

**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.

When Parliament decided, in 1709, to create a law that would protect books from piracy, the London-based publishers and booksellers who had been pushing for such protection were overjoyed. When Queen Anne gave her assent on April 10th the following year to "An act for the encouragement of learning" they were less enthused. Parliament had given them rights, but it had set a time limit on them: 21 years for books already in print and 14 years for new ones, with an additional 14 years if the author was still alive when the first term ran out. After that, the material would enter the public domain so that anyone could reproduce it. The lawmakers intended thus to balance the incentive to create with the interest that society has in free access to knowledge and art. The Statute of Anne thus helped nurture and channel the spate of inventiveness that Enlightenment society and its successors have since enjoyed.

Over the past 50 years, however, that balance has shifted. Largely thanks to the entertainment industry's lawyers and lobbyists, copyright's scope and duration have vastly increased. In America, copyright holders get 95 years' protection as a result of an extension granted in 1998, derided by critics as the "Mickey Mouse Protection Act". They are now calling for even greater protection, and there have been efforts to introduce similar terms in Europe. Such arguments should be resisted: it is time to tip the balance back.

Lengthy protection, it is argued, increases the incentive to create. Digital technology seems to strengthen the argument: by making copying easier, it seems to demand greater protection in return. The idea of extending copyright also has a moral appeal. Intellectual property can seem very like real property, especially when it is yours, and not some faceless corporation's. As a result people feel that once they own it – especially if they have made it – they should go on owning it, much as they would a house that they could pass on to their descendants. On this reading, protection should be perpetual. Ratcheting up the time limit on a regular basis becomes a reasonable way of approximating that perpetuity.

The notion that lengthening copyright increases creativity is questionable, however. Authors and artists do not generally consult the statute books before deciding whether or not to pick up pen or paintbrush. And overlong copyrights often limit, rather than encourage, a work's dissemination, impact and influence. It can be difficult to locate copyright holders to obtain the rights to reuse old material. As a result, much content ends up in legal limbo (and in the case of old movies and sound recordings, is left to deteriorate – copying them in order to preserve them may constitute an act of infringement). The penalties even for inadvertent infringement are so punishing that creators routinely have to self-censor their work. Nor does the advent of digital technology strengthen the case for extending the period of protection. Copyright protection is needed partly to cover the costs of creating and distributing works in physical form. Digital technology slashes such costs, and thus reduces the argument for protection.

The moral case, although easy to sympathise with, is a way of trying to have one's cake and eat it. Copyright was originally the grant of a temporary government-supported monopoly on copying a work, not a property right. From 1710 onwards, it has involved a deal in which the creator or publisher gives up any natural and perpetual claim in order to have the state protect an artificial and limited one. So it remains.

The question is how such a deal can be made equitably. At the moment, the terms of trade favour publishers too much. A return to the 28-year copyrights of the Statute of Anne would be in many ways arbitrary, but not unreasonable. If there is a case for longer terms, they should be on a renewal basis, so that content is not locked up automatically. The value society places on creativity means that fair use needs to be expanded and inadvertent infringement should be minimally penalised. None of this should get in the way of the enforcement of copyright, which remains a vital tool in the encouragement of learning. But tools are not ends in themselves.

**Q1.** Why were London-based publishers and booksellers less enthused by the Statute of Anne?

- a) The Statute of Anne would not let them reap the benefits of the protection rights forever. Your answer is correct
- b) The Statute of Anne only offered them minimum protection and they wanted more rights.
- c) The main objective of the Statute of Anne was to ensure that all books entered the public domain.
- d) The Statute of Anne helped nurture and channel the spate of inventiveness that Enlightenment society enjoyed.

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	243
Avg. time spent on this question by all students	301
Difficulty Level	M
Avg. time spent on this question by students who got this question right	289
% of students who attempted this question	56.73
% of students who got the question right of those who attempted	50.62

[Video Solution](#)

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

Number of words: 708

Refer to the first para of the passage.

Option A: The London-based publishers and booksellers had been pushing for the creation of a law that would protect books from piracy. The Statute of Anne was an "act for the encouragement of learning". Parliament had given them rights, but it had set a time limit on them: 21 years for books already in print and 14 years for new ones, with an additional 14 years if the author was still alive when the first term ran out. After that, the material would enter the public domain so that anyone could reproduce it. In the second para, we are told that copyright's scope and duration have vastly increased. This makes choice A the correct answer.

Option B: 50 years later, copyright holders in America are now calling for even greater protection, and there have been efforts to introduce similar terms in Europe. We cannot infer that this was the situation in London in 1710. The Statute of Anne was more about the time limit on the rights made available by Parliament to London-based publishers and booksellers. Hence choice B is not specific to the question.

Option C: After that, the material would enter the public domain so that anyone could reproduce it. The lawmakers intended thus to balance the incentive to create with the interest that society has in free access to knowledge and art. 'all books' entering the public domain' as given in choice C is extreme and out of scope. Further, choice C is not the reason for the question.

Option D: Choice D merely repeats the last sentence of para 1. It is positive in tone and does not explain why the London-based publishers and booksellers were less enthused by the Statute of Anne. Choice D is not the answer. Choice (A)

undefined

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Lengthy protection, it is argued, increases the incentive to create. Digital technology seems to strengthen the argument: by making copying easier, it seems to demand greater protection in return. The idea of extending copyright also has a moral appeal. Intellectual property can seem very like real property, especially when it is yours, and not some faceless corporation's. As a result people feel that once they own it – especially if they have made it – they should go on owning it, much as they would a house that they could pass on to their descendants. On this reading, protection should be perpetual. Ratcheting up the time limit on a regular basis becomes a reasonable way of approximating that perpetuity.

The notion that lengthening copyright increases creativity is questionable, however. Authors and artists do not generally consult the statute books before deciding whether or not to pick up pen or paintbrush. And overlong copyrights often limit, rather than encourage, a work's dissemination, impact and influence. It can be difficult to locate copyright holders to obtain the rights to reuse old material. As a result, much content ends up in legal limbo (and in the case of old movies and sound recordings, is left to deteriorate – copying them in order to preserve them may constitute an act of infringement). The penalties even for inadvertent infringement are so punishing that creators routinely have to self-censor their work. Nor does the advent of digital technology strengthen the case for

extending the period of protection. Copyright protection is needed partly to cover the costs of creating and distributing works in physical form. Digital technology slashes such costs, and thus reduces the argument for protection.

The moral case, although easy to sympathise with, is a way of trying to have one's cake and eat it. Copyright was originally the grant of a temporary government-supported monopoly on copying a work, not a property right. From 1710 onwards, it has involved a deal in which the creator or publisher gives up any natural and perpetual claim in order to have the state protect an artificial and limited one. So it remains.

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Q2. The balance, which the author refers to in the second paragraph of the passage, is between

- a) fostering creativity and copyright infringement.
- b) enforcing copyright and encouraging learning. Your answer is correct
- c) penalizing inadvertent infringement and incentivizing creativity.
- d) the ease of accessing copyrighted works and works that are in the public domain.

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	405
Avg. time spent on this question by all students	111
Difficulty Level	M
Avg. time spent on this question by students who got this question right	106
% of students who attempted this question	50.5
% of students who got the question right of those who attempted	47

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

Number of words: 708

Over the past 50 years, however, that balance has shifted. Copyright holders in America are now calling for even greater protection, and there have been efforts to introduce similar terms in Europe. Such arguments should be resisted: it is time to tip the balance back (to meet the objective of encouraging learning and interest of society in free access to knowledge and art).

Option A: The lawmakers intended thus to balance the incentive to create with the interest that society has in free access to knowledge and art. While 'fostering creativity' in choice A is correct, 'copyright infringement' is not. Choice A is not the answer.

Option B: The London-based publishers and booksellers had been pushing for the creation of a law that would protect books from piracy and in 1709, Parliament created such a law. The statute of Anne was an "act for the encouragement of learning" that was enforced in 1710. We can say that "the balance" is between enforcing copyright and encouraging learning. So choice B is the correct answer.

Option C: The penalties even for inadvertent infringement are so punishing that creators routinely have to self-censor their work. .... The value society places on creativity means that fair use needs to be expanded and inadvertent infringement should be minimally penalised. None of this should get in the way of the enforcement of copyright, which remains a vital tool in the encouragement of learning (last para). While 'incentivizing creativity' is correct in choice C, the balance that the author is referring to in the second paragraph of the passage does not include 'penalizing inadvertent infringement'. Hence choice C is not the answer.

Option D: Parliament had given them rights, but it had set a time limit on them: 21 years for books already in print and 14 years for new ones, with an additional 14 years if the author was still alive when the first term ran out. After that, the material would enter the public domain so that anyone could reproduce it. Choice D is a distortion. The balance is not between the ease of accessing copyrighted works and works that are in the public domain. Choice D is not the answer. Choice (B)

undefined

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Lengthy protection, it is argued, increases the incentive to create. Digital technology seems to strengthen the argument: by making copying easier, it seems to demand greater protection in return. The idea of extending copyright also has a moral appeal. Intellectual property can seem very like real property, especially when it is yours, and not some faceless corporation's. As a result people feel that once they own it – especially if they have made it – they should go on owning it, much as they would a house that they could pass on to their descendants. On this reading, protection should be perpetual. Ratcheting up the time limit on a regular basis becomes a reasonable way of approximating that perpetuity.

The notion that lengthening copyright increases creativity is questionable, however. Authors and artists do not generally consult the statute books before deciding whether or not to pick up pen or paintbrush. And overlong copyrights often limit, rather than encourage, a work's dissemination, impact and influence. It can be difficult to locate copyright holders to obtain the rights to reuse old material. As a result, much content ends up in legal limbo (and in the case of old movies and sound recordings, is left to deteriorate – copying them in order to preserve them may constitute an act of infringement). The penalties even for inadvertent infringement are so punishing that creators routinely have to self-censor their work. Nor does the advent of digital technology strengthen the case for extending the period of protection. Copyright protection is needed partly to cover the costs of creating and distributing works in physical form. Digital technology slashes such costs, and thus reduces the argument for protection.

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Q3. Which of the following statements will most weaken the case for lengthy protection of books from piracy?

- a) Digital technology has made copying easier and encourages piracy.

- b) Lengthy protection may help in covering the costs of creating and distributing books in their physical form.
- c) Lengthy protection may make the creators more inaccessible and less influential.
- d) Lengthy protection may discourage the work's circulation and hamper its influence. Your answer is correct

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	316
Avg. time spent on this question by all students	119
Difficulty Level	D
Avg. time spent on this question by students who got this question right	117
% of students who attempted this question	49
% of students who got the question right of those who attempted	37.1

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

Number of words: 708

Option A: Lengthy protection, it is argued, increases the incentive to create. Digital technology seems to strengthen the argument: by making copying easier, it seems to demand greater protection in return. Nor does the advent of digital technology strengthen the case for extending the period of protection. Choice A will strengthen the argument for lengthy protection or lengthening copyright. Choice A is not the answer.

Option B: Copyright protection is needed partly to cover the costs of creating and distributing works in physical form. Digital technology slashes such costs, and thus reduces the argument for protection. Choice B makes the case for digital technology but does not necessarily weaken the argument for lengthy protection via a lengthened copyright of works in physical form.

Option C: The notion that lengthening copyright increases creativity is questionable, however. It can be difficult to locate copyright holders to obtain the rights to reuse old material. This does not make the creators less influential. Authors and artists do not generally consult the statute books before deciding whether or not to pick up pen or paintbrush. Choice C does not weaken the argument adequately.

Option D: The notion that lengthening copyright increases creativity is questionable, however. Overlong copyrights often limit, rather than encourage, a work's dissemination, impact and influence. Hence choice D weakens the argument that lengthy protection of books from piracy is required. Choice D is the answer.

Choice (D)

undefined

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Lengthy protection, it is argued, increases the incentive to create. Digital technology seems to strengthen the argument: by making copying easier, it seems to demand greater protection in return. The idea of extending copyright also has a moral appeal. Intellectual property can seem very like real property, especially when it is yours, and not some faceless corporation's. As a result people feel that once they own it – especially if they have made it – they should go on owning it, much as they would a house that they could pass on to their descendants. On this reading, protection should be perpetual. Ratcheting up the time limit on a regular basis becomes a reasonable way of approximating that perpetuity.

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The question is how such a deal can be made equitably. At the moment, the terms of trade favour publishers too much. A return to the 28-year copyrights of the Statute of Anne would be in many ways arbitrary, but not unreasonable. If there is a case for longer terms, they should be on a renewal basis, so that content is not locked up automatically. The value society places on creativity means that fair use needs to be expanded and inadvertent infringement should be minimally penalised. None of this should get in the way of the enforcement of copyright, which remains a vital tool in the encouragement of learning. But tools are not ends in themselves.

**Q4.** According to the passage, which of the following statements about digital technology can be understood to be true?

- a) Because of digital technology, there is a serious need for a lengthier copyright protection.
- b) Plagiarism and infringement have become an exception instead of the norm due to the advent of digital technology.
- c) Digital technology enables works which are digital in form to be created and distributed without incurring much cost. Your answer is correct
- d) Digital technology will lead us to a future where works of art will not be in physical forms.

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	237
Avg. time spent on this question by all students	94
Difficulty Level	M
Avg. time spent on this question by students who got this question right	94
% of students who attempted this question	48.22
% of students who got the question right of those who attempted	52.09

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

Number of words: 708

Option A: Digital technology seems to strengthen the argument: by making copying easier, it seems to demand greater protection in return. But choice A makes use of an incorrect cause-effect sequence (Because of .... there is serious need ...) which is rendered incorrect from the third last sentence of para 4: Nor does the advent of digital technology strengthen the case for extending the period of protection.

Option B: Digital technology seems to strengthen the argument: by making copying easier (plagiarism), it seems to demand greater protection in return. Copying old books, movies and sound recordings in order to preserve them may constitute an act of infringement. The penalties for inadvertent infringement are very punishing. Choice B is false.

Option C: Copyright protection is needed partly to cover the costs of creating and distributing works in physical form. Digital technology slashes such costs, and thus reduces the argument for protection. So choice C is the correct answer.

Option D: Choice D is far-fetched and is out of scope of the given passage. Choice D is not the answer.

Choice (C)

undefined

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**Q5.** With which of the following statements is the author least likely to agree?

- a) A creator's desire to extend or renew his protection rights seems reasonable.
- b) Copyright would serve no purpose if not enforceable.
- c) Creativity demands the expansion of fair usage. Your answer is incorrect
- d) Without copyright as currently administered, learning cannot be encouraged.

**Show Correct Answer**

**Time spent / Accuracy Analysis**

Time taken by you to answer this question 178

Avg. time spent on this question by all students 87

Difficulty Level VD

Avg. time spent on this question by students who got this question right 86

% of students who attempted this question 39.7

% of students who got the question right of those who attempted 40.79

[Video Solution](#)

[Text Solution](#)

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

Number of words: 708

Option A: Intellectual property can seem very like real property, especially when it is yours, and not some faceless corporation's. As a result people feel that once they own it – especially if they have made it – they should go on owning it, much as they would a house that they could pass on to their descendants. On this reading, protection should be perpetual. Towards the end of the passage, the author stresses the fact that copyright is important. Choice A can be inferred and is not the answer.

Option B: None of this should get in the way of the enforcement of copyright. Hence choice B is true and is not the answer.

Option C: The first two paras of the passage talk about the balance between the incentive to create and the interest that society has in free access to knowledge and art. The value society places on creativity means that fair use needs to be expanded and inadvertent infringement should be minimally penalised. Hence choice C is correct and is not the answer.

Option D: None of this should get in the way of the enforcement of copyright, which remains a vital tool in the encouragement of learning. This neither means that it is the only tool, nor even that it is an essential one. Thus, the author is least likely to agree with choice D. Hence choice D is the answer.

Choice (D)

undefined

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The moral case, although easy to sympathise with, is a way of trying to have one's cake and eat it. Copyright was originally the grant of a temporary government-supported monopoly on copying a work, not a property right. From 1710 onwards, it has involved a deal in which the creator or publisher gives up any natural and perpetual claim in order to have the state protect an artificial and limited one. So it remains.

The question is how such a deal can be made equitably. At the moment, the terms of trade favour publishers too much. A return to the 28-year copyrights of the Statute of Anne would be in many ways arbitrary, but not unreasonable. If there is a case for longer terms, they should be on a renewal basis, so that content is not locked up automatically. The value society places on creativity means that fair use needs to be expanded and inadvertent infringement should be minimally penalised. None of this should get in the way of the enforcement of copyright, which remains a vital tool in the encouragement of learning. But tools are not ends in themselves.

**Q6.** What does the last sentence of the passage 'But tools are not ends in themselves' imply?

- a) Creativity should not get in the way of the copyright enforcement as it might come in the way of achieving the end goal.
- b) Copyrights should protect the creators but protecting them is not the end goal. **Your answer is correct**
- c) Creativity should not be constrained by protection rights that never seem to end.
- d) Copyright enforcement is necessary so as to encourage learning, which is the end goal.

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	97
Avg. time spent on this question by all students	92
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	90
% of students who attempted this question	41.37
% of students who got the question right of those who attempted	37.71

[Video Solution](#)

[Text Solution](#)

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

Number of words: 708

Option A: Choice A refers to the penultimate sentence of the last paragraph: None of this (Value society places on creativity ....) should get in the way of the enforcement of copyright, which remains a vital tool in the encouragement of learning. But choice A does not explain the last sentence of the last paragraph. Choice A is not the answer.

Option B: When the author mentions 'tools' in the last sentence of the passage, he is referring to the enforcement of copyright. He begins the last paragraph by saying: The question is how such a deal of copyright (in which the creator or publisher gives up any natural and perpetual claim in order to have the state protect an artificial and limited one) can be made equitably. At the moment, the terms of trade favour publishers too much. A return to the 28-year copyrights of the Statute of Anne would be in many ways arbitrary, but not unreasonable. If there is a case for longer terms, they should be on a renewal basis, so that content is not locked up automatically. So the end goal is not just protecting creators and publishers but also encouraging learning and expanding fair use of knowledge. Hence choice B is the answer.

Option C: When the author is talking about tools, he is referring to 'enforcement of copyright' and not 'creativity'. So choice C should read: Copyright should not be constrained by creativity .... Hence choice C is incorrect.

Option D: The author does say that copyright enforcement is an important tool in the encouragement of learning, but he does not say that is a necessary tool. So, choice D does not provide the reason for the author to mention 'But tools are not ends in themselves.'

Choice (B)

undefined

**DIRECTIONS for questions 7 to 12:** The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Shortness, reduced mobility and sore joints may not come to mind when you think of survival of the fittest. But human evolution could suggest otherwise. In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley, an author of the study, which appeared in Nature Genetics on Monday, and a professor of developmental biology at Stanford University.

The shorter stature may have helped these prehistoric humans retain heat and stave off frostbite in their extremities, the authors said. It also may have reduced their risk of life-threatening bone fractures when slipping on icy surfaces. But the same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. The study looked at variants of the GDF5 gene, which was first linked to skeletal growth in the early 1990s, and is known to be involved in bone growth and joint formation. The researchers wanted to understand how the DNA sequences around it might affect the gene's expression, focusing on one region they named GROW1.

After analyzing the sequence of GROW1 in the 1000 Genomes Project database, a collection of sequences from human populations around the globe, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. To see if that mutation was incidental or actually caused shorter stature, they tested the nucleotide change in mice and found it decreased the length of their long bones, much as it is thought to do in humans. That mutation of the regulatory region analyzed in the study is present in

more than 50 percent of the population in Europe and Asia. In some Asian populations, it's up to 90 percent, Dr. Kingsley said. Even if the variant plays only a small role in increasing arthritis risk, the sheer number of people who possess it means it can have a significant effect. "The very abundance of the change means it could contribute to a lot of cases of arthritis," Dr. Kingsley said.

A similar evolutionary paradox can be seen with sickle cell anemia, a condition in which a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body, Dr. Kingsley said. A genetic variant causes a high rate of the disease in African populations. But that variant was favored because it also confers protection against malaria. "The genome is complex and our evolutionary history is complex," said Terence D. Capellini, one of the lead authors on the study and an associate professor in the department of human evolutionary biology at Harvard University. "Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. As we reveal this history of our genome and how it affects our biology, we begin to understand the connections."

As with many aspects of evolutionary research, it's easier to figure out what traits were favored than it is to explain why. While shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain, said George Perry, associate professor of anthropology and biology at Pennsylvania State University, who is not affiliated with the study. "We're not going to know that without some combination of a time machine and an experiment we can't do," he said. But detailed studies like this can help further our understanding of complex evolutionary processes and the potential consequences for modern medicine and human health, Dr. Perry said.

**Q7.** Which evolutionary paradox has the author touched upon in the passage?

- a) The higher the number of red blood cells, the higher is the protection against malaria.
- b) A genetic mutation that provided protection against the cold and fractures in the past now enhances the risk of osteoporosis and arthritis. Your answer is correct
- c) The very abundance of genomes contributes to increasing the risk of osteoarthritis.
- d) Less oxygen throughout the body will lead to a decrease in immunity against malaria.

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	332
Avg. time spent on this question by all students	262
Difficulty Level	D
Avg. time spent on this question by students who got this question right	258
% of students who attempted this question	43.98
% of students who got the question right of those who attempted	74.07

[Video Solution](#)

[Text Solution](#)

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

Number of words: 659

Option A: A similar evolutionary paradox can be seen with sickle cell anemia, a condition in which a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body. A genetic variant .... was favored because it also confers protection against malaria. Hence choice A is proved incorrect.

Option B: In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago.... But the same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. So choice B is correct.

Option C: The genome is complex and our evolutionary history is complex," said Terence D. Capellini. "Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. .... But the complexity of genomes has not been specifically linked to an increased risk of osteoarthritis. Also 'abundance of genomes' in choice C cannot be inferred to be true.

Option D: In sickle cell anemia, a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body. A genetic variant causes a high rate of the disease in African populations. But that variant was favored because it also confers protection against malaria. Choice D is distorted. Choice D should have read: Less oxygen throughout the body will lead to an increase in immunity against malaria.

Choice (B)

undefined

**DIRECTIONS** for questions 7 to 12: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Shortness, reduced mobility and sore joints may not come to mind when you think of survival of the fittest. But human evolution could suggest otherwise. In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley, an author of the study, which appeared in Nature Genetics on Monday, and a professor of developmental biology at Stanford University.

The shorter stature may have helped these prehistoric humans retain heat and stave off frostbite in their extremities, the authors said. It also may have reduced their risk of life-threatening bone fractures when slipping on icy surfaces. But the same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. The study looked at variants of the GDF5 gene, which was first linked to skeletal growth in the early 1990s, and is known to be involved in bone growth and joint formation. The researchers wanted to understand how the DNA sequences around it might affect the gene's expression, focusing on one region they named GROW1.

After analyzing the sequence of GROW1 in the 1000 Genomes Project database, a collection of sequences from human populations around the globe, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. To see if that mutation was incidental or actually caused shorter stature, they tested the nucleotide change in mice and found it decreased the length of their long bones, much as it is thought to do in humans. That mutation of the regulatory region analyzed in the study is present in more than 50 percent of the population in Europe and Asia. In some Asian populations, it's up to 90 percent, Dr. Kingsley said. Even if the variant plays only a small role in increasing arthritis risk, the sheer number of people who possess it means it can have a significant effect. "The very abundance of the change means it could contribute to a lot of cases of arthritis," Dr. Kingsley said.

A similar evolutionary paradox can be seen with sickle cell anemia, a condition in which a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body, Dr. Kingsley said. A genetic variant causes a high rate of the disease in African populations. But that variant was favored because it also confers protection against malaria. "The genome is complex and our evolutionary history is complex," said Terence D. Capellini, one of the lead authors on the study and an associate professor in the department of human evolutionary biology at Harvard University. "Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. As we reveal this history of our genome and how it affects our biology, we begin to understand the connections."

As with many aspects of evolutionary research, it's easier to figure out what traits were favored than it is to explain why. While shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain, said George Perry, associate professor of anthropology and biology at Pennsylvania State University, who is not affiliated with the study. "We're not going to know that without some combination of a time machine and an experiment we can't do," he said. But detailed studies like this can help further our understanding of complex evolutionary processes and the potential consequences for modern medicine and human health, Dr. Perry said.

**Q8.** Which of the following can possibly be one of the many cases where evolution is a trade-off?

- a) Sacrificing a few hours of sleep so we can get up early in the morning and work on our fitness.
- b) Prescription of hormone replacement therapy to post-menopausal women – while it may reduce the risk of ovarian cancer, it will reduce the risk of breast cancer.
- c) While higher birth weight provides a higher chance of survival in the first few weeks after birth, babies that are too large have higher susceptibility to airborne infections.

d) Certain variants of a gene called APOL1 either make people resistant to trypanosomal infections or increase the risk of kidney failure. Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	215
Avg. time spent on this question by all students	105
Difficulty Level	D
Avg. time spent on this question by students who got this question right	101
% of students who attempted this question	31.71
% of students who got the question right of those who attempted	46

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 659

In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley.

Option A: Choice A does not point to an evolutionary trade-off and is not the answer.  
Option B: Choice B (may reduce one risk .... will reduce another risk) again does not point to a balance achieved between two incompatible features; a compromise; a trade-off. The reduction in the risk of ovarian cancer or breast cancer is a positive or beneficial outcome and this should have been balanced with a negative situation, for choice B to be the answer.

Option C: Choice C points to the evolutionary trade-off given in the passage. An unfavourable outcome (higher susceptibility to airborne infections) is offset by a positive feature (higher chance of survival in the first few weeks after birth). So choice C is the answer.

