the conclusions to the present day unified Germany.

Option A: The strength of West Germany's export-driven industry lies not in numbers but in the indigenous skill that is available at its disposal, ensuring high quality of the goods. This option opposes the author's theory. The strength does lie in numbers (influx of war refugees). Indigenous (local) skill is misrepresentation of information. The skills of the refugees contributed to the German transformation. This option seems to weaken one of the author's reasons behind Germany's transformation. Hence, choice A is the answer.

Option B: The 'diversity of Germany' sits well with the author's theory about the German society accepted the newcomers. B doesn't oppose the author's theory. Hence, choice B is not the answer.

Option C: This option indicates that Germany's export-driven industry was incentivized by the free-market capitalism of America. From 'integration into the American-led post-Bretton Woods free-trade regime, and later into the EEC, offered a vastly superior alternative', we understand that this is indeed true. Hence, this option doesn't oppose the author's theory, rather supports it. Choice C is not the answer.

Option D: Redemption is not one of the three reasons mentioned by the author and even if it were true, it does not undermine any of the three reasons listed above. Hence, choice D is not the answer.

Choice (A)

undefined

DIRECTIONS for questions 10 to 15: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

How could Germany of all countries have become a paragon, politically stable and economically successful, of democratic capitalism in the 1970s - 'Modell Deutschland' - and later, in the 2000s, Europe's uncontested economic and political superpower? Any explanation must have recourse to a Braudelian *longue durée*, concentrating on all-but-permanent or slowly evolving structures, in which destruction can be progress - utter devastation turned into a lasting blessing - because capitalist progress *is* destruction, of a creative sort. In 1945 unconditional surrender forced Germany, or what was left of its western part, into a 'second round of capitalist transformation' of the sort no other European country has ever had to undergo. Germany's bout was a violent - sharp and short - push forward into social and economic 'modernity', driving it for ever from the halfway house of Weimar, in a painful dismantling of structures of political domination and social solidarity, feudal fetters which had held back the country's capitalist progress and which, in locally different manifestations, continue to block capitalist rationalisation in many other European countries.

First among the events that put West Germany on the path to what it would later become was the arrival of ten million refugees and expellees from the East, who made up roughly one in five inhabitants of a devastated territory less than half the size of the pre-war Reich. While some of them remained isolated, depressed and poor for the rest of their lives, others had brought with them as their only possession a determination to fit in and succeed in what was for them in many ways a foreign country. Their arrival disrupted forever, the fabric of what had been until then a largely traditional society divided between urban and rural, Catholic and Protestant, left and right. Centuries-old parochial ways of life and socio-cultural milieu were broken up, often in the face of adamant resistance. But, ultimately, the skills and hard work the newcomers contributed to their new homeland forced the locals to give them a chance to establish themselves. As a result, West Germany became a uniquely competitive and meritocratic society.

This was far from all, the two forces that had between them worn down the Weimar Republic - the eastern aristocracy (the Junkers whom Max Weber had identified as the Reich's main roadblock to capitalist modernity) and the Communist

opposition - had disappeared. Both wings, reactionary and potentially progressive, of one time resistance to capital were thus eliminated, leaving only the Social Democrats (SPD) and Christian Democrats (CDU) in the middle. The CDU, a descendant of the Catholic Zentrumspartei of the Weimar period, appealed to Christians irrespective of denomination, in keeping with the postwar break-up of homogeneous local confessional communities. Add to this the disappearance of the Nazis as an organised political force and the incarceration of Germany's industrial tycoons by the Allies (albeit soon to be released to help with the Korean War), and the result was a vastly simplified political landscape and an economic geography shorn of the parasitic manorialism of Prussia, now dominated instead by what would become the highly productive dualism of a small-firm economy in the south, south-west and Rhineland, and the huge industrial complexes in the Ruhr. While the industrialists were in custody, the British had introduced robust rights for unions and workers' participation in management, particularly of coal and steel companies.

Unconditional surrender and the carving up of the Reich helped the German economy in other ways too. German industry had always been dependent on foreign markets for sale of its manufactured goods and for the raw materials it needed. Fear of being denied access to these markets, especially by the British, was an old German nightmare, which the Nazis tried to end through imperial conquest and autarky. The small, wholly defeated, semi-sovereign West Germany did not have such options. In the event, integration into the American-led post-Bretton Woods free-trade regime, and later into the EEC, offered a vastly superior alternative, not least because under the regime's fixed exchange rates the new West German currency became increasingly undervalued over time. In the 1950s and 1960s, this laid the foundation for a uniquely strong, heavily export-dependent, quality-driven industrial sector, which, continuing older traditions, became the centre of gravity of the West German and later the German political economy.

Q13. Which of the following best explains what the author means by 'capitalist progress's destruction, of a creative sort'?

- ☐ a) **Free market economics always encourages creative and innovative people.**
- ☐ b) **Free trade is impossible without destruction of conservative bastions of economy.**
- ☐ c) **Market-driven economics constantly outperforms, and subsequently, recreates itself.**
- ☐ d) **Capitalism brings progress at an enormous cost, the erosion of tradition and social structures.**

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	98
Difficulty Level	D
Avg. time spent on this question by students who got this question right	101
% of students who attempted this question	23.43
% of students who got the question right of those who attempted	16.02

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 705

Any explanation must have recourse to a Braudelian *longue durée*, concentrating on all-but-permanent or slowly evolving structures, in which destruction can be progress – utter devastation turned into a lasting blessing – because capitalist progress is destruction, of a creative sort. The essence of this question lies not in the quoted line but in the one above – since the quoted line can be interpreted in several ways. Why is capitalist progress destruction? Because, the author feels that any explanation about why Germany transformed into something massively positive should be able to explain a journey that focused on all-but-permanent or slowly evolving structures – the focus was on quick changes – where new replaced old and new replaced permanency. From that we could infer that if capitalism represents destruction, it has to be the destruction of whatever is evolving slowly or whatever is permanent, and hence, not evolving. It is a creative sort of destruction because capitalism involves creating something new as well, to replace whatever is being destroyed. So, the word creative shouldn't be taken literally here.

Option A: The sentence has got nothing to do with actual creativity of individuals. Capitalism is a destruction of a creative sort refers to a new, creative way of replacing the old with the new. Hence, choice A is not the answer.

Option B: Free trade is impossible without destruction of conservative bastions of economy. The 'conservative bastions of economy' is an indicator to 'slowly evolving structures'. Free trade is synonymous to capitalism. Hence, B indicates that capitalism cannot grow without conservative bastions being dismantled. This feels like a good interpretation of the author's line that capitalism is destruction of a creative sort, and rightly so. But, a good reader must also observe that this is the inverse of the author's theory. Free trade is incentivized by destruction of the old. This is not the same as saying that free trade is impossible without destruction of the old. Hence, choice B is not the answer.

Option C: Market-driven economics (synonymous to capitalism) constantly outperforms, and subsequently, recreates itself (destruction of a creative sort). This option indicates that capitalism destroys what exists and recreates something better, as inferred from the word 'outperform'. Hence, this line seems to reflect the essence of the author's comment. Therefore, choice C is the answer.

Option D: Capitalism brings progress at an enormous cost (negative expression), the erosion of tradition and social structures. This option is a good example of tone at work. While capitalism happens at the expense of traditional structures (destruction of slowly evolving structures), the option also includes the expression 'enormous cost', a negative expression, which seems to accuse capitalism. But, capitalism has been shown in a positive light in the passage. (Germany became a superpower). Hence, choice D is not the answer.

Choice (C)

undefined

DIRECTIONS for questions 10 to 15: The passage given below is accompanied by a set of six questions. Choose the best

answer to each question.

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First among the events that put West Germany on the path to what it would later become was the arrival of ten million refugees and expellees from the East, who made up roughly one in five inhabitants of a devastated territory less than half the size of the pre-war Reich. While some of them remained isolated, depressed and poor for the rest of their lives, others had brought with them as their only possession a determination to fit in and succeed in what was for them in many ways a foreign country. Their arrival disrupted forever, the fabric of what had been until then a largely traditional society divided between urban and rural, Catholic and Protestant, left and right. Centuries-old parochial ways of life and socio-cultural milieu were broken up, often in the face of adamant resistance. But, ultimately, the skills and hard work the newcomers contributed to their new homeland forced the locals to give them a chance to establish themselves. As a result, West Germany became a uniquely competitive and meritocratic society.

This was far from all, the two forces that had between them worn down the Weimar Republic - the eastern aristocracy (the Junkers whom Max Weber had identified as the Reich's main roadblock to capitalist modernity) and the Communist opposition - had disappeared. Both wings, reactionary and potentially progressive, of one time resistance to capital were thus eliminated, leaving only the Social Democrats (SPD) and Christian Democrats (CDU) in the middle. The CDU, a descendant of the Catholic Zentrumspartei of the Weimar period, appealed to Christians irrespective of denomination, in keeping with the postwar break-up of homogeneous local confessional communities. Add to this the disappearance of the Nazis as an organised political force and the incarceration of Germany's industrial tycoons by the Allies (albeit soon to be released to help with the Korean War), and the result was a vastly simplified political landscape and an economic geography shorn of the parasitic manorialism of Prussia, now dominated instead by what would become the highly productive dualism of a small-firm economy in the south, south-west and Rhineland, and the huge industrial complexes in the Ruhr. While the industrialists were in custody, the British had introduced robust rights for unions and workers' participation in management, particularly of coal and steel companies.

Unconditional surrender and the carving up of the Reich helped the German economy in other ways too. German industry had always been dependent on foreign markets for sale of its manufactured goods and for the raw materials it needed. Fear of being denied access to these markets, especially by the British, was an old German nightmare, which the Nazis tried to end through imperial conquest and autarky. The small, wholly defeated, semi-sovereign West Germany did not have such options. In the event, integration into the American-led post-Bretton Woods free-trade regime, and later into the EEC, offered a vastly superior alternative, not least because under the regime's fixed exchange rates the new West German currency became increasingly undervalued over time. In the 1950s and 1960s, this laid the foundation for a uniquely strong, heavily export-dependent, quality-driven industrial sector, which, continuing older traditions, became the centre of gravity of the West German and later the German political economy.

Q14. All the following describe the change in West Germany due to the *arrival of ten million refugees and expellees from the East* EXCEPT?

- ☐ a) **The ambition of the refugees turned West Germany into a meritocratic society that broke traditional hierarchies.**
- ☐ b) **The inundation of refugees disrupted the West German society and its conservative, predominantly bipolar power structures.**
- ☐ c) **West Germany's forced diversity because of the arrival of the refugees changed their society forever from a parochial one to a more accepting one.**
- ☐ d) **There was introduction of robust rights for unions and workers' participation in management, particularly of coal and steel companies.**

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

103

Time spent / Accuracy Analysis

Difficulty Level	M
Avg. time spent on this question by students who got this question right	97
% of students who attempted this question	25.64
% of students who got the question right of those who attempted	70

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 705

The arrival of refugees overall, had a positive influence on the German society. This can be inferred from 'But, ultimately, the skills and hard work the newcomers contributed to their new homeland forced the locals to give them a chance to establish themselves. As a result, West Germany became a uniquely competitive and meritocratic society'.

Option A: The ambition (a determination to fit in and succeed) of the refugees turned West Germany into a meritocratic society that broke traditional hierarchies. The three underlined portions are synonymous to the expressions used by the author and hence, describe the positive change brought in by the war refugees. Hence, choice A is not the answer.

Option B: The inundation of refugees disrupted the West German society and its conservative, predominantly bipolar power structures. This can be understood from 'Their arrival disrupted for ever, the fabric of what had been until then a largely traditional society divided between urban and rural, Catholic and Protestant, left and right. Centuries-old parochial ways of life and socio-cultural milieu were broken up, often in the face of adamant resistance.' The duality (urban and rural, for example) justifies bipolar. Hence, this option indicates the change. Choice B is not the answer.

Option C: West Germany's forced diversity (because the locals accepted the refugees only after they witnessed how the refugees brought with them skill and hard work) because of the arrival of the refugees changed their society forever from a parochial one (narrow-minded) to a more accepting one (meritocratic). This option agrees with the positive change in the German society – from traditional to a more competitive, meritocratic one. Hence, choice C is not the answer.

Option D: 'There was introduction of robust rights for unions and workers' participation in management, particularly of coal and steel companies.' While the information in itself is true, it is not with respect to the influx of war refugees. This was more a consequence of getting rid of the tycoons allowing labour changes that improved the economic scenario along with the political landscape. Hence, this option doesn't describe the positive influence of the influx of refugees. Choice D is the answer.

Choice (D)

undefined

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Q15. The author talks about 'incarceration of Germany's industrial tycoons':

- ☐ a) To demonstrate the hypocrisy involved in releasing them again to help with the Korean War.
- ☐ b) To highlight how their adamant resistance paved the way for better unions' and workers' rights and participation in management.
- ☐ c) To explain how the simplification of the political landscape in West Germany came about.
- ☐ d) To highlight how system reform was enabled, contributing to economic stability.

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	116
Difficulty Level	D
Avg. time spent on this question by students who got this question right	117
% of students who attempted this question	18.14
% of students who got the question right of those who attempted	28

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 705

'Add to this A [the disappearance of the Nazis as an organised political force] and B [the incarceration of Germany's industrial tycoons by the Allies], and the result was C [a vastly simplified political landscape] and D [an economic geography shorn of the parasitic manorialism of Prussia, NOW dominated instead by what would become the highly productive dualism of a small-firm economy in the south, south-west and Rhineland, and the huge industrial complexes in the Ruhr.'] If you observe the sentence structure here - Add to this A and B, and the result was C. So, A and B were factors that led to C, which is simplified political landscape and positive economic landscape (shorn of 'parasitic' manorialism). 'Parasitic' is a very strong negative word. So, the incarceration of tycoons (tycoons being jailed) was a reason that led to something positive according to the author. In this case, that positive result is the productivity of a small-firm economy. Another positive can be deduced from, 'While the industrialists were in custody, the British had introduced robust rights for unions and workers' participation in management, particularly of coal and steel companies'. In other words, some useful laws were passed.

Option A: While there was obvious democracy in arresting them and then releasing them to seek help for the Korean War, that was not the author's purpose to talk about these tycoons. That was more of a side-note. Hence, choice A is not the answer. (Please note that not every option that gives a true statement, is necessarily the right answer.)

Option B: The 'adamant resistance' of the tycoons hasn't been mentioned anywhere. The resistance mentioned in an earlier part of the passage was with respect to the obstruction by the traditionalists in the face of changes to society. Also, if you observe the tone, this option gives credit to the tycoons – that the positive action was a consequence of their resistance. It wasn't. Hence, choice B is not the answer.

Option C: The simplification of political landscape may not have come about because of the imprisonment of the tycoons. If you notice the structure of the sentence given above, A and B led to C and D. A is related to politics (disappearance of Nazis) and B is imprisonment of tycoons. C talks about simplification of political landscape and D is the consequence of B. The presence of the word 'respectively' would have made this kind of an inference very easy to make. But, the author doesn't use that word. However, the order (A led to C and B led to D) can still be inferred from 'economic geography short of parasitic manorialism (manorialism from 'manor' refers to traditional feudal societies dominated by rich individuals – think 'zamindari system' for example). Hence, choice C is not the answer.

Option D: This line explains how getting rid of tycoons led to the passing of better labour laws to usher in a more efficient industry in the industrial complexes of the Ruhr. This change is what the author wanted to explain when the incarceration of tycoons is discussed. Hence, choice D is the answer.

Choice (D)

undefined

DIRECTIONS for questions 16 to 21: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

"HOW the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. Kipling did not ignore people in his quirky take on evolution. Two of his tales describe the invention of the alphabet and the invention of letter-writing. But he took for granted the human brains behind these inventions, which are three times the size of those of humanity's closest living relatives, the great apes, and are thus as characteristic of people as trunks are of elephants or humps are of camels.

This week, though, sees the publication of a study which concerns a version of a gene called NOTCH2, known to be involved in embryonic development. It points to an event in the past which changed the activity of this gene in the evolutionary line that leads to modern people. And it is supported by experiments which suggest that the change in question is crucial to the emergence of the big brains which distinguish human beings from all other living animal species.

Dr Haussler, a bioinformatician at the University of California, Santa Cruz, stumbled on his discovery while comparing the development of the brain's cortex in human beings and in macaques, a type of monkey. He found in humans what appeared to be several previously undiscovered versions of NOTCH2, alongside the established one. The new genes (NOTCH2NLs), were absent in macaques and - as a search of genetic databases showed - in all other living animals except chimpanzees and gorillas. In these two great apes, there were two NOTCH2NL genes, but they seemed to be inactive. The difference between apes and humans is that in the human line one of these NOTCH2NLs has now become active, and has multiplied to create three versions, known as A, B and C.

Crucially, this A, B, C pattern is replicated in the DNA of two extinct species of human, Neanderthals and Denisovans. By looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes, Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding.

To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids), which are in vitro replicas of developing brains, made in this case using mouse cells. He used these to test the effects of adding or deleting his newly discovered genes. In the absence of NOTCH2NL, the organoids developed normally. With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect, NOTCH2NL had generated a larger brain.

This study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his brain". It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred.

What that context was is unclear. Though it is hard for human beings to contemplate the idea that big brains could ever be undesirable, small-brained animals do perfectly well without them. And big brains are expensive to maintain. Some calculations suggest humans could not afford them calorifically without the invention of cooking - a process that liberates otherwise indigestible nutrients. Humans now dominate Earth, but until 10,000 years or so ago, when agriculture was adopted, humans were rare. ...

Tool-making is one possible explanation for big brains. A more intriguing theory is that human brains are the equivalent of brightly coloured plumage in birds, permitting the sexes to show off to each other what good mates they would make. Yet another idea, the Machiavellian-intelligence hypothesis, is that big brains enable people to manipulate others to their own advantage - a trick that the invention of language would also assist. Nor need manipulation be malevolent. Collaboration is also a form of manipulation. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Whether humans are big-brained enough to complete the missing "Just So" story remains to be seen.

Q16. Which of the following summarizes the feature(s) of the NOTCH2NLs genes as can be inferred from Dr Haussler's initial discovery mentioned in the passage?

- ☐ a) The NOTCH2NLs genes, implicated in embryonic development and the emergence of big brains in humans, are inactive in macaques but are active in humans, chimpanzees and gorillas. The human variants of the genes are also found in two extinct species of human, Neanderthals and Denisovans.
- ☐ b) The NOTCH2NLs genes, implicated in embryonic development and the emergence of big brains in humans, are active in humans, chimpanzees and gorillas, and were active in Neanderthals and Denisovans but they are absent in macaques and most other living organisms.
- ☐ c) The NOTCH2NLs genes, implicated in embryonic development and the emergence of big brains in humans, are absent in macaques and most other living organisms, but there are two such inactive genes in chimpanzees and gorillas. One of these two genes has become active in humans, and has multiplied to create three versions; these are also exhibited in two extinct species of humans.
- ☐ d) The NOTCH2NLs genes are absent in macaques and most other living species, there are two variants, albeit inactive, in the two great apes - chimpanzees and gorillas. In humans and extinct species of human - Neanderthals and Denisovans - both the inactive genes have become active, and have multiplied to create three versions, known as A, B and C. Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time spent / Accuracy Analysis

Time taken by you to answer this question	276
Avg. time spent on this question by all students	460
Difficulty Level	D
Avg. time spent on this question by students who got this question right	465
% of students who attempted this question	44.61
% of students who got the question right of those who attempted	68.17

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Number of words and Explanatory notes for RC:

Number of words: 749

A study concerns a version of a gene called NOTCH2, known to be involved in embryonic development. NOTCH2 is crucial to the emergence of the big brains which distinguish human beings from all other living animal species.

Option A: Choice A gives wrong information. The third para mentions that NOTCH2NLs were absent in macaques and in all other living animals except chimpanzees and gorillas. In these two great apes, there were two NOTCH2NL genes, but they seemed to be inactive. Choice A does not give the complete representation of the findings of Dr Haussler's initial discovery.

Option B: The new genes (NOTCH2NLs), were absent in macaques and – as a search of genetic databases showed – in all other living animals except chimpanzees and gorillas. In these two great apes, there were two NOTCH2NL genes, but they seemed to be inactive. Again, choice B is distorted and incomplete as it does not provide the correct status about the characteristics of NOTCH2NLs in humans and in Neanderthals and Denisovans.

Option C: Choice C is the correct summary as all features of the NOTCH2NLs in several species as mentioned in paras 3 and 4 are represented in choice C. Choice C is the answer.

Option D: While the first sentence in choice D is correct, the second is not. In humans, one of the inactive genes have become active, and has multiplied to create three versions, known as A, B and C. So "both the inactive genes have become active" in choice D is incorrect.

Choice (C)

undefined

DIRECTIONS for questions 16 to 21: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

"HOW the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. Kipling did not ignore people in his quirky take on evolution. Two of his tales describe the invention of the alphabet and the invention of letter-writing. But he took for granted the human brains behind these inventions, which are three times the size of those of humanity's closest living relatives, the great apes, and are thus as characteristic of people as trunks are of elephants or humps are of camels.

This week, though, sees the publication of a study which concerns a version of a gene called NOTCH2, known to be involved in embryonic development. It points to an event in the past which changed the activity of this gene in the evolutionary line that leads to modern people. And it is supported by experiments which suggest that the change in question is crucial to the emergence of the big brains which distinguish human beings from all other living animal species.

Dr Haussler, a bioinformatician at the University of California, Santa Cruz, stumbled on his discovery while comparing the development of the brain's cortex in human beings and in macaques, a type of monkey. He found in humans what appeared to be several previously undiscovered versions of NOTCH2, alongside the established one. The new genes (NOTCH2NLs), were absent in macaques and - as a search of genetic databases showed - in all other living animals except chimpanzees and gorillas. In these two great apes, there were two NOTCH2NL genes, but they seemed to be inactive. The difference between apes and humans is that in the human line one of these NOTCH2NLs has now become active, and has multiplied to create three versions, known as A, B and C.

Crucially, this A, B, C pattern is replicated in the DNA of two extinct species of human, Neanderthals and Denisovans. By looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes,

Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding.

To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids), which are in vitro replicas of developing brains, made in this case using mouse cells. He used these to test the effects of adding or deleting his newly discovered genes. In the absence of NOTCH2NL, the organoids developed normally. With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect, NOTCH2NL had generated a larger brain.

This study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his brain". It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred.

What that context was is unclear. Though it is hard for human beings to contemplate the idea that big brains could ever be undesirable, small-brained animals do perfectly well without them. And big brains are expensive to maintain. Some calculations suggest humans could not afford them calorifically without the invention of cooking - a process that liberates otherwise indigestible nutrients. Humans now dominate Earth, but until 10,000 years or so ago, when agriculture was adopted, humans were rare. ...

Tool-making is one possible explanation for big brains. A more intriguing theory is that human brains are the equivalent of brightly coloured plumage in birds, permitting the sexes to show off to each other what good mates they would make. Yet another idea, the Machiavellian-intelligence hypothesis, is that big brains enable people to manipulate others to their own advantage - a trick that the invention of language would also assist. Nor need manipulation be malevolent. Collaboration is also a form of manipulation. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Whether humans are big-brained enough to complete the missing "Just So" story remains to be seen.

Q17. Which of the following best explains the influence of NOTCH2NLs on stem cells in the brainoids created by Dr Haussler as a follow up to his initial discovery?

- ☐ a) NOTCH2NLs encourage stem cells in the brainoids to engender many others that turn into neurons, increasing the total number of neurons generated and hence resulting in a larger brain. ▢Your answer is correct
- ☐ b) NOTCH2NLs encourage the normal development of the organoids at a faster rate.
- ☐ c) NOTCH2NLs result in a large brain mass when stem cells in the brainoids morph into glial cells.
- ☐ d) NOTCH2NLs are involved in the expansion of human and mouse brains, as evident from the discovery that stem cells in the brainoids multiplied to form new neurons and the neurons further divide into stem cells in a cyclic and exponential process.

Time spent / Accuracy Analysis

Time taken by you to answer this question	149
Avg. time spent on this question by all students	146
Difficulty Level	M
Avg. time spent on this question by students who got this question right	145
% of students who attempted this question	43.95
% of students who got the question right of those who attempted	79.3

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[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 749

Option A: With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect, NOTCH2NL had generated a larger brain. Choice A is correct.

Option B: In the absence of NOTCH2NL, the organoids developed normally. So choice B, which says "NOTCH2NLs encouraged the normal development of the organoids" is incorrect.

Option C: The stem cells did not differentiate into glial cells. Choice C has not been mentioned in the passage.

Option D: "hypertrophication of human brains" in choice D is correct. Hypertrophication means the enlargement of an organ or a tissue as a result of an increase in the size rather than the number of constituent cells. But the rest of choice D "stem cells in the brainoids multiplied to form new neurons and the neurons further divided into stem cells in a cyclic and exponential process" is distorted. Choice D is not the answer.

Choice (A)

undefined

DIRECTIONS for questions 16 to 21: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

"HOW the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. Kipling did not ignore people in his quirky take on evolution. Two of his tales describe the invention of the alphabet and the invention of letter-writing. But he took for granted the human brains behind these inventions, which are three times the size of those of humanity's closest living relatives, the great apes, and are thus as characteristic of people as trunks are of elephants or humps are of camels.

This week, though, sees the publication of a study which concerns a version of a gene called NOTCH2, known to be involved in embryonic development. It points to an event in the past which changed the activity of this gene in the evolutionary line that leads to modern people. And it is supported by experiments which suggest that the change in question is crucial to the emergence of the big brains which distinguish human beings from all other living animal species.

Dr Haussler, a bioinformatician at the University of California, Santa Cruz, stumbled on his discovery while comparing the development of the brain's cortex in human beings and in macaques, a type of monkey. He found in humans what appeared to be several previously undiscovered versions of NOTCH2, alongside the established one. The new genes (NOTCH2NLs), were absent in macaques and - as a search of genetic databases showed - in all other living animals except chimpanzees and gorillas. In these two great apes, there were two NOTCH2NL genes, but they seemed to be inactive. The difference between apes and humans is that in the human line one of these NOTCH2NLs has now become active, and has multiplied to create three versions, known as A, B and C.

Crucially, this A, B, C pattern is replicated in the DNA of two extinct species of human, Neanderthals and Denisovans. By looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes, Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding.

To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids), which are in vitro replicas of developing brains, made in this case using mouse cells. He used these to test the effects of adding or deleting his newly discovered genes. In the absence of NOTCH2NL, the organoids developed normally. With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect,

NOTCH2NL had generated a larger brain.

This study suggests that NOTCH2NL has played a crucial role in the tale of “How the human got his brain”. It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred.

What that context was is unclear. Though it is hard for human beings to contemplate the idea that big brains could ever be undesirable, small-brained animals do perfectly well without them. And big brains are expensive to maintain. Some calculations suggest humans could not afford them calorifically without the invention of cooking - a process that liberates otherwise indigestible nutrients. Humans now dominate Earth, but until 10,000 years or so ago, when agriculture was adopted, humans were rare. ...