Option D: The either-or situation presented in choice D does not aptly capture the idea of the evolutionary trade-off given in the passage. The correct construction of the choice should have been {{both} and} (which includes a positive outcome and a negative feature).

Choice (C)

undefined

**DIRECTIONS** for questions 7 to 12: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Shortness, reduced mobility and sore joints may not come to mind when you think of survival of the fittest. But human evolution could suggest otherwise. In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley, an author of the study, which appeared in Nature Genetics on Monday, and a professor of developmental biology at Stanford University.

The shorter stature may have helped these prehistoric humans retain heat and stave off frostbite in their extremities, the authors said. It also may have reduced their risk of life-threatening bone fractures when slipping on icy surfaces. But the same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. The study looked at variants of the GDF5 gene, which was first linked to skeletal growth in the early 1990s, and is known to be involved in bone growth and joint formation. The researchers wanted to understand how the DNA sequences around it might affect the gene's expression, focusing on one region they named GROW1.

After analyzing the sequence of GROW1 in the 1000 Genomes Project database, a collection of sequences from human populations around the globe, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. To see if that mutation was incidental or actually caused shorter stature, they tested the nucleotide change in mice and found it decreased the length of their long bones, much as it is thought to do in humans. That mutation of the regulatory region analyzed in the study is present in more than 50 percent of the population in Europe and Asia. In some Asian populations, it's up to 90 percent, Dr. Kingsley said. Even if the variant plays only a small role in increasing arthritis risk, the sheer number of people who possess it means it can have a significant effect. "The very abundance of the change means it could contribute to a lot of cases of arthritis," Dr. Kingsley said.

A similar evolutionary paradox can be seen with sickle cell anemia, a condition in which a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body, Dr. Kingsley said. A genetic variant causes a high rate of the disease in African populations. But that variant was favored because it also confers protection against malaria. "The genome is complex and our evolutionary history is complex," said Terence D. Capellini, one of the lead authors on the study and an associate professor in the department of human evolutionary biology at Harvard University. "Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. As we reveal this history of our genome and how it affects our biology, we begin to understand the connections."

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**Q9.** Which of the following statements correctly highlights the impact of shorter stature on modern humans as can be inferred from the passage?

- a) Shorter stature can protect humans against the risk of osteoporosis and arthritis.
- b) Shorter stature can help in reducing the risk of life-threatening bone fractures.
- c) Shorter stature can be a hindrance to fitness.
- d) None of the above. Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	183
Avg. time spent on this question by all students	73
Difficulty Level	D
Avg. time spent on this question by students who got this question right	86
% of students who attempted this question	44.09
% of students who got the question right of those who attempted	10.2

[Video Solution](#)

[Text Solution](#)

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

Number of words: 659

Option A: The shorter stature may have helped these prehistoric humans retain heat and stave off frostbite in their extremities, the authors said. But the passage also goes on to say that while some traits were advantageous to early humans venturing out of Africa about 60,000 years ago, these same traits may seem unfavorable today. The 'unfavorable' here is the risk of osteoporosis and arthritis, since life spans have now extended to lengths where humans would be afflicted by these. So choice A is not the answer.

Option B: The shorter stature also may have reduced their risk of life-threatening bone fractures when slipping on icy surfaces. But the same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. Also in the last para, we are told that while shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain .... Choice B points to a possible benefit of shorter stature to humans in the past. We cannot say that the benefit can definitely be applicable to humans across the ages or to humans in present times. So choice B is not the answer.

Option C: A genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. The same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. The second and third paras substantiate on this point. Hence choice C can be inferred.      Choice (C)

undefined

**DIRECTIONS** for questions 7 to 12: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Shortness, reduced mobility and sore joints may not come to mind when you think of survival of the fittest. But human evolution could suggest otherwise. In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley, an author of the study, which appeared in *Nature Genetics* on Monday, and a professor of developmental biology at Stanford University.

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After analyzing the sequence of GROW1 in the 1000 Genomes Project database, a collection of sequences from human populations around the globe, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. To see if that mutation was incidental or actually caused shorter stature, they tested the nucleotide change in mice and found it decreased the length of their long bones, much as it is thought to do in humans. That mutation of the regulatory region analyzed in the study is present in more than 50 percent of the population in Europe and Asia. In some Asian populations, it's up to 90 percent, Dr. Kingsley said. Even if the variant plays only a small role in increasing arthritis risk, the sheer number of people who possess it means it can have a significant effect. "The very abundance of the change means it could contribute to a lot of cases of arthritis," Dr. Kingsley said.

A similar evolutionary paradox can be seen with sickle cell anemia, a condition in which a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body, Dr. Kingsley said. A genetic variant causes a high rate of the disease in African populations. But that variant was favored because it also confers protection against malaria. "The genome is complex and our evolutionary history is complex," said Terence D. Capellini, one of the lead authors on the study and an associate professor in the department of human evolutionary biology at Harvard University. "Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. As we reveal this history of our genome and how it affects our biology, we begin to understand the connections."

As with many aspects of evolutionary research, it's easier to figure out what traits were favored than it is to explain why. While shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain, said George Perry, associate professor of anthropology and biology at Pennsylvania State University, who is not affiliated with the study. "We're not going to know that without some combination of a time machine and an experiment we can't do," he said. But detailed studies like this can help further our understanding of complex evolutionary processes and the potential consequences for modern medicine and human health, Dr. Perry said.

**Q10.** Which of the following statements is consistent with the information given in the passage?

- a) Generally, Europeans and Asians are shorter than Africans.
- b) GROW1 is responsible for causing shorter stature.
- c) The growth region GROW1 is endogenous to the GDF5 gene.
- d) The mutation in the GDF5 gene is one of the main reasons as to why arthritis is prevalent among Asians and Europeans. Your answer is incorrect

**Show Correct Answer**

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	285
Avg. time spent on this question by all students	108
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	105
% of students who attempted this question	36
% of students who got the question right of those who attempted	23.89

[Video Solution](#)

[Text Solution](#)

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

Number of words: 659

Option A: The researchers wanted to understand how the DNA sequences around the GDF5 gene (responsible for bone growth, skeletal growth and joint formation) might affect the gene's expression, focusing on one region they named GROW1. After analyzing the sequence of GROW1 in the 1000 Genomes Project database, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. That mutation of the regulatory region is present in more than 50 percent of the European and Asian population. Hence we can infer that choice A is consistent with the information given in the passage.

Option B: After analyzing the sequence of GROW1 in the 1000 Genomes Project database, a collection of sequences from human populations around the globe, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. We can only say that a **mutation** in certain DNA sequences in GROW1 can result in shorter stature. Choice B is inconsistent.

Option C: The researchers wanted to understand how the DNA sequences around the GDF5 gene might affect the gene's expression, focusing on one growth region they named GROW1. 'Endogenous' which means 'within' is incorrect. Choice C is not the answer as it is inconsistent with the information in the passage.

Option D: The study looked at variants of the GDF5 gene, which was first linked to skeletal growth in the early 1990s, and is known to be involved in bone growth and joint formation. The researchers wanted to understand how the DNA sequences around it might affect the gene's expression, focusing on one region they named GROW1. The third para tells us that it is the mutation in certain DNA sequences in GROW1 and not a mutation in the GDF5 gene that is one of the main reasons as to why arthritis is prevalent among Asians and Europeans. Hence choice D is inconsistent.

Choice (A)

undefined

**DIRECTIONS** for questions 7 to 12: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Shortness, reduced mobility and sore joints may not come to mind when you think of survival of the fittest. But human evolution could suggest otherwise. In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley, an author of the study, which appeared in *Nature Genetics* on Monday, and a professor of developmental biology at Stanford University.

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As with many aspects of evolutionary research, it's easier to figure out what traits were favored than it is to explain why. While shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain, said George Perry, associate professor of anthropology and biology at Pennsylvania State University, who is not affiliated with the study. "We're not going to know that without some combination of a time machine and an experiment we can't do," he said. But detailed studies like this can help further our understanding of complex evolutionary processes and the potential consequences for modern medicine and human health, Dr. Perry said.

**Q11.** Which of the following statements about the evolutionary studies mentioned in the passage is true?

- a) There is a foolproof method to conclude the findings of the study in question.
- b) The studies may help in shaping up modern health care. **Your answer is correct**
- c) Explaining why certain traits are favorable is more difficult than figuring out what those traits are.
- d) The studies are full of paradoxes which make them more complex to understand.

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	35
Avg. time spent on this question by all students	72
Difficulty Level	D
Avg. time spent on this question by students who got this question right	78
% of students who attempted this question	38.14
% of students who got the question right of those who attempted	33.08

[Video Solution](#)

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

Number of words: 659

Option A: While shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain, said George Perry, associate professor of anthropology and biology at Pennsylvania State University, who is not affiliated with the study. "We're not going to know that without some combination of a time machine and an experiment we can't do," he said. Choice A is false and is not the answer.

Option B: But detailed studies like this can help further our understanding of complex evolutionary processes and the potential consequences for modern medicine and human health, Dr. Perry said. Choice B is true and is the answer.

Option C: As with many aspects of evolutionary research, it's easier to figure out what traits were **favored** than it is to explain why. 'Favourable' and 'favoured' are not similar words but entirely different things. 'Favourable' is one that grants/has favour for others. 'Favoured' would mean one that has received/has been favoured by others. So what the author is saying is that it's easier to tell which traits appear more often than others. He's not saying it's easier to tell which traits are more beneficial than others. Choice C is incorrect and is not the answer.

Option D: The genome is complex and our evolutionary history is complex. Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. As we reveal this history of our genome and how it affects our biology, we begin to understand the connections." But choice D cannot be ascertained and is not the answer.

Choice (B)

undefined

**DIRECTIONS for questions 7 to 12:** The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

Shortness, reduced mobility and sore joints may not come to mind when you think of survival of the fittest. But human evolution could suggest otherwise. In a new study, researchers found that as early humans migrated into colder northern climates, a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent may have helped some of them survive the most recent ice age. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. "There are many cases like this where evolution is a trade-off," said David Kingsley, an author of the study, which appeared in *Nature Genetics* on Monday, and a professor of developmental biology at Stanford University.

The shorter stature may have helped these prehistoric humans retain heat and stave off frostbite in their extremities, the authors said. It also may have reduced their risk of life-threatening bone fractures when slipping on icy surfaces. But the same gene puts humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. The study looked at variants of the GDF5 gene, which was first linked to skeletal growth in the early 1990s, and is known to be involved in bone growth and joint formation. The researchers wanted to understand how the DNA sequences around it might affect the gene's expression, focusing on one region they named GROW1.

After analyzing the sequence of GROW1 in the 1000 Genomes Project database, a collection of sequences from human populations around the globe, the researchers identified a change in one nucleotide, the basic building block of DNA. The change is prevalent in Europeans and Asians but rare in Africans. To see if that mutation was incidental or actually caused shorter stature, they tested the nucleotide change in mice and found it decreased the length of their long bones, much as it is thought to do in humans. That mutation of the regulatory region analyzed in the study is present in more than 50 percent of the population in Europe and Asia. In some Asian populations, it's up to 90 percent, Dr. Kingsley said. Even if the variant plays only a small role in increasing arthritis risk, the sheer number of people who possess it means it can have a significant effect. "The very abundance of the change means it could contribute to a lot of cases of arthritis," Dr. Kingsley said.

A similar evolutionary paradox can be seen with sickle cell anemia, a condition in which a low number of red blood cells makes it difficult to carry adequate oxygen throughout the body, Dr. Kingsley said. A genetic variant causes a high rate of the disease in African populations. But that variant was favored because it also confers protection against malaria. "The genome is complex and our evolutionary history is complex," said Terence D. Capellini, one of the lead authors on the study and an associate professor in the department of human evolutionary biology at Harvard University. "Because of that complexity, relationships emerge between different aspects of our biology that may seem paradoxical. As we reveal this history of our genome and how it affects our biology, we begin to understand the connections."

As with many aspects of evolutionary research, it's easier to figure out what traits were favored than it is to explain why. While shorter stature may have been a protection against the cold and icy terrain, it's hard to be certain, said George Perry, associate professor of anthropology and biology at Pennsylvania State University, who is not affiliated with the study. "We're not going to know that without some combination of a time machine and an experiment we can't do," he said. But detailed studies like this can help further our understanding of complex evolutionary processes and the potential consequences for modern medicine and human health, Dr. Perry said.

**Q12.** Which of the following can be inferred from the passage?

- a) People who have arthritis tend to survive extreme conditions better than those who don't.
- b) At one point of time, all the humans on Earth belonged to Africa.
- c) The genetic mutation that makes people shorter is the reason why early humans survived the most recent ice age. Your answer is incorrect
- d) The traits that our ancestors found to be advantageous are the same traits that we find to be disadvantageous.

**Show Correct Answer****Time spent / Accuracy Analysis**

Time taken by you to answer this question	60
Avg. time spent on this question by all students	64
Difficulty Level	D
Avg. time spent on this question by students who got this question right	73
% of students who attempted this question	39.07
% of students who got the question right of those who attempted	5.09

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

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

Number of words: 659

Option A: The shorter stature may have helped prehistoric humans retain heat and stave off frostbite in their extremities. It also may have reduced their risk of life-threatening bone fractures when slipping on icy surfaces. But the same gene puts modern humans at greater risk for arthritis in the modern era as they live well beyond their reproductive years. Choice A is a distortion of facts.

Option B: While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. Hence choice B is correct.

Option C: Choice C has an incorrect cause-effect sequence. While some traits resulting from this mutation may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago, in that they 'may have helped some of them survive the most recent ice age.' This is only a possibility, and it would be too much to understand, from this that this is what helped all early humans survive the ice age. The reasons that early humans survived the most recent ice age can be manifold. Choice C is a complete distortion of facts.

Option D: Choice D is too generalized. It talks of traits in general. The passage talks about a specific evolutionary study. While certain traits resulting from this mutation (a genetic mutation that knocks about a centimeter off height and increases the risk of osteoarthritis by up to 80 percent) may seem unfavorable today, they were advantageous to early humans venturing out of Africa about 60,000 years ago. Choice D is not the answer.

Choice (B)

undefined

**DIRECTIONS** for questions 13 to 18: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

It's a cruel irony that a college degree is worth less to people who most need a boost: those born poor. Using a body of data, the Panel Study of Income Dynamics, which includes 50 years of interviews with 18,000 Americans, was able to follow the lives of children born into poor, middle-class and wealthy families. They found that for Americans born into middle-class families, a college degree does appear to be a wise investment. Those in this group who received one earned 162 percent more over their careers than those who didn't.

But for those born into poverty, the results were far less impressive. College graduates born poor earned on average only slightly more than did high school graduates born middle class. And over time, even this small "degree bonus" ebbed away, at least for men: By middle age, male college graduates raised in poverty were earning less than non-degree holders born into the middle class. The scholars conclude, "Individuals from poorer backgrounds may be encountering a glass ceiling that even a bachelor's degree does not break." The authors don't speculate as to why this is the case, but it seems that students from poor backgrounds have less access to very high-income jobs in technology, finance and other fields. Class and race surely play a role.

We appear to be approaching a time when, even for middle-class students, the economic benefit of a college degree will begin to dim. Since 2000, the growth in the wage gap between high school and college graduates has slowed to a halt; 25 percent of college graduates now earn no more than does the average high school graduate. Part of the reason is oversupply. Technology increased the demand for educated workers, but that demand has been consistently outpaced by the number of people – urged on by everyone from teachers to presidents – prepared to meet it.

No other nation punishes the "uneducated" as harshly as the United States. Nearly 30 percent of Americans without a high school diploma live in poverty, compared to 5 percent with a college degree, and we infer that this comes from a lack of education. But in 28 other wealthy developed countries, a lack of a high school diploma increases the probability of poverty by less than 5 percent. In these nations, a dearth of education does not predestine citizens for poverty. It shouldn't here, either: According to the Bureau of Labor Statistics, fewer than 20 percent of American jobs actually require a bachelor's degree. By 2026, the bureau estimates that this proportion will rise, but only to 25 percent.

Why do employers demand a degree for jobs that don't require them? Because they can.

What all this suggests is that the college-degree premium may really be a no-college-degree penalty. It's not necessarily college that gives people the leverage to build a better working life, it's that not having a degree decreases whatever leverage they might otherwise have. This distinction is more than semantic. It is key to understanding the growing chasm between educational attainment and life prospects.

None of this is to suggest that higher education is not desirable: I've encouraged my own children to take that path. But while we celebrate the most recent crop of college graduates, we should also acknowledge the many more Americans who will never don a cap and gown. They, too, deserve the chance to prove themselves worthy of good work, and a good life.

**Q13.** According to the passage, how are American students born into the middle class different from those born into poverty when it comes to their earnings?

In America, ....

- a) college graduates born poor earn slightly more than those born middle class.
- b) male college graduates raised in poverty earn nearly the same as male high school graduates born middle class.
- c) male college graduates raised in middle class earn less than non-degree holders born into poverty.
- d)

all high school diploma holders born into poverty earn slightly more than those born middle class.

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	261
Difficulty Level	M
Avg. time spent on this question by students who got this question right	270
% of students who attempted this question	49.18
% of students who got the question right of those who attempted	58.47

[Video Solution](#)

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

Number of words: 573

The Panel Study of Income Dynamics, which includes 50 years of interviews with 18,000 Americans, was able to follow the lives of children born into poor, middle-class and wealthy families.

Option A: They found that for Americans born into middle-class families, a college degree does appear to be a wise investment. College graduates born poor earned on average only slightly more than did high school graduates born middle class. So choice A has been negated in the passage.

Option B: College graduates born poor earned on average only slightly more than did high school graduates born middle class. Over time, even this small "degree bonus" ebbed away, at least for men. Hence choice B applies.

Option C: A college degree is worth less to people who most need a boost: those born poor. For Americans born into middle-class families, a college degree does appear to be a wise investment. College graduates born poor earned on average only slightly more than did high school graduates born middle class. And over time, even this small "degree bonus" ebbed away, at least for men. By middle age, male college graduates raised in poverty were earning less than non-degree holders born into the middle class. So choice C is distorted and is not the correct answer.

Option D: They found that for Americans born into middle-class families, a college degree does appear to be a wise investment. Those in this group who received one earned 162 percent more over their careers than those who didn't. We can infer that choice D is inverted.

Choice (B)

undefined

**DIRECTIONS for questions 13 to 18:** The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

It's a cruel irony that a college degree is worth less to people who most need a boost: those born poor. Using a body of data, the Panel Study of Income Dynamics, which includes 50 years of interviews with 18,000 Americans, was able to follow the lives of children born into poor, middle-class and wealthy families. They found that for Americans born into middle-class families, a college degree does appear to be a wise investment. Those in this group who received one earned 162 percent more over their careers than those who didn't.

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We appear to be approaching a time when, even for middle-class students, the economic benefit of a college degree will begin to dim. Since 2000, the growth in the wage gap between high school and college graduates has slowed to a halt; 25 percent of college graduates now earn no more than does the average high school graduate. Part of the reason is oversupply. Technology increased the demand for educated workers, but that demand has been consistently outpaced by the number of people – urged on by everyone from teachers to presidents – prepared to meet it.

No other nation punishes the "uneducated" as harshly as the United States. Nearly 30 percent of Americans without a high school diploma live in poverty, compared to 5 percent with a college degree, and we infer that this comes from a lack of education. But in 28 other wealthy developed countries, a lack of a high school diploma increases the probability of poverty by less than 5 percent. In these nations, a dearth of education does not predestine citizens for poverty. It shouldn't here, either: According to the Bureau of Labor Statistics, fewer than 20 percent of American jobs actually require a bachelor's degree. By 2026, the bureau estimates that this proportion will rise, but only to 25 percent.

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What all this suggests is that the college-degree premium may really be a no-college-degree penalty. It's not necessarily college that gives people the leverage to build a better working life, it's that not having a degree decreases whatever leverage they might otherwise have. This distinction is more than semantic. It is key to understanding the growing chasm between educational attainment and life prospects.

None of this is to suggest that higher education is not desirable: I've encouraged my own children to take that path. But while we celebrate the most recent crop of college graduates, we should also acknowledge the many more Americans who will never don a cap and gown. They, too, deserve the chance to prove themselves worthy of good work, and a good life.

**Q14.** Which of the following is linked to the author's prediction "We appear to be approaching a time when, even for middle-class students, the economic benefit of a college degree will begin to dim"?

- a) The wage gap between high school and college graduates has widened in recent times.
- b) There is an increase in the supply of jobs disproportionate with the increase in supply of graduates picking up those jobs.
- c) The number of college graduates who are in need of jobs is much lower than the number of jobs that are available.
- d) None of the above

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	0
Avg. time spent on this question by all students	104
Difficulty Level	M
Avg. time spent on this question by students who got this question right	100
% of students who attempted this question	46.74
% of students who got the question right of those who attempted	45.37

[Video Solution](#)

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

Number of words: 573

Option A: Since 2000, the growth in the wage gap between high school and college graduates has slowed to a halt; 25 percent of college graduates now earn no more than does the average high school graduate. So choice A is rendered incorrect.

Option B: "disproportionate with the increase in supply of graduates picking up those jobs" cannot be inferred from the passage. Hence choice B is not the answer.

Option C: Part of the reason is oversupply. Technology increased the demand for educated workers, but that demand has been consistently outpaced by the number of people – urged on by everyone from teachers to presidents – prepared to meet it. Choice C is inverted.

Hence choice D is the answer. Choice (D)

undefined

**DIRECTIONS** for questions 13 to 18: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

It's a cruel irony that a college degree is worth less to people who most need a boost: those born poor. Using a body of data, the Panel Study of Income Dynamics, which includes 50 years of interviews with 18,000 Americans, was able to follow the lives of children born into poor, middle-class and wealthy families. They found that for Americans born into middle-class families, a college degree does appear to be a wise investment. Those in this group who received one earned 162 percent more over their careers than those who didn't.

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**Q15.** By referring to 'glass ceiling' in the passage, what does the author allude to?

- a) Access to high-income jobs
- b) Access to technology
- c) Access to jobs that confer greater status
- d) One's financial and educational background, class and race.

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	84
Difficulty Level	E
Avg. time spent on this question by students who got this question right	83
% of students who attempted this question	46.96
% of students who got the question right of those who attempted	38.48

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 573

A 'glass ceiling' is a metaphor used to represent an invisible barrier that keeps a given demography from rising beyond a certain level.

Option A: "Individuals from poorer backgrounds may be encountering a glass ceiling that even a bachelor's degree does not break." The authors don't speculate as to why this is the case, but it seems that students from poor backgrounds have **less access to very high-income jobs** in technology, finance and other fields. Class and race surely play a role. Hence choice A is the answer.

Option B: It is not "access to technology" but "access to high-income jobs in technology or finance" that is a limiting factor. The author does not allude to choice B when referring to 'glass ceiling'.

Option C: Choice C has not been specifically mentioned as a limiting factor. The author discusses terms such as high-income jobs and wage gap. He does not allude to "jobs that confer greater status". Choice B is not the answer.

Option D: In the second paragraph, it has been mentioned that even a bachelor's degree does not break the glass ceiling encountered by individuals from poorer background. The glass ceiling is, in fact, the barrier which prevents or limits access to high-income jobs. So choice D is not the 'glass ceiling' mentioned in the passage.

Choice (A)

undefined

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prospects.

None of this is to suggest that higher education is not desirable: I've encouraged my own children to take that path. But while we celebrate the most recent crop of college graduates, we should also acknowledge the many more Americans who will never don a cap and gown. They, too, deserve the chance to prove themselves worthy of good work, and a good life.

**Q16.** Why does the author say that no other nation punishes the 'uneducated' as harshly as the United States?

- a) Almost one-third of Americans without a high school diploma live in poverty while in other nations, this percentage is significantly lower.
- b) Unlike the United States, other developed nations have provisions to enable the uneducated in finding jobs.
- c) In the United States, citizens having formal education have a higher probability of ending up poor than citizens having formal education in other developed nations.
- d) The difference in the probability of a citizen with and without a high school diploma ending up poor is higher in the United States as compared to other developed nations.

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	109
Difficulty Level	D
Avg. time spent on this question by students who got this question right	114
% of students who attempted this question	44.89
% of students who got the question right of those who attempted	31.18

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 573

Option A: Nearly 30 percent of Americans without a high school diploma live in poverty, compared to 5 percent with a college degree, and we infer that this comes from a lack of education. But in 28 other wealthy developed countries, a lack of a high school diploma increases the probability of poverty by less than 5 percent. But choice A is not factually correct. The presentation of actual proportion on the one hand, and probability of change, on the other, cannot be seen as a comparison – they're unlike and therefore not comparable.

Option B: "provisions in other developed nations to enable the uneducated in finding jobs" has not been explicitly mentioned in the passage. Choice B cannot be inferred.

Option C: Nearly 30 percent of Americans without a high school diploma live in poverty..... In 28 other wealthy developed countries, a lack of a high school diploma increases the probability of poverty by less than 5 percent. The comparison is between citizens lacking (and not between citizens having) formal education in the US and other developed nations. This makes choice C incorrect.

Option D: Nearly 30 percent of Americans without a high school diploma live in poverty..... In 28 other wealthy developed countries, a lack of a high school diploma increases the probability of poverty by less than 5 percent. In these (i.e. other developed) nations, a dearth of education does not predestine citizens for poverty. It shouldn't here, either. This makes choice D the correct answer. Choice (D)

undefined

**DIRECTIONS** for questions 13 to 18: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

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None of this is to suggest that higher education is not desirable: I've encouraged my own children to take that path. But while we celebrate the most recent crop of college graduates, we should also acknowledge the many more Americans who will never don a cap and gown. They, too, deserve the chance to prove themselves worthy of good work, and a good life.

**Q17.** Which of the following statements is the author most likely to agree with?

- a) Good work can translate into good life.
- b) Unlike the job scenario in other wealthy developed countries, college education does not come in handy for most American jobs.
- c) Although higher education is desirable, the cost of higher education far outweighs the benefits.
- d) Everyone should have equal access to all job opportunities irrespective of their education.

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	84
Difficulty Level	D
Avg. time spent on this question by students who got this question right	97

**Time spent / Accuracy Analysis**

% of students who attempted this question	<b>42.64</b>
% of students who got the question right of those who attempted	<b>15.57</b>

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

Number of words: 573

Option A: Many more Americans who will never don a cap and gown also deserve the chance to prove themselves worthy of good work, and a good life. This implies that good work can translate into good life. So choice A is the answer.

Option B: According to the Bureau of Labor Statistics, fewer than 20 percent of American jobs actually require a bachelor's degree. By 2026, the bureau estimates that this proportion will rise, but only to 25 percent. But the comment "Why do employers demand a degree for jobs that don't require them?" is with reference to American jobs. There is no comparison with the job scenario in other wealthy developed countries. Hence choice B is not the answer.

Option C: None of this is to suggest that higher education is not desirable: I've encouraged my own children to take that path. So the first part of choice C is correct. The author, in para 3, says "We appear to be approaching a time when, even for middle-class students, the economic benefit of a college degree will begin to dim." However, he does not say that the cost of higher education far outweighs the benefits. Hence choice C is incorrect.

Option D: But while we celebrate the most recent crop of college graduates, we should also acknowledge the many more Americans who will never don a cap and gown. They, too, deserve the chance to prove themselves. But the emphasis on 'equal' access and 'all' job opportunities in choice D makes it incorrect. Choice (A)

undefined

**DIRECTIONS** for questions 13 to 18: The passage given below is accompanied by a set of six questions. Choose the best answer to each question.

It's a cruel irony that a college degree is worth less to people who most need a boost: those born poor. Using a body of data, the Panel Study of Income Dynamics, which includes 50 years of interviews with 18,000 Americans, was able to follow the lives of children born into poor, middle-class and wealthy families. They found that for Americans born into middle-class families, a college degree does appear to be a wise investment. Those in this group who received one earned 162 percent more over their careers than those who didn't.

But for those born into poverty, the results were far less impressive. College graduates born poor earned on average only slightly more than did high school graduates born middle class. And over time, even this small "degree bonus" ebbed away, at least for men: By middle age, male college graduates raised in poverty were earning less than non-degree holders born into the middle class. The scholars conclude, "Individuals from poorer backgrounds may be encountering a glass ceiling that even a bachelor's degree does not break." The authors don't speculate as to why this is the case, but it seems that students from poor backgrounds have less access to very high-income jobs in technology, finance and other fields. Class and race surely play a role.

We appear to be approaching a time when, even for middle-class students, the economic benefit of a college degree will begin to dim. Since 2000, the growth in the wage gap between high school and college graduates has slowed to a halt; 25 percent of college graduates now earn no more than does the average high school graduate. Part of the reason is oversupply. Technology increased the demand for educated workers, but that demand has been consistently outpaced by the number of people – urged on by everyone from teachers to presidents – prepared to meet it.

No other nation punishes the "uneducated" as harshly as the United States. Nearly 30 percent of Americans without a high school diploma live in poverty, compared to 5 percent with a college degree, and we infer that this comes from a lack of education. But in 28 other wealthy developed countries, a lack of a high school diploma increases the probability of poverty by less than 5 percent. In these nations, a dearth of education does not predestine citizens for poverty. It shouldn't here, either: According to the Bureau of Labor Statistics, fewer than 20 percent of American jobs actually require a bachelor's degree. By 2026, the bureau estimates that this proportion will rise, but only to 25 percent.

Why do employers demand a degree for jobs that don't require them? Because they can.

What all this suggests is that the college-degree premium may really be a no-college-degree penalty. It's not necessarily college that gives people the leverage to build a better working life, it's that not having a degree decreases whatever leverage they might otherwise have. This distinction is more than semantic. It is key to understanding the growing chasm between educational attainment and life prospects.

None of this is to suggest that higher education is not desirable: I've encouraged my own children to take that path. But while we celebrate the most recent crop of college graduates, we should also acknowledge the many more Americans who will never don a cap and gown. They, too, deserve the chance to prove themselves worthy of good work, and a good life.

**Q18.** What does the statement "the college-degree premium may really be a no-college-degree penalty" imply?

- a) It's not our education that determines our employment trajectory but rather where that education positions us in relation to others.
- b) What one pays for a college degree is, in reality, the penalty that one pays for not having a degree.
- c) One's chances of building a better working life are relatively higher with a degree than without.
- d) Education has a premium because it gives people the leverage to build a better working life.

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

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>103</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>115</b>
% of students who attempted this question	<b>36.05</b>
% of students who got the question right of those who attempted	<b>21.76</b>

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

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

Number of words: 573

Option A: The quote in the question and the entire last para amounts to: 'You don't have a college degree? Then we don't consider you to be of the stratum from which we would choose our employees'. It's not necessarily college that gives people the leverage to build a better working life, it's that not having a degree **decreases** whatever leverage they might otherwise have. This distinction is more than semantic. Choice A is the answer.

Option B: It is not the payment or the financials involved in obtaining a college degree that becomes the penalty in not obtaining a degree. Choice B is not the intended meaning of the given statement.

Option C: It is key to understanding the growing chasm between educational attainment and life prospects. From this, we can infer that choice C is not entirely true.

Option D: While choice D may be true, it does not talk about why "college-degree premium is less a premium and more of a way of avoiding the penalty." Choice D is wrong.

Choice (A)

undefined

**DIRECTIONS** for questions 19 to 21: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

In *The War of the World*, British historian Niall Ferguson offers a novel analysis of the causes of 20th-century violence. For him, the "war of the world" begins with the Japanese defeat of the Russian navy in 1905 and doesn't end until the conclusion of the Korean War in 1953. Seen this way, World War I and II become peaks in a series of eruptions around the globe, all fueled by the incendiary confluence of three developments.

The first factor was economic. The 20th century was marked by rapid changes in prices and growth rates, and such volatility triggered social and political instability. The second development was social. Ethnic tensions, already growing, were heightened by the century's economic ups and downs. And the third factor was the decline of traditional empires. Anti-liberal empires such as Russia, Austria-Hungary and the Ottoman Empire, with many ethnic groups on their borders, have disintegrated and devolved into relatively stable and racially homogenized nation-states such as Poland, Italy, Japan and Germany.

These aggressive new powers also embraced race theories that trumpeted the natural superiority of some ethnic groups. Earlier imperial powers had accepted interbreeding and the resulting racial melting pots as a natural characteristic of empire, but the supposedly scientific racism demanded an end to such mixing. Brutal conquest, ethnic cleansing and even genocide were more easily inflicted on so-called subhumans. Such racist thinking was prevalent in the first three decades of the 20th century, and as a result attacks against minorities occurred throughout the unstable, racially mixed communities of Eastern and Central Europe. ....

In Germany, assimilation's protective covering was torn away by the Nazi belief that the mixing of blood degraded the master race. "Hitler's determination to exclude Jews from the *Volksgemeinschaft* [the Nazi term for a racially pure community] meant identifying and persecuting a tiny minority that was inextricably interwoven into the fabric of German society," Ferguson writes.

To Ferguson, the outbreak of war was an "avoidable political error," and its massive destruction represented "nothing more than the most terrific train crash." But he concludes that a military confrontation with the Axis powers was unavoidable, given their determination to expand their living space, control vital strategic resources and found a new world order.

The Axis powers' aggressive intentions in the 1930s should have convinced the Western allies to nip Hitler's aggrandizing moves in the bud, thus avoiding the all-out conflagration of World War II. Instead, Britain and France responded as if paralyzed and chose the worst option: They embraced appeasement, perhaps out of exhaustion from the century's previous great conflict. Or they may have been trying to buy time, which they squandered by failing to use it to rearm. To compensate for this lack of judgement, the Western allies threw their entire economic, industrial, and scientific capabilities behind the war effort as the war gained momentum, blurring the distinction between civilian and military resources.

**Q19.** The British historian Niall Ferguson holds responsible which of the following factors for the cataclysmic conflicts of the 20<sup>th</sup> century?

- a. With their powers waning, old empires lost control over their ethnically mixed borderlands and gave rise to new aggressive powers such as Japan, Italy and Germany.
- b. The world's major economies were vulnerable to sudden changes in prices and growth rates.
- c. Ethnic tensions increased in direct proportion to the economic boom or bust.
- d. Racist ideologies were encouraged and enforced by the newly formed nation-states.

 a) a, b, c and d b) b and c c) a, b and c d) a and 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	238
Difficulty Level	M
Avg. time spent on this question by students who got this question right	243
% of students who attempted this question	22.04
% of students who got the question right of those who attempted	54.55

[Video Solution](#)

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

Number of words: 482

Statement (a): And the third factor was the decline of traditional empires. Anti-liberal empires such as the Soviet Union, Austria-Hungary and the Ottoman Empire, with many ethnic groups on their borders, have disintegrated and devolved into relatively stable and racially homogenized nation-states such as Poland, Italy, Japan and Germany. Statement (a) applies.

Statement (b): The first factor was economic. The 20th century was marked by rapid changes in prices and growth rates, and such volatility triggered social and political instability. Statement (b) also is correct.

Statement (c): The second development was social: Ethnic tensions, already growing, were heightened by the century's economic ups and downs. Statement (c) is also true.

Statement (d): Statement (d) can also be inferred from the third para of the passage.

Choice (A)

undefined

**DIRECTIONS for questions 19 to 21:** The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

In *The War of the World*, British historian Niall Ferguson offers a novel analysis of the causes of 20th-century violence. For him, the "war of the world" begins with the Japanese defeat of the Russian navy in 1905 and doesn't end until the conclusion of the Korean War in 1953. Seen this way, World War I and II become peaks in a series of eruptions around the globe, all fueled by the incendiary confluence of three developments.

The first factor was economic. The 20th century was marked by rapid changes in prices and growth rates, and such volatility triggered social and political instability. The second development was social. Ethnic tensions, already growing, were heightened by the century's economic ups and downs. And the third factor was the decline of traditional empires. Anti-liberal empires such as Russia, Austria-Hungary and the Ottoman Empire, with many ethnic groups on their borders, have disintegrated and devolved into relatively stable and racially homogenized nation-states such as Poland, Italy, Japan and Germany.

These aggressive new powers also embraced race theories that trumpeted the natural superiority of some ethnic groups. Earlier imperial powers had accepted interbreeding and the resulting racial melting pots as a natural characteristic of empire, but the supposedly scientific racism demanded an end to such mixing. Brutal conquest, ethnic cleansing and even genocide were more easily inflicted on so-called subhumans. Such racist thinking was prevalent in the first three decades of the 20th century, and as a result attacks against minorities occurred throughout the unstable, racially mixed communities of Eastern and Central Europe. ....

In Germany, assimilation's protective covering was torn away by the Nazi belief that the mixing of blood degraded the master race. "Hitler's determination to exclude Jews from the *Volksgemeinschaft* [the Nazi term for a racially pure community] meant identifying and persecuting a tiny minority that was inextricably interwoven into the fabric of German society," Ferguson writes.

To Ferguson, the outbreak of war was an "avoidable political error," and its massive destruction represented "nothing more than the most terrific train crash." But he concludes that a military confrontation with the Axis powers was unavoidable, given their determination to expand their living space, control vital strategic resources and found a new world order.

The Axis powers' aggressive intentions in the 1930s should have convinced the Western allies to nip Hitler's aggrandizing moves in the bud, thus avoiding the all-out conflagration of World War II. Instead, Britain and France responded as if paralyzed and chose the worst option: They embraced appeasement, perhaps out of exhaustion from the century's previous great conflict. Or they may have been trying to buy time, which they squandered by failing to use it to rearm. To compensate for this lack of judgement, the Western allies threw their entire economic, industrial, and scientific capabilities behind the war effort as the war gained momentum, blurring the distinction between civilian and military resources.

**Q20.** Which of the following statements can be inferred from the passage?

- a) Rather than forestalling the Second World War, appeasement led to it.
- b) Hitler's objective in persecuting the Jews was a counter to the Jewish assimilation into Germany.
- c) The Second World War obscured the line between civilians and combatants.
- d) All of the above.

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	0
Avg. time spent on this question by all students	96
Difficulty Level	D
Avg. time spent on this question by students who got this question right	94
% of students who attempted this question	19.15
% of students who got the question right of those who attempted	73.08

[Video Solution](#)

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

Number of words: 482

Option A: Refer to the last para. Instead, Britain and France responded as if paralyzed and chose the worst option: They embraced appeasement, perhaps out of exhaustion from the century's previous great conflict. Or they may have been trying to buy time, which they squandered by failing to use it to rearm. ... Choice A is true.

Option B: Brutal conquest, ethnic cleansing and even genocide were more easily inflicted on so-called subhumans. In Germany, assimilation's protective covering was torn away by the Nazi belief that the mixing of blood degraded the master race. "Hitler's determination to exclude Jews from the *Volksgemeinschaft* [the Nazi term for a racially pure community] meant identifying and persecuting a tiny minority that was inextricably interwoven into the fabric of German society." So choice B is also correct.

Option C: In a state of total war, the major participants threw their entire economic, industrial, and scientific capabilities behind the war effort, blurring the distinction between civilian and military resources. Choice C is also correct.

Choice (D)

undefined

**DIRECTIONS for questions 19 to 21:** The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

In *The War of the World*, British historian Niall Ferguson offers a novel analysis of the causes of 20th-century violence. For him, the "war of the world" begins with the Japanese defeat of the Russian navy in 1905 and doesn't end until the conclusion of the Korean War in 1953. Seen this way, World War I and II become peaks in a series of eruptions around the globe, all fueled by the incendiary confluence of three developments.

The first factor was economic. The 20th century was marked by rapid changes in prices and growth rates, and such volatility triggered social and political instability. The second development was social. Ethnic tensions, already growing, were heightened by the century's economic ups and downs. And the third factor was the decline of traditional empires. Anti-liberal empires such as Russia,

Austria-Hungary and the Ottoman Empire, with many ethnic groups on their borders, have disintegrated and devolved into relatively stable and racially homogenized nation-states such as Poland, Italy, Japan and Germany.

These aggressive new powers also embraced race theories that trumpeted the natural superiority of some ethnic groups. Earlier imperial powers had accepted interbreeding and the resulting racial melting pots as a natural characteristic of empire, but the supposedly scientific racism demanded an end to such mixing. Brutal conquest, ethnic cleansing and even genocide were more easily inflicted on so-called subhumans. Such racist thinking was prevalent in the first three decades of the 20th century, and as a result attacks against minorities occurred throughout the unstable, racially mixed communities of Eastern and Central Europe. ....

In Germany, assimilation's protective covering was torn away by the Nazi belief that the mixing of blood degraded the master race. "Hitler's determination to exclude Jews from the *Volksgemeinschaft* [the Nazi term for a racially pure community] meant identifying and persecuting a tiny minority that was inextricably interwoven into the fabric of German society," Ferguson writes.

To Ferguson, the outbreak of war was an "avoidable political error," and its massive destruction represented "nothing more than the most terrific train crash." But he concludes that a military confrontation with the Axis powers was unavoidable, given their determination to expand their living space, control vital strategic resources and found a new world order.

The Axis powers' aggressive intentions in the 1930s should have convinced the Western allies to nip Hitler's aggrandizing moves in the bud, thus avoiding the all-out conflagration of World War II. Instead, Britain and France responded as if paralyzed and chose the worst option: They embraced appeasement, perhaps out of exhaustion from the century's previous great conflict. Or they may have been trying to buy time, which they squandered by failing to use it to rearm. To compensate for this lack of judgement, the Western allies threw their entire economic, industrial, and scientific capabilities behind the war effort as the war gained momentum, blurring the distinction between civilian and military resources.

**Q21.** All of the following can be said to be features of the Axis Powers mentioned in the passage EXCEPT?

- a) They rose to power after traditional empires such as Russia, Austria-Hungary and the Ottoman Empire declined.
- b) They resorted to genocide to eradicate the Jews and other minorities.
- c) They accepted miscegenation and propagated racial mixing.
- d) They were aggressive in expanding their territories and controlling vital resources.

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	M
Avg. time spent on this question by students who got this question right	91
% of students who attempted this question	18.16
% of students who got the question right of those who attempted	65.29

[Video Solution](#)

[Text Solution](#)

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

Number of words: 482

Option A: The third factor was the decline of traditional empires. Anti-liberal empires such as the Soviet Union, Austria-Hungary and the Ottoman Empire, with many ethnic groups on their borders, have disintegrated and devolved into relatively stable and racially homogenized nation-states such as Poland, Italy, Japan and Germany. Choice A is true and is not the answer.

Option B: These aggressive new powers also embraced race theories ..... Brutal conquest, ethnic cleansing and even genocide were more easily inflicted on so-called subhumans. Such racist thinking was prevalent ..... attacks against minorities occurred throughout the unstable, racially mixed communities of Eastern and Central Europe. Choice B is true and is not the answer.

Option C: Choice C is true of earlier imperial powers and not the Axis Powers. Earlier imperial powers had accepted interbreeding (miscegenation) and the resulting racial melting pots as a natural characteristic of empire, but the supposedly scientific racism demanded an end to such mixing. Choice C cannot be inferred and is the answer.

Option D: A military confrontation with the Axis powers was unavoidable, given their determination to expand their living space, control vital strategic resources and found a new world order. Choice D is also correct and is not the answer.      Choice (C)

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.

"In a hole in the ground there lived a hobbit."

J. R. R. Tolkien's *The Hobbit* is a classic book, because it is set in Middle-earth, one of the great fantasy worlds in English literature. The creation of Middle-earth, which occupied Tolkien for sixty years, can be divided into three stages. The first stage, begun at the St. Edward's School, involved first the creation of languages and then the development of a series of legends that could give these languages a social context in which to develop. These legends soon became important in their own right, a mythic cycle that combined Christian and pagan (especially Germanic and Celtic) sources to provide England with a national mythology that would express the English spirit effectively.

The death in World War I of most of his St. Edward's friends apparently firmed Tolkien's resolution to compose and dedicate cosmogonic legends and romantic fairy-stories to England. After six years of intermittent composition, "The Hobbit" was published in 1937 as a children's book to popular acclaim. Immediately Tolkien began work on *The Lord of the Rings* which was published in 1954. In its foreword, Tolkien said that he "disliked allegory in all its forms" (using the word applicability instead), and told those claiming the story was a metaphor for World War II to remember that he had lost "all but one" of his close friends in World War I. *The Silmarillion* was published posthumously in 1977.

The great popular success of Middle-earth is due to the labors and spirit of its creator. Although its most striking creatures are noble elves, evil goblins, hobbits and demons, the most important race in Middle-earth is men. ....

The contrast between goblins and elves provides one of the most important measures of good and evil in Middle-earth. *The Silmarillion* tells that elves, the Elder Children of God, were created to guide men, the Younger Children, on the long journey to spiritual wisdom and love of God. Goblins, in contrast, are corrupted elves, bred in mockery of Morgoth, the Necromancer's master, whose revolt against God brings evil to Middle-earth. The Elves never die of old age and are resistant to disease, though they can be slain in battle or die by similar means; however, even when their bodies perish, their spirits travel to the Halls of Mandos in Aman, and eventually can be "reincarnated" into life.

Where the elves serve as a model for men's aspirations, hobbits provide a touchstone. Their lives display a basic goodness, a conservative, pastoral simplicity. Close to nature and free from personal ambition and greed, hobbits need no government and are generally anti-technology. Rarely corrupted, they never corrupt others. ....

"No careful reader of Tolkien's fiction can fail to be aware of the polarities that give it form and fiction," writes Verlyn Flieger. Tolkien's extensive use of duality and parallelism, contrast and opposition is found throughout the three novels, in hope and despair, knowledge and enlightenment, death and immortality, fate and free will. .... Tolkien's technique has been seen to "confer literality on what would in the primary world be called metaphor and then to illustrate [in his secondary world] the process by which the literal becomes metaphoric".

**Q22.** Three of the following are features of the noble elves which formed an important race in Middle-earth. Pick the exception.

- a) The elves served as a beacon light of hope to men.
- b) The elves were against the use of technology and believed in the concept "The government is best that governs least."
- c) Spiritual immortality is a gift which was given to the elves.

- d) The elves helped connect men to God.

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	215
Difficulty Level	E
Avg. time spent on this question by students who got this question right	214
% of students who attempted this question	24.44
% of students who got the question right of those who attempted	70.64

[Video Solution](#)

[Text Solution](#)

Number of words and Explanatory notes for RC:

Number of words: 532

Option A: *The Silmarillion* tells that elves, the Elder Children of God, were created to guide men, the Younger Children, on the long journey to spiritual wisdom and love of God. The elves serve as a model for men's aspirations. Choice A is correct and is not the answer.

Option B: Close to Nature and free from personal ambition and greed, hobbits need no government and are generally anti-technology. Choice B is true of the hobbits and not of the elves. Choice B is the required answer.

Option C: The Elves never die of old age and are resistant to disease, though they can be slain in battle or die by similar means; however, even when their bodies perish, their spirits travel to the Halls of Mandos in Aman, and eventually can be "reincarnated" into life. So choice C is correct and is not the answer.

Option D: The elves, the Elder Children of God, were created to guide men, the Younger Children, on the long journey to spiritual wisdom and love of God. Choice D is true and is not the answer.

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.

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The great popular success of Middle-earth is due to the labors and spirit of its creator. Although its most striking creatures are noble elves, evil goblins, hobbits and demons, the most important race in Middle-earth is men. ...

The contrast between goblins and elves provides one of the most important measures of good and evil in Middle-earth. *The Silmarillion* tells that elves, the Elder Children of God, were created to guide men, the Younger Children, on the long journey to spiritual wisdom and love of God. Goblins, in contrast, are corrupted elves, bred in mockery of Morgoth, the Necromancer's master, whose revolt against God brings evil to Middle-earth. The Elves never die of old age and are resistant to disease, though they can be slain in battle or die by similar means; however, even when their bodies perish, their spirits travel to the Halls of Mandos in Aman, and eventually can be "reincarnated" into life.

Where the elves serve as a model for men's aspirations, hobbits provide a touchstone. Their lives display a basic goodness, a conservative, pastoral simplicity. Close to nature and free from personal ambition and greed, hobbits need no government and are generally anti-technology. Rarely corrupted, they never corrupt others. ....

"No careful reader of Tolkien's fiction can fail to be aware of the polarities that give it form and fiction," writes Verlyn Flieger. Tolkien's extensive use of duality and parallelism, contrast and opposition is found throughout the three novels, in hope and despair, knowledge and enlightenment, death and immortality, fate and free will. ... Tolkien's technique has been seen to "confer literality on what would in the primary world be called metaphor and then to illustrate [in his secondary world] the process by which the literal becomes metaphoric".

**Q23.** What explanation does Tolkien give to people who thought that *The Lord of the Rings* was symbolic of or represented the Second World War?

- a) That he hated death in all its forms and had a desire for deathlessness.
- b) That he hated allegory in any form, and preferred the word "applicability".
- c) That since he lost almost all his friends in World War I, he was unlikely to base his novel on World War 2.
- d) That he lost all his friends in World War I and wanted to showcase the grim realities of World War II in a cosmogonic legend and romantic fantasy tale.

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	117
Difficulty Level	E
Avg. time spent on this question by students who got this question right	116
% of students who attempted this question	22.3
% of students who got the question right of those who attempted	45.66

[Video Solution](#)

[Text Solution](#)

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

Number of words: 532

Option A: Choice A is far-fetched and out of scope of the given passage.  
Option B: In its foreword, Tolkien said that he "disliked allegory in all its forms" (using the word applicability instead). But choice B is not connected to the question.  
Option C: Tolkien told those claiming the story *The Lord of the Rings* was a metaphor for World War II to remember that he had lost "all but one" of his close friends in World War I. Hence we can say that Tolkien had reservations about the war and it was unlikely for him to base his story on The second world War. Hence choice C is the answer.  
Option D: The first part of choice D is correct. The second part is incorrect. Tolkien told those claiming the story was a metaphor for World War II to remember that he had lost "all but one" of his close friends in World War I. Though Tolkien resolved to compose and dedicate cosmogonic legends and romantic fairy-stories to England, he could not have showcased the grim realities of World War II in his novel. Choice D is not the answer.  
Choice (C)

undefined

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"No careful reader of Tolkien's fiction can fail to be aware of the polarities that give it form and fiction," writes Verlyn Flieger. Tolkien's extensive use of duality and parallelism, contrast and opposition is found throughout the three novels, in hope and despair, knowledge and enlightenment, death and immortality, fate and free will. ... Tolkien's technique has been seen to "confer literality on what would in the primary world be called metaphor and then to illustrate [in his secondary world] the process by which the literal becomes metaphoric".

**Q24.** Which of the following is not an example of a polarizing antithesis argued to be at the heart of the structure of *The Lord of the Rings*, *The Hobbit* and *The Silmarillion*?