Tool-making is one possible explanation for big brains. A more intriguing theory is that human brains are the equivalent of brightly coloured plumage in birds, permitting the sexes to show off to each other what good mates they would make. Yet another idea, the Machiavellian-intelligence hypothesis, is that big brains enable people to manipulate others to their own advantage - a trick that the invention of language would also assist. Nor need manipulation be malevolent. Collaboration is also a form of manipulation. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Whether humans are big-brained enough to complete the missing “Just So” story remains to be seen.

Q18. All of the following, if true, will corroborate the secondary finding of Dr Haussler's research EXCEPT?

- ☐ a) Another scientist introduced the NOTCH2NL genes isolated from mouse cells into mouse embryos and found that the number of stem cells in the embryos' brains was thereby increased.
- ☐ b) Stem cells taken from human fetuses were found to proliferate, in vitro, without turning into neurons themselves, but increasing the total number of neurons generated. ▫ Your answer is incorrect
- ☐ c) Magnetic resonance scans and anatomical evidence have shown that the physical features of the hippocampus of the brains of humans are distinct from those of the great apes.
- ☐ d) None of the above

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	346
Avg. time spent on this question by all students	115
Difficulty Level	D
Avg. time spent on this question by students who got this question right	112
% of students who attempted this question	26.18
% of students who got the question right of those who attempted	35.99

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Number of words and Explanatory notes for RC:

Number of words: 749

The NOTCH2NL genes have been implicated in the emergence of big brains in humans. Dr Haussler's secondary finding (To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids)) is: Stem cells in the organoid – in vitro replica of developing brains – which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid.

Option A: If the number of stem cells in the embryos' brains was thereby increased by the step mentioned in choice A, then it would strengthen Dr Haussler's research findings. Choice A is not the answer.

Option B: If stem cells taken from human fetuses proliferated without turning into neurons, increasing the total number of neurons generated (in aggregate), it would also corroborate Dr Haussler's research findings. Choice B is not the answer.

Option C: The physical features of the hippocampus of the brains of humans may be distinct from those of the great apes because of any other reasons or factors. Choice D does not hint at the specific role, if any, of the NOTCH2NLs genes – which formed an important area of Dr Haussler's research. Hence choice C is not specific to the topic under discussion and is the answer.

Choice (C)

undefined

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Crucially, this A, B, C pattern is replicated in the DNA of two extinct species of human, Neanderthals and Denisovans. By

looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes, Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding.

To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids), which are in vitro replicas of developing brains, made in this case using mouse cells. He used these to test the effects of adding or deleting his newly discovered genes. In the absence of NOTCH2NL, the organoids developed normally. With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect, NOTCH2NL had generated a larger brain.

This study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his brain". It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred.

What that context was is unclear. Though it is hard for human beings to contemplate the idea that big brains could ever be undesirable, small-brained animals do perfectly well without them. And big brains are expensive to maintain. Some calculations suggest humans could not afford them calorifically without the invention of cooking - a process that liberates otherwise indigestible nutrients. Humans now dominate Earth, but until 10,000 years or so ago, when agriculture was adopted, humans were rare. ...

Tool-making is one possible explanation for big brains. A more intriguing theory is that human brains are the equivalent of brightly coloured plumage in birds, permitting the sexes to show off to each other what good mates they would make. Yet another idea, the Machiavellian-intelligence hypothesis, is that big brains enable people to manipulate others to their own advantage - a trick that the invention of language would also assist. Nor need manipulation be malevolent. Collaboration is also a form of manipulation. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Whether humans are big-brained enough to complete the missing "Just So" story remains to be seen.

Q19. Consider the following statement:

The ultimate reason for human brain expansion remains unknown and is yet to be resolved.

Based on a reading of the passage, we can consider this statement to be:

- ☐ a) **Definitely true**
- ☐ b) **Probably true** ▣ Your answer is incorrect
- ☐ c) **Definitely false**
- ☐ d) **Cannot be determined**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	207
Avg. time spent on this question by all students	79
Difficulty Level	M
Avg. time spent on this question by students who got this question right	79
% of students who attempted this question	42
% of students who got the question right of those who attempted	34.95

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Number of words and Explanatory notes for RC:

Number of words: 749

Dr Haussler's study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his (large) brain". It does not, however, answer the question of why this happened. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred. What that context was is unclear.

Some possible ideas or possible explanations for big brains have been given in the last para. But these are not definite answers. (Any or all of them may be correct.) Hence we can say that the question statement is definitely true. Choice (A)

undefined

DIRECTIONS for questions 16 to 21: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

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Crucially, this A, B, C pattern is replicated in the DNA of two extinct species of human, Neanderthals and Denisovans. By looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes, Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding.

To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids), which are in vitro replicas of developing brains, made in this case using mouse cells. He used these to test the effects of adding or deleting his newly discovered genes. In the absence of NOTCH2NL, the organoids developed normally. With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect, NOTCH2NL had generated a larger brain.

This study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his brain". It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred.

What that context was is unclear. Though it is hard for human beings to contemplate the idea that big brains could ever be undesirable, small-brained animals do perfectly well without them. And big brains are expensive to maintain. Some

calculations suggest humans could not afford them calorifically without the invention of cooking - a process that liberates otherwise indigestible nutrients. Humans now dominate Earth, but until 10,000 years or so ago, when agriculture was adopted, humans were rare. ...

Tool-making is one possible explanation for big brains. A more intriguing theory is that human brains are the equivalent of brightly coloured plumage in birds, permitting the sexes to show off to each other what good mates they would make. Yet another idea, the Machiavellian-intelligence hypothesis, is that big brains enable people to manipulate others to their own advantage - a trick that the invention of language would also assist. Nor need manipulation be malevolent. Collaboration is also a form of manipulation. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Whether humans are big-brained enough to complete the missing "Just So" story remains to be seen.

Q20. Which of the following can be understood from 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. Active NOTCH2NLs came into play 3 to 4 million years ago, around the same time as the increase in relative brain size of man.
2. NOTCH2NL came into existence for the first time in humans 3 million years ago.
3. Dr Haussler came across his initial result concerning the role of NOTCH2NL serendipitously.
4. Bigheadedness is a trait unique to humans in the animal kingdom and Dr Haussler's research helps to throw light on the why and the how of the human getting his big brain.
5. There are several compatible theories as to why a big brain could have evolved in humans over time.

Your Answer:145 ☐ **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	228
Avg. time spent on this question by all students	141
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	140
% of students who attempted this question	35.33
% of students who got the question right of those who attempted	15.52

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Number of words and Explanatory notes for RC:

Number of words: 749

- (1) The study points to an event in the past which changed the activity of this gene in the evolutionary line that leads to modern people. And it is supported by experiments which suggest that the change in question is crucial to the emergence of the big brains which distinguish human beings from all other living animal species. By looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes, Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding. Hence (1) is true.
 - (2) (2) is proved wrong or farfetched from the lines: This study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his brain". It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen.
 - (3) Dr Haussler, a bioinformatician at the University of California, Santa Cruz, stumbled on his discovery while comparing the development of the brain's cortex in human beings and in macaques, a type of monkey. Hence (3) is true.
 - (4) The first part of (4) is correct. And it is supported by experiments which suggest that the change in question is crucial to the emergence of the big brains which distinguish human beings from all other living animal species. This study suggests that NOTCH2NL has played a crucial role in the tale of "**How** the human got his brain". It does not, however, answer the question of **why** this happened. Hence (4) is incorrect.
 - (5) Refer to the last para which mentions several theories as to why humans got a big brain. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Hence (5) is true.
- So, 1, 3 and 5 can be understood from the passage. Ans: (135)

undefined

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"**HOW** the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. Kipling did not ignore people in his quirky take on evolution. Two of his tales describe the invention of the alphabet and the invention of letter-writing. But he took for granted the human brains behind these inventions, which are three times the size of those of humanity's closest living relatives, the great apes, and are thus as characteristic of people as trunks are of elephants or humps are of camels.

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Dr Haussler, a bioinformatician at the University of California, Santa Cruz, stumbled on his discovery while comparing the development of the brain's cortex in human beings and in macaques, a type of monkey. He found in humans what appeared to be several previously undiscovered versions of NOTCH2, alongside the established one. The new genes (NOTCH2NLs), were absent in macaques and - as a search of genetic databases showed - in all other living animals except chimpanzees and gorillas. In these two great apes, there were two NOTCH2NL genes, but they seemed to be inactive. The difference between apes and humans is that in the human line one of these NOTCH2NLs has now become active, and has multiplied

to create three versions, known as A, B and C.

Crucially, this A, B, C pattern is replicated in the DNA of two extinct species of human, Neanderthals and Denisovans. By looking at minor differences between the various NOTCH-related genes in the three human species and the two great apes, Dr Haussler was able to estimate when the active NOTCH2NL arose: 3m-4m years ago. That is when, according to the fossil record, the craniums of mankind's ancestors started expanding.

To follow up this discovery, Dr Haussler created what are known as organoids (specifically, brainoids), which are in vitro replicas of developing brains, made in this case using mouse cells. He used these to test the effects of adding or deleting his newly discovered genes. In the absence of NOTCH2NL, the organoids developed normally. With it added, stem cells in the organoid which would otherwise have generated new neurons divided instead to create more stem cells. The result, when those stem cells did eventually turn into neurons, was more neurons than normal, and thus a bigger organoid. In effect, NOTCH2NL had generated a larger brain.

This study suggests that NOTCH2NL has played a crucial role in the tale of "How the human got his brain". It does not, however, answer the question of why this happened. Mutations occur all the time. It is improbable that this was the first occasion in history something like NOTCH2NL has arisen. For NOTCH2NL to have prospered in the way that it did, natural selection would have had to have favoured it. Big brains, in other words, must have been useful in the context in which the mutation occurred.

What that context was is unclear. Though it is hard for human beings to contemplate the idea that big brains could ever be undesirable, small-brained animals do perfectly well without them. And big brains are expensive to maintain. Some calculations suggest humans could not afford them calorifically without the invention of cooking - a process that liberates otherwise indigestible nutrients. Humans now dominate Earth, but until 10,000 years or so ago, when agriculture was adopted, humans were rare. ...

Tool-making is one possible explanation for big brains. A more intriguing theory is that human brains are the equivalent of brightly coloured plumage in birds, permitting the sexes to show off to each other what good mates they would make. Yet another idea, the Machiavellian-intelligence hypothesis, is that big brains enable people to manipulate others to their own advantage - a trick that the invention of language would also assist. Nor need manipulation be malevolent. Collaboration is also a form of manipulation. These ideas are not, of course, mutually exclusive. Any or all of them may be correct. Whether humans are big-brained enough to complete the missing "Just So" story remains to be seen.

Q21. What is the most likely purpose of the author's literary allusion in the first paragraph and the last paragraph of the passage?

- ☐ a) To suggest that, though Rudyard Kipling did not discuss the evolution of the human brain, he didn't need to; that story is implicit in his stories of human ideas and inventions.
- ☐ b) To introduce a "Just So" story that we have found an answer to and to point to another "Just So" story for the same context that we are yet to find an answer to. Your answer is correct
- ☐ c) To project an opinion about human ingenuity that is shown to be controversial.
- ☐ d) To argue that there are important "Just So" stories that Rudyard Kipling has not written.

Time spent / Accuracy Analysis

Time taken by you to answer this question	197
Avg. time spent on this question by all students	106
Difficulty Level	D
Avg. time spent on this question by students who got this question right	100
% of students who attempted this question	31.31
% of students who got the question right of those who attempted	61.64

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 749

Option A: "HOW the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. So, the first part of choice A is correct. However, we cannot infer that the "evolution of human brain" story is implicit in his stories of human ideas and inventions. The first para says that his tales describe the inventions of the alphabet and of letter-writing. But he took for granted the human brains behind these inventions, which are three times the size of those of humanity's closest living relatives, the great apes. Taking for granted only means accepting something as you see it without considering why you see it that way. There isn't enough here to say that Kipling's acceptance of the contribution of the brain implied his recognition of how the brain came about. Moreover, choice A only says "evolution of the human brain" and does not refer to the large size of man's brain – the focus of this passage and what is hinted in the possible "Just So" story that Rudyard Kipling did not write. Hence choice A is not the answer.

Option B: The passage begins with the opening line: "HOW the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. From the last 3 paras, we can understand that the author considers "WHY" to be as relevant a question as "how", the latter being the question to which we haven't, as yet, an answer. The passage ends with the sentence: These ideas (or possible explanations for big brains) are not, of course, mutually exclusive. Any or all of them may be correct. Note that the author has reiterated that the mentioned study does not, however, answer the question of why this happened i.e. "Why the human got his brain". Hence choice B is the answer.

Option C: While "products of human ingenuity" in choice C refers to the invention of the alphabet and the invention of letter writing (para 1), there is no controversial opinion mentioned in the passage. The author is like a detached evaluator who is mentioning facts and drawing a conclusion based on the available evidence. Choice C is not true.

Option D: "HOW the human got his brain" is probably the most important "Just So" story that Rudyard Kipling never wrote. But he took for granted the human brains behind the invention of the alphabet and the invention of letter-writing..... This has been mentioned matter-of-fact and not in an accusative manner. Whether humans are big-brained enough to complete the missing "Just So" story remains to be seen. Choice D is out of scope and is not the reason for the question. The author does not rue the fact that Rudyard Kipling has not written other important "Just So" stories.

{Additional information: The phrase "Just So" is a reference to Rudyard Kipling's 1902 *Just So Stories*, containing fictional and deliberately fanciful tales for children, in which the stories pretend to explain animal characteristics, such as the origin of the spots on the leopard.}

Choice (B)

undefined

DIRECTIONS for questions 22 to 24: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

Ironically, there are good arguments against the way philosophers use intuitions in ethics, but these come from philosophy. The first begins with the fact that different people often have different intuitions about the same case. What do we do then? Since disagreement is a possibility, why should we think intuitions track the truth? There are no easy answers to these questions. The problem is not merely that people disagree, but that their differing intuitions have the same authority. The most our intuitions can do, it seems, is tell us about ourselves and our own ways of thinking, not about the facts they're supposedly 'about'. The philosopher Stephen Stich at Rutgers calls this the 'cognitive diversity' objection.

Now, this might not be a problem for using moral intuitions if there were some independent way to tell when intuitions are correct. But there is no such way - and if there were, we wouldn't need the intuitions in the first place. The philosopher Robert Cummins at the University of California, Davis calls this 'the calibration objection'. If we had an answer key to moral cases (Philosophers formulate cases that call for particular moral choices and ask which choice seems, intuitively, like the

right one. When the choice that seems right is the choice the theory calls for, this is a reason to accept the theory.) and a good theory to prove that the key really did have the right answers, we could test particular intuitions - and maybe even the general reliability of whatever cognitive faculty we use to intuit - by seeing whether they line up with the key. But if we had a key and proof that it was correct, intuitions wouldn't matter anymore. There would be no problem we'd need them to solve.

Perplexingly, the prevailing philosophical defence against these objections has been to deny that ethicists rely on moral intuitions at all. But as the philosopher Avner Baz at Tufts has shown, the cognitive diversity and calibration objections can be reformulated to challenge whatever it is these philosophers think they're up to. The best hope for philosophers trying to defend this way of doing ethics would be to show, as T M Scanlon at Harvard has attempted, that our responses to cases are best understood as judgments, similar to those we make in mathematics and in ordinary life.

Need ethics stop until ethicists can make that argument? Hardly. Ethics can be done in many ways. Aristotle, for one, developed an ethical theory without appealing to intuitions. And at least since the ironic dialogues of Socrates, philosophers have practised ethics by meeting others where they are and trying to show them their own hypocrisies, doubts and uncertainties. This kind of ethics aims less at grasping foundational ethical truths than at what John Rawls called 'proof from common ground'. And though this might seem limiting, I suspect the task it leaves us is greater than it at first appears.

Q22. Which of the following best explains the 'cognitive diversity' objection to the use of intuitions in ethics?

- ☐ a) Even though different philosophers often have different intuitions about the same case, they reconcile on the weight to be accorded to each philosopher's intuition(s).
- ☐ b) How individuals think about and engage with new, uncertain, and complex situations differs markedly, and intuitions that people hold cannot track the truth.
- ☐ c) Philosophers and people in general disagree on several matters and their differing intuitions can be placed at different levels of a hierarchy.
- ☐ d) The thoughts and behaviour of many a philosopher lead to different intuitions and these are not representative of the truths that they seek per se.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	186
Avg. time spent on this question by all students	293
Difficulty Level	D
Avg. time spent on this question by students who got this question right	289
% of students who attempted this question	24.17
% of students who got the question right of those who attempted	38.17

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 486

Refer to the first para of the passage.

Option A: The first argument begins with the fact that different people often have different intuitions about the same case. So the first part of choice A is a good argument against the way philosophers use intuitions in ethics. But the second part of choice A cannot be deduced from the passage. Choice A does not specifically answer the question.

Option B: The most our intuitions can do, it seems, is tell us about ourselves and our own ways of thinking Since disagreement is a possibility, why should we think intuitions track the truth? But choice B is not the specific answer to the question. Choice B is not what the philosopher Stephen Stich at Rutgers calls the 'cognitive diversity' objection.

Option C: Choice C is incorrect. The problem is not merely that people disagree, but that their differing intuitions have the same authority.

So choices A, B and C are incomplete as they ignore an important part that intuitions do not serve to explain the facts that the intuitions are supposedly 'about'.

Option D: Different people often have different intuitions about the same case.... The most our intuitions can do, it seems, is tell us about ourselves and our own ways of thinking, not about the facts they're supposedly 'about'. The philosopher Stephen Stich at Rutgers calls this the 'cognitive diversity' objection. Hence choice D is the correct answer.
Choice (D)

undefined

DIRECTIONS for questions 22 to 24: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

Ironically, there are good arguments against the way philosophers use intuitions in ethics, but these come from philosophy. The first begins with the fact that different people often have different intuitions about the same case. What do we do then? Since disagreement is a possibility, why should we think intuitions track the truth? There are no easy answers to these questions. The problem is not merely that people disagree, but that their differing intuitions have the same authority. The most our intuitions can do, it seems, is tell us about ourselves and our own ways of thinking, not about the facts they're supposedly 'about'. The philosopher Stephen Stich at Rutgers calls this the 'cognitive diversity' objection.

Now, this might not be a problem for using moral intuitions if there were some independent way to tell when intuitions are correct. But there is no such way - and if there were, we wouldn't need the intuitions in the first place. The philosopher Robert Cummins at the University of California, Davis calls this 'the calibration objection'. If we had an answer key to moral cases (Philosophers formulate cases that call for particular moral choices and ask which choice seems, intuitively, like the right one. When the choice that seems right is the choice the theory calls for, this is a reason to accept the theory.) and a good theory to prove that the key really did have the right answers, we could test particular intuitions - and maybe even the general reliability of whatever cognitive faculty we use to intuit - by seeing whether they line up with the key. But if we had a key and proof that it was correct, intuitions wouldn't matter anymore. There would be no problem we'd need them to solve.

Perplexingly, the prevailing philosophical defence against these objections has been to deny that ethicists rely on moral intuitions at all. But as the philosopher Avner Baz at Tufts has shown, the cognitive diversity and calibration objections can be reformulated to challenge whatever it is these philosophers think they're up to. The best hope for philosophers trying to defend this way of doing ethics would be to show, as T M Scanlon at Harvard has attempted, that our responses to cases are best understood as judgments, similar to those we make in mathematics and in ordinary life.

Need ethics stop until ethicists can make that argument? Hardly. Ethics can be done in many ways. Aristotle, for one, developed an ethical theory without appealing to intuitions. And at least since the ironic dialogues of Socrates, philosophers have practised ethics by meeting others where they are and trying to show them their own hypocrisies, doubts and uncertainties. This kind of ethics aims less at grasping foundational ethical truths than at what John Rawls called 'proof from common ground'. And though this might seem limiting, I suspect the task it leaves us is greater than it at first appears.

Q23. Which of the following can be inferred to be the author's view on 'the calibration objection' mentioned in the second para of the passage?

- ☐ a) **We either have an independent answer key for any moral case or a ready explanation that would justify using moral intuitions to assess moral theories.**
- ☐ b) **We have both an independent answer key for any moral case and an explanation that would justify using moral intuitions to assess moral theories.**
- ☐ c) **We don't have an independent answer key for any moral case, let alone an explanation that would justify using moral intuitions to assess moral theories.**
- ☐ d) **We don't have a practical solution for any moral situation but we have a gut feeling that our intuitions successfully track whatever it is they are supposed to track.**

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	148
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	144
% of students who attempted this question	22.7
% of students who got the question right of those who attempted	50.69

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 486

Options A and B: But there is no such way to tell when intuitions are correct – and if there were, we wouldn't need the intuitions in the first place. If we had an answer key to moral cases and a good theory to prove that the key really did have the right answers, we could test particular intuitions – and maybe even the general reliability of whatever cognitive faculty we use to intuit – by seeing whether they line up with the key. But if we had a key and proof that it was correct, intuitions wouldn't matter anymore. So choices A and B do not strengthen this viewpoint.

Option C: If we had an answer key to moral cases and a good theory to prove that the key really did have the right answers, we could test particular intuitions by seeing whether they line up with the key. But if we had a key and proof that it was correct, intuitions wouldn't matter anymore. Hence choice C can be inferred to be the view of the author as far as 'the calibration objection' mentioned in para 2 is concerned.

Option D: The first begins with the fact that different people often have different intuitions about the same case. What do we do then? Since disagreement is a possibility, why should we think intuitions track the truth? So "gut feeling that our intuitions successfully track whatever it is they are supposed to track" is incorrect. Choice D is not the answer. Choice (C)

DIRECTIONS for questions 22 to 24: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

Ironically, there are good arguments against the way philosophers use intuitions in ethics, but these come from philosophy. The first begins with the fact that different people often have different intuitions about the same case. What do we do then? Since disagreement is a possibility, why should we think intuitions track the truth? There are no easy answers to these questions. The problem is not merely that people disagree, but that their differing intuitions have the same authority. The most our intuitions can do, it seems, is tell us about ourselves and our own ways of thinking, not about the facts they're supposedly 'about'. The philosopher Stephen Stich at Rutgers calls this the 'cognitive diversity' objection.

Now, this might not be a problem for using moral intuitions if there were some independent way to tell when intuitions are correct. But there is no such way - and if there were, we wouldn't need the intuitions in the first place. The philosopher Robert Cummins at the University of California, Davis calls this 'the calibration objection'. If we had an answer key to moral cases (Philosophers formulate cases that call for particular moral choices and ask which choice seems, intuitively, like the right one. When the choice that seems right is the choice the theory calls for, this is a reason to accept the theory.) and a good theory to prove that the key really did have the right answers, we could test particular intuitions - and maybe even the general reliability of whatever cognitive faculty we use to intuit - by seeing whether they line up with the key. But if we had a key and proof that it was correct, intuitions wouldn't matter anymore. There would be no problem we'd need them to solve.

Perplexingly, the prevailing philosophical defence against these objections has been to deny that ethicists rely on moral intuitions at all. But as the philosopher Avner Baz at Tufts has shown, the cognitive diversity and calibration objections can be reformulated to challenge whatever it is these philosophers think they're up to. The best hope for philosophers trying to defend this way of doing ethics would be to show, as T M Scanlon at Harvard has attempted, that our responses to cases are best understood as judgments, similar to those we make in mathematics and in ordinary life.

Need ethics stop until ethicists can make that argument? Hardly. Ethics can be done in many ways. Aristotle, for one, developed an ethical theory without appealing to intuitions. And at least since the ironic dialogues of Socrates, philosophers have practised ethics by meeting others where they are and trying to show them their own hypocrisies, doubts and uncertainties. This kind of ethics aims less at grasping foundational ethical truths than at what John Rawls called 'proof from common ground'. And though this might seem limiting, I suspect the task it leaves us is greater than it at first appears.

Q24. It can be understood that 'proof from common ground' as discussed in the passage

- ☐ a) involves forming judgments in the ethical field, similar to those people make in mathematics and in ordinary life.
- ☐ b) involves collaborating with others and discussing one's hypocrisies, doubts and uncertainties.
- ☐ c) involves using both the 'cognitive diversity' objection and the 'calibration' objection simultaneously to invalidate intuitions in ethics.
- ☐ d) is a foolhardy way of dealing with the problem.

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	127
Difficulty Level	M
Avg. time spent on this question by students who got this question right	129
% of students who attempted this question	16.51
% of students who got the question right of those who attempted	54.23

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 486

Option A: Our responses to cases are best understood as judgments, similar to those we make in mathematics and in ordinary life. But this is not what 'proof from common ground' as discussed in the passage involves. Choice A is not the answer.

Option B: Since the ironic dialogues of Socrates, philosophers have practised ethics by meeting others where they are and trying to show them their own hypocrisies, doubts and uncertainties. This kind of ethics aims less at grasping foundational ethical truths than at what John Rawls called 'proof from common ground'. Choice B is the correct answer.

Option C: While both the 'cognitive diversity' objection and the 'calibration' objection concern the fundamental question of what it is we are after in philosophy, the author has not mentioned 'proof from common ground' in relation with using both the 'cognitive diversity' objection and the 'calibration' objection simultaneously to invalidate intuitions in ethics. Choice C is not the answer.

Option D: This kind of ethics aims less at grasping foundational ethical truths than at what John Rawls called 'proof from common ground'. And though this might seem limiting, I suspect the task it leaves us is greater than it at first appears. Choice D is not true.

Choice (B)

undefined

Q25. DIRECTIONS for questions 25 to 28: Five sentences (labelled 1, 2, 3, 4, 5) are given in each of the following questions. Four of them can be put together to form a meaningful and coherent short paragraph and **one sentence is the odd one out**. Decide on the proper logical order for the sentences and key in the sequence of four numbers as your answer, even as you **omit the contextually unrelated sentence**.

1. The idea has been put on a firmer footing than before and a new theory proposes that the cataclysm which created the rings may also have brought into being quite a few of Saturn's moons.
2. 13 years of close observation provided by *Cassini*, an American spacecraft showed the planet, its moons and its remarkable rings off better and better, revealing finer structures, striking novelties and greater drama.
3. Reasonably quickly, gravity would have clumped almost all of the debris back together, to produce a new set of moons.
4. Its observations, which ended last September when the craft was crashed into Saturn's atmosphere, also provided further evidence that, as might be expected of such delicate beauty, the rings are quite new to the world.
5. Not everything looks lovelier the longer and closer its inspection, but Saturn does - it is gorgeous through earthly telescopes.