Identify all that apply and enter the corresponding number(s) 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. Knowledge and enlightenment
2. Fate and free will
3. Death and immortality
4. Duality and parallelism
5. Noble and evil
6. Literality and metaphor

**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	140
Difficulty Level	E
Avg. time spent on this question by students who got this question right	134
% of students who attempted this question	16.64
% of students who got the question right of those who attempted	6.32

[Video Solution](#)

[Text Solution](#)

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

Number of words: 532

- . Refer to the last paragraph of the passage.  
"No careful reader of Tolkien's fiction can fail to be aware of the polarities that give it form and fiction," writes Verlyn Flieger.  
Statements 1, 2 and 3: Tolkien's extensive use of duality and parallelism, contrast and opposition is found throughout the three novels, in hope and despair, knowledge and enlightenment, death and immortality, fate and free will. .... So statements 1, 2 and 3 are examples of paradoxes found throughout *The Lord of the Rings*, *The Hobbit* and *The Silmarillion*.  
Statement 5: The contrast between goblins and elves provides one of the most important measures of good and evil in Middle-earth. So statement 5 is also an example of a paradox found throughout *The Lord of the Rings*, *The Hobbit* and *The Silmarillion*.  
Statement 4: (4) is not a specific example of a paradox. Dualism is an instance of opposition or contrast between two concepts or two aspects of something. Parallelism is the state of being parallel or of corresponding in some way. Statement 4 is 'the polarizing antithesis' believed to be a part of Tolkien's fiction.  
Statement 6: Tolkien's technique has been seen to "confer literality on what would in the primary world be called metaphor and then to illustrate [in his secondary world] the process by which the literal becomes metaphoric. As explained for statement (4), statement (6) is also not a specific example of the antithesis.  
Hence statements 4 and 6 are the answers.

Ans: (46)

undefined

**Q25. DIRECTIONS** for questions 25 to 28: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. Since the second world war, state involvement has been more arm's length.
2. In 1930, Italy's Fascist dictator, Benito Mussolini, saw the Biennale's potential as a propaganda showcase and ran it from his office.
3. The British pavilion, for example, is run by the British Council and the State Department delegates responsibility for the American pavilion to the Peggy Guggenheim Collection, which is based in Venice.
4. The world's biggest art festival, the Venice Biennale, has never been just about art.
5. He regarded the event as such a success that four years later, he took Hitler on a personal tour.

**Your Answer:43125** □ **Your answer is incorrect**

Show Correct Answer

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	201
Avg. time spent on this question by all students	191
Difficulty Level	D
Avg. time spent on this question by students who got this question right	178
% of students who attempted this question	41.26
% of students who got the question right of those who attempted	30.09

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 4 is a general sentence that begins the para. It introduces the topic of discussion: the Venice Biennale. Sentence 4 is followed by sentence 2. "the Biennale's potential" in sentence 2 points to "the Venice Biennale" in sentence 4. Also "Biennale's potential as a propaganda showcase" in sentence 2 links with "has never been just about art" in sentence 4. Sentences 2 and 5 form a mandatory pair. "Benito Mussolini, saw the Biennale's potential as a **propaganda showcase** and ran it from his office" in sentence 2 links with "**He** regarded the **event** as such a success" in sentence 5. Sentence 5 is followed by sentence 1. "the second world war" in sentence 1 points to "took Hitler on a personal tour" in sentence 5. Sentence 1 declares that state involvement has been more arm's length (distance discouraging personal contact or familiarity). Sentence 1 is exemplified by sentence 3. "the State Department delegates responsibility for the American pavilion to the Peggy Guggenheim Collection" in sentence 3 validates "state involvement has been more arm's length" in sentence 1. So, 42513.

Ans: (42513)

undefined

**Q26. DIRECTIONS** for questions 25 to 28: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. Over time, he later boasted, the combination of stronger growth and higher prices would lift Japan's nominal GDP (which includes the effects of inflation) to ¥600 trillion (\$5.7 trillion).
2. He claimed it would repel deflation, repair the public finances and revive productivity.

3. Dubbed "Abenomics", his three-piece dream suit includes monetary easing, fiscal pragmatism and structural reform.
4. Economic resurgence was also meant to bolster Japan's national security and global standing.
5. Since returning to office in 2012, Mr Shinzo Abe has strapped Japan into an economic exoskeleton of his own.

**Your Answer:**54213 □ **Your answer is incorrect**

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>160</b>
Avg. time spent on this question by all students	<b>153</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>147</b>
% of students who attempted this question	<b>42.6</b>
% of students who got the question right of those who attempted	<b>27.55</b>

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 5 is a general sentence that begins the para. It has the person's name, the year and it introduces the topic of discussion: Mr Shinzo Abe has strapped Japan into an economic exoskeleton of his own. Sentence 5 is followed by sentence 3. "dubbed "Abenomics" which includes monetary easing, fiscal pragmatism and structural reform" in sentence 3 points to "economic exoskeleton of his own" in sentence 5. Sentence 3 is followed by sentence 2. "it" in sentence 2 points to "Abenomics", his three-piece dream suit" in sentence 3. Also "monetary easing, fiscal pragmatism and structural reform" in sentence 3 would "repel deflation, repair the public finances and revive productivity" as given in sentence 2. Sentence 2 (He claimed) is followed by sentence 1 (Over time, he later boasted). "repel deflation, repair the public finances and revive productivity" in sentence 2 is followed by "combination of stronger growth and higher prices would lift Japan's nominal GDP" in sentence 1. Sentence 1 (lift Japan's nominal GDP) is followed by sentence 4 (economic resurgence) which concludes the para. So, 53214.

Ans: (53214)

undefined

**Q27. DIRECTIONS** for questions 25 to 28: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. But the trouble with iconoclasm when you apply it to the analysis of leadership is that you can go on forever.
2. These books are all valuable exercises in iconoclasm.
3. The very over-the-topness of his stunts, whether it is crossing the Atlantic in a power boat or parading around in drag, is vital to his success.
4. Richard Branson has turned Virgin into a global brand by relentlessly exploiting his two biggest strengths: his ability to take on "big bad wolves" – firms that are overcharging and underserving the public – and his talent for infusing Virgin with a counter-cultural personality.
5. Many successful leaders are successful precisely because they push their strengths to the limit.

**Your Answer:**54321 □ **Your answer is incorrect**

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>159</b>
Avg. time spent on this question by all students	<b>159</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>165</b>
% of students who attempted this question	<b>37.55</b>
% of students who got the question right of those who attempted	<b>7.8</b>

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 2 is a general sentence that begins the para. The pronoun 'these' in "these books" in sentence 2 helps us infer that the given para is taken from a larger text and is not the introductory part of that text. Sentence 2 introduces the topic of discussion i.e. iconoclasm. Sentence 2 is followed by sentence 1. "valuable exercises in iconoclasm" in sentence 2 links with "But the trouble with iconoclasm when you apply it to the analysis of leadership ...." in sentence 1. Sentence 1 is followed by sentence 5. "analysis of leadership is that you can go on forever" in sentence 1 links with "successful leaders push their strengths to the limit" in sentence 5. Sentence 4 serves as an example for the point mentioned in sentence 5 and it follows sentence 5. "push their strengths to the limit" in sentence 5 links with "relentlessly exploiting his two biggest strengths" in sentence 4. Sentence 4 is followed by sentence 3. "over-the-topness of his stunts" in sentence 3 points to "push their strengths to the limit" in sentence 5. "vital to his success" in sentence 3 points to "successful leaders are successful" in sentence 5. Sentence 3 concludes the para. So, 21543.

Ans: (21543)

undefined

**Q28. DIRECTIONS** for questions 25 to 28: The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. After being substantially rebuilt in 1536, she was also one of the earliest ships that could fire a broadside, although the line of battle tactics that employed it had not yet been developed.
2. The precise cause of her sinking is still unclear, because of conflicting testimonies and a lack of conclusive physical evidence.
3. The Mary Rose was one of the largest ships in the English navy through more than three decades of intermittent war and was one of the earliest examples of a purpose-built sailing warship.
4. Several theories have sought to explain the demise of the Mary Rose, based on historical records, knowledge of 16th-century shipbuilding, and modern experiments.
5. She was armed with new types of heavy guns that could fire through the recently invented gun-ports.

Your Answer:42315 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	280
Avg. time spent on this question by all students	149
Difficulty Level	D
Avg. time spent on this question by students who got this question right	153
% of students who attempted this question	39.63
% of students who got the question right of those who attempted	23.52

[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 para. It introduces the topic of discussion: The Mary Rose. Sentence 3 is followed by sentence 5. "earliest examples of a purpose-built sailing warship" in sentence 3 links with "heavy guns that could fire through the recently invented gun-ports" in sentence 5. Sentence 5 is followed by sentence 1. "also one of the earliest ships that could fire a broadside" in sentence 1 links with "heavy guns that could fire through the recently invented gun-ports" in sentence 5 and with "earliest examples of a purpose-built sailing warship" in sentence 3. Sentence 4 follows sentence 1. It brings in a new point of view: the demise of the Mary Rose. "Several theories have sought to explain the demise of the Mary Rose" in sentence 4 links with "The precise cause of her sinking is still unclear" in sentence 2. Sentence 2 concludes the para. So, 35142.

Ans: (35142)

undefined

**Q29. DIRECTIONS** for questions 29 to 32: Each of the following questions has five sentences. Each sentence is labeled with a number. All but one of the sentences can be rearranged to form a logically coherent paragraph. Key in the number of the sentence that does not fit contextually with the paragraph formed by the other four sentences.

1. At the very end of America's industrial boom, a black single mother from Ohio with many problems but a strong work ethic got a job assembling car parts for General Motors.
2. With each passing year, she gained in wages, benefits, holidays and pension rights.
3. Thanks to agreements between her employer and the local chapter of the Electrical Workers Union, she received 80% of her pay even when doing nothing in quiet months.

4. The year was 1988, and Tammy Thomas became one of the last Americans to know the security of a post-war, union-crafted factory contract.
5. A diligent sort, she found she could cover two assembly-line stations at once, allowing her to collect an occasional \$ 20 from a colleague who needed an hour to sober up after lunch.

**Your Answer:**3 Your answer is incorrect

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	169
Avg. time spent on this question by all students	140
Difficulty Level	D
Avg. time spent on this question by students who got this question right	142
% of students who attempted this question	46.59
% of students who got the question right of those who attempted	15.93

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 1 is a general sentence that begins the para. It introduces the topic of discussion and provides details of the time period and the situation. Sentence 4 follows sentence 1. "Tammy Thomas" in sentence 4 points to "a black single mother from Ohio" in sentence 1. "last American to know the security of a post-war, union-crafted factory contract" in sentence 4 links with "At the very end of America's industrial boom..... job assembling car parts for General Motors" in sentence 1. Sentence 4 is followed by sentence 3. "Thanks to agreements between her employer and the local chapter of the Electrical Workers Union" in sentence 3 is parallel to "know the security of a post-war, union-crafted factory contract" in sentence 4. Sentence 3 and sentence 2, in that order, help to further elaborate "know the security of a post-war, union-crafted factory contract" given earlier in sentence 4. So, 1432. Statement 5 is not a statement that's related to a union-crafted employer's contract – it's more in the nature of a casual inter-personal arrangement. So, it doesn't really seem part of the paragraph. As such, it would seem to be appropriate after the discussion on the employer's contract, as a bridge to the feature to be discussed in the next para.

Ans: (5)

undefined

**Q30. DIRECTIONS for questions 29 to 32:** Each of the following questions has five sentences. Each sentence is labeled with a number. All but one of the sentences can be rearranged to form a logically coherent paragraph. Key in the number of the sentence that does not fit contextually with the paragraph formed by the other four sentences.

1. But, for the child of a village policeman who had left school at 13, the poetry of past lives suddenly seemed a revelation – and led to his eventual vocation.
2. When he was ten years old, he was given a Victorian anthology of English poetry, an award to mark his punctilious attendance at the Sunday school of his local church.
3. As with all vocations, or indeed love affairs, it was often difficult.
4. It was filled with the kind of high-flown, sentimental stuff he would later scorn.
5. It was, Geoffrey Hill said, like falling in love.

**Your Answer:**4 Your answer is incorrect

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	34
Avg. time spent on this question by all students	135
Difficulty Level	D
Avg. time spent on this question by students who got this question right	128
% of students who attempted this question	43.64
% of students who got the question right of those who attempted	16.22

[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. The pronoun 'he' in sentence 2 stands for 'Geoffrey Hill' in sentence 5. Sentence 2 is followed by sentence 4. "Victorian anthology of English poetry, an award" in sentence 2 links with "It was filled with the kind of high-flown, sentimental stuff" in sentence 4. So sentence 4 follows sentence 2. Sentence 4 is followed by sentence 1. "but .... the poetry of past lives suddenly seemed a revelation" in sentence 1 contrasts "he would later scorn" in sentence 4 and it also links with "Victorian anthology of English poetry" in sentence 2. So, 5241. Sentence 3 is the odd sentence out. It can be a part of another para as it needs further elaboration. In fact, it can serve as the first sentence of the following paragraph.

Ans: (3)

undefined

**Q31. DIRECTIONS for questions 29 to 32:** Each of the following questions has five sentences. Each sentence is labeled with a number. All but one of the sentences can be rearranged to form a logically coherent paragraph. Key in the number of the sentence that does not fit contextually with the paragraph formed by the other four sentences.

1. Our traditional views are parochial and limited, the result of cultural influences; but we need to reset our conscience, like resetting the watch when you get off the boat in a foreign country.
2. If the value you put on human beings sinks low enough, you stand a fair chance of establishing universal peace and prosperity.
3. It's only when you start packing out the shopping basket with luxury goods such as freedom and dignity and the right to self-determination that you price poor folks out of the market.
4. Bring those values down, and everyone can afford to be happy.
5. It makes sense once you have seen it for yourself; if you have never seen it, of course, it must sound barbaric.

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>135</b>
Difficulty Level	<b>VD</b>
Avg. time spent on this question by students who got this question right	<b>136</b>
% of students who attempted this question	<b>36.99</b>
% of students who got the question right of those who attempted	<b>21.73</b>

[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. Sentence 2 is followed by sentence 4. "If the value you put .... sinks low enough" in sentence 2 links with "bring those values down" in sentence 4. Also "you stand a fair chance of establishing universal peace and prosperity" in sentence 2 links with "everyone can afford to be happy" in sentence 4. Sentence 4 is followed by sentence 3. Sentence 3 reiterates the point made in sentence 2. "packing out" in sentence 3 is a phrasal verb which means "to fill something completely". Also "everyone can afford to be happy" in sentence 4 links with "you price poor folks out of the market" in sentence 3. When the cost of something becomes prohibitively high to a person or business, that person or business is said to have been priced out of the market. Sentence 3 is followed by sentence 5 which concludes the para. "it must sound barbaric" in sentence 5 points to "price poor folks out of the market". So, 2435. Sentence 1 is the odd sentence out. It needs a precedent and more substantiation. Ans: (1)

undefined

**Q32. DIRECTIONS for questions 29 to 32:** Each of the following questions has five sentences. Each sentence is labeled with a number. All but one of the sentences can be rearranged to form a logically coherent paragraph. Key in the number of the sentence that does not fit contextually with the paragraph formed by the other four sentences.

1. Thus, he was Atlas Telamon, "enduring Atlas," and became a doublet of Coeus, the embodiment of the celestial axis around which the heavens revolve.
2. When the Titans were defeated, many of them (including Menoetius) were confined to Tartarus.
3. Atlas and his brother Menoetius sided with the Titans in their war against the Olympians, the Titanomachy.
4. But Zeus condemned Atlas to stand at the western edge of Gaia (the Earth) and hold up the sky on his shoulders.
5. "Atlantic Ocean" means "Sea of Atlas", while "Atlantis" means "island of Atlas".

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>0</b>
Avg. time spent on this question by all students	<b>113</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>103</b>
% of students who attempted this question	<b>41.72</b>
% of students who got the question right of those who attempted	<b>62.66</b>

[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 Atlas to us, specifically in the context of the Titans' war against the Olympians. Sentences 3 and 2 form a mandatory pair. "sided with the Titans in their war against the Olympians" in sentence 3 links with "when the Titans were defeated" in sentence 2. Sentence 2 is followed by sentence 4. Menoetius was confined to Tartarus but Zeus condemned Atlas to stand at the western edge of Gaia (the Earth). Sentence 4 is followed by sentence 1. "hold up the sky on his shoulders" in sentence 4 links with "he was Atlas Telamon, "enduring Atlas,"" in sentence 1. So, 3241. Sentence 5 is the odd sentence out. It is unrelated to the rest of the context. Sentence 5 can be a part of another para.

Ans: (5)

undefined

**Q33. DIRECTIONS for questions 33 and 34:** Each of the following questions has a paragraph from which the last sentence has been left incomplete. From the given options, choose the one that completes the paragraph in the most appropriate way.

Apart from a gentle nudge in the back as the pilots opened the throttles of its four Rolls-Royce Olympus jet engines, passengers had little sensation that the Concorde was accelerating through the sound barricade. Not so for those on the ground. A sonic boom trailing behind the aircraft would rattle windows and dislodge roof tiles. Supersonic passenger flights came to an end in 2003 after a downturn in air travel and a fatal crash in Paris three years earlier. But Concorde, although a technological marvel for its time, was never a commercial success: the 14 aircraft that saw service were heavily subsidised by British and French taxpayers; they had limited range and they guzzled fuel flying subsonically, which they were largely forced to do over land because of their sonic booms. Yet the idea of a Concorde successor has never quite gone away. \_\_\_\_\_

- a) Reducing the sound of a sonic boom is impossible without computational fluid dynamics, which relies on powerful computer systems.
- b) If a supersonic airliner were to fly again, however, such a noisy footprint would have to be toned down.
- c) If the aircraft's quieter boom does prove to be acceptable, then its sound "signature" could become a certification standard that any future supersonic passenger aircraft would have to meet.
- d) "We are not shooting completely in the dark," says Peter Cohen, head of commercial supersonic technology at NASA's Langley Research Centre in Hampton, Virginia.

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	155
Difficulty Level	D
Avg. time spent on this question by students who got this question right	149
% of students who attempted this question	28.24
% of students who got the question right of those who attempted	48.96

[Video Solution](#)

[Text Solution](#)

Option A: Choice A is a matter-of-fact statement which does not link well with the penultimate sentence of the para. Choice A highlights the importance of computational fluid dynamics' which can reduce the sound of a sonic boom. But whether the latter has been achieved or whether progress has been made in that direction has not been stated in choice A. Choice A can be a part of another para.

Option B: The para highlights the fact that sonic booms trailing behind the aircraft would rattle windows and dislodge roof tiles. The 14 Concorde aircraft were largely forced to fly subsonically over land because of their sonic booms. The latter half of the para highlights some limitations of the Concorde. So choice B which talks about a solution for the 'sonic boom' links very well with the penultimate sentence. "such a noisy footprint would have to be toned down" in choice B points to "sonic boom trailing behind the aircraft would rattle windows and dislodge roof tiles" in the para. Choice B best concludes and completes the para.

Option C: Choice C jumps the gun. "aircraft's quieter boom" is nowhere implied. The para talks about the sonic boom of the Concorde and not "quieter boom". So, choice C (become a certification standard that any future supersonic passenger aircraft would have to meet) can be part of another para which talks about improvements made on the parent model.

Option D: Choice D needs a precedent and more substantiation. It is positive in tone but needs to be placed in another para.

Choice (B)

undefined

**Q34. DIRECTIONS for questions 33 and 34:** Each of the following questions has a paragraph from which the last sentence has been left incomplete. From the given options, choose the one that completes the paragraph in the most appropriate way.

Nathaniel Taggart had been a penniless adventurer who had come from somewhere in New England and built a railroad across a continent, in the days of the first steel rails. His railroad still stood; his battle to build it had dissolved into a legend, because people preferred not to understand it or believe it possible. He was a man who had never accepted the creed that others had the right to stop him. He set his goal and moved toward it, his way as straight as one of his rails. He never sought any loans, bonds, subsidies, land grants or legislative favours from the government. He obtained money from the men who owned it, going from door to door – from the mahogany doors of bankers to the clapboard doors of lonely farmhouses. He never talked about the public good. He merely told people that they would make big profits on his railroad, he told them why he expected the profits and he gave his reasons. \_\_\_\_\_

- a) It was said that Nat Taggart had staked his life on his railroad many times; but once, he staked more than his life.
- b) Yet no penny of his wealth had been obtained by force or fraud.
- c) Through all the generations that followed, Taggart Transcontinental was one of the few railroads that never went bankrupt and the only one whose controlling stock remained in the hands of the founder's descendants.
- d) In his lifetime, the name "Nat Taggart" was not famous but notorious.

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	175
Difficulty Level	M
Avg. time spent on this question by students who got this question right	175
% of students who attempted this question	30.64

**Time spent / Accuracy Analysis**

% of students who got the question right of those who attempted      **51.93**

[Video Solution](#)

[Text Solution](#)

Option A: Choice A runs tangent to the para. Choice A is not connected to the penultimate sentence of the para. It sounds like an introductory sentence of another para.

Option B: The contrast conjunction 'yet' in choice B is misplaced. Choice B fails to explain a contrasting viewpoint mentioned in the penultimate sentence of the para. It has already been mentioned in the para that Nathaniel Taggart never sought any loans, bonds, subsidies, land grants or legislative favours from the government. Choice B cannot complete the para.

Option C: Choice C summarizes the main content of the para and also completes it. "never went bankrupt and the only one whose controlling stock remained in the hands of the founder's descendants" in choice C substantiates "he never sought any loans, bonds, subsidies, land grants or legislative favours from the government. He obtained money from the men who owned it, going from door to door." in the para. Choice C is the answer.

Option D: Choice D is an easy elimination. "not famous but notorious" in choice D is negative in tone and does not gel well with the positive tone of the para.

Choice (C)

undefined

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

A particular ATM has notes of four different denominations, Rs.2000, Rs.1000, Rs.500 and Rs.100. While dispensing cash, the ATM always tries to minimize the number of notes dispensed based on the number of notes of each denomination available in the ATM.

At the beginning of a particular day, there were a certain number of notes of each denomination in the ATM. Further, no additional cash was loaded in to the ATM at any point during the day. Exactly seven persons, Amit, Girish, Lokesh, Bhargav, Rohit, Harish and Manish, withdrew cash from the ATM on that day, not necessarily in the same order.

The following table provides the amount withdrawn by each customer from the ATM, the total number of notes of all denominations dispensed and the number of Rs.100 notes dispensed by the ATM:

Further, it is known that Lokesh did not receive any Rs.2000 notes.

Customer	Amount Withdrawn (Rs.)	Total Number of Notes Dispensed	Number of Rs.100 Notes Dispensed
Amit	3800	14	8
Girish	1000	10	10
Lokesh	5300	9	3
Bhargav	4500	9	0
Rohit	2400	6	4
Harish	2700	4	2
Manish	6300	7	3

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

Who was the third person to withdraw cash from the ATM?

- a) Rohit
- b) Lokesh
- c) Manish
- 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      **134**

Avg. time spent on this question by all students      **455**

Difficulty Level      **M**

Avg. time spent on this question by students who got this question right **560**

% of students who attempted this question      **36.24**

% of students who got the question right of those who attempted      **36.91**

[Video Solution](#)

[Text Solution](#)

Given that the ATM machine always tries to minimize the number of notes dispensed. Hence, it will dispense the maximum possible number of notes of higher denominations before dispensing notes of lower denominations.

Given that Amit withdrew ₹3800. Since eight ₹100 notes were dispensed, for the total notes dispensed to be 14, six ₹500 notes must be dispensed.

Similarly, for Girish, all the 10 notes dispensed were ₹100 notes.

For Lokesh, four ₹1000 notes, two ₹500 notes and three ₹100 notes would have been dispensed.

For Bhargav, nine ₹500 notes would have been dispensed.

For Rohit, two ₹1000 notes and four ₹100 notes would have been dispensed.

For Harish, one ₹2000 notes, one ₹500 note and two ₹100 notes would have been dispensed.

For Manish, two ₹2000 notes, two ₹1000 notes and three ₹100 notes would have been dispensed.

The following table provides the notes dispensed for each person:

Customer	Amount Withdrawn (₹)	₹2000	₹1000	₹500	₹100
Amit	3800	0	0	6	8
Girish	1000	0	0	0	10
Lokesh	5300	0	4	2	3
Bhargav	4500	0	0	9	0
Rohit	2400	0	2	0	4
Harish	2700	1	0	1	2
Manish	6300	2	2	0	3

From the above table, we can see that except for Girish, everyone else should have been dispensed at least one ₹2000 note (to minimize the number of notes). However, the machine dispensed ₹2000 notes only to Harish and Manish. It did not dispense ₹2000 notes to the others because it ran out of ₹2000 notes.

This implies that Amit, Lokesh, Bhargav and Lohit must have withdrawn cash only after Harish and Manish. If they withdrew cash before either of Harish or Manish, they would have been dispensed at least one ₹2000 note.

Hence, Harish and Manish withdrew from the ATM before Amit, Lokesh, Bhargav and Lohit. Also, Manish was dispensed ₹1000 notes and Girish was not. This implies that Girish also withdrawn cash from the ATM after Manish.

Further, the ATM dispensed two ₹2000 notes and two ₹1000 notes to Manish instead of dispensing three ₹2000 notes. From this we can infer that, the ATM had only two 2000 notes when Manish entered the ATM and dispensed the last two ₹2000 notes to Manish. Hence, Harish must have withdrawn cash from the ATM before Manish.

Therefore, Harish was the first person to withdraw cash from the ATM and Manish was the second person to withdraw.

Between Amit, Lokesh, Bhargav, Rohit and Girish, if there were sufficient number of ₹1000 notes, the ATM must have dispensed ₹1000 to everyone. However, only Lokesh and Rohit were dispensed ₹1000 notes.

Hence, Lokesh and Rohit withdrew before Amit, Bhargav and Girish.

Also, Lokesh withdrew ₹5300. Since there were no ₹2000 notes in the ATM, he must have been dispensed five ₹1000 notes and three ₹100 notes. However, he was dispensed only four ₹1000 notes. This implies that these were the last four ₹1000 notes in the ATM. Hence, Rohit must have withdrawn cash before Lokesh.

Between Amit, Bhargav and Girish, only Amit and Bhargav were dispensed ₹500 notes. Also, for Amit, instead of dispensing seven ₹500 notes, the ATM dispensed only six ₹500 notes. Hence, Bhargav entered before Amit. And, Girish was the last person in the ATM.

The following table provides the order in which the seven persons withdrew cash from the ATM:

Order	1	2	3	4	5	6	7
Person	Harish	Manish	Rohit	Lokesh	Bhargav	Amit	Girish

Rohit was the third person to withdraw cash from the ATM.

Choice (A)

undefined

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

A particular ATM has notes of four different denominations, Rs.2000, Rs.1000, Rs.500 and Rs.100. While dispensing cash, the ATM always tries to minimize the number of notes dispensed based on the number of notes of each denomination available in the ATM.

At the beginning of a particular day, there were a certain number of notes of each denomination in the ATM. Further, no additional cash was loaded in to the ATM at any point during the day. Exactly seven persons, Amit, Girish, Lokesh, Bhargav, Rohit, Harish and Manish, withdrew cash from the ATM on that day, not necessarily in the same order.

The following table provides the amount withdrawn by each customer from the ATM, the total number of notes of all denominations dispensed and the number of Rs.100 notes dispensed by the ATM:

Further, it is known that Lokesh did not receive any Rs.2000 notes.

Customer	Amount Withdrawn (Rs.)	Total Number of Notes Dispensed	Number of Rs.100 Notes Dispensed
Amit	3800	14	8
Girish	1000	10	10
Lokesh	5300	9	3
Bhargav	4500	9	0
Rohit	2400	6	4
Harish	2700	4	2
Manish	6300	7	3

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

What is the number of Rs.500 notes dispensed to the sixth person who withdrew cash from the ATM?

- a) 0
- b) 2
- c) 6
- d) 9

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	140
Difficulty Level	M
Avg. time spent on this question by students who got this question right	123
% of students who attempted this question	31.45
% of students who got the question right of those who attempted	62.15

[Video Solution](#)

[Text Solution](#)

Given that the ATM machine always tries to minimize the number of notes dispensed. Hence, it will dispense the maximum possible number of notes of higher denominations before dispensing notes of lower denominations.

Given that Amit withdrew ₹3800. Since eight ₹100 notes were dispensed, for the notes dispensed to be 14, six ₹500 notes must be dispensed.

Similarly, for Girish, all the 10 notes dispensed were ₹100 notes.

For Lokesh, four ₹1000 notes, two ₹500 notes and three ₹100 notes would have been dispensed.

For Bhargav, nine ₹500 notes would have been dispensed.

For Rohit, two ₹1000 notes and four ₹100 notes would have been dispensed.

For Harish, one ₹2000 notes, one ₹500 note and two ₹100 notes would have been dispensed.

For Manish, two ₹2000 notes, two ₹1000 notes and three ₹100 notes would have been dispensed.

The following table provides the notes dispensed for each person:

Customer	Amount Withdrawn (₹)	₹2000	₹1000	₹500	₹100
Amit	3800	0	0	6	8

Girish	1000	0	0	0	10
Lokesh	5300	0	4	2	3
Bhargav	4500	0	0	9	0
Rohit	2400	0	2	0	4
Harish	2700	1	0	1	2
Manish	6300	2	2	0	3

From the above table, we can see that except for Girish, everyone else should have been dispensed at least one ₹2000 note (to minimize the number of notes). However, the machine dispensed ₹2000 notes only to Harish and Manish. It did not dispense ₹2000 notes to the others because it ran out of ₹2000 notes.

This implies that Amit, Lokesh, Bhargav and Rohit must have withdrawn cash after Harish and Manish. If they withdrew cash before either of Harish or Manish, they would have been dispensed at least one ₹2000 note.

Hence, Harish and Manish withdrew from the ATM before Amit, Lokesh, Bhargav and Rohit. Also, Manish was dispensed ₹1000 notes and Girish was not. This implies Girish also withdrew cash from the ATM after Manish.

Further, the ATM dispensed two ₹2000 notes and two ₹1000 notes to Manish instead of dispensing three ₹2000 notes. From this we can infer that, the ATM had only ₹2000 notes when Manish entered the ATM and dispensed the last two ₹2000 notes to Manish. Hence, Harish must have withdrawn cash from the ATM before Manish.

Therefore, Harish was the first person to withdraw cash from the ATM and Manish was the second person to withdraw.

Between Amit, Lokesh, Bhargav, Rohit and Girish, if there were sufficient number of ₹1000 notes, the ATM must have dispensed ₹1000 to everyone. However, Lokesh and Rohit were dispensed ₹1000 notes.

Hence, Lokesh and Rohit withdrew before Amit, Bhargav and Girish.

Also, Lokesh withdrew ₹5300. Since there were no ₹2000 notes in the ATM, he must have been dispensed five ₹1000 notes and three ₹100 notes. However, he was dispensed only four ₹1000 notes. This implies that these were the last four ₹1000 notes in the ATM. Hence, Rohit must have withdrawn cash before Lokesh.

Between Amit, Bhargav and Girish, only Amit and Bhargav were dispensed ₹500 notes. Also, for Amit, instead of dispensing seven ₹500 notes, the ATM dispensed six ₹500 notes. Hence, Bhargav entered before Amit. And, Girish was the last person to withdraw cash from the ATM.

The following table provides the order in which the seven persons withdrew cash from the ATM:

Order	1	2	3	4	5	6	7
Person	Harish	Manish	Rohit	Lokesh	Bhargav	Amit	Girish

The number of ₹500 notes dispensed to the sixth person who withdrew cash from the ATM is:

undefined

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

A particular ATM has notes of four different denominations, Rs.2000, Rs.1000, Rs.500 and Rs.100. While dispensing cash, the ATM always tries to minimize the number of notes dispensed based on the number of notes of each denomination available in the ATM.

At the beginning of a particular day, there were a certain number of notes of each denomination in the ATM. Further, no additional cash was loaded in to the ATM at any point during the day. Exactly seven persons, Amit, Girish, Lokesh, Bhargav, Rohit, Harish and Manish, withdrew cash from the ATM on that day, not necessarily in the same order.

The following table provides the amount withdrawn by each customer from the ATM, the total number of notes of all denominations dispensed and the number of Rs.100 notes dispensed by the ATM:

Further, it is known that Lokesh did not receive any Rs.2000 notes.

Customer	Amount Withdrawn (Rs.)	Total Number of Notes Dispensed	Number of Rs.100 Notes Dispensed
Amit	3800	14	8
Girish	1000	10	10
Lokesh	5300	9	3
Bhargav	4500	9	0
Rohit	2400	6	4
Harish	2700	4	2
Manish	6300	7	3

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

Among the persons who withdrew cash from the ATM after Lokesh did, to how many persons were more than two Rs.500 notes dispensed?

- a) 1
- b) 2
- c) 3
- d) 4

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

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	1
Avg. time spent on this question by all students	96
Difficulty Level	M
Avg. time spent on this question by students who got this question right	87
% of students who attempted this question	30.34
% of students who got the question right of those who attempted	73.04

[Video Solution](#)

[Text Solution](#)

Given that the ATM machine always tries to minimize the number of notes dispensed. Hence, it will dispense the maximum possible number of notes of higher denominations before dispensing notes of lower denominations.

Given that Amit withdrew ₹3800. Since eight ₹100 notes were dispensed, for the 14 notes dispensed to be 14, six ₹500 notes must be dispensed.

Similarly, for Girish, all the 10 notes dispensed were ₹100 notes.

For Lokesh, four ₹1000 notes, two ₹500 notes and three ₹100 notes would have been dispensed.

For Bhargav, nine ₹500 notes would have been dispensed.

For Rohit, two ₹1000 notes and four ₹100 notes would have been dispensed.

For Harish, one ₹2000 notes, one ₹500 note and two ₹100 notes would have been dispensed.

For Manish, two ₹2000 notes, two ₹1000 notes and three ₹100 notes would have been dispensed.

The following table provides the notes dispensed for each person:

Customer	Amount Withdrawn ₹	₹2000	₹1000	₹500	₹100

	(₹)				
Amit	3800	0	0	6	8
Girish	1000	0	0	0	10
Lokesh	5300	0	4	2	3
Bhargav	4500	0	0	9	0
Rohit	2400	0	2	0	4
Harish	2700	1	0	1	2
Manish	6300	2	2	0	3

From the above table, we can see that except for Girish, everyone else should have been dispensed at least one ₹2000 note (to minimize the number of notes). However, the machine dispensed ₹2000 notes only to Harish and Manish. It did not dispense ₹2000 notes to the others because it ran out of ₹2000 notes.

This implies that Amit, Lokesh, Bhargav and Rohit must have withdrawn cash after Harish and Manish. If they withdrew cash before either of Harish or Manish, it would have been dispensed at least one ₹2000 note.

Hence, Harish and Manish withdrew from the ATM before Amit, Lokesh, Bhargav and Rohit. Also, Manish was dispensed ₹1000 notes and Girish was not. This implies Girish also withdrew cash from the ATM after Manish.

Further, the ATM dispensed two ₹2000 notes and two ₹1000 notes to Manish instead of dispensing three ₹2000 notes. From this we can infer that, the ATM had only ₹2000 notes when Manish entered the ATM and dispensed the last two ₹2000 notes to Manish. Hence, Harish must have withdrawn cash from the ATM before Manish.

Therefore, Harish was the first person to withdraw cash from the ATM and Manish was the second person to withdraw.

Between Amit, Lokesh, Bhargav, Rohit and Girish, if there were sufficient number of ₹1000 notes, the ATM must have dispensed ₹1000 to everyone. However, since Lokesh and Rohit were dispensed ₹1000 notes.

Hence, Lokesh and Rohit withdrew before Amit, Bhargav and Girish.

Also, Lokesh withdrew ₹5300. Since there were no ₹2000 notes in the ATM, he must have been dispensed five ₹1000 notes and three ₹100 notes. However, he was dispensed only four ₹1000 notes. This implies that these were the last four ₹1000 notes in the ATM. Hence, Rohit must have withdrawn cash before Lokesh.

Between Amit, Bhargav and Girish, only Amit and Bhargav were dispensed ₹500 notes. Also, for Amit, instead of dispensing seven ₹500 notes, the ATM dispensed six ₹500 notes. Hence, Bhargav entered before Amit. And, Girish was the last person to withdraw cash in the ATM.

The following table provides the order in which the seven persons withdrew cash from the ATM:

Order	1	2	3	4	5	6	7
Person	Harish	Manish	Rohit	Lokesh	Bhargav	Amit	Girish

Among the three persons who withdrew cash from the ATM after Lokesh, two people were dispensed more than two ₹500 notes.

Choice

undefined

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

A particular ATM has notes of four different denominations, Rs.2000, Rs.1000, Rs.500 and Rs.100. While dispensing cash, the ATM always tries to minimize the number of notes dispensed based on the number of notes of each denomination available in the ATM.

At the beginning of a particular day, there were a certain number of notes of each denomination in the ATM. Further, no additional cash was loaded in to the ATM at any point during the day. Exactly seven persons, Amit, Girish, Lokesh, Bhargav, Rohit, Harish and Manish, withdrew cash from the ATM on that day, not necessarily in the same order.

The following table provides the amount withdrawn by each customer from the ATM, the total number of notes of all denominations dispensed and the number of Rs.100 notes dispensed by the ATM:

Further, it is known that Lokesh did not receive any Rs.2000 notes.

Customer	Amount Withdrawn (Rs.)	Total Number of Notes Dispensed	Number of Rs.100 Notes Dispensed
Amit	3800	14	8
Girish	1000	10	10
Lokesh	5300	9	3
Bhargav	4500	9	0
Rohit	2400	6	4
Harish	2700	4	2
Manish	6300	7	3

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

What was the number of Rs.1000 notes in the ATM at the beginning of the day?

- a) 12
- b) 10
- c) 8
- 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	10
Avg. time spent on this question by all students	93
Difficulty Level	M
Avg. time spent on this question by students who got this question right	93
% of students who attempted this question	30.26
% of students who got the question right of those who attempted	67.56

[Video Solution](#)

[Text Solution](#)

Given that the ATM machine always tries to minimize the number of notes dispensed. Hence, it will dispense the maximum possible number of notes of higher denominations before dispensing notes of lower denominations.

Given that Amit withdrew ₹3800. Since eight ₹100 notes were dispensed, for the total notes dispensed to be 14, six ₹500 notes must be dispensed.

Similarly, for Girish, all the 10 notes dispensed were ₹100 notes.

For Lokesh, four ₹1000 notes, two ₹500 notes and three ₹100 notes would have been dispensed.

For Bhargav, nine ₹500 notes would have been dispensed.

For Rohit, two ₹1000 notes and four ₹100 notes would have been dispensed.

For Harish, one ₹2000 notes, one ₹500 note and two ₹100 notes would have been dispensed.

For Manish, two ₹2000 notes, two ₹1000 notes and three ₹100 notes would have been dispensed.

The following table provides the notes dispensed for each person.

<b>Customer</b>	<b>Amount Withdrawn (₹)</b>	<b>₹2000</b>	<b>₹1000</b>	<b>₹500</b>	<b>₹100</b>
Amit	3800	0	0	6	8
Girish	1000	0	0	0	10
Lokesh	5300	0	4	2	3
Bhargav	4500	0	0	9	0
Rohit	2400	0	2	0	4
Harish	2700	1	0	1	2
Manish	6300	2	2	0	3

From the above table, we can see that except for Girish, everyone else should have been dispensed at least one ₹2000 note (to minimize the number of notes). However, the machine dispensed ₹2000 notes only to Harish and Manish. It did not dispense ₹2000 notes to the others because it ran out of ₹2000 notes.

This implies that Amit, Lokesh, Bhargav and Lohit must have withdrawn cash after Harish and Manish. If they withdrew cash before either of Harish or Manish, they would have been dispensed at least one ₹2000 note.

Hence, Harish and Manish withdrew from the ATM before Amit, Lokesh, Bhargav and Lohit. Also, Manish was dispensed ₹1000 notes and Girish was not. This implies that Girish also withdrew cash from the ATM after Manish.

Further, the ATM dispensed two ₹2000 notes and two ₹1000 notes to Manish instead of dispensing three ₹2000 notes. From this we can infer that, the ATM had only ₹2000 notes when Manish entered the ATM and dispensed the last two ₹2000 notes to Manish. Hence, Harish must have withdrawn cash from the ATM before Manish.

Therefore, Harish was the first person to withdraw cash from the ATM and Manish was the second person to withdraw.

Between Amit, Lokesh, Bhargav, Rohit and Girish, if there were sufficient number of ₹1000 notes, the ATM must have dispensed ₹1000 to everyone. However, only Lokesh and Rohit were dispensed ₹1000 notes.

Hence, Lokesh and Rohit withdrew before Amit, Bhargav and Girish.

Also, Lokesh withdrew ₹5300. Since there were no ₹2000 notes in the ATM, he must have been dispensed five ₹1000 notes and three ₹100 notes. However, he was dispensed only four ₹1000 notes. This implies that these were the last four ₹1000 notes in the ATM. Hence, Rohit must have withdrawn cash before Lokesh.

Between Amit, Bhargav and Girish, only Amit and Bhargav were dispensed ₹500 notes. Also, for Amit, instead of dispensing seven ₹500 notes, the ATM dispensed only six ₹500 notes. Hence, Bhargav entered before Amit. And, Girish was the last person to withdraw cash in the ATM.

The following table provides the order in which the seven persons withdrew cash from the ATM:

Order	1	2	3	4	5	6	7
Person	Harish	Manish	Rohit	Lokesh	Bhargav	Amit	Girish

Since all the ₹1000 notes were withdrawn during the day, there must have been a total of eight ₹1000 notes at the beginning of the day. Choice (C)

undefined

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

In a service station, five tasks – Body Wash, Brake Checking, Engine Tuning, Interior Wash and Wheel Alignment – had to be performed on a vehicle on a particular day. The order in which the five tasks should be performed was fixed. The time taken to finish each task was 10 minutes, 20 minutes, 30 minutes, 50 minutes and 80 minutes, not necessarily in the same order. The tasks should be performed one after the other and any task can be performed as soon as the previous task is completed. Further, each task can be performed by exactly one technician among Dev, Gaurav, Krish, Lalit and Raju, not necessarily in that order.

On that particular day, each technician reached the service station at a different time. Any technician who reached the service station started working on his task immediately after he reached, providing all the preceding tasks, if any, were already complete. If not, he waited until all the tasks scheduled before his task were finished.

The following information is known about the details of the tasks:

- i. Only one technician arrived by 10:00AM but he had to start his job at 11:20AM.
- ii. Dev arrived at 12:00PM and started his task immediately.
- iii. The first task to be finished did not take longer than 20 minutes.
- iv. Interior Wash, which was the last task, was finished at 3:00PM.
- v. Engine Tuning takes 30 minutes to complete, while Body Wash takes 50 minutes.
- vi. Gaurav, who did not arrive first, performed Wheel Alignment and he was the third person to finish his task.
- vii. Lalit was not the first person to arrive but finished his job before Dev, while Raju did not perform Interior Wash.

**Q5. DIRECTIONS for questions 5 to 7:** Select the correct alternative from the given choices.

At what time did Krish arrive?

- a) 10:00AM
- b) 10:20AM
- c) 1:40PM Your answer is correct
- d) 2:10PM

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	578
Avg. time spent on this question by all students	478
Difficulty Level	D
Avg. time spent on this question by students who got this question right	554
% of students who attempted this question	13.27
% of students who got the question right of those who attempted	38.47

[Video Solution](#)

[Text Solution](#)

Given that Wheel Alignment was the third task and it was performed by Gaurav (from (vi)). Also, the first task could have taken only 10/20 minutes (from (iii)). From (v), the first task cannot be Engine Tuning or Body Wash. From (iv) and (vi), the first task c

First task cannot be Engine Tuning or Body Wash. From (iv) and (vi), the first task can only be Brake Checking. Interior Wash is the last task which got finished by 3:00PM. Since Dev started his work at 12:00, he could not have started his task 2<sup>nd</sup> (since C person started his task at 11:20AM which was not the first task from (i)). Also, D could not have performed the last task because if he was the last person to finish the task, his task would have taken 3 hours (from 12:00PM to 3:00PM). Dev cannot be third because Gaurav was third. Therefore, Dev can only be 4<sup>th</sup>.

Gaurav could not have started the task at 11:20 (since he was not the first to arrive). Therefore, the technician who performed the second task would have started at 11:20AM. Between 11:20 and 12:00 two tasks must be finished. This is only possible if one task is 10 minutes and the other 20 or 30 minutes. But these two tasks can't take 10 and 20 minutes because the first task takes 10/20 minutes. Hence of the two tasks which were completed between 11:20 and 12:00 one task must take 10 minutes and the other, 30 minutes. Gaurav's task cannot be 30 minutes because Engine Tuning takes 30 minutes and Gaurav did not perform Engine Tuning. Hence, Gaurav's task took 10 minutes and the second task took 30 minutes, which must be Engine Tuning. The first task took 20 minutes.

Since the second task started at 11:20 AM and the person who performed the second task arrived before 10:00 AM, he must have waited for the first task to finish till 11:20 AM. Hence, the first task ended at 11:20 AM and must have started at 11:00 AM (since the first task took 20 minutes).

The fourth task would have been Body Wash for 50 minutes. Interior washing would have taken 80 minutes.

From (vii), Lalit would have been the first person to finish his task, Raju, the second and the last person would be Krish. The following table presents this information:

Name	Lalit	Raju	Gaurav	Dev	Krish
Task	Brake Checking	Engine Tuning	Wheel Alignment	Body Wash	Interior Wash
Start Time	11:00AM	11:20AM	11:50AM	12:00PM	1:40PM
End Time	11:20AM	11:50AM	12:00PM	12:50PM	3:00PM
Duration	20 minutes	30 minutes	10 minutes	50 minutes	80 minutes

Also, Lalit must have arrived at 11:00AM (since he was the first person to start). Raju arrived at 10:00 and must be the first person to arrive. Gaurav could have arrived at any time after 10:00 but before 11:50. Dev must have been the fourth person to arrive (since he came at 12:00PM). Krish must have been arrived at 1:40 since he must have started his task as soon as he arrived.

Krish arrived at 1:40PM.

Choice (C)

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

In a service station, five tasks – Body Wash, Brake Checking, Engine Tuning, Interior Wash and Wheel Alignment – had to be performed on a vehicle on a particular day. The order in which the five tasks should be performed was fixed. The time taken to finish each task was 10 minutes, 20 minutes, 30 minutes, 50 minutes and 80 minutes, not necessarily in the same order. The tasks should be performed one after the other and any task can be performed as soon as the previous task is completed. Further, each task can be performed by exactly one technician among Dev, Gaurav, Krish, Lalit and Raju, not necessarily in that order.

On that particular day, each technician reached the service station at a different time. Any technician who reached the service station started working on his task immediately after he reached, providing all the preceding tasks, if any, were already complete. If not, he waited until all the tasks scheduled before his task were finished.

The following information is known about the details of the tasks:

- i. Only one technician arrived by 10:00AM but he had to start his job at 11:20AM.
- ii. Dev arrived at 12:00PM and started his task immediately.
- iii. The first task to be finished did not take longer than 20 minutes.
- iv. Interior Wash, which was the last task, was finished at 3:00PM.
- v. Engine Tuning takes 30 minutes to complete, while Body Wash takes 50 minutes.
- vi. Gaurav, who did not arrive first, performed Wheel Alignment and he was the third person to finish his task.
- vii. Lalit was not the first person to arrive but finished his job before Dev, while Raju did not perform Interior Wash.

**Q6. DIRECTIONS** for questions 5 to 7: Select the correct alternative from the given choices.

Which technician had to wait the longest to start his task after he arrived at the service station?

- a) Raju  
 b) Gaurav  
 c) Dev  
 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	14
Avg. time spent on this question by all students	93
Difficulty Level	D
Avg. time spent on this question by students who got this question right	93
% of students who attempted this question	12.99
% of students who got the question right of those who attempted	42.45

[Video Solution](#)

[Text Solution](#)

Given that Wheel Alignment was the third task and it was performed by Gaurav (from (vi)). Also, the first task could have taken only 10/20 minutes (from (iii)). From (v), the first task cannot be Engine Tuning or Body Wash. From (iv) and (vi), the first task can only be Brake Checking. Interior Wash is the last task which got finished by 3:00PM. Since Dev started his work at 12:00, he could not have started his task 2<sup>nd</sup> (since no person started his task at 11:20AM which was not the first task from (i)). Also, Dev could not have performed the last task because if he was the last person to finish the task, his task would have taken 3 hours (from 12:00PM to 3:00PM). Dev cannot be third because Gaurav was third. Therefore, Dev can only be 4<sup>th</sup>.

Gaurav could not have started the task at 11:20 (since he was not the first to arrive). Therefore, the technician who performed the second task would have started at 11:20AM. Between 11:20 and 12:00 two tasks must be finished. This is only possible if one task is 10 minutes and the other 20 or 30 minutes. But these two tasks can take 10 and 20 minutes because the first task takes 10/20 minutes. Hence of the two tasks which were completed between 11:20 and 12:00 one task must take 10 minutes.

and the other, 30 minutes. Gaurav's task cannot be 30 minutes because Engine tuning takes 30 minutes and Gaurav did not perform Engine Tuning. Hence, Gaurav's task took 10 minutes and the second task took 30 minutes, which must be Engine Tuning. The first task took 20 minutes.

Since the second task started at 11:20 AM and the person who performed the second task arrived before 10:00 AM, he must have waited for the first task to finish till 11:00 AM. Hence, the first task ended at 11:20 AM and must have started at 11:00 AM (since the first task took 20 minutes).

The fourth task would have been Body Wash for 50 minutes. Interior washing would have taken 80 minutes.

From (vii), Lalit would have been the first person to finish his task, Raju, the second and the last person would be Krish. The following table presents this information:

Name	Lalit	Raju	Gaurav	Dev	Krish
Task	Brake Checking	Engine Tuning	Wheel Alignment	Body Wash	Interior Wash
Start Time	11:00AM	11:20AM	11:50AM	12:00PM	1:40PM
End Time	11:20AM	11:50AM	12:00PM	12:50PM	3:00PM
Duration	20 minutes	30 minutes	10 minutes	50 minutes	80 minutes

Also, Lalit must have arrived at 11:00AM (since he was the first person to start). Raju arrived at 10:00 and must be the first person to arrive. Gaurav could have arrived at any time after 10:00 but before 11:50. Dev must have been the fourth person to arrive (since he came at 12:00PM). Krish must have been arrived at 1:40 since he must have started his task as soon as he arrived.

Gaurav could have waited for a maximum of 110 minutes (if he arrived just after 10 AM). Raju waited for at least 80 minutes. Hence, the answer cannot be determined. Choice (I)

undefined

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

In a service station, five tasks – Body Wash, Brake Checking, Engine Tuning, Interior Wash and Wheel Alignment – had to be performed on a vehicle on a particular day. The order in which the five tasks should be performed was fixed. The time taken to finish each task was 10 minutes, 20 minutes, 30 minutes, 50 minutes and 80 minutes, not necessarily in the same order. The tasks should be performed one after the other and any task can be performed as soon as the previous task is completed. Further, each task can be performed by exactly one technician among Dev, Gaurav, Krish, Lalit and Raju, not necessarily in that order.

On that particular day, each technician reached the service station at a different time. Any technician who reached the service station started working on his task immediately after he reached, providing all the preceding tasks, if any, were already complete. If not, he waited until all the tasks scheduled before his task were finished.

The following information is known about the details of the tasks:

i. Only one technician arrived by 10:00AM but he had to start his job at 11:20AM.

ii. Dev arrived at 12:00PM and started his task immediately.

iii. The first task to be finished did not take longer than 20 minutes.