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	221
Difficulty Level	VD

Time spent / Accuracy Analysis

Avg. time spent on this question by students who got this question right	221
% of students who attempted this question	42.01
% of students who got the question right of those who attempted	24.02

[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 topic of discussion: Saturn looks gorgeous through earthly telescopes. Sentence 5 is followed by sentence 2. "showed off better and better" in sentence (2) takes "gorgeous and lovelier" in sentence (5) to a higher degree of description. Also "13 years of close observation provided by *Cassini*, an American spacecraft" in sentence (2) links with "inspection through earthly telescopes" in sentence (5). Sentence (2) is followed by sentence (4). "Its" and "the craft" in sentence (4) refer to "*Cassini*, an American spacecraft" in sentence (2). "also provided further evidence that" in sentence (4) follows "showed the planet, its moons and its remarkable rings" in sentence (2). "as might be expected of such delicate beauty, the rings are quite new to the world" in sentence (4) links with "remarkable rings off better and better, revealing finer structures, striking novelties and greater drama" in sentence 2. So, 524. Sentence (4) is followed by sentence (1). "The idea" in sentence (1) refers to "the rings are quite new to the world" and "cataclysm which created the rings" in sentence (1). Sentence (1), which talks about the confirmation of an idea and a new theory, concludes the para. Hence 5241. Sentence (3) is the odd sentence out. "the debri" in sentence (3) needs a precedent. Also the conjecture or surmise "gravity would have clumped almost all of the debri back together" in sentence (3) does not link with the remaining sentences of the para and it needs further substantiation.

Ans: (5241)

undefined

Q26. DIRECTIONS for questions 25 to 28: Five sentences (labelled 1, 2, 3, 4, 5) are given in each of the following questions. Four of them can be put together to form a meaningful and coherent short paragraph and **one sentence is the odd one out**. Decide on the proper logical order for the sentences and key in the sequence of four numbers as your answer, even as you **omit the contextually unrelated sentence**.

1. They feast on blood, not brains, and hop about rather than stagger forwards, and the differences extend to economics.
2. The zombies that appear in Chinese legends are not quite the same as their Western counterparts.
3. This small excursion into the world of the undead is one of the many gems in Dinny McMohan's new book "China's Great Wall of Debt", a vivid account of China's economic problems, from debt to falsified data.
4. Yet for all the undeniable weaknesses in China's economy, the central argument of the book is debatable.
5. Chinese officials, like their Western peers, openly fret about zombie companies - insolvent firms kept alive by banks - but are far less willing to kill them off.

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	0
Avg. time spent on this question by all students	170
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	186
% of students who attempted this question	44.68
% of students who got the question right of those who attempted	4.67

[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 paragraph. It introduces the topic of discussion: the zombies in Chinese legends. Sentence (2) is followed by sentence (1). "They feast on blood, not brains, and hop about rather than stagger forwards" in sentence (1) links with "Chinese zombies are not quite the same as their Western counterparts" in sentence (2). Sentence (1) is followed by sentence (5). "Chinese officials, like their Western peers" in sentence (5) links with "the differences extend to economics" in sentence (1) and "The zombies that appear in Chinese legends are not quite the same as their Western counterparts" in sentence (2). Sentence (5) provides a point of similarity and difference between Chinese officials and their Western peers as far as Zombie companies are concerned. Sentence (3) follows sentence (5). "world of the undead" in sentence (3) points to "far less willing to kill them off" in sentence (5). "China's economic problems, from debt to falsified data" in sentence (3) points to "the differences extend to economics" in sentence (1). So, 2153. Sentence (4) leaves the thoughtflow incomplete. It can be a part of another paragraph much later in the text.

Ans: (2153)

undefined

Q27. DIRECTIONS for questions 25 to 28: Five sentences (labelled 1, 2, 3, 4, 5) are given in each of the following questions. Four of them can be put together to form a meaningful and coherent short paragraph and **one sentence is the odd one out**. Decide on the proper logical order for the sentences and key in the sequence of four numbers as your answer, even as you **omit the contextually unrelated sentence**.

1. The monastery has been attacked and looted at least four times, most recently by the occupying Italians in 1936, each time being rebuilt, but it is unlikely that the gospels have ever left the walls of the monastery.
2. The ongoing dispute over where and how the gospels should be kept, and who may see them, is intensely local yet symbolic.
3. The Garima Gospels are not easy to see.
4. The roughly 100 monks store the two books in a circular treasure-house next to the church and have protected the relics from Muslim invaders, colonial armies and fires.
5. These illuminated Christian manuscripts - at around 1500 years old, perhaps the oldest of their kind in existence - belong to the Abba Garima monastery, which is perched on a remote outcrop in the Tigray region of northern Ethiopia.

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	166
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	158
% of students who attempted this question	38.19
% of students who got the question right of those who attempted	8.24

[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: Garima Gospels. Sentence (3) is followed by sentence (5). "These illuminated Christian manuscripts" in sentence (5) links with "The Garima Gospels" in sentence (3). Also "belong to the Abba Garima monastery, which is perched on a remote outcrop" in sentence (5) explains why "The Garima Gospels are not easy to see" in sentence (3). Sentence (5) is followed by sentence (4). "The roughly 100 monks" in sentence (4) refer to the monks of "the Abba Garima monastery" mentioned in sentence (5). Sentence (4) provides other details such as: the form or nature of the Gospels, where they are placed and the protective role of the monks. Sentence (4) and sentence (1) form a mandatory pair. "The monastery has been attacked and looted at least four times" in sentence (1) links with "protected the relics from Muslim invaders, colonial armies and fires" in sentence (4). "unlikely that the gospels have ever left the walls of the monastery" in sentence (4) mirrors the introduction sentence (3): The Garima Gospels are not easy to see. Sentence (4) concludes the para. So, 3541. Sentence (2) is the odd sentence out. "ongoing dispute over where and how the gospels should be kept, and who may see them" in sentence (2) runs tangent to the text. "intensely local yet symbolic" in sentence (2) needs further elaboration.

Ans: (3541)

undefined

Q28. DIRECTIONS for questions 25 to 28: Five sentences (labelled 1, 2, 3, 4, 5) are given in each of the following questions. Four of them can be put together to form a meaningful and coherent short paragraph and **one sentence is the odd one out**. Decide on the proper logical order for the sentences and key in the sequence of four numbers as your answer, even as you **omit the contextually unrelated sentence**.

1. Passengers may find the biggest elephant on their journey is the white one they are riding.
2. When Kenya launched its new railway last year, connecting the coastal city of Mombasa to the capital, Nairobi, passenger tickets sold out.
3. The seats are comfortable and, at just 700 shillings, affordable and lucky passengers see elephants along the way.
4. The new line, run by Chinese engineers who wander up and down the carriages, has cut the journey to between four and six hours, depending on the number of stops.
5. Travelling between the country's two biggest cities overland had meant crowding into a bus for 12 hours, or riding the old British-built railway, which might have taken 24 hours.

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	147
Difficulty Level	D
Avg. time spent on this question by students who got this question right	143
% of students who attempted this question	44.24
% of students who got the question right of those who attempted	22.45

[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: the new railway launched in Kenya. Sentences (2) and (5) form a mandatory pair. "Travelling between the country's two biggest cities overland" in sentence (5) refers to "coastal city of Mombasa and the capital, Nairobi" in sentence (2). So sentence (5) follows sentence (2). Sentences (5) and (4) form another mandatory pair. "The new line has cut the journey to between four and six hours" in sentence 4 contrasts "crowding into a bus for 12 hours, or riding the old British-built railway, which might have taken 24 hours (in the past)" in sentence 5. Sentence (4) follows sentence (5). Sentence (3) is another positive sentence about the new railway in Kenya and it concludes the paragraph. So, 2543. Sentence (1) is the odd sentence out. "white elephant" in sentence (1) has a negative connotation as it refers to "a possession that is useless or troublesome, especially one that is expensive to maintain or difficult to dispose of." Sentence (1) can come later in the flow after a discussion of the new railway's redundancies, if any.

Ans: (2543)

undefined

Q29. DIRECTIONS for questions 29 to 32: Each of the following questions consists of a highlighted sentence and two paragraphs from which the sentence may have been taken. The paragraphs have a total of three blanks numbered as (2), (3) and (4). Choose the number of the blank where the highlighted sentence can best be reinserted and key in that number in the input box provided below the question paragraphs.

Further:

If you think that the highlighted sentence is contextually unrelated or does not belong to the given paragraphs, then key in the number 0 as your answer in the input box.

If you think that the statement precedes the first para, then key in the number 1 as your answer in the input box.

If you think that the statement succeeds the second para, then key in the number 5 as your answer in the input box.

The time has come to get him out.

An English trawler strays into Russian waters. When it returns, the captain has a package to deliver to British intelligence. For the next four years, a high-ranked Russian naval officer, Viktor Archenko, passes valuable information to MI6, a British government agency responsible for the collection, analysis, and appropriate dissemination of foreign intelligence and also charged with the conduct of espionage activities outside British territory. _____(2)_____ Suddenly the flow of information stops. His contacts in London know nothing about him - but they know that he's under suspicion. _____(3)_____

But the new breed now playing the spy game have no interest in irrelevant Cold War sparring or the risk of a scandal. There are deals to be done, alliances to be made. They would rather leave Archenko to fend for himself. Only one veteran agent realizes that there is much more at stake than one man's life. _____(4)_____ Only he dares ask the question: If the war is over, who will fight the peace?

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	199
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	179
% of students who attempted this question	34.69
% of students who got the question right of those who attempted	39.23

[Video Solution](#)

[Text Solution](#)

On a careful reading of the paragraph, it can be inferred that the highlighted sentence does not belong to blank (2). The sentence is completely out of place in blank (2), as it interrupts the flow of thought. "Suddenly the flow of information stops" in the sentence after blank (2) needs to continue after the sentence preceding blank (2) (Viktor Archenko, passes valuable information to MI6, a British government agency responsible for).

The highlighted sentence can be a part of blank (3). "The time has come to get him out" as mentioned in the highlighted sentence follows the sequence of events mentioned earlier: the flow of information stops, his contacts in London know nothing about him, they know that he's under suspicion. By placing the highlighted sentence in blank (3), we also see that the remainder of the text flows well. "The time has come to get him out" also contrasts "But the new breed now playing the spy game have no interest rather leave Archenko to fend for himself."

The highlighted sentence cannot be a part of blank (4). If the highlighted sentence is placed in blank (4), then there will be a complete distortion of thoughtflow. The pronoun 'him' in the sentence "The time has come to get him out" would incorrectly refer to the "veteran agent". The pronoun 'him' needs to refer to "Viktor Archenko". "One man's life" in the second para refers to the life of Viktor Archenko. Also "Only he dares ask the question: If the war is over, who will fight the peace?" in the sentence after blank (4) needs to continue after the sentence preceding blank (4) (Only one veteran agent realizes that there is much more at stake than one man's life.)

The highlighted sentence would be redundant if placed before or after the given passage. So (1) and (5) do not apply as answers. Ans: (3)

undefined

Q30. DIRECTIONS for questions 29 to 32: Each of the following questions consists of a highlighted sentence and two paragraphs from which the sentence may have been taken. The paragraphs have a total of three blanks numbered as (2), (3) and (4). Choose the number of the blank where the highlighted sentence can best be reinserted and key in that number in the input box provided below the question paragraphs.

Further:

If you think that the highlighted sentence is contextually unrelated or does not belong to the given paragraphs, then key in the number 0 as your answer in the input box.

If you think that the statement precedes the first para, then key in the number 1 as your answer in the input box.

If you think that the statement succeeds the second para, then key in the number 5 as your answer in the input box.

Yet he turns out to be far more than the sum of his failures.

Tom Rachman's latest novel *The Italian Teacher* is the story of a great man and the wreckage greatness leaves in its wake. It chronicles the life and legend of Bear Bavinsky, a painter of enormous appetites and all-consuming ego, largely through the eyes of his son, Charles (known as Pinch). Their names capture the complexion of their fraught relationship. Bear lumbers through life heedless of his impact: Pinch shrinks, unable to escape the giant's shadow, hoping only to avoid being trampled underfoot. _____(2)_____ Bear charms and bullies, holds forth and rages, occupying physical and psychic space. Even his encouragement turns out to be another way to assert dominance, proving how far those close to him have fallen short of his own achievement. _____(3)_____

Though Bear bestrides the narrative, it is Pinch who commands the reader's respect. An "insubstantial man", as he himself admits, he is diffident, filled with self-loathing, incapable of standing up to his bullying father. He is all damage and insecurity,

a victim of Bear's insatiable needs. _____(4)_____ He is redeemed by his honesty, intelligence and wit, plus his determination to spare neither himself nor others the verdict of his finely tuned sensibility.

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	110
Difficulty Level	D
Avg. time spent on this question by students who got this question right	117
% of students who attempted this question	29.95
% of students who got the question right of those who attempted	56.89

[Video Solution](#)

[Text Solution](#)

Even on a cursory reading of the paragraph, one can understand that the two paragraphs compare and contrast the characters of Bear Bavinsky and his son Charles mentioned in Tom Rachman's latest novel *The Italian Teacher*.

The highlighted sentence is too specific to be upstream of the given para. So (1) is not the answer.

The highlighted sentence is a misfit if placed in blanks (2) and (3). The second half of the first paragraph captures the fraught relationship between Bear Bavinsky and his son Charles. The highlighted sentence does not have a correct precedent in blanks (2) and (3). Further the highlighted sentence cannot be a part of blank (2) as "Yet he turns out to be far more than the sum of his failures" has not been justified or substantiated in the lines succeeding blank (2), as far as Pinch is concerned. Also the highlighted sentence cannot be a part of blank (3) as the lines preceding blank (3) do not necessarily point to the failures of Bear Bavinsky. If the highlighted sentence is placed in blank (3), it will also leave the thoughtflow incomplete. The last three sentences of the first para need to run continuously, as given. So, (2) and (3) are not the answers.

The highlighted sentence would best be placed in blank (4). The second para focuses on Pinch who commands the reader's respect. "diffident, filled with self-loathing, incapable of standing up to his bullying father, all damage and insecurity, a victim of Bear's insatiable needs" in the lines preceding blank 4 are aptly contrasted by "He is redeemed by his honesty, intelligence and wit, plus his determination to spare neither himself nor others ..." in the sentence succeeding blank (4) through the contrast conjunction 'yet' in the highlighted sentence. "sum of his failures" in the highlighted sentence links with the characteristics of the "insubstantial man" as given in the lines preceding blank (4). "He turns out to be far more than the sum of his failures" is substantiated by the last sentence of the second paragraph.

It would be difficult to say whether the highlighted sentence which is specific in tone would be positioned in a paragraph that comes later in the flow, after the question paragraphs. So (5) is not the answer.

Ans: (4)

undefined

Q31. DIRECTIONS for questions 29 to 32: Each of the following questions consists of a highlighted sentence and two paragraphs from which the sentence may have been taken. The paragraphs have a total of three blanks numbered as (2), (3) and (4). Choose the number of the blank where the highlighted sentence can best be reinserted and key in that number in the input box provided below the question paragraphs.

Further:

If you think that the highlighted sentence is contextually unrelated or does not belong to the given paragraphs, then key in the number 0 as your answer in the input box.

If you think that the statement precedes the first para, then key in the number 1 as your answer in the input box.

If you think that the statement succeeds the second para, then key in the number 5 as your answer in the input box.

Christmas 2016 was hygge's moment in Britain.

_____ (2) _____ A crush of books appeared seeking to explain how Danes - for the word is theirs - achieve hygge, which means comfort or convivial ease. An important ingredient, say the books, is a wood fire, around which one is supposed to sit, sipping something warming. British readers ought to have been prepared for that.

_____ (3) _____ A surprise publishing hit of 2015 had been "Norwegian Wood", a book that teaches how to chop and dry firewood.

About 175000 new wood-burning stoves are sold in Britain each year. In 2015, an official survey found that 7.5% of Britons burn wood at home, usually to provide a little extra heat or because they like looking at flames.

_____ (4) _____ Wood-burning is fashionable in Britain but it is also, unfortunately, a big contributor to air pollution. In hygge's homeland, things are even worse. "If you ask Danish children to draw a house, they will draw a chimney with smoke coming out," says Kare PressKristensen, an advisor to the Danish Ecological Council. Domestic wood-burning supplies about 3% of Denmark's energy consumption but accounts for 67% of fine-particle emissions.

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	94
Difficulty Level	D
Avg. time spent on this question by students who got this question right	95
% of students who attempted this question	28.08
% of students who got the question right of those who attempted	30.62

[Video Solution](#)

[Text Solution](#)

The highlighted sentence best fits a place in blank (2). The sentence following blank (2) provides the reason for the point made in the highlighted sentence: A crush of books appeared seeking to explain how Danes – for the word is theirs – achieve hygge. The hygge's moment has been exemplified by 'wood fire' around which people sit and sip something warming (comfort or convivial ease).

The highlighted sentence cannot be a part of blank (3). "British readers ought to have been prepared for that (wood fire as hygge) is best followed by: "A surprise publishing hit of 2015 had been "Norwegian Wood", a book that teaches how to chop and dry firewood."

Similarly, the highlighted sentence cannot be a part of blank (4). The second para does not specifically talk about any happening related to Christmas 2016. Also 'hygge's moment' as such has to be introduced much earlier in the flow. The second para goes on to discuss the wood-burning activity across Britain and Denmark. Inserting the highlighted sentence anywhere in para 4, especially in blank 4, will disrupt the thoughtflow.

Ans: (2)

undefined

Q32. DIRECTIONS for questions 29 to 32: Each of the following questions consists of a highlighted sentence and two paragraphs from which the sentence may have been taken. The paragraphs have a total of three blanks numbered as (2), (3) and (4). Choose the number of the blank where the highlighted sentence can best be reinserted and key in that number in the input box provided below the question paragraphs.

Further:

If you think that the highlighted sentence is contextually unrelated or does not belong to the given paragraphs, then key in the number 0 as your answer in the input box.

If you think that the statement precedes the first para, then key in the number 1 as your answer in the input box.

If you think that the statement succeeds the second para, then key in the number 5 as your answer in the input box.

So are experiments.

On the eve of the First World War, a young Winston Churchill switched the Royal Navy from coal to oil. As Daniel Yergin put it in his book "The Prize", the reliance on doubtful supplies of oil from Persia rather than Welsh coal turned energy security into a question of national strategy. _____(2)_____ Churchill responded that "safety and certainty in oil lie in variety, and variety alone."

The same is true of energy today, but the variety of available sources now extends far beyond oil.

_____(3)_____ Military planners are taking note. Since 2003, when America's current defence secretary, James Mattis, drew attention to the vulnerabilities in warfare caused by the "tether of fuel", America's armed forces have invested in a variety of clean-energy technologies: wind turbines, solar panels and mini-grids are common on military bases. _____(4)_____ A year-long naval exercise in 2016 involved a strike group powered by a mixture of conventional fuels, nuclear power and biofuels made from beef fat.

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	98
Difficulty Level	D
Avg. time spent on this question by students who got this question right	104
% of students who attempted this question	27.62
% of students who got the question right of those who attempted	21.36

[Video Solution](#)

[Text Solution](#)

The highlighted sentence does not find a place in blank (2). The part "Churchill responded that "safety and certainty in oil lie in variety, and variety alone."" is Churchill's response to his actions and it justifies the fact that the reliance on doubtful supplies of oil from Persia rather than Welsh coal turned energy security into a question of national strategy. There is no place for the comparison "So are experiments" here. "The same is true of energy today" as given in the initial part of para 2 links with "safety and certainty in oil lie in variety, and variety alone" mentioned in the concluding part of para 1.

Similarly, the highlighted sentence would distort the thoughtflow if placed in blank (3). It is out of context here. To be grammatically correct, the sentence would need to read as: "So do experiments" and not "So are experiments". But the part succeeding blank (3): "Military planners are taking note. Since 2003, when America's current defence secretary, James Mattis, drew attention to the vulnerabilities in warfare caused by the "tether of fuel", America's armed forces have invested in a **variety** of clean-energy technologies" needs to immediately follow "the **variety** of available sources now extends far beyond oil" as mentioned in the part preceding blank (3).

The highlighted sentence best fits in blank (4) serving as a bridge between "clean-energy technologies: wind turbines, solar panels and mini-grids are common on military bases" and the experiment "A year-long naval exercise in 2016 involved a strike group powered by a mixture of conventional fuels, nuclear power and biofuels made from beef fat". Hence (4) is the answer.

Ans: (4)

undefined

Q33. DIRECTIONS for questions 33 and 34: In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. To Algerians, Abdelaziz Bouteflika is like Schrodinger's cat: simultaneously alive and dead unless his actual state has been observed.
2. Occasionally, Mr Bouteflika, the 81-year-old president of Algeria, who has at least suffered one bad stroke, is
3. rolled up in his wheelchair for an appearance. In October, for example, he met Dmitry Medvedev, the Russian prime minister.
4. A short video of the encounter showed Mr Bouteflika staring blankly into the distance and mumbling a few words.
5. Behind the scenes, a clique of military officers and economic officials actually run the country.

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	150
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	129
% of students who attempted this question	33.07
% of students who got the question right of those who attempted	1.89

[Video Solution](#)

[Text Solution](#)

In sentence (1), 'unless' needs to be replaced with 'until'. "simultaneously" means "at the same time" and so we need "until" (happening or done up to a particular point in time) and not 'unless' (a conjunction which means 'except if').

In part (2), "at least" needs to modify "one bad stroke" and should be placed immediately before it. The part should read: who has suffered at least one bad stroke".

In part (3), we need "rolled out" and not "rolled up".

Roll up: When you say 'he rolled up' you mean he arrived in a vehicle, or on wheels, and this could be a mildly humorous way of saying he arrived in his wheelchair – if this had been in active voice.

However, the usage is in passive voice here – so it would mean someone is packed up or packaged, and that is obviously not what is meant here. If it were, he'd be rolled up in a blanket, or in bandages, not in a wheelchair.

Roll out: When you 'roll out' something (active voice) it means that you present it for viewing by others. The same meaning works in passive voice too. When something 'is rolled out', it is presented for viewing, and that is the context (about Bouteflika) here.

Sentence (4) is error free.

In sentence (5), there is an error of subject-verb agreement. The subject 'clique' is a singular collective noun and needs a singular verb 'runs'. The part should read: actually runs the country.

Ans: (4)

undefined

Q34. DIRECTIONS for questions 33 and 34: In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the

sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. "The Next Steve Jobs" is how *Inc.*, an American business magazine, described Elizabeth Holmes when her photograph appeared on its cover in 2015.
2. They may share an affinity for black turtlenecks and the reputations of Ms Holmes and Apple's celebrated late boss could not be more different.
3. On March 14th, Ms Holmes was accused of fraud by America's Securities and Exchange Commission (SEC) and she has agreed to turn out much of her stake in her startup Theranos.
4. Only a few years ago Ms Holmes who is 34 years old was touted the world's youngest self-made female billionaire, a shatterer of Silicon Valley's reinforced glass ceiling.
5. It now turns up that Ms Holmes's claims were deceptive and she exaggerated her start-up's capabilities allegedly.

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	161
Difficulty Level	D
Avg. time spent on this question by students who got this question right	142
% of students who attempted this question	28.31
% of students who got the question right of those who attempted	6.17

[Video Solution](#)

[Text Solution](#)

Sentence (1) is grammatically correct.

In sentence (2), we need to use a contrast conjunction 'but' to contrast 'share an affinity' and 'could not be more different'. The second half of sentence (2) highlights the different reputations of Ms Holmes and Steve Jobs. So the part needs to read "share an affinity for black turtlenecks **but** the reputations of".

In sentence (3), the phrasal verb 'turn out' is incorrect. We need to use the phrasal verb 'turn over'. Here 'turn over' would mean "to give something that you control to someone else".

Sentence (4) has errors of punctuation. The relative clause "who is 34 years old" needs to be placed within commas on both sides. Also, there needs to be a comma after "Only a few years ago". "Touted" needs to be followed by "as" (touted as). The part should read: Only a few years ago, Ms Holmes, who is 34 years old, was touted as the world's youngest self-made female billionaire, a shatterer of Silicon Valley's reinforced glass ceiling.

In sentence (5), the adverb 'allegedly' is misplaced. It modifies the verb 'exaggerated' and should be placed before it. Further the phrasal verb 'turns up' needs to be replaced with 'turns out' which means to be discovered to be; to prove to be. (Note: 'Her start-up's capabilities' in sentence 5 is acceptable. Since one is talking about capabilities (strengths), and not about physical parts, one is looking at the start-up as an organisation (and, therefore, a person). Using the possessive noun in this context is quite appropriate).

Ans: (1)

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

XYZ Ltd. was a conglomerate established in the year 1972 and has exactly seven subsidiaries, A through G. Each year, the subsidiary that achieved the highest annual revenue, among the seven subsidiaries, in that year was labelled as the *Highest Grossing Subsidiary* for that year. In the first year of inception of XYZ Ltd., the *Highest Grossing Subsidiary* was conferred the award of **Revenue Record Holder** and its revenue in that year was termed as the **Revenue Record**. In each subsequent year, if the *Highest Grossing Subsidiary* of that year achieved an annual revenue greater than the existing **Revenue Record**, the award was passed on to the *Highest Grossing Subsidiary* of that year. Else, the existing **Revenue Record Holder** continued to hold that award until its **Revenue Record** was exceeded by another subsidiary.

The following table provides the twenty highest annual revenues (in descending order) that were achieved by any subsidiary during the period 1972 to 2016, along with the name of the subsidiary and the year in which the revenue was achieved:

Subsidiary	Revenue (in USD mn)	Year
G	564	2014
A	551	2010
C	510	2012
D	507	2010
B	495	2007
G	473	2008
E	443	2015
E	418	2001
F	401	1997
B	391	2002
C	381	1991
G	371	1993
A	350	1986
B	314	1979
G	310	1981
B	298	2016
F	274	1980
F	261	1975
A	254	2011
D	251	1972

Q1. DIRECTIONS for questions 1 to 4: Select the correct alternative from the given choices.

Which subsidiary held the award for the year 1988?

- ☐ a) **A**
- ☐ b) **C**
- ☐ c) **G**
- ☐ d) **F**

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	196
Avg. time spent on this question by all students	323
Difficulty Level	E
Avg. time spent on this question by students who got this question right	325
% of students who attempted this question	38.83
% of students who got the question right of those who attempted	89.65

[Video Solution](#)

Text Solution

G generated the highest revenue in 2014. Hence, G would have held the award from 2014 to 2016.

A generated the highest revenue in 2010. Hence, A would have held the award from 2010 to 2013 (in 2014, G was given the award).

C generated USD 510 mn in 2012. However, A generated a higher revenue in 2010 itself. Hence, for this revenue, C would not have got the award in 2012 as it did not generate a higher revenue than the existing highest revenue.

In 2007, B generated USD 495 mn, which was the highest at that point of time. Hence, B would have held the award from 2007 till 2009.

We can ignore the entries of USD 473 mn and USD 443 mn because these revenues were generated in the years after B generated USD 495 mn.

E generated USD 418 mn in 2001. Hence, E would have held the award from 2001 to 2006.

F would have held the award from 1997 to 2000.

C would have held the award from 1991 to 1997.