- iv. Interior Wash, which was the last task, was finished at 3:00PM.
- v. Engine Tuning takes 30 minutes to complete, while Body Wash takes 50 minutes.
- vi. Gaurav, who did not arrive first, performed Wheel Alignment and he was the third person to finish his task.
- vii. Lalit was not the first person to arrive but finished his job before Dev, while Raju did not perform Interior Wash.

**Q7. DIRECTIONS** for questions 5 to 7: Select the correct alternative from the given choices.

Which technician performed Body Wash?

- a) Dev
- b) Raju
- c) Lalit
- d) Krish

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	4
Avg. time spent on this question by all students	84
Difficulty Level	D
Avg. time spent on this question by students who got this question right	80
% of students who attempted this question	11.46
% of students who got the question right of those who attempted	40.14

[Video Solution](#)

[Text Solution](#)

Given that Wheel Alignment was the third task and it was performed by Gaurav (from (vi)). Also, the first task could have taken only 10/20 minutes (from (iii)). From (v), the first task cannot be Engine Tuning or Body Wash. From (iv) and (vi), the first task can only be Brake Checking. Interior Wash is the last task which got finished by 3:00PM. Since Dev started his work at 12:00, he could not have started his task 2<sup>nd</sup> (since no one started his task at 11:20AM which was not the first task from (i)). Also, Dev could not have performed the last task because if he was the last person to finish his task, his task would have taken 3 hours (from 12:00PM to 3:00PM). Dev cannot be the third because Gaurav was third. Therefore, Dev can only be 4<sup>th</sup>.

Gaurav could not have started the task at 11:20 (since he was not the first to arrive). Therefore, the technician who performed the second task would have started between 11:20AM and 12:00. Between 11:20 and 12:00 two tasks must be finished. This is only possible if one task is 10 minutes and the other 20 or 30 minutes. But these two tasks cannot take 10 and 20 minutes because the first task takes 10/20 minutes. Hence, of the two tasks which were completed between 11:20 and 12:00 one task must take 10 minutes and the other, 30 minutes. Gaurav's task cannot be 30 minutes because Engine tuning takes 30 minutes and Gaurav did not perform Engine Tuning. Hence, Gaurav's task took 10 minutes and the second task took 30 minutes, which must be Engine Tuning. The first task took 20 minutes.

Since the second task started at 11:20 AM and the person who performed the second task arrived before 10:00 AM, he must have waited for the first task to finish till 11:20 AM. Hence, the first task ended at 11:20 AM and must have started at 11:00 AM (since the first task took 20 minutes).

The fourth task would have been Body Wash for 50 minutes. Interior washing would have taken 80 minutes.

From (vii), Lalit would have been the first person to finish his task, Raju, the second

and the last person would be Krish. The following table presents this information:

Name	Lalit	Raju	Gaurav	Dev	Krish
Task	Brake Checking	Engine Tuning	Wheel Alignment	Body Wash	Interior Wash
Start Time	11:00AM	11:20AM	11:50AM	12:00PM	1:40PM
End Time	11:20AM	11:50AM	12:00PM	12:50PM	3:00PM
Duration	20 minutes	30 minutes	10 minutes	50 minutes	80 minutes

Also, Lalit must have arrived at 11:00AM (since he was the first person to start). Raju arrived at 10:00 and must be the first person to arrive. Gaurav could have arrived at any time after 10:00 but before 11:50. Dev must have been the fourth person to arrive (since he came at 12:00PM). Krish must have been arrived at 1:40 since he must have started his task as soon as he arrived.

Dev performed Body Wash.

Choice (A)

undefined

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

In a service station, five tasks – Body Wash, Brake Checking, Engine Tuning, Interior Wash and Wheel Alignment – had to be performed on a vehicle on a particular day. The order in which the five tasks should be performed was fixed. The time taken to finish each task was 10 minutes, 20 minutes, 30 minutes, 50 minutes and 80 minutes, not necessarily in the same order. The tasks should be performed one after the other and any task can be performed as soon as the previous task is completed. Further, each task can be performed by exactly one technician among Dev, Gaurav, Krish, Lalit and Raju, not necessarily in that order.

On that particular day, each technician reached the service station at a different time. Any technician who reached the service station started working on his task immediately after he reached, providing all the preceding tasks, if any, were already complete. If not, he waited until all the tasks scheduled before his task were finished.

The following information is known about the details of the tasks:

- i. Only one technician arrived by 10:00AM but he had to start his job at 11:20AM.
- ii. Dev arrived at 12:00PM and started his task immediately.
- iii. The first task to be finished did not take longer than 20 minutes.
- iv. Interior Wash, which was the last task, was finished at 3:00PM.
- v. Engine Tuning takes 30 minutes to complete, while Body Wash takes 50 minutes.
- vi. Gaurav, who did not arrive first, performed Wheel Alignment and he was the third person to finish his task.
- vii. Lalit was not the first person to arrive but finished his job before Dev, while Raju did not perform Interior Wash.

**Q8. DIRECTIONS** for question 8: Type in your answer in the input box provided below the question.

How many technicians definitely did not have to wait to perform their tasks?

Your Answer:2 Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question

**Time spent / Accuracy Analysis**

Avg. time spent on this question by all students	<b>61</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>67</b>
% of students who attempted this question	<b>14.51</b>
% of students who got the question right of those who attempted	<b>32.41</b>

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

Given that Wheel Alignment was the third task and it was performed by Gaurav (from (vi)). Also, the first task could have taken only 10/20 minutes (from (iii)). From (v), the first task cannot be Engine Tuning or Body Wash. From (iv) and (vi), the first task can only be Brake Checking. Interior Wash is the last task which got finished by 3:00PM. Since Dev started his work at 12:00, he could not have started his task 2<sup>nd</sup> (since no person started his task at 11:20AM which was not the first task from (i)). Also, D could not have performed the last task because if he was the last person to finish the task, his task would have taken 3 hours (from 12:00PM to 3:00PM). Dev cannot be third because Gaurav was third. Therefore, Dev can only be 4<sup>th</sup>.

Gaurav could not have started the task at 11:20 (since he was not the first to arrive). Therefore, the technician who performed the second task would have started at 11:20AM. Between 11:20 and 12:00 two tasks must be finished. This is only possible if one task is 10 minutes and the other 20 or 30 minutes. But these two tasks cannot take 10 and 20 minutes because the first task takes 10/20 minutes. Hence of the two tasks which were completed between 11:20 and 12:00 one task must take 10 minutes and the other, 30 minutes. Gaurav's task cannot be 30 minutes because Engine Tuning takes 30 minutes and Gaurav did not perform Engine Tuning. Hence, Gaurav's task took 10 minutes and the second task took 30 minutes, which must be Engine Tuning. The first task took 20 minutes.

Since the second task started at 11:20 AM and the person who performed the second task arrived before 10:00 AM, he must have waited for the first task to finish till 11:20 AM. Hence, the first task ended at 11:20 AM and must have started at 11:00 AM (since the first task took 20 minutes).

The fourth task would have been Body Wash for 50 minutes. Interior washing would have taken 80 minutes.

From (vii), Lalit would have been the first person to finish his task, Raju, the second and the last person would be Krish. The following table presents this information:

Name	Lalit	Raju	Gaurav	Dev	Krish
Task	Brake Checking	Engine Tuning	Wheel Alignment	Body Wash	Interior Wash
Start Time	11:00AM	11:20AM	11:50AM	12:00PM	1:40PM
End Time	11:20AM	11:50AM	12:00PM	12:50PM	3:00PM
Duration	20 minutes	30 minutes	10 minutes	50 minutes	80 minutes

Also, Lalit must have arrived at 11:00AM (since he was the first person to start). Raju arrived at 10:00 and must be the first person to arrive. Gaurav could have arrived a time after 10:00 but before 11:50. Dev must have been the fourth person to arrive (since he came at 12:00PM). Krish must have been arrived at 1:40 since he must have started his task as soon as he arrived.

Lalit, Dev and Krish definitely did not have to wait to perform their tasks. Ans: (3)

undefined

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

There are twelve equally spaced chairs around a circular table. Six persons – A through F – were sitting in six of these twelve chairs. Each person was wearing a dress of a different colour among Blue, Green, Red, Purple, Violet and Yellow. The following information is known about their positions:

- i. There was at least one occupied chair next to any empty chair and there was at most one occupied chair adjacent to any occupied chair.
- ii. No one was sitting adjacent to the person wearing a Green Dress, while the person wearing a Blue dress was sitting adjacent to the person wearing a Violet dress.
- iii. C and D were sitting opposite each other.
- iv. B was not sitting adjacent to E but he was sitting to the left of the person wearing a Red dress.
- v. The number of empty chairs between E and F in the clockwise direction is the same as that in the anticlockwise direction and one of E and F was wearing a Purple dress.
- vi. B was sitting three places to the right of C and there was exactly one person sitting in the chairs between them in the clockwise direction from B to C.

**Q9. DIRECTIONS** for question 9: Select the correct alternative from the given choices.

For which of the following pairs of persons is the number of empty chairs between them in the clockwise direction and the anticlockwise direction the same?

- a) A and D
- b) B and E
- c) C and D
- d) C and F

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	103
Avg. time spent on this question by all students	529
Difficulty Level	D
Avg. time spent on this question by students who got this question right	588
% of students who attempted this question	20.44
% of students who got the question right of those who attempted	35.44

[Video Solution](#)

[Text Solution](#)

Let the hands of a clock, from 1 to 12, represent the positions of the chairs.

From (iii), C and D are opposite each other. Let C be at 12 and D be at 6. From (vi), B is three places to the right of C. Hence, B must be at 9. From (iv), the person at 8 must be wearing a Red dress.

From (i), no one must be sitting at 10 (since B has one neighbour). From (vi), since there is exactly one person sitting between B and C in the clockwise direction from B to C, this person must be at 11.

No one must be at 1 (since C already has one neighbour). The positions of five persons are fixed (at 12, 6, 8, 9 and 11). Hence, the sixth person must be at 3. On this, then not more than two empty chairs will be between any two persons (from (i)).

From (v), E and F can be at 11 or 3 or 8. But there has to be an equal number of empty chairs between them in the clockwise and anticlockwise direction. If E and F are at 11 and 3 (in any order), there will be two empty chairs in one direction and four empty chairs in the other direction. Hence, this is not possible. Similarly, they cannot be at 11 and 8. If they are at 8 and 3, there will be exactly three empty chairs between them in either direction. Hence, E and F must be at 3 and 8, in any order. From (iv), B was not adjacent to E. Hence, E must be at 3 and F must be at 8. A must be at 11.

Also, F must be wearing a Red dress. From (v), E must be wearing a Purple dress.

From (ii), D is the only person who can be wearing a Green dress. The person wearing Blue and Violet dresses must be A and C in any order. B must be wearing Yellow dress.

The following table provides their positions (from 1 to 12 as in the face of a clock) and the colour of their dresses:

<b>Position</b>	<b>Person</b>	<b>Dress Colour</b>
1	Empty	-
2	Empty	-
3	E	Purple
4	Empty	-
5	Empty	-
6	D	Green
7	Empty	-
8	F	Red
9	B	Yellow
10	Empty	-
11	A	Violet/Blue
12	C	Blue/Violet

Between B and E, there are an equal number of empty chairs in the clockwise direction as there are in the anticlockwise direction. Choice (B)

undefined

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

There are twelve equally spaced chairs around a circular table. Six persons – A through F – were sitting in six of these twelve chairs. Each person was wearing a dress of a different colour among Blue, Green, Red, Purple, Violet and Yellow. The following information is known about their positions:

- i. There was at least one occupied chair next to any empty chair and there was at most one occupied chair adjacent to any occupied chair.
- ii. No one was sitting adjacent to the person wearing a Green Dress, while the person wearing a Blue dress was sitting adjacent to the person wearing a Violet dress.
- iii. C and D were sitting opposite each other.
- iv. B was not sitting adjacent to E but he was sitting to the left of the person wearing a Red dress.
- v. The number of empty chairs between E and F in the clockwise direction is the same as that in the anticlockwise direction and one of E and F was wearing a Purple dress.
- vi. B was sitting three places to the right of C and there was exactly one person sitting in the chairs between them in the clockwise direction from B to C.

**Q10. DIRECTIONS for question 10:** Type in your answer in the input box provided below the question.

For how many of the six persons were the chairs opposite them not empty?

**Your Answer:**4 **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	71
Difficulty Level	D
Avg. time spent on this question by students who got this question right	66
% of students who attempted this question	23.69
% of students who got the question right of those who attempted	43

[Video Solution](#)

[Text Solution](#)

Let the hands of a clock, from 1 to 12, represent the positions of the chairs. From (iii), C and D are opposite each other. Let C be at 12 and D be at 6. From (vi), is three places to the right of C. Hence, B must be at 9. From (iv), the person at 8 must be wearing a Red dress.

From (i), no one must be sitting at 10 (since B has one neighbour). From (vi), since there is exactly one person sitting between B and C in the clockwise direction from C to C, this person must be at 11.

No one must be at 1 (since C already has one neighbour). The positions of five persons are fixed (at 12, 6, 8, 9 and 11). Hence, the sixth person must be at 3. Or then not more than two empty chairs will be between any two persons (from (i)).

From (v), E and F can be at 11 or 3 or 8. But there has to be an equal number of empty chairs between them in the clockwise and anticlockwise direction. If E and F are at 11 and 3 (in any order), there will be two empty chairs in one direction and four empty chairs in the other direction. Hence, this is not possible. Similarly, they cannot be at 11 and 8. If they are at 8 and 3, there will be exactly three empty chairs between them in either direction. Hence, E and F must be at 3 and 8, in any order. From (iv), F was not adjacent to E. Hence, E must be at 3 and F must be at 8. A must be at 11.

Also, F must be wearing a Red dress. From (v), E must be wearing a Purple dress.

From (ii), D is the only person who can be wearing a Green dress. The persons wearing Blue and Violet dresses must be A and C in any order. B must be wearing a Yellow dress.

The following table provides their positions (from 1 to 12 as in the face of a clock) and the colour of their dresses:

<b>Position</b>	<b>Person</b>	<b>Dress Colour</b>
1	Empty	-
2	Empty	-
3	E	Purple
4	Empty	-
5	Empty	-
6	D	Green
7	Empty	-
8	F	Red
9	B	Yellow
10	Empty	-
11	A	Violet/Blue
12	C	Blue/Violet

For four persons (C, D, B and E), the chairs opposite them were not empty.

Ans: (4)

undefined

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

There are twelve equally spaced chairs around a circular table. Six persons – A through F – were sitting in six of these twelve chairs. Each person was wearing a dress of a different colour among Blue, Green, Red, Purple, Violet and Yellow. The following information is known about their positions:

- i. There was at least one occupied chair next to any empty chair and there was at most one occupied chair adjacent to any occupied chair.
- ii. No one was sitting adjacent to the person wearing a Green Dress, while the person wearing a Blue dress was sitting adjacent to the person wearing a Violet dress.
- iii. C and D were sitting opposite each other.
- iv. B was not sitting adjacent to E but he was sitting to the left of the person wearing a Red dress.
- v. The number of empty chairs between E and F in the clockwise direction is the same as that in the anticlockwise direction and one of E and F was wearing a Purple dress.
- vi. B was sitting three places to the right of C and there was exactly one person sitting in the chairs between them in the clockwise direction from B to C.

**Q11. DIRECTIONS** for question 11: Select the correct alternative from the given choices.

If the chair three places to the left of the person wearing a Blue dress was not empty, who is sitting to three places to the right of the person wearing a Violet dress?

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

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	19
Avg. time spent on this question by all students	84
Difficulty Level	D
Avg. time spent on this question by students who got this question right	74
% of students who attempted this question	15.17
% of students who got the question right of those who attempted	31.64

[Video Solution](#)

[Text Solution](#)

Let the hands of a clock, from 1 to 12, represent the positions of the chairs.

From (iii), C and D are opposite each other. Let C be at 12 and D be at 6. From (vi), B is three places to the right of C. Hence, B must be at 9. From (iv), the person at 8 must be wearing a Red dress.

From (i), no one must be sitting at 10 (since B has one neighbour). From (vi), since there is exactly one person sitting between B and C in the clockwise direction from B to C, this person must be at 11.

No one must be at 1 (since C already has one neighbour). The positions of five persons are fixed (at 12, 6, 8, 9 and 11). Hence, the sixth person must be at 3. On the circle, then not more than two empty chairs will be between any two persons (from (i)).

From (v), E and F can be at 11 or 3 or 8. But there has to be an equal number of empty chairs between them in the clockwise and anticlockwise direction. If E and F are at 11 and 3 (in any order), there will be two empty chairs in one direction and four empty chairs in the other direction. Hence, this is not possible. Similarly, they cannot be at 11 and 8. If they are at 8 and 3, there will be exactly three empty chairs between them in either direction. Hence, E and F must be at 3 and 8, in any order. From (iv), F was not adjacent to E. Hence, E must be at 3 and F must be at 8. A must be at 11.

Also, F must be wearing a Red dress. From (v), E must be wearing a Purple dress.

From (ii), D is the only person who can be wearing a Green dress. The person wearing Blue and Violet dresses must be A and C in any order. B must be wearing Yellow dress.

The following table provides their positions (from 1 to 12 as in the face of a clock) and the colour of their dresses:

<b>Position</b>	<b>Person</b>	<b>Dress Colour</b>
1	Empty	-
2	Empty	-
3	E	Purple
4	Empty	-
5	Empty	-
6	D	Green
7	Empty	-
8	F	Red
9	B	Yellow
10	Empty	-
11	A	Violet/Blue
12	C	Blue/Violet

From the given condition, C must be wearing the Blue dress. Then A would be wearing the Violet Dress and F will be the person three places to the left of A.      Choice (A)

undefined

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

There are twelve equally spaced chairs around a circular table. Six persons – A through F – were sitting in six of these twelve chairs. Each person was wearing a dress of a different colour among Blue, Green, Red, Purple, Violet and Yellow. The following information is known about their positions:

- i. There was at least one occupied chair next to any empty chair and there was at most one occupied chair adjacent to any occupied chair.
- ii. No one was sitting adjacent to the person wearing a Green Dress, while the person wearing a Blue dress was sitting adjacent to the person wearing a Violet dress.
- iii. C and D were sitting opposite each other.
- iv. B was not sitting adjacent to E but he was sitting to the left of the person wearing a Red dress.
- v. The number of empty chairs between E and F in the clockwise direction is the same as that in the anticlockwise direction and one of E and F was wearing a Purple dress.
- vi. B was sitting three places to the right of C and there was exactly one person sitting in the chairs between them in the clockwise direction from B to C.

**Q12. DIRECTIONS for question 12:** Type in your answer in the input box provided below the question.

How many pairs of empty chairs are opposite each other?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>28</b>
Avg. time spent on this question by all students	<b>52</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>45</b>
% of students who attempted this question	<b>21.52</b>
% of students who got the question right of those who attempted	<b>62.88</b>

[Video Solution](#)

[Text Solution](#)

Let the hands of a clock, from 1 to 12, represent the positions of the chairs. From (iii), C and D are opposite each other. Let C be at 12 and D be at 6. From (vi), is three places to the right of C. Hence, B must be at 9. From (iv), the person at 8 mi be wearing a Red dress.

From (i), no one must be sitting at 10 (since B has one neighbour). From (vi), sin there is exactly one person sitting between B and C in the clockwise direction from to C, this person must be at 11.

No one must be at 1 (since C already has one neighbour). The positions of fi persons are fixed (at 12, 6, 8, 9 and 11). Hence, the sixth person must be at 3. Or then not more than two empty chairs will be between any two persons (from (i)).

From (v), E and F can be at 11 or 3 or 8. But there has to be an equal number empty chairs between them in the clockwise and anticlockwise direction. If E and F a at 11 and 3 (in any order), there will be two empty chairs in one direction and fc empty chairs in the other direction. Hence, this is not possible. Similarly, they canr be at 11 and 8. If they are at 8 and 3, there will be exactly three empty chairs betwe them in either direction. Hence, E and F must be at 3 and 8, in any order. From (iv), was not adjacent to E. Hence, E must be at 3 and F must be at 8. A must be at 11.

Also, F must be wearing a Red dress. From (v), E must be wearing a Purple dress. From (ii), D is the only person who can be wearing a Green dress. The perso wearing Blue and Violet dresses must be A and C in any order. B must be wearing Yellow dress.

The following table provides their positions (from 1 to 12 as in the face of a clock) a the colour of their dresses:

<b>Position</b>	<b>Person</b>	<b>Dress Colour</b>
1	Empty	-
2	Empty	-
3	E	Purple
4	Empty	-
5	Empty	-
6	D	Green
7	Empty	-
8	F	Red
9	B	Yellow
10	Empty	-
11	A	Violet/Blue
12	C	Blue/Violet

Two pairs of empty chairs are opposite each other.

Ans: (2)

undefined

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

Harish works at a toll plaza on a highway and he collects toll from the vehicles that pass through the toll plaza. The toll that he collects for each type of vehicle is different. The following table provides the toll collected for each type of vehicle:

Vehicle	Toll (in Rs.)
Car	50
Van	70
Truck	120
Bus	150

**Q13.** **DIRECTIONS** for questions 13 to 15: Type in your answer in the input box provided below the question.

If, on a particular day, at least 50 vehicles passed through the toll plaza and the total toll collected by Harish was exactly Rs.3000, what is the minimum number of cars that must have paid the toll?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	1094
Avg. time spent on this question by all students	241
Difficulty Level	M
Avg. time spent on this question by students who got this question right	261
% of students who attempted this question	33.56
% of students who got the question right of those who attempted	15.38

[Video Solution](#)

[Text Solution](#)

Given that at least 50 vehicles passed through the toll plaza.  
If no cars passed through the toll gate, then the total toll collected must be at least  $70 \times 50 = 3500$ .  
Hence, some cars must have passed through the toll gate.  
We can consider only cars and vans to have passed through the toll gate (to minimize the number of cars).  
Let  $c$  be the number of cars and  $v$  be the number of vans.  
 $c + v \geq 50$   
Also,  $50c + 70v = 3000$   
If we take  $c + v = 50$  (the minimum possible), we get  $c = 25$  and  $v = 25$ .  
Hence, a minimum of 25 cars must have passed through the toll gate. Ans: (25)

undefined

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

Harish works at a toll plaza on a highway and he collects toll from the vehicles that pass through the toll plaza. The toll that he collects for each type of vehicle is different. The following table provides the toll collected for each type of vehicle:

Vehicle	Toll (in Rs.)
Car	50
Van	70
Truck	120
Bus	150

**Q14.** **DIRECTIONS** for questions 13 to 15: Type in your answer in the input box provided below the question.

If, on a particular day, at least 100 vehicles passed through the toll plaza and the total toll collected by Harish was at most Rs.10,000, what is the maximum number of buses that could have paid the toll?

**Your Answer:50 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	135
Difficulty Level	M
Avg. time spent on this question by students who got this question right	135
% of students who attempted this question	28.43
% of students who got the question right of those who attempted	31.02

[Video Solution](#)

[Text Solution](#)

Given that at least 100 vehicles passed through the toll gate.  
 Also, the total toll collected was at most ₹10,000.  
 If 100 buses passed through the toll gate, then the toll collected will be ₹15,000.  
 However, this is not possible.  
 For the toll collected to be ₹10,000, there must be 66.67 buses. We can reduce the number of buses and increase the number of cars (which have the minimum toll) to find the maximum number of buses.  
 Let  $c$  be the number of cars and  $b$  be the number of buses.  
 We can take  $b + c = 100$ .  
 Also,  $150b + 50c = 10,000$   
 Solving the two, we get  $b = 50$ .  
 Hence, a maximum of 50 buses must have passed through the toll gate. Ans: (50)

undefined

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

Harish works at a toll plaza on a highway and he collects toll from the vehicles that pass through the toll plaza. The toll that he collects for each type of vehicle is different. The following table provides the toll collected for each type of vehicle:

Vehicle	Toll (in Rs.)
Car	50
Van	70
Truck	120
Bus	150

**Q15. DIRECTIONS for questions 13 to 15:** Type in your answer in the input box provided below the question.

On a particular day, for every car that paid the toll, exactly two vans paid the toll; for every van that paid the toll, exactly two trucks paid the toll. At least one car paid the toll on that day.

If the total toll collected was exactly Rs.45,000, what is the minimum number of buses that must have paid the toll?

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	115
Avg. time spent on this question by all students	204
Difficulty Level	D
Avg. time spent on this question by students who got this question right	252
% of students who attempted this question	17.89
% of students who got the question right of those who attempted	19.72

[Video Solution](#)

[Text Solution](#)

The number of cars, vans and trucks are in the ratio 1:2:4.  
 Let  $x$ ,  $2x$  and  $4x$  be the number of cars, vans and trucks.  
 Since the total toll collected was 45000,  

$$50x + 70 \times 2x + 120 \times 4x = 45000 \Rightarrow x = 67.16$$
 However,  $x$  must be an integer.  
 If  $x$  is 67, then toll collected will be  $670 \times 67 = 44890$ .  
 The remaining ₹110 cannot be collected if any number of buses passed through the toll gate as it cannot be expressed in the form of 150k.  
 If  $x$  is 66, then toll collected will be  $670 \times 66 = 44220$ .  
 The remaining  $110 + 670$  also cannot be expressed as 150k.  
 We need to find a number of the form  $670y + 110$  which must be divisible by 150 (or  $67y + 11$  must be divisible by 15).  
 For  $y = 7$ , the value becomes 4800 which is divisible by 150.  
 Hence,  $x$  will be 60. In this case, the toll collected will be 40200.  
 The remaining 4800 will be collected from buses.  
 Hence, a minimum of  $4800/150 = 32$  buses would have passed through the toll gate.  
 Ans: (32)

undefined

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

Harish works at a toll plaza on a highway and he collects toll from the vehicles that pass through the toll plaza. The toll that he collects for each type of vehicle is different. The following table provides the toll collected for each type of vehicle:

Vehicle	Toll (in Rs.)
Car	50
Van	70
Truck	120
Bus	150

**Q16. DIRECTIONS for question 16:** Select the correct alternative from the given choices.

On a particular day, for every car that paid the toll, exactly two vans paid the toll; for every van that paid the toll, exactly two trucks paid the toll. At least one car paid the toll on that day.