A would have held the award from 1986 to 1990.

B would have held the award from 1979 to 1985.

F would have held the award from 1975 to 1978.

D would have held the award from 1972 to 1974.

The following table provides the subsidiaries that held the award during the given period (in chronological order) and the record for the highest revenue in that period:

Subsidiary	Period (both years inclusive)	Number of Years	Revenue (in USD mn)
D	1972-1974	3	251
F	1975-1978	4	261
B	1979-1985	7	314
A	1986-1990	5	350
C	1991-1997	7	381
F	1997-2000	4	401
E	2001-2006	6	418
B	2007-2009	3	495
A	2010-2013	4	551
G	2014-2016	3	564

A held the award for the year 1988.

Choice (A)

undefined

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

XYZ Ltd. was a conglomerate established in the year 1972 and has exactly seven subsidiaries, A through G. Each year, the subsidiary that achieved the highest annual revenue, among the seven subsidiaries, in that year was labelled as the *Highest Grossing Subsidiary* for that year. In the first year of inception of XYZ Ltd., the *Highest Grossing Subsidiary* was conferred the award of **Revenue Record Holder** and its revenue in that year was termed as the **Revenue Record**. In each subsequent year, if the *Highest Grossing Subsidiary* of that year achieved an annual revenue greater than the existing **Revenue Record**, the award was passed on to the *Highest Grossing Subsidiary* of that year. Else, the existing **Revenue Record Holder** continued to hold that award until its **Revenue Record** was exceeded by another subsidiary.

The following table provides the twenty highest annual revenues (in descending order) that were achieved by any subsidiary during the period 1972 to 2016, along with the name of the subsidiary and the year in which the revenue was achieved:

Subsidiary	Revenue (in USD mn)	Year
G	564	2014
A	551	2010
C	510	2012
D	507	2010
B	495	2007
G	473	2008
E	443	2015
E	418	2001
F	401	1997
B	391	2002
C	381	1991
G	371	1993
A	350	1986
B	314	1979
G	310	1981
B	298	2016
F	274	1980
F	261	1975
A	254	2011
D	251	1972

Q2. DIRECTIONS for questions 1 to 4: Select the correct alternative from the given choices.

How many distinct subsidiaries held the award between 2005 and 2011?

- ☐ 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	0
Avg. time spent on this question by all students	144
Difficulty Level	E
Avg. time spent on this question by students who got this question right	153
% of students who attempted this question	37.84
% of students who got the question right of those who attempted	44.83

[Video Solution](#)

[Text Solution](#)

G generated the highest revenue in 2014. Hence, G would have held the award from 2014 to 2016.

A generated the highest revenue in 2010. Hence, A would have held the award from 2010 to 2013 (in 2014, G was given the award).

C generated USD 510 mn in 2012. However, A generated a higher revenue in 2010 itself. Hence, for this revenue, C would not have got the award in 2012 as it did not generate a higher revenue than the existing highest revenue.

In 2007, B generated USD 495 mn, which was the highest at that point of time. Hence, B would have held the award from 2007 till 2009.

We can ignore the entries of USD 473 mn and USD 443 mn because these revenues were generated in the years after B generated USD 495 mn.

E generated USD 418 mn in 2001. Hence, E would have held the award from 2001 to 2006.

F would have held the award from 1997 to 2000.

C would have held the award from 1991 to 1997.

A would have held the award from 1986 to 1990.

B would have held the award from 1979 to 1985.

F would have held the award from 1975 to 1978.

D would have held the award from 1972 to 1974.

The following table provides the subsidiaries that held the award during the given period (in chronological order) and the record for the highest revenue in that period:

Subsidiary	Period (both years inclusive)	Number of Years	Revenue (in USD mn)
D	1972-1974	3	251
F	1975-1978	4	261
B	1979-1985	7	314
A	1986-1990	5	350
C	1991-1997	7	381
F	1997-2000	4	401
E	2001-2006	6	418
B	2007-2009	3	495
A	2010-2013	4	551
G	2014-2016	3	564

Three subsidiaries (E, B and A) held the award during the given period.

Choice (C)

undefined

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

XYZ Ltd. was a conglomerate established in the year 1972 and has exactly seven subsidiaries, A through G. Each year, the subsidiary that achieved the highest annual revenue, among the seven subsidiaries, in that year was labelled as the *Highest*

Grossing *Subsidiary* for that year. In the first year of inception of XYZ Ltd., the *Highest Grossing Subsidiary* was conferred the award of **Revenue Record Holder** and its revenue in that year was termed as the **Revenue Record**. In each subsequent year, if the *Highest Grossing Subsidiary* of that year achieved an annual revenue greater than the existing **Revenue Record**, the award was passed on to the *Highest Grossing Subsidiary* of that year. Else, the existing **Revenue Record Holder** continued to hold that award until its **Revenue Record** was exceeded by another subsidiary.

The following table provides the twenty highest annual revenues (in descending order) that were achieved by any subsidiary during the period 1972 to 2016, along with the name of the subsidiary and the year in which the revenue was achieved:

Subsidiary	Revenue (in USD mn)	Year
G	564	2014
A	551	2010
C	510	2012
D	507	2010
B	495	2007
G	473	2008
E	443	2015
E	418	2001
F	401	1997
B	391	2002
C	381	1991
G	371	1993
A	350	1986
B	314	1979
G	310	1981
B	298	2016
F	274	1980
F	261	1975
A	254	2011
D	251	1972

Q3. DIRECTIONS for questions 1 to 4: Select the correct alternative from the given choices.

Which subsidiary held the award for the maximum number of years during the given period?

- ☐ a) **B**
- ☐ b) **A**
- ☐ c) **F**
- ☐ d) **C**

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	228
Difficulty Level	M
Avg. time spent on this question by students who got this question right	207
% of students who attempted this question	31.59
% of students who got the question right of those who attempted	60.06

[Video Solution](#)

[Text Solution](#)

G generated the highest revenue in 2014. Hence, G would have held the award from 2014 to 2016.

A generated the highest revenue in 2010. Hence, A would have held the award from 2010 to 2013 (in 2014, G was given the award).

C generated USD 510 mn in 2012. However, A generated a higher revenue in 2010 itself. Hence, for this revenue, C would not have got the award in 2012 as it did not generate a higher revenue than the existing highest revenue.

In 2007, B generated USD 495 mn, which was the highest at that point of time. Hence, B would have held the award from 2007 till 2009.

We can ignore the entries of USD 473 mn and USD 443 mn because these revenues were generated in the years after B generated USD 495 mn.

E generated USD 418 mn in 2001. Hence, E would have held the award from 2001 to 2006.

F would have held the award from 1997 to 2000.

C would have held the award from 1991 to 1997.

A would have held the award from 1986 to 1990.

B would have held the award from 1979 to 1985.

F would have held the award from 1975 to 1978.

D would have held the award from 1972 to 1974.

The following table provides the subsidiaries that held the award during the given period (in chronological order) and the record for the highest revenue in that period:

Subsidiary	Period (both years inclusive)	Number of Years	Revenue (in USD mn)
D	1972-1974	3	251
F	1975-1978	4	261
B	1979-1985	7	314
A	1986-1990	5	350
C	1991-1997	7	381
F	1997-2000	4	401
E	2001-2006	6	418
B	2007-2009	3	495
A	2010-2013	4	551
G	2014-2016	3	564

B held the award for the maximum number of years (10 years).

Choice (A)

undefined

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

XYZ Ltd. was a conglomerate established in the year 1972 and has exactly seven subsidiaries, A through G. Each year, the subsidiary that achieved the highest annual revenue, among the seven subsidiaries, in that year was labelled as the *Highest Grossing Subsidiary* for that year. In the first year of inception of XYZ Ltd., the *Highest Grossing Subsidiary* was conferred the award of **Revenue Record Holder** and its revenue in that year was termed as the **Revenue Record**. In each subsequent year, if the *Highest Grossing Subsidiary* of that year achieved an annual revenue greater than the existing **Revenue Record**, the award was passed on to the *Highest Grossing Subsidiary* of that year. Else, the existing **Revenue Record Holder** continued to hold that award until its **Revenue Record** was exceeded by another subsidiary.

The following table provides the twenty highest annual revenues (in descending order) that were achieved by any subsidiary during the period 1972 to 2016, along with the name of the subsidiary and the year in which the revenue was achieved:

Subsidiary	Revenue (in USD mn)	Year
G	564	2014
A	551	2010
C	510	2012
D	507	2010
B	495	2007
G	473	2008
E	443	2015
E	418	2001
F	401	1997
B	391	2002
C	381	1991
G	371	1993
A	350	1986
B	314	1979
G	310	1981
B	298	2016
F	274	1980
F	261	1975
A	254	2011
D	251	1972

Q4. DIRECTIONS for questions 1 to 4: Select the correct alternative from the given choices.

What is the least number of years for which any subsidiary held the award?

- ☐ a) 0
- ☐ b) 3
- ☐ c) 4
- ☐ 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	92
Difficulty Level	M
Avg. time spent on this question by students who got this question right	102
% of students who attempted this question	29.17
% of students who got the question right of those who attempted	57.63

[Video Solution](#)

[Text Solution](#)

G generated the highest revenue in 2014. Hence, G would have held the award from 2014 to 2016.

A generated the highest revenue in 2010. Hence, A would have held the award from 2010 to 2013 (in 2014, G was given the award).

C generated USD 510 mn in 2012. However, A generated a higher revenue in 2010 itself. Hence, for this revenue, C would not have got the award in 2012 as it did not generate a higher revenue than the existing highest revenue.

In 2007, B generated USD 495 mn, which was the highest at that point of time. Hence, B would have held the award from 2007 till 2009.

We can ignore the entries of USD 473 mn and USD 443 mn because these revenues were generated in the years after B generated USD 495 mn.

E generated USD 418 mn in 2001. Hence, E would have held the award from 2001 to 2006.

F would have held the award from 1997 to 2000.

C would have held the award from 1991 to 1997.

A would have held the award from 1986 to 1990.

B would have held the award from 1979 to 1985.

F would have held the award from 1975 to 1978.

D would have held the award from 1972 to 1974.

The following table provides the subsidiaries that held the award during the given period (in chronological order) and the record for the highest revenue in that period:

Subsidiary	Period (both years inclusive)	Number of Years	Revenue (in USD mn)
D	1972-1974	3	251
F	1975-1978	4	261
B	1979-1985	7	314
A	1986-1990	5	350
C	1991-1997	7	381
F	1997-2000	4	401
E	2001-2006	6	418
B	2007-2009	3	495
A	2010-2013	4	551
G	2014-2016	3	564

G and D both held the award for a minimum number of years, i.e., 3 years.

Choice (B)

undefined

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

Telomia Inc. manufactures and sells four different types of products - Pens, Pencils, Markers and Sketch Pens - for Rs.30, Rs.10, Rs.40 and Rs.25 per unit respectively. It costs the company Rs.10, Rs.6, Rs.25 and Rs.20 per unit respectively to

manufacture each type of product.

The total revenue of the company is calculated as sum of the products of the price per unit and number of units sold of each type.

The total cost of the company is calculated as the sum of the products of the cost per unit and the number of units sold of each type.

The profit percentage of the company is calculated as the profit of the company as a percentage of the total cost of the company.

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

If, during a particular year, the number of units of Pens, Pencils, Markers and Sketch Pens sold by Telomia Inc. are in the ratio 1:2:3:4, what is the profit percentage of the company for this year?

- ☐ a) 42.68%
- ☐ b) 48.32%
- ☐ c) 52.54%
- ☐ d) 55.74%

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	24
Avg. time spent on this question by all students	307
Difficulty Level	E
Avg. time spent on this question by students who got this question right	297
% of students who attempted this question	46.52
% of students who got the question right of those who attempted	86.2

[Video Solution](#)

[Text Solution](#)

Let the number of Pens, Pencils, Markers and Sketch Pens be x , $2x$, $3x$ and $4x$ respectively.

$$\text{Total Revenue} = x \times 30 + 2x \times 10 + 3x \times 40 + 4x \times 25 = 270x$$

$$\text{Total Cost} = x \times 10 + 2x \times 6 + 3x \times 25 + 4x \times 20 = 177x$$

$$\text{Profit Percentage} = \frac{270x - 177x}{177x} = 52.54\%$$

Choice (C)

undefined

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

Telomia Inc. manufactures and sells four different types of products - Pens, Pencils, Markers and Sketch Pens - for Rs.30, Rs.10, Rs.40 and Rs.25 per unit respectively. It costs the company Rs.10, Rs.6, Rs.25 and Rs.20 per unit respectively to manufacture each type of product.

The total revenue of the company is calculated as sum of the products of the price per unit and number of units sold of each type.

The total cost of the company is calculated as the sum of the products of the cost per unit and the number of units sold of each type.

The profit percentage of the company is calculated as the profit of the company as a percentage of the total cost of the company.

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

If, during a particular year, the revenues of Telomia Inc. from the sale of Pens, Pencils, Markers and Sketch Pens were in the ratio of 1:2:4:5, what is the profit percentage of Telomia Inc. for this year?

- ☐ a) 49.38%
- ☐ b) 47.52%
- ☐ c) 51.68%
- ☐ d) 53.47%

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	260
Difficulty Level	E
Avg. time spent on this question by students who got this question right	279
% of students who attempted this question	29.67
% of students who got the question right of those who attempted	61.81

[Video Solution](#)

[Text Solution](#)

Let the revenue of the company from the sale of Pens, Pencils, Markers and Sketch Pens be x , $2x$, $4x$ and $5x$.

Number of units of each type sold will be $x/30$, $2x/10$, $4x/40$, $5x/25$ respectively.

$$\text{Total Cost} = \frac{x}{30} \times 10 + \frac{x}{5} \times 6 + \frac{x}{10} \times 25 + \frac{x}{5} \times 20 = \frac{241x}{30}$$

$$\text{Profit Percentage} = \frac{12x \frac{241x}{30}}{\frac{241x}{30}} = 49.38\%$$

Choice (A)

undefined

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

Telomia Inc. manufactures and sells four different types of products - Pens, Pencils, Markers and Sketch Pens - for Rs.30, Rs.10, Rs.40 and Rs.25 per unit respectively. It costs the company Rs.10, Rs.6, Rs.25 and Rs.20 per unit respectively to manufacture each type of product.

The total revenue of the company is calculated as sum of the products of the price per unit and number of units sold of each type.

The total cost of the company is calculated as the sum of the products of the cost per unit and the number of units sold of each type.

The profit percentage of the company is calculated as the profit of the company as a percentage of the total cost of the company.

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

If, during a particular year, the number of units of Pens, Pencils and Markers sold by Telomia Inc. are in the ratio 1:3:5 and the company made a profit percentage of 35%, what is the ratio of the number of Sketch Pens sold to the number of Markers sold?

- ☐ a) 12.095

- ☐ b) 8.742
- ☐ c) 4.371
- ☐ d) 5.345

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	270
Difficulty Level	M
Avg. time spent on this question by students who got this question right	278
% of students who attempted this question	21.69
% of students who got the question right of those who attempted	69.8

[Video Solution](#)

[Text Solution](#)

Let the number of Pens, Pencils and Sketch Pens sold be x , $3x$ and $5x$ respectively.

The number of Markers sold be n .

Total Revenue = $260x + 25n$

Total Cost = $153x + 20n$

Profit Percentage = $\frac{107x+5n}{153x+20n}$

Given that profit percentage is 35%.

Hence, $\frac{107x+5n}{153x+20n} = 0.35 \Rightarrow 107x + 5n = 53.55x + 7n \Rightarrow \frac{n}{x} = \frac{53.45}{2}$

Required ratio = $\frac{n}{5x} = \frac{53.45}{10} = 5.345$

Choice (D)

undefined

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

Telomia Inc. manufactures and sells four different types of products - Pens, Pencils, Markers and Sketch Pens - for Rs.30, Rs.10, Rs.40 and Rs.25 per unit respectively. It costs the company Rs.10, Rs.6, Rs.25 and Rs.20 per unit respectively to manufacture each type of product.

The total revenue of the company is calculated as sum of the products of the price per unit and number of units sold of each type.

The total cost of the company is calculated as the sum of the products of the cost per unit and the number of units sold of each type.

The profit percentage of the company is calculated as the profit of the company as a percentage of the total cost of the company.

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

During a particular year, the total Revenue of Telomia Inc. was Rs.21 mn and Telomia Inc. sold an equal number of Pens, Pencils, Markers and Sketch Pens. What is the total number of Markers that Telomia Inc. sold?

- ☐ a) 200,000
- ☐ b) 250,000
- ☐ c) 275,000

☐ d) 300,000

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	115
Difficulty Level	E
Avg. time spent on this question by students who got this question right	112
% of students who attempted this question	32.6
% of students who got the question right of those who attempted	91.91

[Video Solution](#)

[Text Solution](#)

Let the number of units of each type of product be n .
Given that $105n = 21,000,000 \Rightarrow n = 200,000$

Choice (A)

undefined

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

Each of five friends, Bala, Charan, Kalyan, Pavan, and Venky, studying in a university, opted for a different course among Mathematics, Physics, Chemistry, Economics, and Commerce. It is known that the total number of students in the university that enrolled for each of these courses was different. Further, it is also known that

- i. Kalyan opted for the course for which the maximum number of students had enrolled and it was not Mathematics.
- ii. Charan opted for Chemistry, for which a higher number of students had enrolled than for Commerce and neither of these courses had the lowest enrolment.
- iii. a higher number of students enrolled for the course opted for by Pavan than for the course opted for by Charan.

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

Which of the following courses could not have been opted for by Pavan?

- ☐ a) Mathematics
- ☐ b) Physics
- ☐ c) Economics
- ☐ d) Commerce ☒ Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	263
Avg. time spent on this question by all students	288
Difficulty Level	E
Avg. time spent on this question by students who got this question right	283

Time spent / Accuracy Analysis

% of students who attempted this question	56.65
% of students who got the question right of those who attempted	85.23

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

Given that Charan opted for Chemistry and Kalyan did not opt for Mathematics. Kalyan could not have opted for Commerce because Commerce cannot have the highest number of enrolled students. Hence, Kalyan could have opted for either Physics or Economics.

Also, since Pavan opted for a course which had higher enrolment than Chemistry, he would have opted for a course with the second highest enrolment (since Commerce did not have the lowest enrolment).

Chemistry would have the third highest enrolment and Commerce, the fourth highest. The following table shows the possibilities in the descending order of number of enrolled students.

Student	Course
Kalyan	Physics/Economics
Pavan	Mathematics/ Physics/Economics
Charan	Chemistry
Bala/Venky	Commerce
Venky/Bala	Mathematics/Physics/Economics

Pavan could not have opted for commerce.

Choice (D)

undefined

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

Each of five friends, Bala, Charan, Kalyan, Pavan, and Venky, studying in a university, opted for a different course among Mathematics, Physics, Chemistry, Economics, and Commerce. It is known that the total number of students in the university that enrolled for each of these courses was different. Further, it is also known that

- Kalyan opted for the course for which the maximum number of students had enrolled and it was not Mathematics.
- Charan opted for Chemistry, for which a higher number of students had enrolled than for Commerce and neither of these courses had the lowest enrolment.
- a higher number of students enrolled for the course opted for by Pavan than for the course opted for by Charan.

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

Which of the following statements is definitely true?

- ☐ a) If Bala opted for Economics, Kalyan opted for Commerce.
- ☐ b) If Pavan opted for Mathematics, Venky opted for Economics.
- ☐ c) If Venky opted for Physics, Bala opted for Economics.
- ☐ d) If Venky opted for Physics, Kalyan opted for Economics.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	170
Avg. time spent on this question by all students	163
Difficulty Level	E
Avg. time spent on this question by students who got this question right	160
% of students who attempted this question	45.51
% of students who got the question right of those who attempted	77.62

[Video Solution](#)

[Text Solution](#)

Given that Charan opted for Chemistry and Kalyan did not opt for Mathematics. Kalyan could not have opted for Commerce because Commerce cannot have the highest number of enrolled students. Hence, Kalyan could have opted for either Physics or Economics.

Also, since Pavan opted for a course which had higher enrolment than Chemistry, he would have opted for a course with the second highest enrolment (since Commerce did not have the lowest enrolment).

Chemistry would have the third highest enrolment and Commerce, the fourth highest. The following table shows the possibilities in the descending order of number of enrolled students.

Student	Course
Kalyan	Physics/Economics
Pavan	Mathematics/ Physics/Economics
Charan	Chemistry
Bala/Venky	Commerce
Venky/Bala	Mathematics/Physics/Economics

Only the statement given in Option D is definitely true.

Choice (D)

undefined

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

Each of five friends, Bala, Charan, Kalyan, Pavan, and Venky, studying in a university, opted for a different course among Mathematics, Physics, Chemistry, Economics, and Commerce. It is known that the total number of students in the university that enrolled for each of these courses was different. Further, it is also known that

- Kalyan opted for the course for which the maximum number of students had enrolled and it was not Mathematics.
- Charan opted for Chemistry, for which a higher number of students had enrolled than for Commerce and neither of these courses had the lowest enrolment.
- a higher number of students enrolled for the course opted for by Pavan than for the course opted for by Charan.

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

In how many different ways could the five students have opted for the five courses?

○ a) 8

- ☐ b) 6
- ☐ c) 4
- ☐ d) 2

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	107
Difficulty Level	E
Avg. time spent on this question by students who got this question right	118
% of students who attempted this question	32.99
% of students who got the question right of those who attempted	47.47

[Video Solution](#)

[Text Solution](#)

Given that Charan opted for Chemistry and Kalyan did not opt for Mathematics. Kalyan could not have opted for Commerce because Commerce cannot have the highest number of enrolled students. Hence, Kalyan could have opted for either Physics or Economics.

Also, since Pavan opted for a course which had higher enrolment than Chemistry, he would have opted for a course with the second highest enrolment (since Commerce did not have the lowest enrolment).

Chemistry would have the third highest enrolment and Commerce, the fourth highest. The following table shows the possibilities in the descending order of number of enrolled students.

Student	Course
Kalyan	Physics/Economics
Pavan	Mathematics/ Physics/Economics
Charan	Chemistry
Bala/Venky	Commerce
Venky/Bala	Mathematics/Physics/Economics

If Kalyan had chosen Physics, the students could have chosen the courses in 4 ways (2 ways for 2nd and last course, 2 ways for last two students). Similarly if Kalyan had chosen Economics, the students could have chosen the courses in 4 ways. Hence, the students could have chosen the courses in 8 ways.

Choice (A)

undefined

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

Each of five friends, Bala, Charan, Kalyan, Pavan, and Venky, studying in a university, opted for a different course among Mathematics, Physics, Chemistry, Economics, and Commerce. It is known that the total number of students in the university that enrolled for each of these courses was different. Further, it is also known that

- i. Kalyan opted for the course for which the maximum number of students had enrolled and it was not Mathematics.
- ii. Charan opted for Chemistry, for which a higher number of students had enrolled than for Commerce and neither of these courses had the lowest enrolment.
- iii. a higher number of students enrolled for the course opted for by Pavan than for the course opted for by Charan.

Q12. DIRECTIONS for questions 9 to 12: Select the correct alternative from the given choices.

Consider the following statements.

Which set of statements given below from among those are sufficient to determine the exact courses opted for by each of the five friends?

- i. Bala opted for a course, the enrolment for which was higher than that for the course opted for by Venky.
- ii. The number of students who enrolled for Physics was higher than those who enrolled for any other course.
- iii. Venky opted for Commerce.
- iv. More number of students enrolled for Economics than for Chemistry.

- ☐ a) (i) and (ii)
- ☐ b) (i), (ii) and (iv)
- ☐ c) (i) and (iv)
- ☐ d) (i), (ii) and (iii)

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	3
Avg. time spent on this question by all students	177
Difficulty Level	E
Avg. time spent on this question by students who got this question right	186
% of students who attempted this question	39.1
% of students who got the question right of those who attempted	60.88

[Video Solution](#)

[Text Solution](#)

Given that Charan opted for Chemistry and Kalyan did not opt for Mathematics. Kalyan could not have opted for Commerce because Commerce cannot have the highest number of enrolled students. Hence, Kalyan could have opted for either Physics or Economics.

Also, since Pavan opted for a course which had higher enrolment than Chemistry, he would have opted for a course with the second highest enrolment (since Commerce did not have the lowest enrolment).

Chemistry would have the third highest enrolment and Commerce, the fourth highest. The following table shows the possibilities in the descending order of number of enrolled students.

Student	Course
Kalyan	Physics/Economics
Pavan	Mathematics/ Physics/Economics
Charan	Chemistry
Bala/Venky	Commerce
Venky/Bala	Mathematics/Physics/Economics

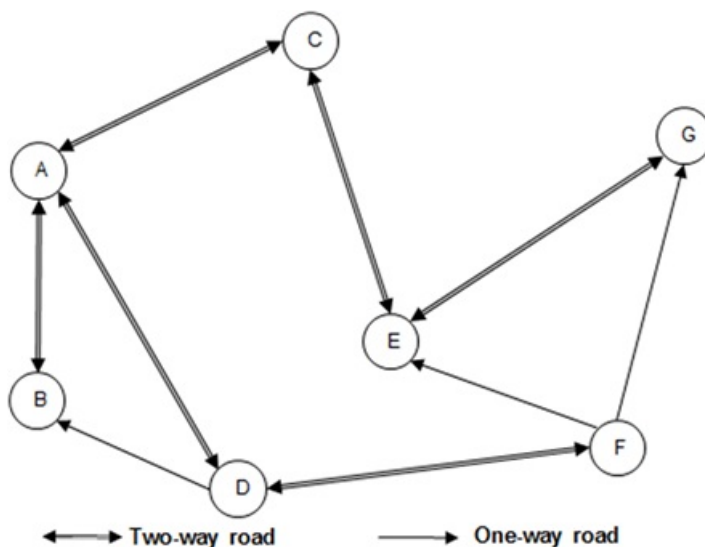
From (i), (ii) and (iv), we can determine the exact courses chosen by each student.

Choice (B)

undefined

DIRECTIONS for questions 13 to 16: Answer the questions on the basis of the information given below.

Seven localities, A through G, in a city were connected by certain two-way and one-way roads as shown in the figure below.



This morning, Kishore, the newly appointed Traffic Commissioner of the city, changed all the existing two-way roads into one-way roads while ensuring that any locality can be reached from any other locality.

Answer all the questions that follow taking into account the changes that Kishore made.

Q13. DIRECTIONS for questions 13 and 14: Type in your answer in the input box provided below the question.

What is the minimum number of localities that a person must pass through to go from G to D (excluding G and D)?

Your Answer:3 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	206
Avg. time spent on this question by all students	195
Difficulty Level	M
Avg. time spent on this question by students who got this question right	199
% of students who attempted this question	49.78
% of students who got the question right of those who attempted	69.03

[Video Solution](#)

[Text Solution](#)

Given that Kishore converted all the two-way roads into one-way roads. Also, every locality must be accessible from every other locality.

Hence, for each locality, there must be a road for coming to the locality and a road for going from the locality.

By observing the diagram, we can see that G has only two roads connected to it – one from F and another from E. Of these two roads, the road from F is a one-way road from F to G. Hence, to go from G to any other locality, the road connecting to E must be from G to E.

For E, there are three roads. One from F to E, another from G to E (a two-way road converted to a one-way road) and a two-way road between E and C. To go from E to any other locality, the road between E and C must be a one-way road from E to C.

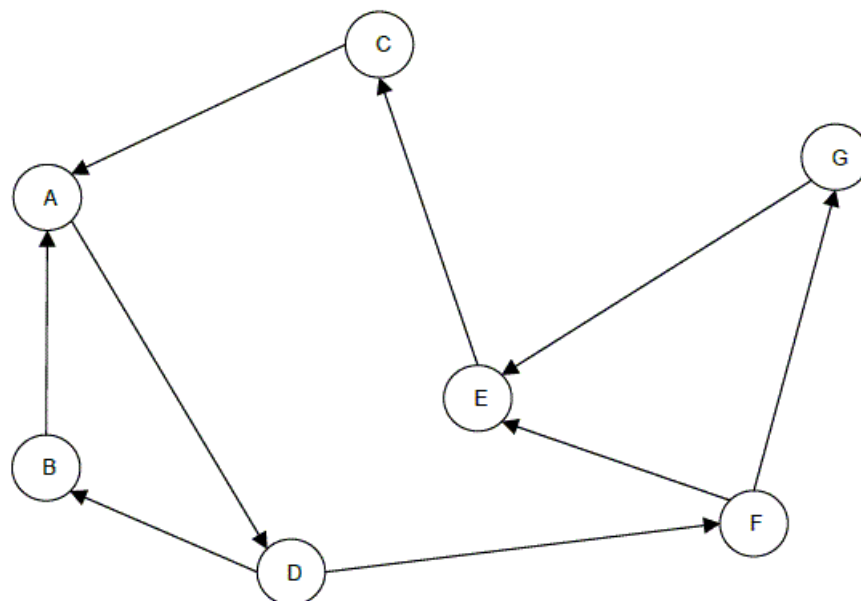
C is connected by two roads – one from E to C and the other, a two-way road between A and C. Since there are no roads going away from C, the road between A and C must be a road from C to A.

B is connected by two roads – one from D to B and the other, between A and B. The road between A and B must be a road from B to A.

A is connected by three roads – to/from C, B and D. Of these, two roads, from C and B are coming into A. Hence, the road between A and D must be from A to D.

Similarly, for F, the two-way road between D and F must be a road from D to F.

The following diagram provides the directions of the roads after the two-way roads are changed:



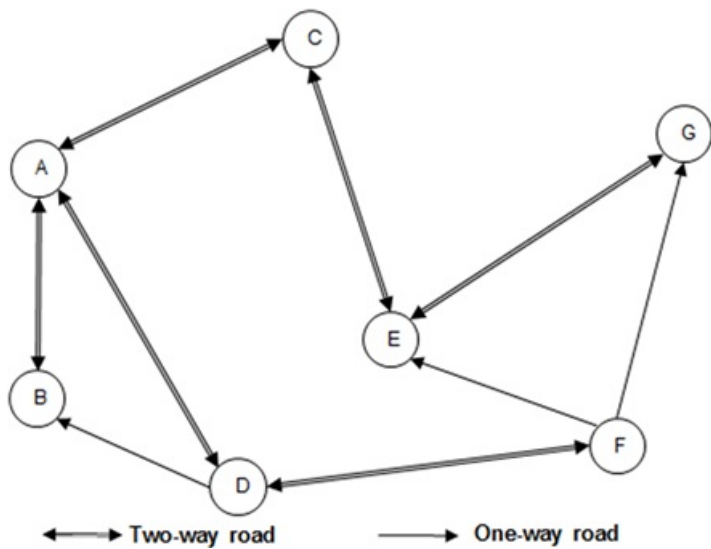
The route from A to G is G – E – C – A – D. Hence, a person has to pass through 3 localities to go from G to D.

Ans: (3)

undefined

DIRECTIONS for questions 13 to 16: Answer the questions on the basis of the information given below.

Seven localities, A through G, in a city were connected by certain two-way and one-way roads as shown in the figure below.



This morning, Kishore, the newly appointed Traffic Commissioner of the city, changed all the existing two-way roads into one-way roads while ensuring that any locality can be reached from any other locality.

Answer all the questions that follow taking into account the changes that Kishore made.

Q14. DIRECTIONS for questions 13 and 14: Type in your answer in the input box provided below the question.

In how many ways can a person travel from F to C without passing through any locality twice?

Your Answer:2 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	64
Avg. time spent on this question by all students	81
Difficulty Level	M
Avg. time spent on this question by students who got this question right	76
% of students who attempted this question	47.85
% of students who got the question right of those who attempted	48.7

[Video Solution](#)

[Text Solution](#)

Given that Kishore converted all the two-way roads into one-way roads. Also, every locality must be accessible from every other locality.

Hence, for each locality, there must be a road for coming to the locality and a road for going from the locality.

By observing the diagram, we can see that G has only two roads connected to it – one from F and another from E. Of these two roads, the road from F is a one-way road from F to G. Hence, to go from G to any other locality, the road connecting to E must be from G to E.

For E, there are three roads. One from F to E, another from G to E (a two-way road converted to a one-way road) and a two-way road between E and C. To go from E to any other locality, the road between E and C must be a one-way road from E to C.

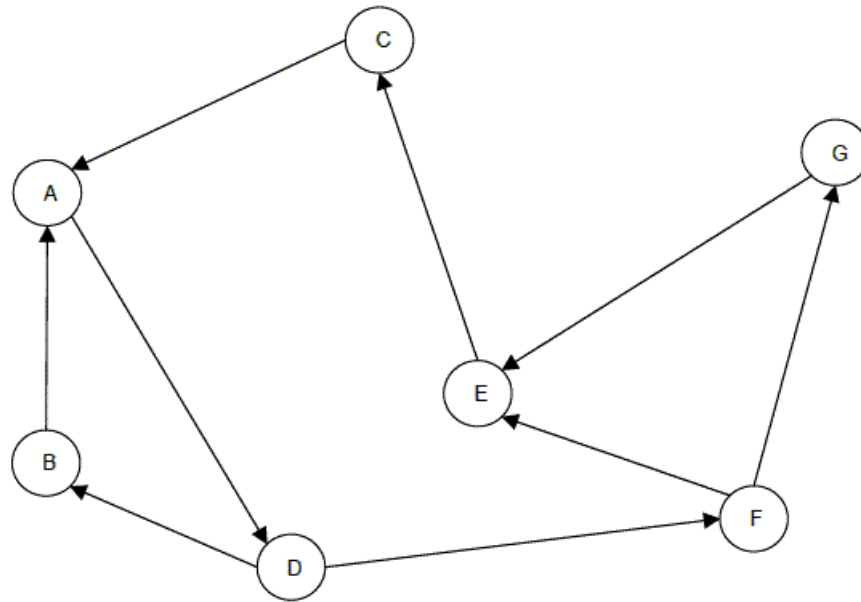
C is connected by two roads – one from E to C and the other, a two-way road between A and C. Since there are no roads going away from C, the road between A and C must be a road from C to A.

B is connected by two roads – one from D to B and the other, between A and B. The road between A and B must be a road from B to A.

A is connected by three roads – to/from C, B and D. Of these, two roads, from C and B are coming into A. Hence, the road between A and D must be from A to D.

Similarly, for F, the two-way road between D and F must be a road from D to F.

The following diagram provides the directions of the roads after the two-way roads are changed:

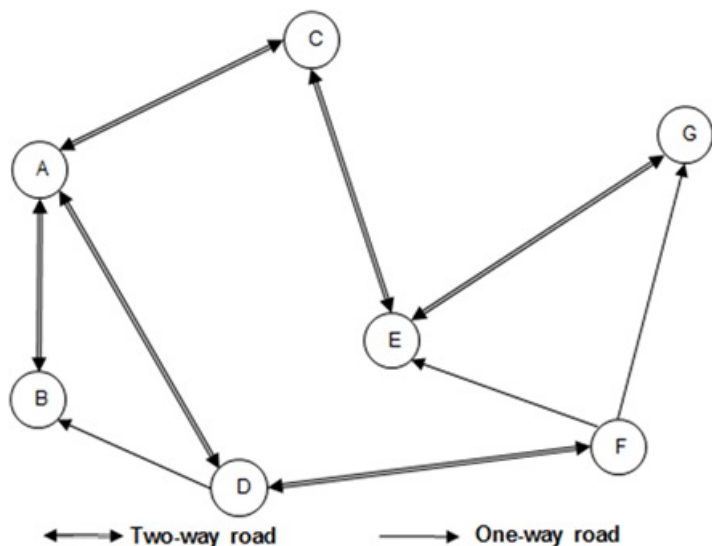


A person can travel from F to C in two ways: F – E – C; F – G – E – C. Ans: (2)

undefined

DIRECTIONS for questions 13 to 16: Answer the questions on the basis of the information given below.

Seven localities, A through G, in a city were connected by certain two-way and one-way roads as shown in the figure below.



This morning, Kishore, the newly appointed Traffic Commissioner of the city, changed all the existing two-way roads into one-way roads while ensuring that any locality can be reached from any other locality.

Answer all the questions that follow taking into account the changes that Kishore made.

Q15. DIRECTIONS for question 15: Select the correct alternative from the given choices.

Three persons started from one locality and reached another locality and none of them visited the same locality more than once. If, for each person, there was at least one road that the other two did not travel on, which of the following can be the origin and destination of the three persons?

- ☐ a) Origin: D; Destination: E
- ☐ b) Origin: B; Destination: E
- ☐ c) Origin: G; Destination: F
- ☒ d) Origin: D; Destination: A Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	136
Avg. time spent on this question by all students	153
Difficulty Level	M
Avg. time spent on this question by students who got this question right	153
% of students who attempted this question	29.5
% of students who got the question right of those who attempted	69.88

[Video Solution](#)

[Text Solution](#)

Given that Kishore converted all the two-way roads into one-way roads. Also, every locality must be accessible from every other locality.

Hence, for each locality, there must be a road for coming to the locality and a road for going from the locality.

By observing the diagram, we can see that G has only two roads connected to it – one from F and another from E. Of these two roads, the road from F is a one-way road from F to G. Hence, to go from G to any other locality, the road connecting to E must be from G to E.

For E, there are three roads. One from F to E, another from G to E (a two-way road converted to a one-way road) and a two-way road between E and C. To go from E to any other locality, the road between E and C must be a one-way road from E to C.

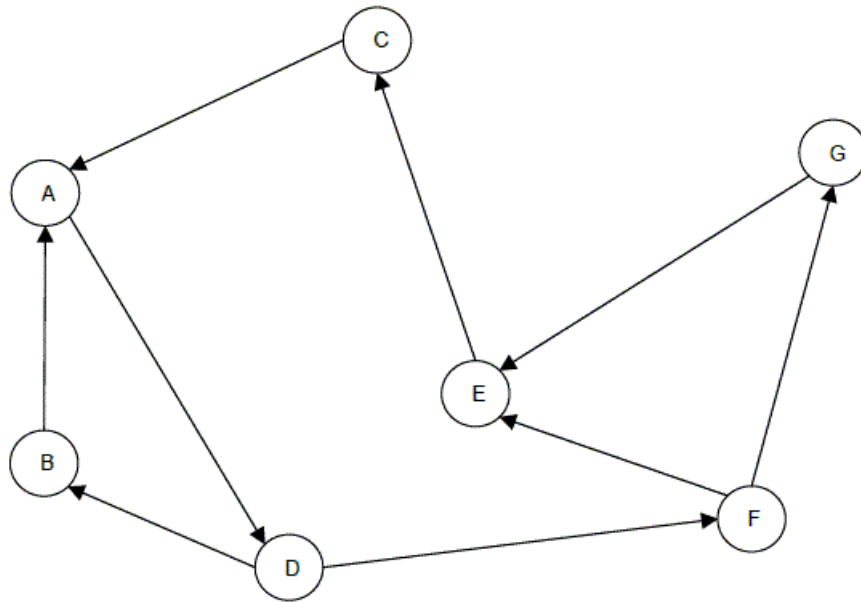
C is connected by two roads – one from E to C and the other, a two-way road between A and C. Since there are no roads going away from C, the road between A and C must be a road from C to A.

B is connected by two roads – one from D to B and the other, between A and B. The road between A and B must be a road from B to A.

A is connected by three roads – to/from C, B and D. Of these, two roads, from C and B are coming into A. Hence, the road between A and D must be from A to D.

Similarly, for F, the two-way road between D and F must be a road from D to F.

The following diagram provides the directions of the roads after the two-way roads are changed:



We need to find a pair of localities between which there are three different routes.

From D to E, there are two ways: D – F – E, D – F – G – E.

From B to E, there are two ways: B – A – D – F – E, B – A – D – F – G – E.

From G to F, there is only one way: G – E – C – A – D – F.

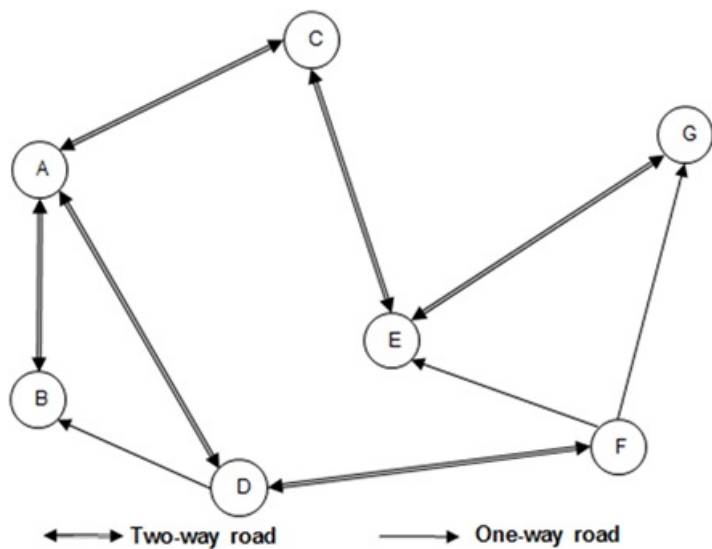
From D to A, there are three ways: D – B – A, D – F – E – C – A, D – F – G – E – C – A. Hence, this is possible.

Hence, only option D is possible.

Choice (D)

DIRECTIONS for questions 13 to 16: Answer the questions on the basis of the information given below.

Seven localities, A through G, in a city were connected by certain two-way and one-way roads as shown in the figure below.



This morning, Kishore, the newly appointed Traffic Commissioner of the city, changed all the existing two-way roads into one-way roads while ensuring that any locality can be reached from any other locality.

Answer all the questions that follow taking into account the changes that Kishore made.

Q16. DIRECTIONS for question 16: Type in your answer in the input box provided below the question.

If a person travelled from one locality to another and passed through all the localities exactly once, how many of the seven localities can be the locality from which he started?

Your Answer:2 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	153
Avg. time spent on this question by all students	142
Difficulty Level	D
Avg. time spent on this question by students who got this question right	149
% of students who attempted this question	35.4
% of students who got the question right of those who attempted	31.05

[Video Solution](#)

[Text Solution](#)

Given that Kishore converted all the two-way roads into one-way roads. Also, every locality must be accessible from every other locality.

Hence, for each locality, there must be a road for coming to the locality and a road for going from the locality.

By observing the diagram, we can see that G has only two roads connected to it – one from F and another from E. Of these two roads, the road from F is a one-way road from F to G. Hence, to go from G to any other locality, the road connecting to E must be from G to E.

For E, there are three roads. One from F to E, another from G to E (a two-way road converted to a one-way road) and a two-way road between E and C. To go from E to any other locality, the road between E and C must be a one-way road from E to C.

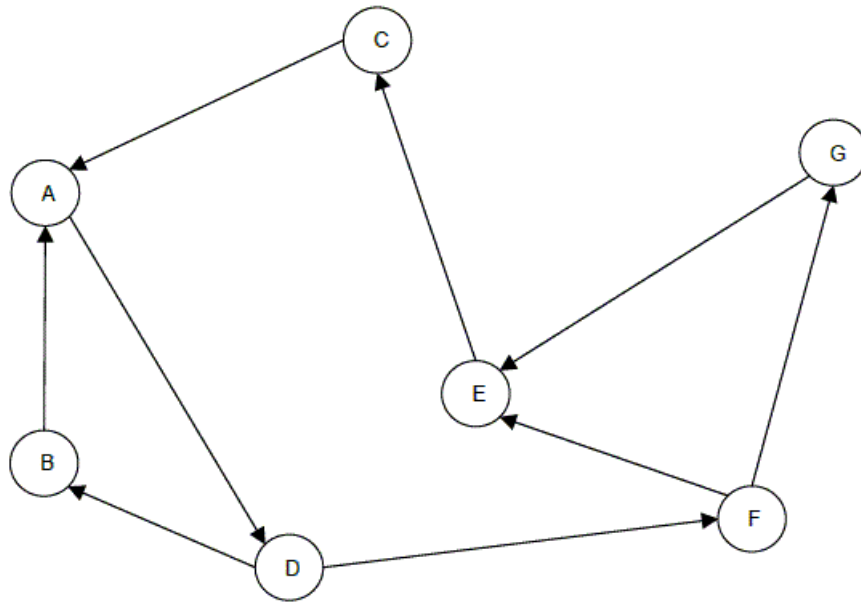
C is connected by two roads – one from E to C and the other, a two-way road between A and C. Since there are no roads going away from C, the road between A and C must be a road from C to A.

B is connected by two roads – one from D to B and the other, between A and B. The road between A and B must be a road from B to A.

A is connected by three roads – to/from C, B and D. Of these, two roads, from C and B are coming into A. Hence, the road between A and D must be from A to D.

Similarly, for F, the two-way road between D and F must be a road from D to F.

The following diagram provides the directions of the roads after the two-way roads are changed:



From A, the maximum number of localities that a person can pass through is 6 (including origin and destination): A – D – F – G – E – C.

From B, the maximum number of localities that a person can pass through is 7: B – A – D – F – G – E – C.

From C, the maximum number of localities that a person can pass through is 6: C – A – D – F – G – E.

From D, the maximum number of localities that a person can pass through is 6: D – F – G – E – C – A.

From E, the maximum number of localities that a person can pass through is 6: E – C – A – D – F – G.

From F, the maximum number of localities that a person can pass through is 7: F – G – E – C – A – D – B.

From G, the maximum number of localities that a person can pass through is 6: G – E – C – A – D – F/B.

Hence, the locality from which the person started can be B or F.

Ans: (2)

undefined

DIRECTIONS for questions 17 to 20: Answer the questions on the basis of the information given below.

In a warehouse, there were three different types of cartons - A, B and C - each of a different weight among 100 kg, 40 kg and 30 kg respectively. The cartons must be stacked vertically (i.e., in columns) such that the weight of any carton in the stack is not less than half the weight of all the stacks above it.

Q17. DIRECTIONS for questions 17 to 20: Type in your answer in the input box provided below the question.

If there are a maximum number of cartons in a stack, what is the minimum weight (in kg) of the stack?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	152
Avg. time spent on this question by all students	210
Difficulty Level	M
Avg. time spent on this question by students who got this question right	276
% of students who attempted this question	23.3
% of students who got the question right of those who attempted	8.51

[Video Solution](#)

[Text Solution](#)

The height of a stack is determined based on the weight of each carton.
To maximize the height of the carton, there must be a 100 kg carton at the bottom.
In this case, the total weight of the stacks above it can be at most 200 kg.
If the second stack from the bottom is a 100 kg stack, then there can be additional 100 kg on top of this stack. There can be three cartons each of 30 kg above this OR one carton of 40 kg and two cartons of 30 kg each on top of this.
Hence, the maximum height of a stack is 5 and there are two possibilities for having five cartons in a stack as shown below:

Case 1	Case 2
30	30
30	30
40	30
100	100
100	100

The minimum weight of the stack will be $100 + 100 + 90 = 290$ kg.

Ans: (290)

undefined

DIRECTIONS for questions 17 to 20: Answer the questions on the basis of the information given below.

In a warehouse, there were three different types of cartons - A, B and C - each of a different weight among 100 kg, 40 kg and 30 kg respectively. The cartons must be stacked vertically (i.e., in columns) such that the weight of any carton in the stack is not less than half the weight of all the stacks above it.

Q18. DIRECTIONS for questions 17 to 20: Type in your answer in the input box provided below the question.

In the warehouse, if there are seven stacks, each with the maximum possible number of cartons, the total number of cartons of the same type across the seven stacks can be at most

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	80
Difficulty Level	M

Time spent / Accuracy Analysis

Avg. time spent on this question by students who got this question right	89
% of students who attempted this question	14.94
% of students who got the question right of those who attempted	23.9

[Video Solution](#)

[Text Solution](#)

From the above solution, we can see that the maximum number of cartons of a single type in a stack with 5 cartons is three (as there are 3 cartons of 30 kg each in Case 2). Hence, there can be a maximum of $3 \times 7 = 21$ cartons of a single type in the warehouse.
Ans: (21)

undefined

DIRECTIONS for questions 17 to 20: Answer the questions on the basis of the information given below.

In a warehouse, there were three different types of cartons - A, B and C - each of a different weight among 100 kg, 40 kg and 30 kg respectively. The cartons must be stacked vertically (i.e., in columns) such that the weight of any carton in the stack is not less than half the weight of all the stacks above it.

Q19. DIRECTIONS for questions 17 to 20: Type in your answer in the input box provided below the question.

If there are 10 cartons of each of the three types, what is the minimum number of stacks that must be formed?

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	92
Difficulty Level	M
Avg. time spent on this question by students who got this question right	140
% of students who attempted this question	15.01
% of students who got the question right of those who attempted	18.53

[Video Solution](#)

[Text Solution](#)

Since the maximum height of a stack is 5, for 10 cartons of each type, ideally only 6 stacks will be required. However, from the available cases, we can see that it is not possible to fit 10 cartons of each type in only 6 stacks (because no combination of stacks of 5 will require 10 cartons of each type).
If we go with the stack mentioned in Case 1 (as it has the most even distribution of cartons of the three types), we can form a maximum of five stacks. After forming five stacks, there will be 5 cartons of 40 kg left. We can stack three of these cartons as one stack and the remaining two as the other stack.
In this way, we can form seven stacks to fit in 10 cartons of each type. Ans: (7)

undefined

DIRECTIONS for questions 17 to 20: Answer the questions on the basis of the information given below.

In a warehouse, there were three different types of cartons - A, B and C - each of a different weight among 100 kg, 40 kg and 30 kg respectively. The cartons must be stacked vertically (i.e., in columns) such that the weight of any carton in the stack is not less than half the weight of all the stacks above it.

Q20. DIRECTIONS for questions 17 to 20: Type in your answer in the input box provided below the question.

If the number of cartons of the types A, B and C are 16, 4 and 20 respectively, what is the minimum number of stacks that must be formed?

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	87
Difficulty Level	M
Avg. time spent on this question by students who got this question right	107
% of students who attempted this question	12.04
% of students who got the question right of those who attempted	18.65

[Video Solution](#)

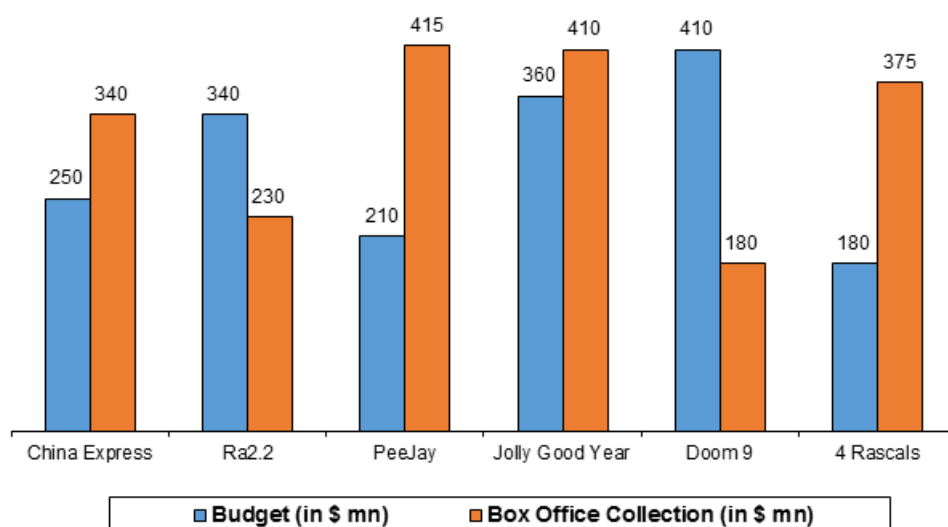
[Text Solution](#)

Since there are 16 cartons of 100 kg, 4 cartons of 40 kg and 20 cartons of 30 kg, these cartons can be accommodated in 8 stacks – four stacks with 2 cartons of 100 kg and three cartons of 30 kg each; another four stacks with two cartons of 100 kg, one carton of 40 kg and two cartons of 30 kg each.
Ans: (8)

undefined

DIRECTIONS for questions 21 to 24: Answer the questions on the basis of the information given below.

The National Movie Association conducted a study to analyse the commercial success of six films. The study gathered information about the Budget of each of these films, and their respective Box Office Collections. The Budget of a film comprises all the costs involved in producing the film. The Box Office Collection of a film is the revenue generated by the film only through ticket sales. The following bar-chart presents this information for each of the six films.



Q21. DIRECTIONS for questions 21 and 22: Select the correct alternative from the given choices.

If the average price of each ticket is \$1.5 and each person has watched any movie only once, approximately how many people would have watched the movie 'Jolly Good Year'?

- ☐ a) 615 million
- ☐ b) 273 million ▢ Your answer is correct
- ☐ c) 277 million
- ☐ d) 620 million

Time spent / Accuracy Analysis

Time taken by you to answer this question	112
Avg. time spent on this question by all students	152
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	148
% of students who attempted this question	49.32
% of students who got the question right of those who attempted	89.84

[Video Solution](#)

[Text Solution](#)

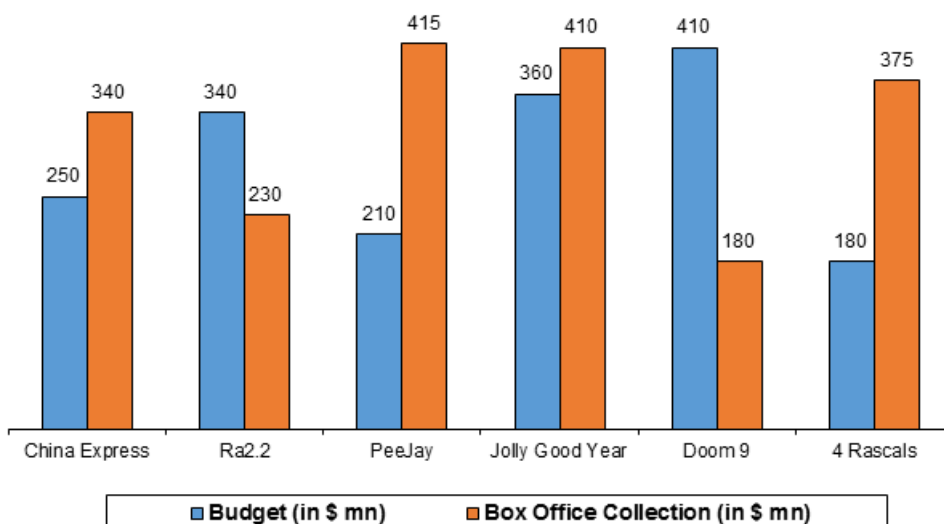
Total box office collection of Jolly Good Year = \$410 mn
 Price per ticket = \$1.50
 Total number of people who watched the movie
 = $410/1.5$ = approximately 273 mn

Choice (B)

undefined

DIRECTIONS for questions 21 to 24: Answer the questions on the basis of the information given below.