If the total toll collected by Harish was Rs.6,500 more than the amount of toll paid by the vans passing through the toll gate, what is the number of buses that passed through the toll gate?

b) 8

c) 7

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	8
Avg. time spent on this question by all students	124
Difficulty Level	D
Avg. time spent on this question by students who got this question right	144
% of students who attempted this question	10.37
% of students who got the question right of those who attempted	27.86

[Video Solution](#)

[Text Solution](#)

Let the number of cars, vans and trucks be  $x$ ,  $2x$  and  $4x$ .

Let  $b$  be the number of buses.

Total toll collected =  $50x + 140x + 480x + 150b = 670x + 150b$

Given that  $670x + 150b = 140x + 6500 \Rightarrow 530x + 150b = 6500 \Rightarrow b = \frac{650 - 53x}{15}$

We need to minimize the value of  $b$ . Hence, we need to find the maximum possible value of  $x$  for which  $b$  is not a fraction (and also not negative).

We can see that the only possible value of  $x$  is 10.

Hence, the number of buses can only be 8.

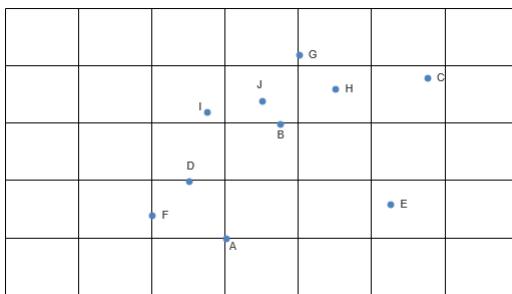
Choice (B)

undefined

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

Sanjay and Ranjith are students studying MBA in the same college and they were both given independent assignments in which they had to collect the data on the number of schools in and the population of ten different cities and prepare a presentation using the data. Sanjay collected the relevant data and made a presentation related to the data. Ranjith completely forgot about the assignment and on the day before the submission, just copied whatever he could from Sanjay's presentation, without Sanjay knowing about it.

Ranjith was able to copy a scatter plot in which each point represents a city and the two perpendicular axes being the number of schools in and the population of the cities. But he was not able to copy either the labels of the cities in the plot or the titles of the axes. Further, he was completely uncertain about the exact positions of the axes and, hence, even the origin, in the graph. He was, however, also able to copy a table with the names of the cities and the number of schools in each city. The scatter plot and the table are provided below, with the points in the scatter plot labelled from A to J, for reference. Further, he also knew that the difference in the population between Clearshore and Oldshade was 500,000.



City	Number of Schools
Clearshore	150
Deerston	70
Ironmage	190
Lornesse	160
Oldshade	170
Redwick	180
Rockbeach	50
Springcrest	80
Waterland	210
Wellmead	100

**Q17. DIRECTIONS** for questions 17 to 19: Select the correct alternative from the given choices.

Which of the following cities cannot have the highest number of schools per capita among the given cities?

a) Lornesse

b) Deerston

c) Waterland

d) Ironmage

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	12
Avg. time spent on this question by all students	281
Difficulty Level	D
Avg. time spent on this question by students who got this question right	405
% of students who attempted this question	8.89
% of students who got the question right of those who attempted	20.24

[Video Solution](#)

First, we need to identify which axis represents the number of schools and which represents the population.

Let us assume that the horizontal axis represents the number of schools. The points arranged in the increasing order of the number of schools will be F, D, I, A, J, B, G, H, C. Now, the difference in the number of schools in F and A must be the same as the difference in the number of schools in A and G. From the table, F must represent 70 (since it is the lowest) and A must represent 100 (since it is the fourth lowest). Now G must be 150. But the fourth highest value (which is G in the graph) from the table is 170. Hence, the horizontal axis is not the number of schools.

Therefore, the vertical axis is the number of schools and the population is represented in the horizontal axis. (we can perform a quick check similar to the one above for the vertical axis as well and see that the data satisfies).

Therefore, the labels in the graph (in ascending order of number of schools) A, F, E, B, I, J, H, C, G represent Rockbeach, Deerston, Springcrest, Wellmead, Clearshore, Lornesse, Oldshade, Redwick, Ironmage and Waterland.

Given that the difference in population between Clearshore (represented by B) and Oldshade (represented by J) is 500,000. By observing the graph, we can see that the point J is at the horizontal centre of the grid and point B is midway between J and the next gridline (along the horizontal axis). Hence,  $1/4^{\text{th}}$  of the horizontal grid represents 500,000 population.

Let X be the population (in '000) in Deerston (represented by F and has the least population). The following table gives the number of schools and population (in terms of x) for each city.

Letter	City	Number of Schools	Population (in '000)
B	Clearshore	150	$X+3500$
F	Deerston	70	X
C	Ironmage	190	$X+7500$
I	Lornesse	160	$X+1500$
J	Oldshade	170	$X+3000$
H	Redwick	180	$X+5000$
A	Rockbeach	50	$X+2000$
E	Springcrest	80	$X+6500$
G	Waterland	210	$X+4000$
D	Wellmead	100	$X+1000$

The city with the highest number of schools per capita will be the city for which the slope of the line connecting the city with the origin is the highest. However, we do not know the position of the origin in the graph. If the origin is at the bottom left corner of the graph as it is shown, then the city will be the one represented by I, i.e., Lornesse. If the origin is more towards the right on the horizontal axis, the highest per capita will be for the city represented by F i.e., Deerston. If the origin is towards the left on the

for city represented by F, i.e., Deerston. If the origin is towards the left of a horizontal axis (imagine around five or six additional gridlines to the left), then the city with the highest per capita will be G, i.e., Waterland. No other city can have the highest per capita for any other position of origin. From the given options, Ironmage cannot have the highest number of schools per capita.

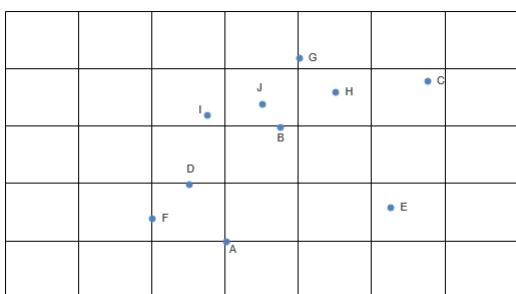
Choice (D)

undefined

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

Sanjay and Ranjith are students studying MBA in the same college and they were both given independent assignments in which they had to collect the data on the number of schools in and the population of ten different cities and prepare a presentation using the data. Sanjay collected the relevant data and made a presentation related to the data. Ranjith completely forgot about the assignment and on the day before the submission, just copied whatever he could from Sanjay's presentation, without Sanjay knowing about it.

Ranjith was able to copy a scatter plot in which each point represents a city and the two perpendicular axes being the number of schools in and the population of the cities. But he was not able to copy either the labels of the cities in the plot or the titles of the axes. Further, he was completely uncertain about the exact positions of the axes and, hence, even the origin, in the graph. He was, however, also able to copy a table with the names of the cities and the number of schools in each city. The scatter plot and the table are provided below, with the points in the scatter plot labelled from A to J, for reference. Further, he also knew that the difference in the population between Clearshore and Oldshade was 500,000.



City	Number of Schools
Clearshore	150
Deerston	70
Ironmage	190
Lornesse	160
Oldshade	170
Redwick	180
Rockbeach	50
Springcrest	80
Waterland	210
Wellmead	100

**Q18. DIRECTIONS** for questions 17 to 19: Select the correct alternative from the given choices.

If the city represented by the letter I in the graph has the highest number of schools per capita, which of the following can be the population of Oldshade?

- a) 1 mn
- b) 4 mn
- c) 7 mn
- d) 11 mn

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	4
Avg. time spent on this question by all students	105
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	107
% of students who attempted this question	4.69
% of students who got the question right of those who attempted	41.01

[Video Solution](#)

[Text Solution](#)

First, we need to identify which axis represents the number of schools and which represents the population.

Let us assume that the horizontal axis represents the number of schools. The points arranged in the increasing order of the number of schools will be F, D, I, A, J, B, G, H, C. Now, the difference in the number of schools in F and A must be the same as the difference in the number of schools in A and G. From the table, F must represent 50 (since it is the lowest) and A must represent 100 (since it is the fourth lowest). Now G must be 150. But the fourth highest value (which is G in the graph) from the table is 170.

must be 100. But the fourth highest value (which is C in the graph) from the table is 11. Hence, the horizontal axis is not the number of schools.

Therefore, the vertical axis is the number of schools and the population is represented in the horizontal axis. (we can perform a quick check similar to the one above for the vertical axis as well and see that the data satisfies).

Therefore, the labels in the graph (in ascending order of number of schools) A, F, E, B, I, J, H, C, G represent Rockbeach, Deerston, Springcrest, Wellmead, Clearshore, Lornesse, Oldshade, Redwick, Ironmage and Waterland.

Given that the difference in population between Clearshore (represented by B) and Oldshade (represented by J) is 500,000. By observing the graph, we can see that the point J is at the horizontal centre of the grid and point B is midway between J and the next gridline (along the horizontal axis). Hence,  $1/4^{\text{th}}$  of the horizontal grid represents 500,000 population.

Let  $X$  be the population (in '000) in Deerston (represented by F and has the least population). The following table gives the number of schools and population (in terms of  $x$ ) for each city.

Letter	City	Number of Schools	Population (in '000)
B	Clearshore	150	$X+3500$
F	Deerston	70	$X$
C	Ironmage	190	$X+7500$
I	Lornesse	160	$X+1500$
J	Oldshade	170	$X+3000$
H	Redwick	180	$X+5000$
A	Rockbeach	50	$X+2000$
E	Springcrest	80	$X+6500$
G	Waterland	210	$X+4000$
D	Wellmead	100	$X+1000$

Given that Lornesse has the highest number of schools per capita. From the above answer, the possible cities with the highest number of schools per capita are Lornesse, Deerston and Waterland.

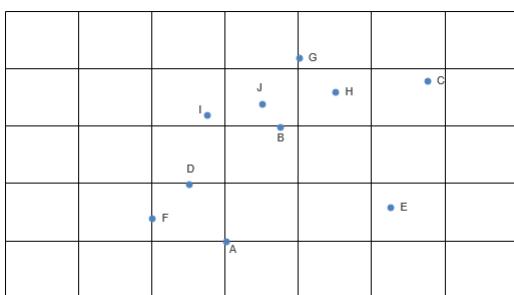
Hence, by comparing Lornesse and Deerston, we get  $\frac{160}{X+1500} > \frac{70}{X} \Rightarrow X > 1166.67$

By comparing Lornesse and Waterland, we get  $\frac{160}{X+1500} > \frac{210}{X+4000} \Rightarrow X < 6500$

Hence, the population (in '000) of Oldshade can be between 4166.67 and 9500. From the options, the population of Oldshade can be 7 mn. Choice (C)

Sanjay and Ranjith are students studying MBA in the same college and they were both given independent assignments in which they had to collect the data on the number of schools in and the population of ten different cities and prepare a presentation using the data. Sanjay collected the relevant data and made a presentation related to the data. Ranjith completely forgot about the assignment and on the day before the submission, just copied whatever he could from Sanjay's presentation, without Sanjay knowing about it.

Ranjith was able to copy a scatter plot in which each point represents a city and the two perpendicular axes being the number of schools in and the population of the cities. But he was not able to copy either the labels of the cities in the plot or the titles of the axes. Further, he was completely uncertain about the exact positions of the axes and, hence, even the origin, in the graph. He was, however, also able to copy a table with the names of the cities and the number of schools in each city. The scatter plot and the table are provided below, with the points in the scatter plot labelled from A to J, for reference. Further, he also knew that the difference in the population between Clearshore and Oldshade was 500,000.



City	Number of Schools
Clearshore	150
Deerston	70
Ironmage	190
Lornesse	160
Oldshade	170
Redwick	180
Rockbeach	50
Springcrest	80
Waterland	210
Wellmead	100

**Q19. DIRECTIONS** for questions 17 to 19: Select the correct alternative from the given choices.

The difference between the populations of which of the following pairs of cities is the highest?

- a) Deerston, Redwick
- b) Oldshade, Wellmead
- c) Lornesse, Clearshore
- d) Rockbeach, Waterland

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	88
Difficulty Level	M
Avg. time spent on this question by students who got this question right	89
% of students who attempted this question	6.44
% of students who got the question right of those who attempted	39.94

[Video Solution](#)

[Text Solution](#)

First, we need to identify which axis represents the number of schools and which represents the population.

Let us assume that the horizontal axis represents the number of schools. The points arranged in the increasing order of the number of schools will be F, D, I, A, J, B, G, H, C. Now, the difference in the number of schools in F and A must be the same as the difference in the number of schools in A and G. From the table, F must represent 50 (since it is the lowest) and A must represent 100 (since it is the fourth lowest). Now G must be 150. But the fourth highest value (which is G in the graph) from the table is 170. Hence, the horizontal axis is not the number of schools.

Therefore, the vertical axis is the number of schools and the population is represented in the horizontal axis. (we can perform a quick check similar to the one above for the vertical axis as well and see that the data satisfies).

Therefore, the labels in the graph (in ascending order of number of schools) A, F, E, B, I, J, H, C, G represent Rockbeach, Deerston, Springcrest, Wellmead, Clearshore, Lornesse, Oldshade, Redwick, Ironmage and Waterland.

Given that the difference in population between Clearshore (represented by B) and Oldshade (represented by I) is 500,000. By observing the graph, we can see that the

City whose population is represented by J is 500,000. By observing the graph, we can see that point J is at the horizontal centre of the grid and point B is midway between J and the next gridline (along the horizontal axis). Hence,  $1/4^{\text{th}}$  of the horizontal grid represents 500,000 population.

Let X be the population (in '000) in Deerston (represented by F and has the least population). The following table gives the number of schools and population (in terms of x) for each city.

Letter	City	Number of Schools	Population (in '000)
B	Clearshore	150	$X+3500$
F	Deerston	70	X
C	Ironmage	190	$X+7500$
I	Lornesse	160	$X+1500$
J	Oldshade	170	$X+3000$
H	Redwick	180	$X+5000$
A	Rockbeach	50	$X+2000$
E	Springcrest	80	$X+6500$
G	Waterland	210	$X+4000$
D	Wellmead	100	$X+1000$

The difference between the populations for the cities in the options are calculated below:

Option A: 5000

Option B: 2000

Option C: 2000

Option D: 2000

Hence, the difference is highest for option A.

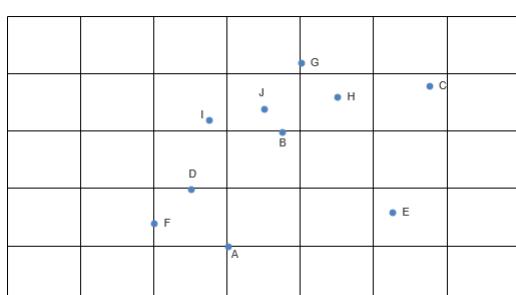
Choice (A)

undefined

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

Sanjay and Ranjith are students studying MBA in the same college and they were both given independent assignments in which they had to collect the data on the number of schools in and the population of ten different cities and prepare a presentation using the data. Sanjay collected the relevant data and made a presentation related to the data. Ranjith completely forgot about the assignment and on the day before the submission, just copied whatever he could from Sanjay's presentation, without Sanjay knowing about it.

Ranjith was able to copy a scatter plot in which each point represents a city and the two perpendicular axes being the number of schools in and the population of the cities. But he was not able to copy either the labels of the cities in the plot or the titles of the axes. Further, he was completely uncertain about the exact positions of the axes and, hence, even the origin, in the graph. He was, however, also able to copy a table with the names of the cities and the number of schools in each city. The scatter plot and the table are provided below, with the points in the scatter plot labelled from A to J, for reference. Further, he also knew that the difference in the population between Clearshore and Oldshade was 500,000.



City	Number of Schools
Clearshore	150
Deerston	70
Ironmage	190
Lomesse	160
Oldshade	170
Redwick	180
Rockbeach	50
Springcrest	80
Waterland	210
Wellmead	100

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

How many cities definitely have more than 100 schools and definitely have a population of more than 1 mn?

**Your Answer:**3 Your answer is incorrect

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>19</b>
Avg. time spent on this question by all students	<b>76</b>
Difficulty Level	<b>D</b>
Avg. time spent on this question by students who got this question right	<b>86</b>
% of students who attempted this question	<b>8.27</b>
% of students who got the question right of those who attempted	<b>31.21</b>

[Video Solution](#)

[Text Solution](#)

First, we need to identify which axis represents the number of schools and which represents the population.

Let us assume that the horizontal axis represents the number of schools. The points arranged in the increasing order of the number of schools will be F, D, I, A, J, B, G, H, C. Now, the difference in the number of schools in F and A must be the same as the difference in the number of schools in A and G. From the table, F must represent (since it is the lowest) and A must represent 100 (since it is the fourth lowest). Now C must be 150. But the fourth highest value (which is G in the graph) from the table is 170. Hence, the horizontal axis is not the number of schools.

Therefore, the vertical axis is the number of schools and the population is represented in the horizontal axis. (we can perform a quick check similar to the one above for the vertical axis as well and see that the data satisfies).

Therefore, the labels in the graph (in ascending order of number of schools) A, F, E, B, I, J, H, C, G represent Rockbeach, Deerston, Springcrest, Wellmead, Clearshore, Lornesse, Oldshade, Redwick, Ironmage and Waterland.

Given that the difference in population between Clearshore (represented by B) and Oldshade (represented by J) is 500,000. By observing the graph, we can see that the point J is at the horizontal centre of the grid and point B is midway between J and the next gridline (along the horizontal axis). Hence,  $1/4^{\text{th}}$  of the horizontal grid represents 500,000 population.

Let X be the population (in '000) in Deerston (represented by F and has the least population). The following table gives the number of schools and population (in terms of x) for each city.

Letter	City	Number of Schools	Population (in '000)
B	Clearshore	150	$X+3500$
F	Deerston	70	X
C	Ironmage	190	$X+7500$
I	Lornesse	160	$X+1500$
J	Oldshade	170	$X+3000$
H	Redwick	180	$X+5000$
A	Rockbeach	50	$X+2000$
E	Springcrest	80	$X+6500$
G	Waterland	210	$X+4000$
D	Wellmead	100	$X+1000$

Cities which have population of more than  $X+1000$  will definitely have more than 100 schools.

Six cities (Clearshore, Ironmage, Lornesse, Oldshade, Redwick, Waterland) satisfy the given condition. Ans: (6)

undefined

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

The six faces of cube are painted with six different colours – Red, Blue, Yellow, Green, Orange and Pink – such that each face is painted in a different colour.

This cube is placed on a square table, with one chair placed along each side of the table. Four persons, Lalit, Gaurav, Kishore and Tilak, were sitting on the four chairs in the same order in clockwise direction.

It is known that the Blue coloured face is not adjacent the Pink coloured face, while the Red coloured face is not adjacent the Orange coloured face. If the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit, the Blue coloured face would be facing Gaurav.

**Q21. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

The cube is placed on the table resting on the Yellow coloured face such that Gaurav was facing the Pink coloured face.

Which coloured face will Kishore be facing?

- a) Red
- b) Blue
- c) Orange
- d) Pink

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

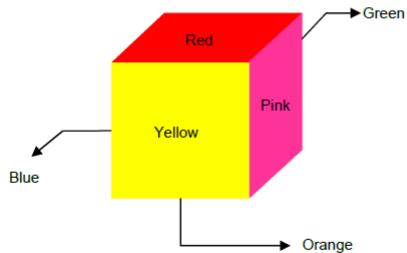
Time taken by you to answer this question	25
Avg. time spent on this question by all students	314
Difficulty Level	M
Avg. time spent on this question by students who got this question right	323
% of students who attempted this question	38.54
% of students who got the question right of those who attempted	60.31

[Video Solution](#)

[Text Solution](#)

Given that the Blue coloured face is not adjacent the Pink coloured face. This is possible only if the Pink coloured face is opposite the Blue coloured face. Similarly, the Red and Orange faces must be opposite each other.

The remaining two faces, Green and Yellow, must also be opposite each other. From the third statement about the faces facing Lalit and Gaurav, we can determine the colours of the six faces. The following provides the figure when the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit and the blue coloured face facing Gaurav (since they are next to each other in the clockwise direction):



The cube is placed resting on the Yellow coloured face. The four faces in the clockwise direction will be Red, Blue, Orange and Pink. If Gaurav is facing Pink coloured face, Kishore will be facing the Red coloured face.

Choice (A)

undefined

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

The six faces of cube are painted with six different colours – Red, Blue, Yellow, Green, Orange and Pink – such that each face is painted in a different colour.

This cube is placed on a square table, with one chair placed along each side of the table. Four persons, Lalit, Gaurav, Kishore and Tilak, were sitting on the four chairs in the same order in clockwise direction.

It is known that the Blue coloured face is not adjacent the Pink coloured face, while the Red coloured face is not adjacent the Orange coloured face. If the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit, the Blue coloured face would be facing Gaurav.

**Q22. DIRECTIONS** for questions 21 to 24: Select the correct alternative from the given choices.

The cube is placed on the table resting on the Yellow coloured face such that Gaurav was facing the Pink coloured face.

If Kishore moved the cube such that the cube is not resting on the Yellow coloured face but Gaurav was still facing the Pink coloured face, which of the following faces could Kishore be facing?

- I. Yellow coloured face
- II. Blue coloured face
- III. Orange coloured face

IV.  
Red coloured  
face

V.  
Green coloured  
face

a)

III or IV or V

b)

I or V

c)

I or II or IV

d)

I or III or V

You did not answer this question

Show Correct Answer

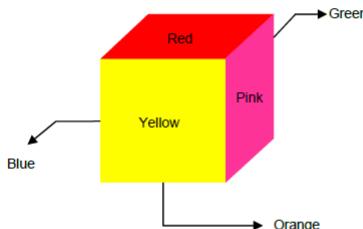
Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	146
Difficulty Level	M
Avg. time spent on this question by students who got this question right	155
% of students who attempted this question	30.99
% of students who got the question right of those who attempted	46.24

[Video Solution](#)

[Text Solution](#)

Given that the Blue coloured face is not adjacent the Pink coloured face. This is possible only if the Pink coloured face is opposite the Blue coloured face. Similarly, the Red and Orange faces must be opposite each other. The remaining two faces, Green and Yellow, must also be opposite each other. From the third statement about the faces facing Lalit and Gaurav, we can determine the colours of the six faces. The following provides the figure when the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit and the blue coloured face facing Gaurav (since they are next to each other in the clockwise direction):



The cube is placed resting on the Yellow coloured face. The four faces in the clockwise direction will be Red, Blue, Orange and Pink. For Gaurav to be facing the Pink coloured face, the cube can be placed resting on Red or Yellow or Orange or Green faces. However, it is given that the cube is not resting on the Yellow face. If the cube is resting on the Red face, Kishore would be facing the Green face. If the cube is resting on the Orange face, Kishore would be facing the Yellow face. If the cube is resting on the Green face, Kishore would be facing the Orange face. Hence, Kishore can be facing the Green or the Yellow or the Orange face.

Choice (D)

undefined

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

The six faces of cube are painted with six different colours – Red, Blue, Yellow, Green, Orange and Pink – such that each face is painted in a different colour.

This cube is placed on a square table, with one chair placed along each side of the table. Four persons, Lalit, Gaurav, Kishore and Tilak, were sitting on the four chairs in the same order in clockwise direction.

It is known that the Blue coloured face is not adjacent the Pink coloured face, while the Red coloured face is not adjacent the Orange coloured face. If the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit, the Blue coloured face would be facing Gaurav.

**Q23.** The cube was placed on the table resting on the Blue coloured face with the Orange coloured face facing Lalit. Starting from Lalit, in the clockwise direction, each person flipped the cube such that the face on the top of the cube and the face on the bottom of the cube are swapped while ensuring that the colour of the face that he faces did not change.

What will be the colour of the face that Kishore faces after Gaurav flips the cube for the first time?

a)

Yellow

b)

Red

c)

Orange

d)

Green

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	175
Difficulty Level	D
Avg. time spent on this question by students who got this question right	188
% of students who attempted this question	21.06
% of students who got the question right of those who attempted	58.18

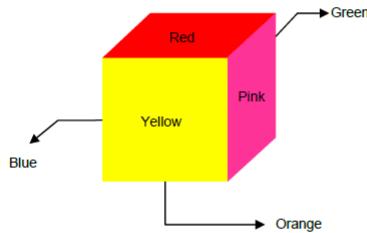
[Video Solution](#)

[Text Solution](#)

Given that the Blue coloured face is not adjacent the Pink coloured face. This is possible only if the Pink coloured face is opposite the Blue coloured face. Similarly, the Red and Orange faces must be opposite each other.

The remaining two faces, Green and Yellow, must also be opposite each other.

From the third statement about the faces facing Lalit and Gaurav, we can determine the colours of the six faces. The following provides the figure when the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit and the blue coloured face facing Gaurav (since they are next to each other in the clockwise direction):



Given that the cube is resting on the Blue face. If the Orange coloured face is facing Lalit, then Gaurav, Kishore and Tilak will be facing Yellow, Red and Green faces respectively.