The National Movie Association conducted a study to analyse the commercial success of six films. The study gathered information about the Budget of each of these films, and their respective Box Office Collections. The Budget of a film comprises all the costs involved in producing the film. The Box Office Collection of a film is the revenue generated by the film only through ticket sales. The following bar-chart presents this information for each of the six films.



Q22. DIRECTIONS for questions 21 and 22: Select the correct alternative from the given choices.

For which film is its Box Office Collection as a percentage of its Budget the highest?

- ☐ a) 4 Rascals ▢ Your answer is correct

- ☐ b) PeeJay
- ☐ c) Doom 9
- ☐ d) China Express

Time spent / Accuracy Analysis

Time taken by you to answer this question	132
Avg. time spent on this question by all students	110
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	107
% of students who attempted this question	51.56
% of students who got the question right of those who attempted	79.1

[Video Solution](#)

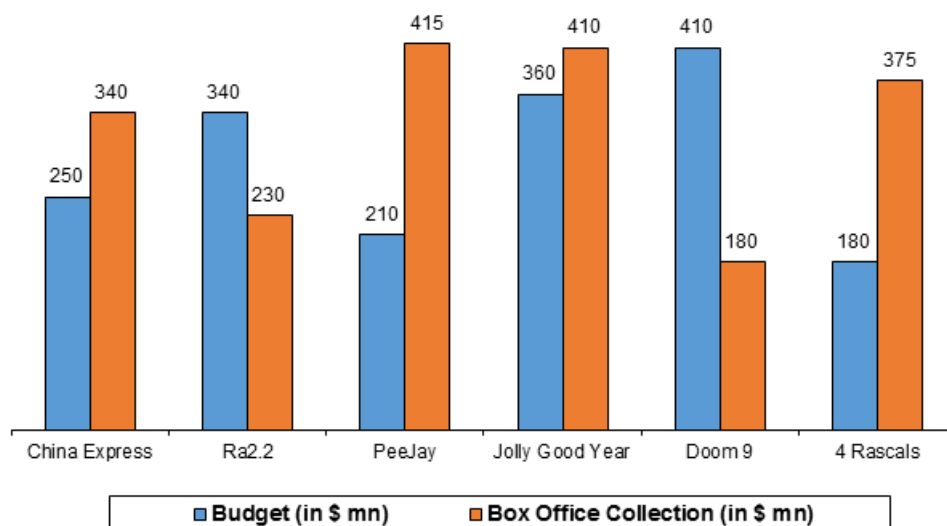
[Text Solution](#)

Only for the movie 4 Rascals is the Box Office Collection more than double its Budget.
Choice (A)

undefined

DIRECTIONS for questions 21 to 24: Answer the questions on the basis of the information given below.

The National Movie Association conducted a study to analyse the commercial success of six films. The study gathered information about the Budget of each of these films, and their respective Box Office Collections. The Budget of a film comprises all the costs involved in producing the film. The Box Office Collection of a film is the revenue generated by the film only through ticket sales. The following bar-chart presents this information for each of the six films.



Q23. DIRECTIONS for questions 23 and 24: Type in your answer in the input box provided below the question.

The study found that the revenue generated from the audio sales for each film was equal to exactly 20% of its respective Budget. What would be the difference (in \$mn) between the Budget and the total revenue (which is the sum of the Box Office Collection and revenue from audio sales) for Ra2.2?

Your Answer:42 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	186
Avg. time spent on this question by all students	116

Time spent / Accuracy Analysis

Difficulty Level	E
Avg. time spent on this question by students who got this question right	112
% of students who attempted this question	42.59
% of students who got the question right of those who attempted	75.68

[Video Solution](#)

[Text Solution](#)

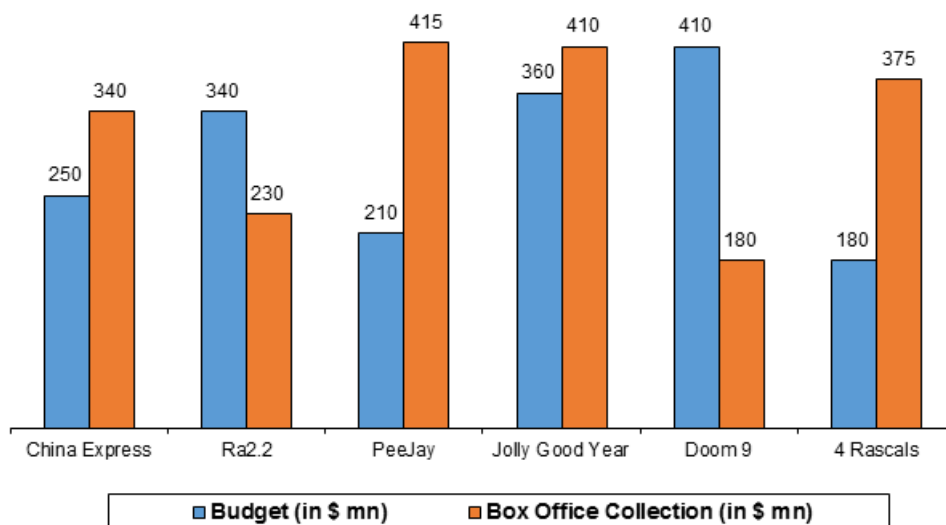
Budget for Ra2.2 = \$340 mn
Box Office Collections = \$230 mn
Audio Sales = 20% × 340 = \$68 mn
Total Revenue = \$298 mn
Difference = \$42 mn

Ans: (42)

undefined

DIRECTIONS for questions 21 to 24: Answer the questions on the basis of the information given below.

The National Movie Association conducted a study to analyse the commercial success of six films. The study gathered information about the Budget of each of these films, and their respective Box Office Collections. The Budget of a film comprises all the costs involved in producing the film. The Box Office Collection of a film is the revenue generated by the film only through ticket sales. The following bar-chart presents this information for each of the six films.



Q24. DIRECTIONS for questions 23 and 24: Type in your answer in the input box provided below the question.

Only the movies with Box Office Collections higher than their Budgets have to pay a tax, which is equal to 27% of the difference between the respective Box Office Collection and Budget. If the tax paid by PeeJay as a percentage of the total tax paid by all the six movies is $x\%$, find x .

Enter your answer as a decimal value, rounded off to two decimal places.

Your Answer:37.96 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	232
Avg. time spent on this question by all students	242
Difficulty Level	M
Avg. time spent on this question by students who got this question right	228

Time spent / Accuracy Analysis

% of students who attempted this question	34.87
% of students who got the question right of those who attempted	48.85

[Video Solution](#)

[Text Solution](#)

The movies that had Box office collections higher than the Budget were China Express, PeeJay, Jolly Good Year, and 4 Rascals.

Difference between Box Office Collections and Budget for China Express = $340 - 250 = 90$

Difference between Box Office Collections and Budget for PeeJay = $415 - 210 = 205$

Difference between Box Office Collections and Budget for Jolly Good Year = $410 - 360 = 50$

Difference between Box Office Collections and Budget for 4 Rascals = $375 - 180 = 195$

Total difference = 540

Total Tax paid = $540 \times 27\%$

Tax paid by PeeJay = $205 \times 27\%$

Percentage tax paid by PeeJay = $205/540 = 37.96\%$

Ans: (37.96)

undefined

DIRECTIONS for questions 25 to 28: Answer the questions on the basis of the information given below.

During a particular month, Ramu, a food critic, visited exactly seven restaurants, A through G, and ranked the seven restaurants from 1 to 7 such that a numerically lower rank is considered better than a numerically higher rank. He visited at most one restaurant on any day of the month. He visited the restaurants ranked second, third and sixth on Mondays; he visited the restaurants ranked first and fifth on Fridays; he visited the restaurants ranked fourth and seventh on Saturdays.

It is also known that

- i. C, which he did not visit on a Saturday, was ranked worse than B.
- ii. the day of the week on which he visited F was not the same as the day of the week on which he visited D.
- iii. D was ranked worse than A and he did not visit D on a Monday.
- iv. three restaurants were ranked better than E but worse than G, but he did not visit these two restaurants on the same day.
- v. he did not visit A on a Monday and A was ranked worse than F.

Q25.

DIRECTIONS for questions 25 to 28: Select the correct alternative from the given choices. How many restaurants were ranked better than C?

- ☐ a) 1
- ☐ b) 2

☐ c) 4

☐ d) 5 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	858
Avg. time spent on this question by all students	615
Difficulty Level	E
Avg. time spent on this question by students who got this question right	641
% of students who attempted this question	29.78
% of students who got the question right of those who attempted	68.63

[Video Solution](#)

[Text Solution](#)

From (iv), E's rank can be 5 or 6 or 7 and G's rank can be 1 or 2 or 3. Since E and G were not visited on the same day, E's rank and G's rank cannot be 5 and 1 OR 6 and 2.

Hence, E's rank must be 7 and G's rank must be 3.

From (i), C cannot be ranked 1st. B cannot be ranked 7th. Since he did not visit C on a Saturday, C cannot be ranked 4th or 7th. Hence, C can be ranked 2 or 5 or 6.

From (iii), D's rank cannot be 1. Since he did not visit D on Monday, D's rank cannot be 2 or 3 or 6.

Hence, D's rank can only be 4 or 5.

From (v), A's rank cannot be 1 or 2 or 3 or 6. Hence, A's rank can only be 4 or 5.

From (iii), A's rank must be 4 and D's rank must be 5.

From (v), A was ranked worse than F. Hence, F's rank can only be 1 or 2.

Also, B was ranked worse than C. Hence, B's rank can only be 1 or 2.

C's rank must be 6. From (ii), F's rank must be 2 and B's rank must be 1.

The following table provides the ranks of the seven restaurants and the day on which he visited each restaurant:

Rank	Restaurant	Day
1	B	Friday
2	F	Monday
3	G	Monday
4	A	Saturday
5	D	Friday
6	C	Monday
7	E	Saturday

Five restaurants were ranked better than C (which was ranked sixth). Choice (D)

undefined

DIRECTIONS for questions 25 to 28: Answer the questions on the basis of the information given below.

During a particular month, Ramu, a food critic, visited exactly seven restaurants, A through G, and ranked the seven restaurants from 1 to 7 such that a numerically lower rank is considered better than a numerically higher rank. He visited at most one restaurant on any day of the month. He visited the restaurants ranked second, third and sixth on Mondays; he visited the restaurants ranked first and fifth on Fridays; he visited the restaurants ranked fourth and seventh on Saturdays.

It is also known that

- C, which he did not visit on a Saturday, was ranked worse than B.

- ii. the day of the week on which he visited F was not the same as the day of the week on which he visited D.
- iii. D was ranked worse than A and he did not visit D on a Monday.
- iv. three restaurants were ranked better than E but worse than G, but he did not visit these two restaurants on the same day.
- v. he did not visit A on a Monday and A was ranked worse than F.

Q26.

DIRECTIONS for questions 25 to 28: Select the correct alternative from the given choices. Which of the following restaurant is ranked better than G?

- ☐ a) **A**
- ☐ b) **B**
- ☐ c) **F**
- ☐ d) **More than one of the above** **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	12
Avg. time spent on this question by all students	52
Difficulty Level	E
Avg. time spent on this question by students who got this question right	49
% of students who attempted this question	30.2
% of students who got the question right of those who attempted	79.88

[Video Solution](#)

[Text Solution](#)

From (iv), E's rank can be 5 or 6 or 7 and G's rank can be 1 or 2 or 3. Since E and G were not visited on the same day, E's rank and G's rank cannot be 5 and 1 OR 6 and 2.

Hence, E's rank must be 7 and G's rank must be 3.

From (i), C cannot be ranked 1st. B cannot be ranked 7th. Since he did not visit C on a Saturday, C cannot be ranked 4th or 7th. Hence, C can be ranked 2 or 5 or 6.

From (iii), D's rank cannot be 1. Since he did not visit D on Monday, D's rank cannot be 2 or 3 or 6.

Hence, D's rank can only be 4 or 5.

From (v), A's rank cannot be 1 or 2 or 3 or 6. Hence, A's rank can only be 4 or 5.

From (iii), A's rank must be 4 and D's rank must be 5.

From (v), A was ranked worse than F. Hence, F's rank can only be 1 or 2.

Also, B was ranked worse than C. Hence, B's rank can only be 1 or 2.

C's rank must be 6. From (ii), F's rank must be 2 and B's rank must be 1.

The following table provides the ranks of the seven restaurants and the day on which he visited each restaurant:

Rank	Restaurant	Day
1	B	Friday
2	F	Monday
3	G	Monday
4	A	Saturday
5	D	Friday
6	C	Monday
7	E	Saturday

Both B and F are ranked better than G.

Choice (D)

undefined

DIRECTIONS for questions 25 to 28: Answer the questions on the basis of the information given below.

During a particular month, Ramu, a food critic, visited exactly seven restaurants, A through G, and ranked the seven restaurants from 1 to 7 such that a numerically lower rank is considered better than a numerically higher rank. He visited at most one restaurant on any day of the month. He visited the restaurants ranked second, third and sixth on Mondays; he visited the restaurants ranked first and fifth on Fridays; he visited the restaurants ranked fourth and seventh on Saturdays.

It is also known that

- i. C, which he did not visit on a Saturday, was ranked worse than B.
- ii. the day of the week on which he visited F was not the same as the day of the week on which he visited D.
- iii. D was ranked worse than A and he did not visit D on a Monday.
- iv. three restaurants were ranked better than E but worse than G, but he did not visit these two restaurants on the same day.
- v. he did not visit A on a Monday and A was ranked worse than F.

Q27.

DIRECTIONS for questions 25 to 28: Select the correct alternative from the given choices. The ranks of any two restaurants that Ramu visited consecutively differed by more than one. Also, he visited the first restaurant on a Monday and visited a restaurant on every Friday, Saturday and Monday that followed (until he visited all the seven restaurants).

Which of the following can be the number of restaurants that Ramu visited before visiting A?

- ☐ a) 2
- ☐ b) 3
- ☐ c) 5
- ☐ d) More than one of the above **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	179
Difficulty Level	M
Avg. time spent on this question by students who got this question right	197
% of students who attempted this question	17.79
% of students who got the question right of those who attempted	51.24

[Video Solution](#)

[Text Solution](#)

From (iv), E's rank can be 5 or 6 or 7 and G's rank can be 1 or 2 or 3. Since E and G were not visited on the same day, E's rank and G's rank cannot be 5 and 1 OR 6 and 2.

Hence, E's rank must be 7 and G's rank must be 3.

From (i), C cannot be ranked 1st. B cannot be ranked 7th. Since he did not visit C on a Saturday, C cannot be ranked 4th or 7th. Hence, C can be ranked 2 or 5 or 6.

From (iii), D's rank cannot be 1. Since he did not visit D on Monday, D's rank cannot be 2 or 3 or 6.

Hence, D's rank can only be 4 or 5.

From (v), A's rank cannot be 1 or 2 or 3 or 6. Hence, A's rank can only be 4 or 5.

From (iii), A's rank must be 4 and D's rank must be 5.

From (v), A was ranked worse than F. Hence, F's rank can only be 1 or 2.

Also, B was ranked worse than C. Hence, B's rank can only be 1 or 2.

C's rank must be 6. From (ii), F's rank must be 2 and B's rank must be 1.

The following table provides the ranks of the seven restaurants and the day on which

he visited each restaurant:

Rank	Restaurant	Day
1	B	Friday
2	F	Monday
3	G	Monday
4	A	Saturday
5	D	Friday
6	C	Monday
7	E	Saturday

He must have visited the seven restaurants on Monday, Friday, Saturday, Monday, Friday, Saturday and Monday.

The second restaurant the he visits can be ranked 1 or 5 (since he visited this on Friday).

Let the second restaurant that he visited be ranked 5. The fifth restaurant must be ranked 1 (since the fifth restaurant was visited on a Friday).

The third restaurant must be ranked 7 (it cannot be ranked 4 as the difference between 5 and 4 is 1).

The first restaurant can be ranked 2 or 3.

The fourth restaurant can be ranked 2 or 3. However, this cannot be 2 as the fifth restaurant is ranked 1. Hence, the fourth restaurant is ranked 3 and the first restaurant must be ranked 2.

The sixth restaurant must be ranked 4 and the last restaurant must be ranked 6.

This is one possible case.

Let the second restaurant be ranked 1 and the fifth restaurant be ranked 5.

The first restaurant can be ranked 3 or 6.

The third restaurant can be ranked 4 or 7.

The fourth restaurant must be ranked 2 or 3. It cannot be ranked 6 because the fifth restaurant is ranked 5.

The sixth restaurant must be ranked 7. It cannot be ranked 4 because the fifth restaurant is ranked 5.

Hence, the third restaurant must be ranked 4. The fourth restaurant must be ranked 2.

The last restaurant cannot be ranked 6 (as the sixth restaurant is ranked 7). Hence, the last restaurant must be ranked 3 and the first restaurant must be ranked 6. This is another case.

These are the only two possible cases and they are presented below:

Order	Case 1		Case 2	
	Restaurant	Rank	Restaurant	Rank
1	F	2	C	6
2	D	5	B	1
3	E	7	A	4
4	G	3	F	2
5	B	1	D	5
6	A	4	E	7
7	C	6	G	3

He could have visited 2 or 5 restaurants before visiting A.

Choice (D)

undefined

DIRECTIONS for questions 25 to 28: Answer the questions on the basis of the information given below.

During a particular month, Ramu, a food critic, visited exactly seven restaurants, A through G, and ranked the seven restaurants from 1 to 7 such that a numerically lower rank is considered better than a numerically higher rank. He visited at most one restaurant on any day of the month. He visited the restaurants ranked second, third and sixth on Mondays; he visited the restaurants ranked first and fifth on Fridays; he visited the restaurants ranked fourth and seventh on Saturdays.

It is also known that

- i. C, which he did not visit on a Saturday, was ranked worse than B.
- ii. the day of the week on which he visited F was not the same as the day of the week on which he visited D.
- iii. D was ranked worse than A and he did not visit D on a Monday.
- iv. three restaurants were ranked better than E but worse than G, but he did not visit these two restaurants on the same day.
- v. he did not visit A on a Monday and A was ranked worse than F.

Q28.

DIRECTIONS for questions 25 to 28: Select the correct alternative from the given choices. The ranks of any two restaurants that Ramu visited consecutively differed by more than one. Also, he visited the first restaurant on a Monday and visited a restaurant on every Friday, Saturday and Monday that followed (until he visited all the seven restaurants).

What is the difference between the ranks of the restaurant that he visited first and A?

- ☐ a) 1
- ☐ b) 2
- ☐ c) 3
- ☐ d) Cannot be determined □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	116
Avg. time spent on this question by all students	71
Difficulty Level	M
Avg. time spent on this question by students who got this question right	81
% of students who attempted this question	17.27
% of students who got the question right of those who attempted	31.64

[Video Solution](#)

[Text Solution](#)

From (iv), E's rank can be 5 or 6 or 7 and G's rank can be 1 or 2 or 3. Since E and G were not visited on the same day, E's rank and G's rank cannot be 5 and 1 OR 6 and 2.

Hence, E's rank must be 7 and G's rank must be 3.

From (i), C cannot be ranked 1st. B cannot be ranked 7th. Since he did not visit C on a Saturday, C cannot be ranked 4th or 7th. Hence, C can be ranked 2 or 5 or 6.

From (iii), D's rank cannot be 1. Since he did not visit D on Monday, D's rank cannot be 2 or 3 or 6.

Hence, D's rank can only be 4 or 5.

From (v), A's rank cannot be 1 or 2 or 3 or 6. Hence, A's rank can only be 4 or 5.

From (iii), A's rank must be 4 and D's rank must be 5.

From (v), A was ranked worse than F. Hence, F's rank can only be 1 or 2.

Also, B was ranked worse than C. Hence, B's rank can only be 1 or 2.

C's rank must be 6. From (ii), F's rank must be 2 and B's rank must be 1.

The following table provides the ranks of the seven restaurants and the day on which he visited each restaurant:

Rank	Restaurant	Day
1	B	Friday
2	F	Monday
3	G	Monday
4	A	Saturday
5	D	Friday
6	C	Monday
7	E	Saturday

In both the cases, the required difference = 2.

Choice (B)

undefined

DIRECTIONS for questions 29 to 32: Answer these questions on the basis of the information given below.

The following excerpts are taken from the diary of a young girl named Anne:

Excerpt 1: "I went to the park immediately after the library closed and reached the park by 11 a.m."

Excerpt 2: "I went to the Restaurant to have my lunch. I reached the restaurant by 12 noon and had lunch with Bob."

Excerpt 3: "I met my friend Elisa on my way to the supermarket. We went to the supermarket together after which we split up and I headed for lunch."

Excerpt 4: "Today I spent time with five of my friends, Bob, Elisa, John, Charlotte and Amanda, at five different places, the library, the fair, the park, the restaurant and the supermarket, and then returned home."

Excerpt 5: "I planned to meet John the first thing in the morning but instead met him at the place I visited last."

Q29. DIRECTIONS for questions 29 to 32: Select the correct alternative from the given choices.

Where did Anne go to after leaving the park?

Q 29 The Restaurant

- ☐ a) The Restaurant
- ☐ b) The Fair
- ☐ c) The Library
- ☐ d) The Supermarket Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	367
Avg. time spent on this question by all students	213
Difficulty Level	E
Avg. time spent on this question by students who got this question right	216
% of students who attempted this question	47.3
% of students who got the question right of those who attempted	91.65

[Video Solution](#)

[Text Solution](#)

From Ex. 1, she went to the Park after the Library.
 From Ex. 2 and 3, she went to the Restaurant after she left the supermarket.
 Also she went to the restaurant after leaving the Library and the park.
 Therefore she went to these places in the following order – Library, Park, Supermarket and Restaurant.
 She could have gone to the fair first thing in the morning or after leaving the park or the last thing in the day. Since she met John at the last place and she could not have met John in the restaurant, the restaurant could not have been the last place she visited. Therefore, she visited the fair at the end. The order and the people she met are listed below.

Place	Person Anne Met
Library	Charlotte/Amanda
Park	Amanda/Charlotte
Supermarket	Elisa
Restaurant	Bob
Fair	John

Anne went to the supermarket after leaving the park.

Choice (D)

undefined

DIRECTIONS for questions 29 to 32: Answer these questions on the basis of the information given below.

The following excerpts are taken from the diary of a young girl named Anne:

Excerpt 1: “I went to the park immediately after the library closed and reached the park by 11 a.m.”

Excerpt 2: “I went to the Restaurant to have my lunch. I reached the restaurant by 12 noon and had lunch with Bob.”

Excerpt 3: “I met my friend Elisa on my way to the supermarket. We went to the supermarket together after which we split up and I headed for lunch.”

Excerpt 4: “Today I spent time with five of my friends, Bob, Elisa, John, Charlotte and Amanda, at five different places, the library, the fair, the park, the restaurant and the supermarket, and then returned home.”

Excerpt 5: “I planned to meet John the first thing in the morning but instead met him at the place I visited last.”

Q30. DIRECTIONS for questions 29 to 32: Select the correct alternative from the given choices.

Which place did Anne visit last?

- ☐ a) The Restaurant

- ☐ a) The Restaurant
- ☐ b) The Fair Your answer is correct
- ☐ c) The Park
- ☐ d) The Supermarket

Time spent / Accuracy Analysis

Time taken by you to answer this question	7
Avg. time spent on this question by all students	33
Difficulty Level	E
Avg. time spent on this question by students who got this question right	31
% of students who attempted this question	46.04
% of students who got the question right of those who attempted	93.51

[Video Solution](#)

[Text Solution](#)

From Ex. 1, she went to the Park after the Library.
 From Ex. 2 and 3, she went to the Restaurant after she left the supermarket.
 Also she went to the restaurant after leaving the Library and the park.
 Therefore she went to these places in the following order – Library, Park, Supermarket and Restaurant.
 She could have gone to the fair first thing in the morning or after leaving the park or the last thing in the day. Since she met John at the last place and she could not have met John in the restaurant, the restaurant could not have been the last place she visited. Therefore, she visited the fair at the end. The order and the people she met are listed below.

Place	Person Anne Met
Library	Charlotte/Amanda
Park	Amanda/Charlotte
Supermarket	Elisa
Restaurant	Bob
Fair	John

Anne visited the fair the last.

Choice (B)

undefined

DIRECTIONS for questions 29 to 32: Answer these questions on the basis of the information given below.

The following excerpts are taken from the diary of a young girl named Anne:

Excerpt 1: “I went to the park immediately after the library closed and reached the park by 11 a.m.”

Excerpt 2: “I went to the Restaurant to have my lunch. I reached the restaurant by 12 noon and had lunch with Bob.”

Excerpt 3: “I met my friend Elisa on my way to the supermarket. We went to the supermarket together after which we split up and I headed for lunch.”

Excerpt 4: “Today I spent time with five of my friends, Bob, Elisa, John, Charlotte and Amanda, at five different places, the library, the fair, the park, the restaurant and the supermarket, and then returned home.”

Excerpt 5: “I planned to meet John the first thing in the morning but instead met him at the place I visited last.”

Q31. DIRECTIONS for questions 29 to 32: Select the correct alternative from the given choices.

Whom did Anne meet at the library?

- ☐ a) John

- ☐ a) John
- ☐ b) Charlotte
- ☐ c) Amanda
- ☐ d) Cannot be determined **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	27
Avg. time spent on this question by all students	36
Difficulty Level	E
Avg. time spent on this question by students who got this question right	35
% of students who attempted this question	44.83
% of students who got the question right of those who attempted	97.92

[Video Solution](#)

[Text Solution](#)

From Ex. 1, she went to the Park after the Library.
 From Ex. 2 and 3, she went to the Restaurant after she left the supermarket.
 Also she went to the restaurant after leaving the Library and the park.
 Therefore she went to these places in the following order – Library, Park, Supermarket and Restaurant.
 She could have gone to the fair first thing in the morning or after leaving the park or the last thing in the day. Since she met John at the last place and she could not have met John in the restaurant, the restaurant could not have been the last place she visited. Therefore, she visited the fair at the end. The order and the people she met are listed below.

Place	Person Anne Met
Library	Charlotte/Amanda
Park	Amanda/Charlotte
Supermarket	Elisa
Restaurant	Bob
Fair	John

Anne met either Charlotte or Amanda at the library.

Choice (D)

undefined

DIRECTIONS for questions 29 to 32: Answer these questions on the basis of the information given below.

The following excerpts are taken from the diary of a young girl named Anne:

Excerpt 1: “I went to the park immediately after the library closed and reached the park by 11 a.m.”

Excerpt 2: “I went to the Restaurant to have my lunch. I reached the restaurant by 12 noon and had lunch with Bob.”

Excerpt 3: “I met my friend Elisa on my way to the supermarket. We went to the supermarket together after which we split up and I headed for lunch.”

Excerpt 4: “Today I spent time with five of my friends, Bob, Elisa, John, Charlotte and Amanda, at five different places, the library, the fair, the park, the restaurant and the supermarket, and then returned home.”

Excerpt 5: “I planned to meet John the first thing in the morning but instead met him at the place I visited last.”

Q32. DIRECTIONS for questions 29 to 32: Select the correct alternative from the given choices.

If the sum of the time spent by Anne at each place and the time she took to reach her next destination from that place was half an hour, when did she reach home after meeting all five friends?

- ☐ a) 12:30 p.m.
- ☐ b) 1:00 p.m. **Your answer is correct**
- ☐ c) 1:30 p.m.
- ☐ d) 2:00 p.m.

Time spent / Accuracy Analysis

Time taken by you to answer this question	121
Avg. time spent on this question by all students	123
Difficulty Level	E
Avg. time spent on this question by students who got this question right	113
% of students who attempted this question	39.28
% of students who got the question right of those who attempted	68.92

[Video Solution](#)

Text Solution

From Ex. 1, she went to the Park after the Library.
 From Ex. 2 and 3, she went to the Restaurant after she left the supermarket.
 Also she went to the restaurant after leaving the Library and the park.
 Therefore she went to these places in the following order – Library, Park, Supermarket and Restaurant.
 She could have gone to the fair first thing in the morning or after leaving the park or the last thing in the day. Since she met John at the last place and she could not have met John in the restaurant, the restaurant could not have been the last place she visited. Therefore, she visited the fair at the end. The order and the people she met are listed below.

Place	Person Anne Met
Library	Charlotte/Amanda
Park	Amanda/Charlotte
Supermarket	Elisa
Restaurant	Bob
Fair	John

Anne spent 12:00 – 12:30 PM in the restaurant, 12:30-1:00 PM in the fair and reached home by 1:00 PM (since the half an hour includes the travel time to the next place).
 Choice (B)

undefined

Q1. DIRECTIONS for questions 1 to 3: Type in your answer in the input box provided below the question.

There are seven boxes numbered from 1 to 7 and 30 identical balls. In how many ways can these 30 balls be distributed among these seven boxes such that each box contains at least one ball and no two boxes contain the same number of balls?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	136
Avg. time spent on this question by all students	204
Difficulty Level	M
Avg. time spent on this question by students who got this question right	208
% of students who attempted this question	17.08
% of students who got the question right of those who attempted	5.48

[Video Solution](#)

[Text Solution](#)

If we distribute the balls as shown below 2 balls are left out.

1 2 3 4 5 6 7

$$\text{Their sum} = \frac{7 \times 8}{2} = 28$$

These left out 2 balls are distributed in these boxes in two ways and the distributions are

1 2 3 4 5 6 9

(or)

1 2 3 4 5 7 8

For each of these distribution we have 7! Arrangements among the boxes.

∴ Total number of ways = 2 x 7! = 2 x 5040 = 10080

Ans: (10080)

undefined

Q2. DIRECTIONS for questions 1 to 3: Type in your answer in the input box provided below the question.

Ours is a big family and I have thrice as many brothers as sisters, while my sister, Bharathi, has four times as many brothers as sisters. How many children do my parents have?

Your Answer:21 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	335
Avg. time spent on this question by all students	185
Difficulty Level	E
Avg. time spent on this question by students who got this question right	197
% of students who attempted this question	43.58
% of students who got the question right of those who attempted	43.57

[Video Solution](#)

[Text Solution](#)

We must note that the 'I' in the question cannot be female because in that case 'I' and Bharathi will have equal number of brothers and sisters.

Let there be b boys and g girls.

$$\Rightarrow b - 1 = 3s \text{ and } b = 4(s - 1)$$

$$\Rightarrow 3s + 1 = 4s - 4 \Rightarrow s = 5 \text{ and } b = 16$$

$$\Rightarrow s + b = 21$$

Ans: (21)

undefined

Q3. DIRECTIONS for questions 1 to 3: Type in your answer in the input box provided below the question.

Rani and Lakshmi can type ten identical books in 25 and 20 days respectively. If Rani, Lakshmi and Veena, together, undertake the work of typing the ten books for a sum of Rs.6000, and complete the work in ten days, find Veena's share (in Rs.).

Your Answer:600 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	100
Avg. time spent on this question by all students	192
Difficulty Level	E
Avg. time spent on this question by students who got this question right	178
% of students who attempted this question	45.73
% of students who got the question right of those who attempted	73.86

[Video Solution](#)

[Text Solution](#)

The entire typing work is completed in 10 days.

$$\text{Rani's share} = \frac{10}{25} (6000) = 2400 \text{ and}$$

$$\text{Lakshmi's share} = \frac{10}{20} (6000) = 3000$$

$$\therefore \text{Veena's share} =$$

$$₹6000 - (₹2400 + ₹3000) = ₹600$$

Ans: (600)

undefined

Q4. DIRECTIONS for questions 4 to 7: Select the correct alternative from the given choices.

Find the value of $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \dots}}}$.

- ☐ a) $\frac{\sqrt{5}-1}{2}$ **Your answer is correct**
- ☐ b) $\frac{\sqrt{3}-1}{2}$
- ☐ c) $\frac{\sqrt{2}+1}{2}$
- ☐ d) $\frac{\sqrt{5}+1}{2}$

Time spent / Accuracy Analysis

Time taken by you to answer this question	67
Avg. time spent on this question by all students	91
Difficulty Level	E
Avg. time spent on this question by students who got this question right	89
% of students who attempted this question	33.44
% of students who got the question right of those who attempted	74.68

[Video Solution](#)

[Text Solution](#)

Let the entire continued fraction be x .

$$\therefore x = \frac{1}{1+x}$$

$$\Rightarrow x^2 + x - 1 = 0 \Rightarrow x = \frac{-1 \pm \sqrt{5}}{2}$$

$$\text{As } x > 0, x = \frac{\sqrt{5} - 1}{2}$$

Choice (A)

undefined

Q5. DIRECTIONS for questions 4 to 7: Select the correct alternative from the given choices.

Three circles A, B and C, all of equal radius, are drawn - each touching the other two externally. If another circle is now drawn through the three points of contact (where the circles touch each other), what is the ratio of the area of this circle to that of the circle passing through the centres of the three original circles?

- ☐ a) 1 : 2
- ☐ b) 4 : 9
- ☐ c) 9 : 16
- ☐ d) 1 : 4

You did not answer this question

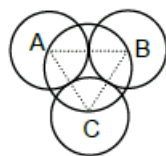
Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	415
Avg. time spent on this question by all students	183
Difficulty Level	M
Avg. time spent on this question by students who got this question right	188
% of students who attempted this question	20.71
% of students who got the question right of those who attempted	54.08

[Video Solution](#)

[Text Solution](#)



If we join the three centres, we get an equilateral triangle.

A circle passing through the three points of contact of the circles, that circle will be the INCIRCLE of triangle ABC.

A circle passing through the three centres will be the CIRCUMCIRCLE of the triangle ABC.

We know that the circumradius and inradius of an equilateral triangle bear in the ratio 2 : 1 (because in an equilateral triangle, the centroid, incentre, circumcentre, orthocentre are all the same and the centroid cuts the median in the ratio 2 : 1).

If the radii of the two circles required are in the ratio 1 : 2, their areas will be in the ratio 1 : 4.

Choice (D)

undefined

Q6. DIRECTIONS for questions 4 to 7: Select the correct alternative from the given choices.

For an odd positive integer n , satisfying $51 \leq n \leq 99$, the quantity $n^3 - n$ is always divisible by

- ☐ a) 48.
- ☐ b) 24.
- ☐ c) 18.
- ☐ d) None of these ☐ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	135
Avg. time spent on this question by all students	160
Difficulty Level	E
Avg. time spent on this question by students who got this question right	167
% of students who attempted this question	43.92
% of students who got the question right of those who attempted	49.9

[Video Solution](#)

[Text Solution](#)

$$n^2 - n = n(n^2 - 1) = (n - 1)n(n + 1)$$

We can observe that the given quantity is the product of three consecutive numbers. One of these three numbers $(n - 1)$, n , or $(n + 1)$ will be divisible by 3. Since x is an odd integer, one of $(n - 1)$ or $(n + 1)$ will be divisible by 2 and the other by 4. Therefore $n^3 - n$ is always divisible by $2 \times 4 \times 3$, which is 24. Choice (B)

undefined

Q6. DIRECTIONS for questions 4 to 7: Select the correct alternative from the given choices.

For an odd positive integer n , satisfying $51 \leq n \leq 99$, the quantity $n^3 - n$ is always divisible by

- ☐ a) 48.
- ☐ b) 24.
- ☐ c) 18.
- ☐ d) None of these ☐ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	135
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Time spent / Accuracy Analysis

Avg. time spent on this question by all students	160
Difficulty Level	E
Avg. time spent on this question by students who got this question right	167
% of students who attempted this question	43.92
% of students who got the question right of those who attempted	49.9

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

$$n^2 - n = n(n^2 - 1) = (n - 1)n(n + 1)$$

We can observe that the given quantity is the product of three consecutive numbers. One of these three numbers $(n - 1)$, n , or $(n + 1)$ will be divisible by 3. Since x is an odd integer, one of $(n - 1)$ or $(n + 1)$ will be divisible by 2 and the other by 4.

Therefore $n^3 - n$ is always divisible by $2 \times 4 \times 3$, which is 24. Choice (B)

undefined

Q7. DIRECTIONS for questions 4 to 7: Select the correct alternative from the given choices.

There are n numbers arranged in a row such that the product of the first i numbers among them is $\frac{1}{i+1}$ (for all values of i) and the product of the last i numbers among them is $\frac{n-i+1}{n+1}$ (for all values of i). If exactly three of the n numbers are greater than $\frac{49}{60}$, what is the value of n ?

- ☐ 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	20
Avg. time spent on this question by all students	145
Difficulty Level	M
Avg. time spent on this question by students who got this question right	157
% of students who attempted this question	3.17
% of students who got the question right of those who attempted	56.74

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

The product of the first i number is $\frac{1}{i+1}$

\therefore The first number is $\frac{1}{2}$

The second one is $\frac{2}{3}$

(\therefore the product of the first two is $\frac{1}{3}$)

The third number is $\frac{3}{4}$

(\therefore the product of the first three is $\frac{1}{4}$)

Similarly, we can get the numbers of the sequence, one after another

The sequence is $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$. As exactly three are greater than $\frac{49}{60}$, these

have to be $\frac{5}{6}, \frac{6}{7}$ and $\frac{7}{8}$. Thus, there are 7 terms in the sequence and $n = 7$

Choice (B)

undefined

Q7. DIRECTIONS for questions 4 to 7: Select the correct alternative from the given choices.

There are n numbers arranged in a row such that the product of the first i numbers among them is $\frac{1}{i+1}$ (for all values of i) and the product of the last i numbers among them is $\frac{n-i+1}{n+1}$ (for all values of i). If exactly three of the n numbers are greater than $\frac{49}{60}$, what is the value of n ?

- ☐ 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	20
Avg. time spent on this question by all students	145
Difficulty Level	M
Avg. time spent on this question by students who got this question right	157
% of students who attempted this question	3.17
% of students who got the question right of those who attempted	56.74

[Video Solution](#)

[Text Solution](#)

The product of the first i number is $\frac{1}{i+1}$

\therefore The first number is $\frac{1}{2}$

The second one is $\frac{2}{3}$

(\because the product of the first two is $\frac{1}{3}$)

The third number is $\frac{3}{4}$

(\because the product of the first three is $\frac{1}{4}$)

Similarly, we can get the numbers of the sequence, one after another

The sequence is $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \frac{7}{8}$. As exactly three are greater than $\frac{49}{60}$, these

have to be $\frac{5}{6}, \frac{6}{7}$ and $\frac{7}{8}$. Thus, there are 7 terms in the sequence and $n = 7$

Choice (B)

undefined

Q8. DIRECTIONS for questions 8 and 9: Type in your answer in the input box provided below the question.

In a class of 100 students, the number of students who do not play Football is 12 more than those who do not play Volleyball. If the number of students who play neither of the games is eight less than those who play both, then find the number of students who play Volleyball.

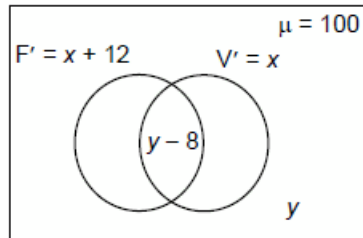
You did not answer this question [Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	318
Avg. time spent on this question by all students	228
Difficulty Level	E
Avg. time spent on this question by students who got this question right	212
% of students who attempted this question	31.31
% of students who got the question right of those who attempted	55.47

[Video Solution](#)

[Text Solution](#)



In the above diagrammatic representation, those who do not play Volleyball = $V' =$ say x
 Then, those who do not play Football = $F' = x + 12$
 If those who play both = y , those who play neither = $y - 8$
 $\therefore (x) + (x + 12) - (y - 8) + y = 100 \Rightarrow x = 40$
 \therefore Those who play Volleyball = $\mu - V' = 100 - 40 = 60$
 Note that the value of x is independent of the value of y .

Ans: (60)

undefined

Q9. DIRECTIONS for questions 8 and 9: Type in your answer in the input box provided below the question.

A thin wire which is 80 cm long is cut into three pieces along its length. The longest piece is three times as long as the middle sized piece and the shortest piece is 46 cm shorter than the longest piece. Find the length (in cm) of the shortest piece.

Your Answer:8 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	102
Avg. time spent on this question by all students	159
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	152
% of students who attempted this question	53.39
% of students who got the question right of those who attempted	85.72

[Video Solution](#)

[Text Solution](#)

Let C be the length of middle strip of cloth
 \therefore Length of longest strip = $3C$
 shortest strip = $3C - 46$
 Total length = $C + 3C + 3C - 46$
 $\Rightarrow 7C - 46 = 80 \Rightarrow 7C = 126 \Rightarrow C = 18 \text{ cm}$
 \therefore The length of the shortest piece is $3C - 46$
 $= 54 - 46 = 8 \text{ cm}.$

Ans: (8)

undefined

Q9. DIRECTIONS for questions 8 and 9: Type in your answer in the input box provided below the question.

A thin wire which is 80 cm long is cut into three pieces along its length. The longest piece is three times as long as the middle sized piece and the shortest piece is 46 cm shorter than the longest piece. Find the length (in cm) of the shortest piece.

Your Answer:8 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	102
Avg. time spent on this question by all students	159
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	152
% of students who attempted this question	53.39
% of students who got the question right of those who attempted	85.72

[Video Solution](#)

[Text Solution](#)

Let C be the length of middle strip of cloth
 \therefore Length of longest strip = $3C$
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 Total length = $C + 3C + 3C - 46$
 $\Rightarrow 7C - 46 = 80 \Rightarrow 7C = 126 \Rightarrow C = 18 \text{ cm}$
 \therefore The length of the shortest piece is $3C - 46$
 $= 54 - 46 = 8 \text{ cm}.$

Ans: (8)

undefined

undefined

Q10. DIRECTIONS for questions 10 and 11: Select the correct alternative from the given choices.

If $a, b \in \mathbb{R}$, then the value of the expression $a^2 + 2b^2 - 6a - 8b - 3$ lies in the interval

- ☐ a) $[18, \infty)$
- ☐ b) $[1, \infty)$
- ☒ c) $[-20, \infty)$ Your answer is correct
- ☐ d) $[-2, \infty)$

Time spent / Accuracy Analysis

Time taken by you to answer this question	123
Avg. time spent on this question by all students	113
Difficulty Level	M
Avg. time spent on this question by students who got this question right	111
% of students who attempted this question	24.17
% of students who got the question right of those who attempted	84.45

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

By treating $a^2 + 2b^2 - 6a - 8b - 3$ as a sum of two separate quadratic expressions i.e. $(a^2 - 6a) + (2b^2 - 8b - 3)$.

We calculate the individual minima of the two expressions and the sum of these gives us the minima of the expression. The maximum value that the expression can take is $+\infty$. The minimum value is

$$\frac{4(1)(0) - (-6)^2}{4} + \frac{4(2)(-3) - (-8)^2}{4(2)} = -9 - 11 = -20. \quad \text{Choice (C)}$$

Q10. DIRECTIONS for questions 10 and 11: Select the correct alternative from the given choices.

If $a, b \in \mathbb{R}$, then the value of the expression $a^2 + 2b^2 - 6a - 8b - 3$ lies in the interval

- ☐ a) $[18, \infty)$
☐ b) $[1, \infty)$
☒ c) $[-20, \infty)$ **Your answer is correct**
☐ d) $[-2, \infty)$

Time spent / Accuracy Analysis

Time taken by you to answer this question	123
Avg. time spent on this question by all students	113
Difficulty Level	M
Avg. time spent on this question by students who got this question right	111
% of students who attempted this question	24.17
% of students who got the question right of those who attempted	84.45

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

By treating $a^2 + 2b^2 - 6a - 8b - 3$ as a sum of two separate quadratic expressions i.e. $(a^2 - 6a) + (2b^2 - 8b - 3)$.

We calculate the individual minima of the two expressions and the sum of these gives us the minima of the expression. The maximum value that the expression can take is $+\infty$. The minimum value is

$$\frac{4(1)(0) - (-6)^2}{4} + \frac{4(2)(-3) - (-8)^2}{4(2)} = -9 - 11 = -20. \quad \text{Choice (C)}$$

undefined

Q11. DIRECTIONS for questions 10 and 11: Select the correct alternative from the given choices.

For a particular day of the year, it happens that the sum of the date and square root of the month gives the square of the month. What is the date?

- ☐ a) 14th February
- ☐ b) 16th April
- ☐ c) 16th February
- ☐ d) 14th April Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	71
Avg. time spent on this question by all students	101
Difficulty Level	E
Avg. time spent on this question by students who got this question right	95
% of students who attempted this question	54.81
% of students who got the question right of those who attempted	88.6

[Video Solution](#)

[Text Solution](#)

Consider the choices. Only choice (D) satisfies the given condition.

The equation is $D + \sqrt{M} = M^2$

M can be 1, 4, 9 only.

For M = 1, D = 0, not possible.

M = 4, D = 14, possible.

M = 9, D = 78, not possible

Choice (D)

undefined

Q12. DIRECTIONS for question 12: Type in your answer in the input box provided below the question.

Let M be the set of all even numbers from 1 to 25 and all the odd numbers between 26 and 200. If all the elements of M are multiplied, find the number of zeroes at the end of this product.

Your Answer:21 Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	300
Avg. time spent on this question by all students	166
Difficulty Level	M
Avg. time spent on this question by students who got this question right	179
% of students who attempted this question	35.06
% of students who got the question right of those who attempted	13.05

[Video Solution](#)

[Text Solution](#)

From 1 to 25, the maximum power of 2 that exists is 2^{22} ($12 + 6 + 3 + 1$). Odd multiples of 5 from 26 to 200 are 17, odd multiple of 5^2 are 75, 125 and 175, and 125 is a multiple of 5^3 .

\therefore Highest power of 5 is $17 + 3 + 1 = 21$

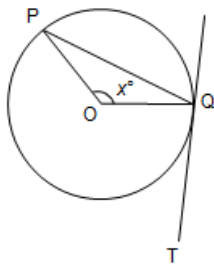
However, when multiplying the even numbers from 1 to 25 we also get 10 and 20 having two 5's in them. \therefore The total number of 5's are 23 and total number of 2's is 22.

\therefore In the product there would be 22 zeroes at the end of the product (because we have twenty three 5's and twenty two 2's available).
Ans: (22)

undefined

Q13. DIRECTIONS for question 13: Select the correct alternative from the given choices.

The figure given below consists of a circle with centre O. PQ is a chord of the circle and TQ is a tangent to the circle at Q. If $\angle POQ = x^\circ$ and $\angle PQT = \frac{3}{2}x^\circ$, what is the value of x?



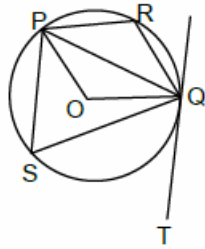
- ☐ a) 144
- ☐ b) 135
- ☐ c) 120
- ☐ d) 90 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	206
Avg. time spent on this question by all students	172
Difficulty Level	M
Avg. time spent on this question by students who got this question right	171
% of students who attempted this question	38.44
% of students who got the question right of those who attempted	75.37

[Video Solution](#)

[Text Solution](#)



Since QT is tangent $OQ \perp QT \Rightarrow \angle OQP = \frac{3x^\circ}{2} - 90^\circ$

In $\triangle POQ$ $\angle OQP = \angle OPQ = \frac{180^\circ - x^\circ}{2} = \frac{3x^\circ}{2} - 90^\circ$
 $\Rightarrow x = 90$

Alternative solution:

Given that $\angle PQT = \frac{3}{2}x^\circ$ and $\angle POQ = x^\circ$

As per alternate segment theorem

$\angle PQT = \angle PRQ = \frac{3}{2}x^\circ$

$\Rightarrow \angle PSQ = 180 - \frac{3}{2}x^\circ$ (Opposite angles of a cyclic quadrilateral)

$\angle POQ = 2\angle PSQ$

$\Rightarrow x = 2\left(180 - \frac{3}{2}x\right)$

$\Rightarrow x + 3x = 360 \Rightarrow x = 90$

Choice (D)

undefined

Q14. DIRECTIONS for questions 14 and 15: Type in your answer in the input box provided below the question.

Chakradhar and Dhruva have two spools of 'manja' (a specially prepared thread) to fly their kites. Each of the manjas has tiny knots at regular intervals, which helps in keeping track of the length of the manja that is used. Each of the persons has the same length of manja. While Chakradhar's manja has knots at intervals of 10 feet, Dhruva's manja has knots at intervals of 12 feet. Also, Dhruva's manja has exactly 10 knots less than that of Chakradhar. If each of the manjas starts and ends with a knot, find the length (in feet) of the manja with either of them.

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	66
Avg. time spent on this question by all students	183
Difficulty Level	E
Avg. time spent on this question by students who got this question right	182
% of students who attempted this question	30.24
% of students who got the question right of those who attempted	68.64

[Video Solution](#)

[Text Solution](#)

Let Chakradhar make n knots. Dhruva makes $(n - 10)$ knots. Since both the manjas start and end with a knot, the length of the manja L is given by
 $L = 10(n - 1) = 12(n - 11)$
 $\Rightarrow n = 61$ and $L = 600$

Ans: (600)

undefined

Q14. DIRECTIONS for questions 14 and 15: Type in your answer in the input box provided below the question.

Chakradhar and Dhruva have two spools of 'manja' (a specially prepared thread) to fly their kites. Each of the manjas has tiny knots at regular intervals, which helps in keeping track of the length of the manja that is used. Each of the persons has the same length of manja. While Chakradhar's manja has knots at intervals of 10 feet, Dhruva's manja has knots at intervals of 12 feet. Also, Dhruva's manja has exactly 10 knots less than that of Chakradhar. If each of the manjas starts and ends with a knot, find the length (in feet) of the manja with either of them.

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	66
Avg. time spent on this question by all students	183
Difficulty Level	E
Avg. time spent on this question by students who got this question right	182
% of students who attempted this question	30.24
% of students who got the question right of those who attempted	68.64

[Video Solution](#)

[Text Solution](#)

Let Chakradhar make n knots. Dhruva makes $(n - 10)$ knots. Since both the manjas start and end with a knot, the length of the manja L is given by
 $L = 10(n - 1) = 12(n - 11)$
 $\Rightarrow n = 61$ and $L = 600$

Ans: (600)

undefined

Q15. DIRECTIONS for questions 14 and 15: Type in your answer in the input box provided below the question.

A television channel has eight programs – A through H – which are available for three prime-time slots on a Sunday evening. In how many different ways can the programmes be shown, if program A can come only after program B?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	17
Avg. time spent on this question by all students	124
Difficulty Level	M

Time spent / Accuracy Analysis

Avg. time spent on this question by students who got this question right	154
% of students who attempted this question	29.49
% of students who got the question right of those who attempted	4.09

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

The program 1 can come only after program 2.

Case 1: Possibilities when program 1 is selected

Slot 1	Slot2	Slot 3	
2	1	–	→ 6 ways
2	–	1	→ 6 ways
–	2	1	→ 6 ways

			i.e., 18 ways

Case 2: When program 1 is not in the list, the remaining seven can be scheduled in 7P_3
 $= 7 \times 6 \times 5 = 210$ ways.
 i.e., a total of $18 + 210 = 228$ ways. Ans: (228)

undefined

Q15. DIRECTIONS for questions 14 and 15: Type in your answer in the input box provided below the question.

A television channel has eight programs – A through H – which are available for three prime-time slots on a Sunday evening. In how many different ways can the programmes be shown, if program A can come only after program B?

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	17
Avg. time spent on this question by all students	124
Difficulty Level	M
Avg. time spent on this question by students who got this question right	154
% of students who attempted this question	29.49
% of students who got the question right of those who attempted	4.09

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

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Case 1: Possibilities when program 1 is selected

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2	1	–	→ 6 ways
2	–	1	→ 6 ways
–	2	1	→ 6 ways

			i.e., 18 ways

Case 2: When program 1 is not in the list, the remaining seven can be scheduled in 7P_3
 $= 7 \times 6 \times 5 = 210$ ways.
 i.e., a total of $18 + 210 = 228$ ways. Ans: (228)

undefined

Q16. DIRECTIONS for question 16: Select the correct alternative from the given choices.

The whole numbers from 0 to 84 (both inclusive) are written, from left to right, on a thin, long metal sheet, in the ascending order, all along its length, such that the gap between any two consecutive digits is the same. If the sheet is now cut into four equal pieces along its length, using three cuts, what is the sum of the two digits on either side of the rightmost cut?

- ☐ a) 8
- ☐ b) 10
- ☐ c) 6
- ☐ d) 4

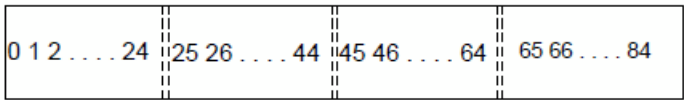
You did not answer this question [Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	8
Avg. time spent on this question by all students	201
Difficulty Level	E
Avg. time spent on this question by students who got this question right	205
% of students who attempted this question	22.32
% of students who got the question right of those who attempted	65.8

[Video Solution](#)

[Text Solution](#)



From 0 to 84, total number of digits = 10 (1) + 75 (2) = 160
Since, the sheet is cut into 4 equal parts, each part has $\frac{160}{4} = 40$ digits. The division would be as shown in the above figure.
4 and 6 are present on either side of the 3rd cut.
 $4 + 6 = 10$

Choice (B)

undefined

Q16. DIRECTIONS for question 16: Select the correct alternative from the given choices.

The whole numbers from 0 to 84 (both inclusive) are written, from left to right, on a thin, long metal sheet, in the ascending order, all along its length, such that the gap between any two consecutive digits is the same. If the sheet is now cut into four equal pieces along its length, using three cuts, what is the sum of the two digits on either side of the rightmost cut?

- ☐ a) 8
- ☐ b) 10

- ☐ c) 6
- ☐ d) 4

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	8
Avg. time spent on this question by all students	201
Difficulty Level	E
Avg. time spent on this question by students who got this question right	205
% of students who attempted this question	22.32
% of students who got the question right of those who attempted	65.8

[Video Solution](#)

[Text Solution](#)

0 1 2 24	25 26 44	45 46 64	65 66 84
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From 0 to 84, total number of digits = 10 (1) + 75 (2) = 160

Since, the sheet is cut into 4 equal parts, each part has $\frac{160}{4} = 40$ digits. The division

would be as shown in the above figure.

4 and 6 are present on either side of the 3rd cut.

4 + 6 = 10

Choice (B)

undefined

Q17. DIRECTIONS for questions 17 and 18: Type in your answer in the input box provided below the question.

When the curve $y = \log_{0.1} x$ and $y = 16 - x^2$ are drawn in the $x - y$ plane, how many times do they intersect for values $x \geq 0$?

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

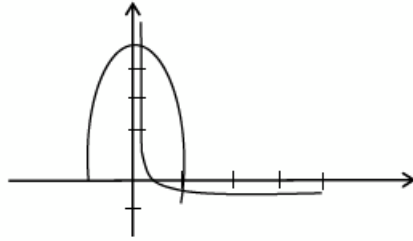
Time spent / Accuracy Analysis

Time taken by you to answer this question	5
Avg. time spent on this question by all students	100
Difficulty Level	M
Avg. time spent on this question by students who got this question right	102
% of students who attempted this question	18.6
% of students who got the question right of those who attempted	37.24

[Video Solution](#)

[Text Solution](#)

The graph of $y = \log_{0.1} x$ and $y = 16 - x^2$ are shown below.



We can see that they intersect at two points and for both points $x > 0$. Ans: (2)

undefined

Q17. DIRECTIONS for questions 17 and 18: Type in your answer in the input box provided below the question.

When the curve $y = \log_{0.1} x$ and $y = 16 - x^2$ are drawn in the $x - y$ plane, how many times do they intersect for values $x \geq 0$?

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

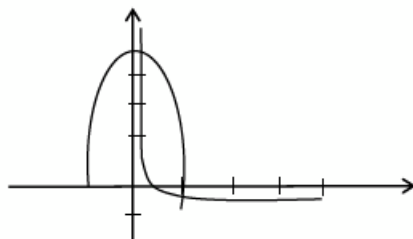
Time spent / Accuracy Analysis

Time taken by you to answer this question	5
Avg. time spent on this question by all students	100
Difficulty Level	M
Avg. time spent on this question by students who got this question right	102
% of students who attempted this question	18.6
% of students who got the question right of those who attempted	37.24

[Video Solution](#)

[Text Solution](#)

The graph of $y = \log_{0.1} x$ and $y = 16 - x^2$ are shown below.



We can see that they intersect at two points and for both points $x > 0$. Ans: (2)

undefined

Q18. DIRECTIONS for questions 17 and 18: Type in your answer in the input box provided below the question.

A tank is fitted with two taps A and B. The tank can be filled by opening A for two hours and B for nine hours or alternately by opening A for three hours and B for six hours. If the tank has to be filled using only A, how many hours will it take?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	270
Avg. time spent on this question by all students	149
Difficulty Level	E
Avg. time spent on this question by students who got this question right	141
% of students who attempted this question	37.14
% of students who got the question right of those who attempted	68.69

[Video Solution](#)

[Text Solution](#)

T is the capacity of other tank (in litres) and A and B are the flow rates of the two taps (in litres/hour)

$$\therefore T = 2A + 9B = 3A + 6B$$

$$\text{i.e. } A = 3B$$

$$\therefore T = 5A, \text{ i.e., tap A alone takes 5 hours to fill the tank.}$$

Ans: (5)

undefined

Q18. DIRECTIONS for questions 17 and 18: Type in your answer in the input box provided below the question.

A tank is fitted with two taps A and B. The tank can be filled by opening A for two hours and B for nine hours or alternately by opening A for three hours and B for six hours. If the tank has to be filled using only A, how many hours will it take?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	270
Avg. time spent on this question by all students	149
Difficulty Level	E
Avg. time spent on this question by students who got this question right	141
% of students who attempted this question	37.14
% of students who got the question right of those who attempted	68.69

[Video Solution](#)

[Text Solution](#)

T is the capacity of other tank (in litres) and A and B are the flow rates of the two taps (in litres/hour)

$$\therefore T = 2A + 9B = 3A + 6B$$

$$\text{i.e. } A = 3B$$

$$\therefore T = 5A, \text{ i.e., tap A alone takes 5 hours to fill the tank.}$$

Ans: (5)

Q19. DIRECTIONS for questions 19 and 20: Select the correct alternative from the given choices.

Three beggars are about to eat their meal. One of them has 5 rotis, the second has 3 rotis, the third has no food but has 12 rupees with him. They share their food equally and the third beggar gives the other two Rs.12 for his share of rotis. How much did the second beggar get from the third beggar?

- ☐ a) **Rs.1.50** Your answer is correct
- ☐ b) **Rs.4.80**
- ☐ c) **Rs.8**
- ☐ d) **Rs.6**

Time spent / Accuracy Analysis

Time taken by you to answer this question	280
Avg. time spent on this question by all students	181
Difficulty Level	M
Avg. time spent on this question by students who got this question right	178
% of students who attempted this question	44.21
% of students who got the question right of those who attempted	57.84

[Video Solution](#)

[Text Solution](#)

The total number of rotis were $5 + 3 = 8$

∴ Each beggar had $\frac{8}{3}$ rotis.

The first beggar gives $5 - \frac{8}{3} = \frac{7}{3}$ rotis to the third beggar

The second beggar gives $= 3 - \frac{8}{3} = \frac{1}{3}$ rotis to the third beggar.

So ₹12 is divided in the ratio $\frac{7}{3} : \frac{1}{3}$ i.e.,

The third beggar, ₹10.5 and ₹1.5 respectively and gives to first and second beggar.

∴ Second beggar gets ₹1.5. Choice (A)

Q19. DIRECTIONS for questions 19 and 20: Select the correct alternative from the given choices.

Three beggars are about to eat their meal. One of them has 5 rotis, the second has 3 rotis, the third has no food but has 12 rupees with him. They share their food equally and the third beggar gives the other two Rs.12 for his share of rotis. How much did the second beggar get from the third beggar?

- ☐ a) **Rs.1.50** Your answer is correct
- ☐ b) **Rs.4.80**
- ☐ c) **Rs.8**
- ☐ d) **Rs.6**

Time spent / Accuracy Analysis

Time taken by you to answer this question	280
Avg. time spent on this question by all students	181
Difficulty Level	M
Avg. time spent on this question by students who got this question right	178
% of students who attempted this question	44.21
% of students who got the question right of those who attempted	57.84

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

The total number of rotis were $5 + 3 = 8$

\therefore Each beggar had $\frac{8}{3}$ rotis.

The first beggar gives $5 - \frac{8}{3} = \frac{7}{3}$ rotis to the third beggar

The second beggar gives $= 3 - \frac{8}{3} = \frac{1}{3}$ rotis to the third beggar.

So ₹12 is divided in the ratio $\frac{7}{3} : \frac{1}{3}$ i.e.,

The third beggar, ₹10.5 and ₹1.5 respectively and gives to first and second beggar.

\therefore Second beggar gets ₹1.5. Choice (A)

undefined

Q20. DIRECTIONS for questions 19 and 20: Select the correct alternative from the given choices.

A sphere of radius R is melted to form n identical spheres of radius r. If both R and r are integers, then which of the following is necessarily true?

- ☐ a) n is a perfect square
- ☒ b) n is a perfect cube Your answer is correct
- ☐ c) n is an odd power of 3
- ☐ d) \sqrt{n} is a perfect cube

Time spent / Accuracy Analysis

Time taken by you to answer this question	89
Avg. time spent on this question by all students	85
Difficulty Level	M
Avg. time spent on this question by students who got this question right	84
% of students who attempted this question	36.02
% of students who got the question right of those who attempted	77.35

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

The volume of the sphere will remain the same after it is melted.
Therefore volume of the sphere of radius R = total volume of the n identical spheres of radius r.

$$\frac{4}{3}\pi R^3 = n \times \frac{4}{3}\pi r^3$$

$$R^3 = n \times r^3$$

$$R = r \times (n)^{1/3}$$

Since R and r are integers, n must be a perfect cube.

Choice (B)

undefined

Q21. DIRECTIONS for question 21: Type in your answer in the input box provided below the question.

In the year 2002, a person takes up a job for a certain salary. In the following year, his salary increases by 20% percent. In the third year, his salary increases by an amount equal to twice the increase in the year before. In the fourth year, the amount of increase in his salary is thrice that in the preceding year. If the salary of the person in the third year is Rs.16,000, then what is the difference (in Rs.) between the salary increase in the fourth year and the second year?

Your Answer:10000 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	34
Avg. time spent on this question by all students	194
Difficulty Level	E
Avg. time spent on this question by students who got this question right	173
% of students who attempted this question	36.48
% of students who got the question right of those who attempted	37.56

[Video Solution](#)

[Text Solution](#)

The table below shows the year, the salary and the increase in the salary.

Year	Increment	Salary
2002	–	x
2003	0.2x	1.2x
2004	0.4x	1.6x
2005	1.2x	2.8x

'x' is assumed as the initial salary in year 2002.

Given in 2004 salary = 16000 = 1.6x

⇒ x = ₹10000.

The difference in increments for the fourth and the second year

= 1.2x – 0.2x = x = ₹10000.

Ans : (10000)

undefined

Q22. DIRECTIONS for questions 22 to 24: Select the correct alternative from the given choices.

If x is a positive integer, which of the following cannot be the value of $x + 3$ $(x + 5)$ $(x + 7)$ $(x + 9)$?

☐ a) 3465

- ☐ b) 5760
- ☐ c) 7560
- ☐ d) 13440

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	142
Difficulty Level	M
Avg. time spent on this question by students who got this question right	181
% of students who attempted this question	27.23
% of students who got the question right of those who attempted	42.77

[Video Solution](#)

[Text Solution](#)

$x + 3, x + 5, x + 7, x + 9$ are either consecutive odd or consecutive even integers.

If the product is odd, each of the terms is odd.

Let us factorize each of the choices

$$3465 = 5 \times 7 \times 9 \times 11.$$

$$5760 = 6 \times 8 \times 10 \times 12$$

$$7560 = 7 \times 9 \times 10 \times 12$$

$$13440 = 8 \times 10 \times 12 \times 14$$

Of the above, only 7560 is not a product of four consecutive numbers of the same parity, i.e. all even.

Alternative Solution:

When the product of alternate natural numbers is even, each of the terms is even.

$$\therefore \text{If } x + 3 = 2k, x + 5 = 2k_2, x + 7 = 2k_3, x + 9 = 2k_4.$$

$$(x + 3)(x + 5)(x + 7)(x + 9) = 16 k_1 k_2 k_3 k_4$$

\therefore The product must be divisible by 16.

7560 is not divisible by 16.

Choice (C)

undefined

Q23. DIRECTIONS for questions 22 to 24: Select the correct alternative from the given choices.

What is the time taken by the train to cross the platform?

- I. The length of the platform is 200 m.
- II. The train takes 40 seconds to cross a bridge of length 400 m.

- ☐ a) The question can be answered by using only one of the statements. Your answer is incorrect
- ☐ b) The question can be answered by using either statement alone.
- ☐ c) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.
- ☐ d) The question cannot be answered even when both the statements are used together.

Show Correct Answer

Time taken by you to answer this question	21
Avg. time spent on this question by all students	78
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	91
% of students who attempted this question	53.75
% of students who got the question right of those who attempted	44.9

Text Solution

undefined

A train starting from Old Delhi railway station to Chandigarh railway station encounters 38 intermediate railway stations along its route. In how many ways can the train stop at exactly three intermediate stations such that no two of them are consecutive?

- ☐ a) 6545
- ☐ b) 5984
- ☐ c) 7140
- ☐ d) 8436

Time taken by you to answer this question	83
Avg. time spent on this question by all students	133
Difficulty Level	M
Avg. time spent on this question by students who got this question right	146
% of students who attempted this question	9.34
% of students who got the question right of those who attempted	45.14

Text Solution

Choice (C)

undefined

Q25. DIRECTIONS for questions 25 and 26: Type in your answer in the input box provided below the question.

If six straight lines and five circles intersect each other, then the maximum possible number of distinct points of intersection is

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	151
Avg. time spent on this question by all students	82
Difficulty Level	E
Avg. time spent on this question by students who got this question right	112
% of students who attempted this question	18.47
% of students who got the question right of those who attempted	7.84

[Video Solution](#)

[Text Solution](#)

The number of points of intersection using 6 straight lines is ${}^6C_2 = \frac{6 \times 5}{1 \times 2} = 15$

We know that a straight line and a circle can intersect in at most two different points.

\therefore The number points of intersection = ${}^6C_1 \times {}^5C_1 \times 2 = 60$

We know that two circles can intersect in at most two different points. The number points of intersection possible by five circles is ${}^5C_2 \times 2 = 20$.

\therefore The maximum number of distinct points of intersection = $15 + 60 + 20 = 95$.

Ans: (95)

undefined

Q26. DIRECTIONS for questions 25 and 26: Type in your answer in the input box provided below the question.

If, when 950 and 1170 are divided by a natural number d , the remainders obtained are 18 and 5 respectively, then d is at most

Your Answer:233 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	39
Avg. time spent on this question by all students	149
Difficulty Level	E
Avg. time spent on this question by students who got this question right	143
% of students who attempted this question	23.56
% of students who got the question right of those who attempted	73.38

[Video Solution](#)

[Text Solution](#)

950 when divided by the number gives a remainder of 18 means $950 - 18 = 932$ is exactly divisible by that number.

Similarly $1170 - 5 = 1165$ is exactly divisible by that number. So, the required number is H.C.F of 932 and 1165. The HCF of 932 and 1165 is 233. Ans: (233)

undefined

Q27. DIRECTIONS for questions 27 to 31: Select the correct alternative from the given choices.

Two circles having equal radii touch each other externally. If the distance between the centres of the two circles is 18 cm, then the length of the direct common tangent that can be drawn to the two circles is

- ☐ a) 9 cm
- ☐ b) 18 cm
- ☐ c) 29 cm
- ☐ d) $18\sqrt{2}$ cm

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	11
Avg. time spent on this question by all students	82
Difficulty Level	E
Avg. time spent on this question by students who got this question right	80
% of students who attempted this question	34.83
% of students who got the question right of those who attempted	74.66

[Video Solution](#)

[Text Solution](#)

As the two circles touch each other, distance between their centres is equal to sum of their radii i.e., 18 cm. As the radii are equal, difference is radii = 0.

Length of direct common tangent

$$= \sqrt{(\text{distance between the centres})^2 - (\text{difference of their radii})^2}$$

$$= \sqrt{(18)^2 - (0)^2} = 18 \text{ cm}$$

Choice (B)

undefined

Q28. DIRECTIONS for questions 27 to 31: Select the correct alternative from the given choices.

Given $a * b = a + b$

$$a \odot b = a - b,$$

$$a \Delta b = ab,$$

$$a \nabla b = a^4 + a^2b^2 + b^4$$

$$a \Psi b = \frac{a}{b}$$

and $a @ b = a^3 + b^3$.

Find the value of $\{[(a * b) \Delta (a \odot b)] \Delta (a \nabla b)\} \Psi (a @ b)$.

☐ a) $a^3 + b^3$

☐ b) $a^2 - b^2$

☐ c) $a^2 + b^2$

☐ d) $a^3 - b^3$

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	8
Avg. time spent on this question by all students	186
Difficulty Level	E
Avg. time spent on this question by students who got this question right	186
% of students who attempted this question	26.98
% of students who got the question right of those who attempted	77.8

[Video Solution](#)

[Text Solution](#)

The symbol 'X' has not been used to explicitly to denote multiplication. Instead multiplication has been consistently indicated implicitly, i.e., the product of p and q is consistently denoted as pq .

$$\{[(a \times b) \Delta (a \odot b)] \Delta (a \nabla b)\} \Psi (a @ b)$$

$$\left\{[(a+b)(a-b)](a^4 + a^2b^2 + b^4)\right\} (a^3 + b^3)$$

$$= (a^2 - b^2)(a^4 + a^2b^2 + b^4) \div (a^3 + b^3)$$

$$= \frac{(a^6 - b^6)}{(a^3 + b^3)} = \frac{(a^3 + b^3)(a^3 - b^3)}{(a^3 + b^3)} = a^3 - b^3$$

Choice (D)

undefined

Q29. DIRECTIONS for questions 27 to 31: Select the correct alternative from the given choices.

There are three measuring jars J_1 , J_2 and J_3 . First J_3 is filled with water and then emptied into an empty vessel A. Then J_2 and J_3 are both filled with milk and emptied into another empty vessel B. Finally J_1 is filled with milk drawn from B. If the capacity (in litres) of J_1 is at least 3 and at most 8, that of J_2 is at least 6 and at most 12, and that of J_3 is at least 7 and at most 14, then the volume of water in A as a percentage of the volume of milk in B is at most

☐ a) 116.67%.

☐ b) 140%.

- ☐ c) 132.8%.
- ☐ d) 107.69%.

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	11
Avg. time spent on this question by all students	194
Difficulty Level	M
Avg. time spent on this question by students who got this question right	215
% of students who attempted this question	5.7
% of students who got the question right of those who attempted	47.53

[Video Solution](#)

Text Solution

Let the capacities of the three jars J_1 , J_2 and J_3 be V_1 , V_2 , V_3 respectively.

Volume of water in A = capacity of $J_1 = V_1$

Volume of milk in B = $V_2 + V_3 - V_1$

$$\therefore \text{Required ratio} = \frac{V_3}{V_2 + V_3 - V_1}.$$

Given $3 \leq V_1 \leq 8$

$6 \leq V_2 \leq 12$

$7 \leq V_3 \leq 14$

$$\frac{V_3}{V_2 + V_3 - V_1} = \frac{1}{\left(\frac{V_2}{V_3} - \frac{V_1}{V_3} + 1\right)}$$

This ratio is maximum when the denominator is minimum.

This occurs when $V_2 - V_1$ is as negative as possible and V_3 is the minimum possible.

When $V_2 = 6$, $V_1 = 8$ and $V_3 = 7$,

$$\text{the ratio is } \frac{1}{\left(\frac{6-8}{7} + 1\right)} = \frac{7}{5} = 140\%$$

Choice (B)

undefined

Q30. DIRECTIONS for questions 27 to 31: Select the correct alternative from the given choices.

If the sum of the 10th, 20th, 30th terms of an arithmetic progression is equal to the 58th term, what is the ratio of the sum of the 10th, 20th and 30th terms to the sum of the 5th, 10th and 15th terms?

- ☐ a) 2 : 1
- ☐ b) 20 : 9
- ☐ c) 19 : 9
- ☐ 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	118
Avg. time spent on this question by all students	130

Time spent / Accuracy Analysis

Difficulty Level	E
Avg. time spent on this question by students who got this question right	132
% of students who attempted this question	23.31
% of students who got the question right of those who attempted	60.12

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

For any AP $a, a + d, a + 2d, \dots$

$$t_{10} = a + 9d$$

$$t_{20} = a + 19d$$

$$t_{30} = a + 29d$$

$$t_{58} = a + 57d$$

$$\therefore t_{10} + t_{20} + t_{30} = 3a + 57d$$

$$\therefore 3a + 57d = a + 57d \Rightarrow a = 0.$$

$$t_{10} + t_{20} + t_{30} = 57d \text{ and}$$

$$t_5 + t_{10} + t_{15} = 4d + 9d + 14d = 27d.$$

$$\therefore \text{The required ratio is } \frac{57}{27} = \frac{19}{9}.$$

Choice (C)

undefined

Q31. DIRECTIONS for questions 27 to 31: Select the correct alternative from the given choices.

If $f(x+y) = \frac{f(x)+f(y)}{1-f(x)f(y)}$ and $f(k) = 2 - \sqrt{3}$, find the value of $f(4k)$.

- ☐ a) $\sqrt{3}$
- ☐ b) 1
- ☐ c) $\frac{1}{\sqrt{3}}$
- ☐ d) $8\sqrt{3}$

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	16
Avg. time spent on this question by all students	180
Difficulty Level	M
Avg. time spent on this question by students who got this question right	193
% of students who attempted this question	10.04
% of students who got the question right of those who attempted	57.16

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

$$\text{Given } f(x+y) = \frac{f(x)+f(y)}{1-f(x)f(y)}$$

$$f(k) = 2 - \sqrt{3}$$

$$\therefore f(2k) = \frac{f(k)+f(k)}{1-[f(k)]^2}$$

$$= \frac{2(2-\sqrt{3})}{1-(2-\sqrt{3})^2} = \frac{4-2\sqrt{3}}{1-4-3+4\sqrt{3}} = \frac{4-2\sqrt{3}}{-6+4\sqrt{3}}$$

$$= \frac{2(2-\sqrt{3})}{2\sqrt{3}(-\sqrt{3}+2)} = \frac{1}{\sqrt{3}}$$

$$f(4k) = \frac{f(2k)+f(2k)}{1-[f(2k)]^2}$$

$$= \frac{\frac{2}{\sqrt{3}}}{1-\left(\frac{1}{\sqrt{3}}\right)^2} = \sqrt{3}$$

Alternative Solution:

The given relation is satisfied by $f(x) = \tan x$

$$f(k) = 2 - \sqrt{3} = \tan 15^\circ$$

$$\therefore f(4k) = \tan 60^\circ = \sqrt{3}$$

Choice (A)

undefined

Q32. DIRECTIONS for question 32: Type in your answer in the input box provided below the question.

A point P is 3 units from the line $3x + 4y + k = 0$ (L_1) and 4 units from the line $4x - 3y + \ell = 0$ (L_2). The reflection of the point P on L_1 is P_1 ; the reflection of P_1 on L_2 is P_2 ; the reflection of P_2 on L_1 is P_3 ; the reflection of P_3 on L_2 is P_4 . Find the area (in sq.units) of the figure formed by joining P_1, P_2, P_3 and P_4 .

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

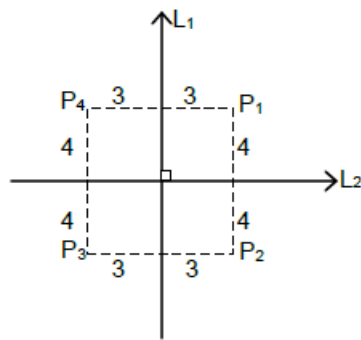
Time spent / Accuracy Analysis

Time taken by you to answer this question	7
Avg. time spent on this question by all students	90
Difficulty Level	D
Avg. time spent on this question by students who got this question right	124
% of students who attempted this question	3.69
% of students who got the question right of those who attempted	37.91

[Video Solution](#)

[Text Solution](#)

The given pair of lines can be observed to be mutually perpendicular. Hence the reflections will be as below.



Thus, P_4 coincides with P and $P_1P_2P_3P_4$ is a rectangle of area $= (3 + 3) \times (4 + 4) = 48$ sq.units.
Ans: (48)

undefined

Q33. DIRECTIONS for questions 33 and 34: Select the correct alternative from the given choices.

Ram and Shyam were trying to solve a quadratic equation. Ram copied the coefficient of x wrongly and obtained -4 and 24 as the roots of the equation. Shyam copied the constant term wrongly and obtained -9 and 13 as the roots of the equation. Find the roots of original equation?

- ☐ a) $-12, -8$
- ☐ b) $-12, 8$
- ☐ c) $8, 12$
- ☐ d) $-8, 12$

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	9
Avg. time spent on this question by all students	141
Difficulty Level	E
Avg. time spent on this question by students who got this question right	141
% of students who attempted this question	19.42
% of students who got the question right of those who attempted	69.77

[Video Solution](#)

[Text Solution](#)

When the coefficient of x is copied wrongly the equation will have the same product of roots as the original equation

$$(\because \text{product of roots} = -\frac{c}{a})$$

Let the roots of original equation be α and β .

$$\Rightarrow \alpha\beta = (-4) \times (24) = -96 \quad \rightarrow (1)$$

When the constant term is wrongly copied the sum of roots will be the same sum of roots of original equation.

$$(\because \text{sum of roots} = -\frac{b}{a})$$

$$\Rightarrow \alpha + \beta = -9 + 13 = 4 \quad \rightarrow (2)$$

$$\begin{aligned} (\alpha - \beta)^2 &= (\alpha + \beta)^2 - 4(\alpha\beta) \\ &= (4)^2 - (4)(-96) \\ &= 400 \end{aligned}$$

$$\alpha - \beta = \pm 20 \quad \rightarrow (3)$$

From (1) and (3)

We get α, β as $-8, 12$

Alternative Solution:

Checking from the options, only option (B) and (D) have product of roots as -96 and of them, both only (D) has sum of roots as 4 .

\therefore The correct answer is $-8, 12$

Choice (D)

undefined

Q34. DIRECTIONS for questions 33 and 34: Select the correct alternative from the given choices.

Find the last three digits in the binary representation of the number 76548926.

- ☐ a) 010
- ☐ b) 100
- ☐ c) 011
- ☐ d) 110

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	8
Avg. time spent on this question by all students	113
Difficulty Level	E
Avg. time spent on this question by students who got this question right	103
% of students who attempted this question	23.85
% of students who got the question right of those who attempted	67.09

[Video Solution](#)

[Text Solution](#)

Since in the binary form of $(76548926)_2$ all digits from the fourth digit (from right) contribute values of multiples of 2^3 or more, the remainder when 76548926 is divided by 2^3 , i.e., 8, will determine the last three digits of the binary form of $(76548926)_2$. The remainder when 76548926 is divided by 8 is 6. The number 6 expressed in binary system equals 110.

Choice (D)