If Lalit flips the cube as mentioned in the question, Gaurav, Kishore and Tilak will be facing Green, Red and Yellow faces respectively.

After this, Gaurav is facing the Green face and the cube is resting on the Pink face. If Gaurav flips the cube as mentioned, Kishore, Tilak and Lalit will be facing Orange, Yellow and Red respectively.

Hence, after Gaurav flips the cube, Kishore will be facing Orange face.

Choice (C)

undefined

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

The six faces of cube are painted with six different colours – Red, Blue, Yellow, Green, Orange and Pink – such that each face is painted in a different colour.

This cube is placed on a square table, with one chair placed along each side of the table. Four persons, Lalit, Gaurav, Kishore and Tilak, were sitting on the four chairs in the same order in clockwise direction.

It is known that the Blue coloured face is not adjacent the Pink coloured face, while the Red coloured face is not adjacent the Orange coloured face. If the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit, the Blue coloured face would be facing Gaurav.

**Q24.** The cube was placed on the table resting on the Blue coloured face with the Orange coloured face facing Lalit. Starting from Lalit, in the clockwise direction, each person flipped the cube such that the face on the top of the cube and the face on the bottom of the cube are swapped while ensuring that the colour of the face that he faces did not change.

What will be the colour of the face that Gaurav faces after Tilak flips the cube for the first time?

a)

Orange

b)

Yellow

c)

Red

d)

Green

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

Time spent / Accuracy Analysis

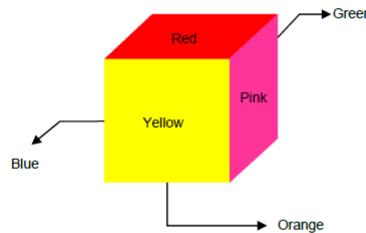
Time taken by you to answer this question	1
Avg. time spent on this question by all students	86
Difficulty Level	D
Avg. time spent on this question by students who got this question right	87
% of students who attempted this question	17.03
% of students who got the question right of those who attempted	56.15

[Video Solution](#)

[Text Solution](#)

Given that the Blue coloured face is not adjacent the Pink coloured face. This is possible only if the Pink coloured face is opposite the Blue coloured face. Similarly, the Red and Orange faces must be opposite each other.

The remaining two faces, Green and Yellow, must also be opposite each other. From the third statement about the faces facing Lalit and Gaurav, we can determine the colours of the six faces. The following provides the figure when the cube is placed on the table resting on the Orange coloured face with the Yellow coloured face facing Lalit and the blue coloured face facing Gaurav (since they are next to each other in the clockwise direction).



From the above solution, we can see that, after Gaurav's turn, Kishore is facing the Orange face and the cube is resting on the Blue face. Tilak, Lalit and Gaurav are facing Yellow, Red and Green faces respectively.

After Kishore flips the cube, the cube will be resting on the Pink face. Tilak, Lalit and Gaurav will be facing Green, Red and Yellow faces respectively.

After Tilak flips the cube, the cube will be resting on the Blue face. Lalit, Gaurav and Kishore will be facing Orange, Yellow and Red faces.  
Hence, Gaurav will be facing the Yellow face.

Choice (B)

undefined

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

Six persons, A through F, were standing in a line, from left to right, all facing the same direction. Each person is from a different country among India, England, New Zealand, Australia, France and Germany. Further, each person is wearing a hat of a different colour among Red, Blue, Black, Brown, Yellow and Green.

The following information is known about their relative positions, the countries that they are from and the colours of their hats:

- i. The person from Australia is standing three places to the right of the person wearing a Yellow hat, who, in turn, was not standing at the extreme left.
- ii. C, who was from New Zealand, was standing to the immediate right of the person wearing a Black hat, who, in turn, was not standing at any extreme end.
- iii. The person who was wearing a Red hat was standing to the immediate right of the person from Australia.
- iv. The person from India was not wearing a Yellow hat but he was standing to the immediate left D.
- v. B, who was wearing a Blue hat, is from England and is standing immediately next to the person from India.
- vi. The person wearing a Brown hat was two places away from E, while F is two places away from the person from France.

**Q25. DIRECTIONS** for questions 25 to 28: Select the correct alternative from the given choices.

Who is standing to the immediate left of the person from Australia?

- a) F Your answer is correct
- b) A
- c) C
- d) E

Time spent / Accuracy Analysis

Time taken by you to answer this question	1017
Avg. time spent on this question by all students	586
Difficulty Level	E
Avg. time spent on this question by students who got this question right	630

**Time spent / Accuracy Analysis**

% of students who attempted this question	<b>28.71</b>
% of students who got the question right of those who attempted	<b>65.58</b>

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

Let 1 to 6 represent the six positions in a line from left to right in that order.

From (i), the person from Australia is standing three places to the right of the person wearing a Yellow hat. Further, the person wearing a Yellow hat was not standing any end.

The person from Australia can be at 5 and the person wearing Yellow hat can be at 2

The person from Australia can be at 6 and the person wearing Yellow hat can be at 3

However, from (iii), the person wearing Red hat is to the immediate right of the person from Australia. Hence, the person from Australia cannot be at 6.

Therefore, the person from Australia must be at 5 and the person wearing Yellow hat must be at 2.

From (iii), the person wearing Red hat must be at 6.

From (iv), the person from India must be to the immediate left of D. From (v), B must be immediately next to the person from India. Since D is to the immediate right of the person from India, B must be to the immediate left of the person from India.

Also, B is from England and wearing a Blue hat.

B cannot be at 1 because, in this case, the person from India must be wearing a Yellow hat (at 2) and this violates condition (iv).

B cannot be at 2 because the person in this place is wearing a Yellow hat.

B cannot be at 4 because the person from India cannot be at 5 (as this person is from Australia).

Hence, B must be at 3. The person from India must be at 4. D must be at 5 (and must be from Australia).

From (ii), C was to the immediate left of a person wearing a Black hat. C can only be at 6 and D must be wearing a Black hat.

From (vi), the person wearing a Brown hat cannot be at 1 as he cannot be two places away from E. Hence, the person wearing a Brown hat must be at 4. E must be at 2.

From (vi), F cannot be at 1 as he cannot be two places away from the person from France. Hence, F must be at 4 and E must be the person from France. A must be at 1 and he is from Germany.

The following table presents this information:

Order	1	2	3	4	5	6
Person	A	E	B	F	D	C
Country	Germany	France	England	India	Australia	New Zealand
Hat Colour	Green	Yellow	Blue	Brown	Black	Red

- . F is sitting to the immediate left of the person from Australia (i.e., D).

Choice (A)

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

Six persons, A through F, were standing in a line, from left to right, all facing the same direction. Each person is from a different country among India, England, New Zealand, Australia, France and Germany. Further, each person is wearing a hat of a different colour among Red, Blue, Black, Brown, Yellow and Green.

The following information is known about their relative positions, the countries that they are from and the colours of their hats:

- i. The person from Australia is standing three places to the right of the person wearing a Yellow hat, who, in turn, was not standing at the extreme left.
- ii. C, who was from New Zealand, was standing to the immediate right of the person wearing a Black hat, who, in turn, was not standing at any extreme end.
- iii. The person who was wearing a Red hat was standing to the immediate right of the person from Australia.
- iv. The person from India was not wearing a Yellow hat but he was standing to the immediate left D.
- v. B, who was wearing a Blue hat, is from England and is standing immediately next to the person from India.
- vi. The person wearing a Brown hat was two places away from E, while F is two places away from the person from France.

**Q26. DIRECTIONS** for questions 25 to 28: Select the correct alternative from the given choices.

Who is wearing the Green hat?

- a) E   Your answer is incorrect
- b) A
- c) D
- d) F

[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	66
Difficulty Level	E
Avg. time spent on this question by students who got this question right	62
% of students who attempted this question	25.09
% of students who got the question right of those who attempted	61.14

[Video Solution](#)

[Text Solution](#)

Let 1 to 6 represent the six positions in a line from left to right in that order.

From (i), the person from Australia is standing three places to the right of the person wearing a Yellow hat. Further, the person wearing a Yellow hat was not standing at any end.

The person from Australia can be at 5 and the person wearing Yellow hat can be at 2.

The person from Australia can be at 6 and the person wearing Yellow hat can be at 3.

However, from (iii), the person wearing Red hat is to the immediate right of the person from Australia. Hence, the person from Australia cannot be at 6.

Therefore, the person from Australia must be at 5 and the person wearing Yellow hat must be at 2.

From (iii), the person wearing Red hat must be at 6.

From (iv), the person from India must be to the immediate left of D. From (v), B must be immediately next to the person from India. Since D is to the immediate right of the person from India, B must be to the immediate left of the person from India.

Also, B is from England and wearing a Blue hat.

B cannot be at 1 because, in this case, the person from India must be wearing a Yellow hat (at 2) and this violates condition (iv).

B cannot be at 2 because the person in this place is wearing a Yellow hat.

B cannot be at 4 because the person from India cannot be at 5 (as this person is from Australia).

Hence, B must be at 3. The person from India must be at 4. D must be at 5 (and must be from Australia).

From (ii), C was to the immediate left of a person wearing a Black hat. C can only be at 6 and D must be wearing a Black hat.

From (vi), the person wearing a Brown hat cannot be at 1 as he cannot be two places away from E. Hence, the person wearing a Brown hat must be at 4. E must be at 2.

From (vi), F cannot be at 1 as he cannot be two places away from the person from France. Hence, F must be at 4 and E must be the person from France. A must be at 1 and he is from Germany.

The following table presents this information:

Order	1	2	3	4	5	6
Person	A	E	B	F	D	C
Country	Germany	France	England	India	Australia	New Zealand
Hat Colour	Green	Yellow	Blue	Brown	Black	Red

- . A is wearing the Green hat.

Choice (B)

undefined

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

Six persons, A through F, were standing in a line, from left to right, all facing the same direction. Each person is from a different country among India, England, New Zealand, Australia, France and Germany. Further, each person is wearing a hat of a different colour among Red, Blue, Black, Brown, Yellow and Green.

The following information is known about their relative positions, the countries that they are from and the colours of their hats:

- i. The person from Australia is standing three places to the right of the person wearing a Yellow hat, who, in turn, was not standing at the extreme left.
- ii. C, who was from New Zealand, was standing to the immediate right of the person wearing a Black hat, who, in turn, was not standing at any extreme end.
- iii. The person who was wearing a Red hat was standing to the immediate right of the person from Australia.
- iv. The person from India was not wearing a Yellow hat but he was standing to the immediate left D.
- v. B, who was wearing a Blue hat, is from England and is standing immediately next to the person from India.
- vi. The person wearing a Brown hat was two places away from E, while F is two places away from the person from France.

**Q27. DIRECTIONS** for questions 25 to 28: Select the correct alternative from the given choices.

Who among the following is standing adjacent to the person wearing the Red hat?

- a) A
- b) F
- c) B
- d) D Your answer is correct

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	21
Avg. time spent on this question by all students	55
Difficulty Level	E
Avg. time spent on this question by students who got this question right	54
% of students who attempted this question	25.53
% of students who got the question right of those who attempted	76.82

[Video Solution](#)

[Text Solution](#)

Let 1 to 6 represent the six positions in a line from left to right in that order. From (i), the person from Australia is standing three places to the right of the person wearing a Yellow hat. Further, the person wearing a Yellow hat was not standing at any end.

The person from Australia can be at 5 and the person wearing Yellow hat can be at 2. The person from Australia can be at 6 and the person wearing Yellow hat can be at 3. However, from (iii), the person wearing Red hat is to the immediate right of the person from Australia. Hence, the person from Australia cannot be at 6.

Therefore, the person from Australia must be at 5 and the person wearing Yellow hat must be at 2.

From (iii), the person wearing Red hat must be at 6.

From (iv), the person from India must be to the immediate left of D. From (v), B must be immediately next to the person from India. Since D is to the immediate right of the person from India, B must be to the immediate left of the person from India.

Also, B is from England and wearing a Blue hat.

B cannot be at 1 because, in this case, the person from India must be wearing Yellow hat (at 2) and this violates condition (iv).

B cannot be at 2 because the person in this place is wearing a Yellow hat.

B cannot be at 4 because the person from India cannot be at 5 (as this person is from Australia).

Hence, B must be at 3. The person from India must be at 4. D must be at 5 (and must be from Australia).

From (ii), C was to the immediate left of a person wearing a Black hat. C can only be at 6 and D must be wearing a Black hat.

From (vi), the person wearing a Brown hat cannot be at 1 as he cannot be two places away from E. Hence, the person wearing a Brown hat must be at 4. E must be at 2.

From (vi), F cannot be at 1 as he cannot be two places away from the person from France. Hence, F must be at 4 and E must be the person from France. A must be at 1 and he is from Germany.

The following table presents this information:

Order	1	2	3	4	5	6
Person	A	E	B	F	D	C
Country	Germany	France	England	India	Australia	New Zealand
Hat Colour	Green	Yellow	Blue	Brown	Black	Red

D is standing adjacent to the person wearing the Red hat.

Choice (D)

Six persons, A through F, were standing in a line, from left to right, all facing the same direction. Each person is from a different country among India, England, New Zealand, Australia, France and Germany. Further, each person is wearing a hat of a different colour among Red, Blue, Black, Brown, Yellow and Green.

The following information is known about their relative positions, the countries that they are from and the colours of their hats:

- i. The person from Australia is standing three places to the right of the person wearing a Yellow hat, who, in turn, was not standing at the extreme left.
- ii. C, who was from New Zealand, was standing to the immediate right of the person wearing a Black hat, who, in turn, was not standing at any extreme end.
- iii. The person who was wearing a Red hat was standing to the immediate right of the person from Australia.
- iv. The person from India was not wearing a Yellow hat but he was standing to the immediate left D.
- v. B, who was wearing a Blue hat, is from England and is standing immediately next to the person from India.
- vi. The person wearing a Brown hat was two places away from E, while F is two places away from the person from France.

**Q28. DIRECTIONS** for questions 25 to 28: Select the correct alternative from the given choices.

From which country is the person standing to the immediate right of E?

- a) **Germany**  b) **Your answer is incorrect**  
 c) **France**  
 d) **England**  
 e) **Australia**

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>29</b>
Avg. time spent on this question by all students	<b>74</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>74</b>
% of students who attempted this question	<b>23.33</b>
% of students who got the question right of those who attempted	<b>62.32</b>

[Video Solution](#)

[Text Solution](#)

Let 1 to 6 represent the six positions in a line from left to right in that order. From (i), the person from Australia is standing three places to the right of the person wearing a Yellow hat. Further, the person wearing a Yellow hat was not standing at any end.

The person from Australia can be at 5 and the person wearing Yellow hat can be at 2. The person from Australia can be at 6 and the person wearing Yellow hat can be at 3. However, from (iii), the person wearing Red hat is to the immediate right of the person from Australia. Hence, the person from Australia cannot be at 6.

Therefore, the person from Australia must be at 5 and the person wearing Yellow hat must be at 2.

From (iii), the person wearing Red hat must be at 6.

From (iv), the person from India must be to the immediate left of D. From (v), B must be immediately next to the person from India. Since D is to the immediate right of the person from India, B must be to the immediate left of the person from India.

Also, B is from England and wearing a Blue hat.

B cannot be at 1 because, in this case, the person from India must be wearing a Yellow hat (at 2) and this violates condition (iv).

B cannot be at 2 because the person in this place is wearing a Yellow hat.

B cannot be at 4 because the person from India cannot be at 5 (as this person is from Australia).

Hence, B must be at 3. The person from India must be at 4. D must be at 5 (and must be from Australia).

From (ii), C was to the immediate left of a person wearing a Black hat. C can only be at 6 and D must be wearing a Black hat.

From (vi), the person wearing a Brown hat cannot be at 1 as he cannot be two places away from E. Hence, the person wearing a Brown hat must be at 4. E must be at 2.

From (vi), F cannot be at 1 as he cannot be two places away from the person from France. Hence, F must be at 4 and E must be the person from France. A must be at 1 and he is from Germany.

The following table presents this information:

Order	1	2	3	4	5	6
Person	A	E	B	F	D	C
Country	Germany	France	England	India	Australia	New Zealand
Hat Colour	Green	Yellow	Blue	Brown	Black	Red

The person standing to the immediate right of E is from England.

Choice (C)

Kiran is the owner of MarkmyBistro, a boutique restaurant. He wanted to track the number of customers that visit his restaurant every day.

He devised a way in which he can track the number of customers visiting his restaurant. On each day, after every set of ten customers visited his restaurant, he drew a vertical line on his calendar, below the date of that day and he did not draw any additional line if less than ten customers visited the restaurant after he drew the previous line. Hence, each vertical line below any date represented ten customers.

The following is a page from the calendar that Kiran used for tracking the number of customers for the month of February 2018.

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	///	//	////	//	////	///
7	8	9	10	11	12	13
/	//	/	/	//	/	/
14	15	16	17	18	19	20
//	//	///	///	//	//	///
21	22	23	24	25	26	27
////	//	///	////	/	//	////
28						
///						

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

For the given month, Kiran wanted to find the total number of customers who visited the restaurant on each day of the week during the month. For which day of the week can this total number of customers never be the maximum?

- a) Tuesday
- b) Wednesday
- c) Friday
- d) None of the above

You did not answer this question

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	22
Avg. time spent on this question by all students	185
Difficulty Level	M
Avg. time spent on this question by students who got this question right	187
% of students who attempted this question	26.77
% of students who got the question right of those who attempted	74.89

[Video Solution](#)

[Text Solution](#)

Since Kiran only drew a line **after** every ten customers, on each day, we can only find the range of the number of customers that visited the restaurant.  
The following table provides the ranges:

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	30-39	20-29	40-49	20-29	50-59	30-39
7	8	9	10	11	12	13
10-19	20-29	10-19	0-9	10-19	20-29	10-19
14	15	16	17	18	19	20
20-29	20-29	30-39	30-39	30-39	20-29	30-39
21	22	23	24	25	26	27
40-49	20-29	30-39	40-49	10-19	20-29	40-49
28						
30-39						

On Mondays, the number of customers will be in the range 100 – 136.  
On Tuesdays, the number of customers will be in the range 90 – 126.  
On Wednesdays, the number of customers will be in the range 90 – 126.  
On Thursdays, the number of customers will be in the range 110 – 146.  
On Fridays, the number of customers will be in the range 70 – 106.  
On Saturdays, the number of customers will be in the range 110 – 146.  
On Sundays, the number of customers will be in the range 110 – 146.  
The maximum number of customers could have visited on any day of the week, except for Friday, because the maximum number of customers that visited the restaurant on Friday is 106. But the minimum number of customers who could have visited the restaurant on Thursday/Saturday/Sunday is 110. Hence, the day cannot be Friday.

Choice (C)

undefined

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

Kiran is the owner of MarkmyBistro, a boutique restaurant. He wanted to track the number of customers that visit his restaurant every day.

He devised a way in which he can track the number of customers visiting his restaurant. On each day, after every set of ten customers visited his restaurant, he drew a vertical line on his calendar, below the date of that day and he did not draw any additional line if less than ten customers visited the restaurant after he drew the previous line. Hence, each vertical line below any date represented ten customers.

The following is a page from the calendar that Kiran used for tracking the number of customers for the month of February 2018.

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	///	//	////	//	////	///
7	8	9	10	11	12	13
/	//	/	/	/	//	/
14	15	16	17	18	19	20
//	//	///	///	//	//	///
21	22	23	24	25	26	27
////	//	///	////	/	//	////
28						
///						

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

Which of the following can be the average number of customers who visited his restaurant during the month?

- a) 24
- b) 30
- c) 34
- d) 38

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	138
Difficulty Level	M
Avg. time spent on this question by students who got this question right	160
% of students who attempted this question	22.97
% of students who got the question right of those who attempted	32.68

[Video Solution](#)

[Text Solution](#)

Since Kiran only drew a line **after** every ten customers, on each day, we can only find the range of the number of customers that visited the restaurant.  
The following table provides the ranges:

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	30-39	20-29	40-49	20-29	50-59	30-39
7	8	9	10	11	12	13
10-19	20-29	10-19	0-9	10-19	20-29	10-19
14	15	16	17	18	19	20
20-29	20-29	30-39	30-39	30-39	20-29	30-39
21	22	23	24	25	26	27
40-49	20-29	30-39	40-49	10-19	20-29	40-49
28						
30-39						

The total number of customers who visited the restaurant will be in the range 680 – 932. The average number of restaurants that visited per day will be in the range  $680/28 = 24.29$  to  $932/28 = 33.29$ .  
Only option B falls in this range.

Choice (B)

undefined

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

Kiran is the owner of MarkmyBistro, a boutique restaurant. He wanted to track the number of customers that visit his restaurant every day.

He devised a way in which he can track the number of customers visiting his restaurant. On each day, after every set of ten customers visited his restaurant, he drew a vertical line on his calendar, below the date of that day and he did not draw any additional line if less than ten customers visited the restaurant after he drew the previous line. Hence, each vertical line below any date represented ten customers.

The following is a page from the calendar that Kiran used for tracking the number of customers for the month of February 2018.

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	///	//	////	//	////	///
7	8	9	10	11	12	13
/	//	/	/	//	/	/
14	15	16	17	18	19	20
//	//	///	///	//	//	///
21	22	23	24	25	26	27
////	//	///	////	/	//	////
28						
///						

**Q31. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

If Kiran observed that, on exactly one day, x, in February (excluding the first and the last day of the month), the number of customers who visited the restaurant on that day was the average of the number of customers who visited on the previous day and that on the next day, how many possibilities exist for x?

- a) 7

- b) 8
- c) 10
- d) 11

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	187
Difficulty Level	D
Avg. time spent on this question by students who got this question right	211
% of students who attempted this question	13.15
% of students who got the question right of those who attempted	15.7

[Video Solution](#)

[Text Solution](#)

Since Kiran only drew a line **after** every ten customers, on each day, we can only find the range of the number of customers that visited the restaurant.  
The following table provides the ranges:

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	30-39	20-29	40-49	20-29	50-59	30-39
7	8	9	10	11	12	13
10-19	20-29	10-19	0-9	10-19	20-29	10-19
14	15	16	17	18	19	20
20-29	20-29	30-39	30-39	30-39	20-29	30-39
21	22	23	24	25	26	27
40-49	20-29	30-39	40-49	10-19	20-29	40-49
28						
30-39						

For any day to satisfy the given condition, the number of customers who visited on that day must lie between the number of customers who visited on the previous and the next days.

It is not necessary that the intervals should lie on either side. Say, in the case of 16<sup>th</sup>, it is possible that 25 customers visited on 15<sup>th</sup> and 35 customers visited on 17<sup>th</sup>. On 16<sup>th</sup>, it is possible for 30 customers (average of 25 and 35) to visit the restaurant.  
This condition is satisfied for 6<sup>th</sup>, 9<sup>th</sup>, 11<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup>, 18<sup>th</sup>, 20<sup>th</sup>, 23<sup>rd</sup> and 26<sup>th</sup>.

Choice (D)

undefined

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

Kiran is the owner of MarkmyBistro, a boutique restaurant. He wanted to track the number of customers that visit his restaurant every day.

He devised a way in which he can track the number of customers visiting his restaurant. On each day, after every set of ten customers visited his restaurant, he drew a vertical line on his calendar, below the date of that day and he did not draw any additional line if less than ten customers visited the restaurant after he drew the previous line. Hence, each vertical line below any date represented ten customers.

The following is a page from the calendar that Kiran used for tracking the number of customers for the month of February 2018.

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	///	/	////	/	////	///
7	8	9	10	11	12	13
/	/	/	/	/	/	/
14	15	16	17	18	19	20
/	/	///	///	/	/	///
21	22	23	24	25	26	27
///	/	///	///	/	/	///
28						
///						

**Q32. DIRECTIONS** for questions 29 to 32: Select the correct alternative from the given choices.

It is known that during the month of February, for n consecutive days, the number of customers that visited on the n days, taken in that order, formed n consecutive numbers. What is the maximum possible value of n?

- a) 3
- b) 5
- c) 4
- d) 6

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	4
Avg. time spent on this question by all students	139
Difficulty Level	M
Avg. time spent on this question by students who got this question right	138
% of students who attempted this question	13.55
% of students who got the question right of those who attempted	35.42

[Video Solution](#)

[Text Solution](#)

Since Kiran only drew a line **after** every ten customers, on each day, we can only find the range of the number of customers that visited the restaurant.  
The following table provides the ranges:

M	T	W	Th	F	Sat	Sun
	1	2	3	4	5	6
	30-39	20-29	40-49	20-29	50-59	30-39
7	8	9	10	11	12	13
10-19	20-29	10-19	0-9	10-19	20-29	10-19
14	15	16	17	18	19	20
20-29	20-29	30-39	30-39	30-39	20-29	30-39
21	22	23	24	25	26	27
40-49	20-29	30-39	40-49	10-19	20-29	40-49
28						
30-39						

The given condition can be satisfied for a maximum for 5 days, from 14<sup>th</sup> to 18<sup>th</sup>.  
Choice (B)

undefined

**Q1. DIRECTIONS for questions 1 to 5:** Select the correct alternative from the given choices.

Simplify:  $\frac{1}{(4+2\sqrt{5})} + \frac{1}{(7+3\sqrt{5})} + \frac{\sqrt{5}}{(1+\sqrt{5})}$

- a)  $2 - \frac{\sqrt{5}}{2}$  Your answer is correct
- b)  $4 + \frac{\sqrt{5}}{2}$
- c)  $2 + \frac{\sqrt{5}}{2}$
- d)  $4 - \sqrt{5}$

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	130
Avg. time spent on this question by all students	175
Difficulty Level	E
Avg. time spent on this question by students who got this question right	169
% of students who attempted this question	28.85
% of students who got the question right of those who attempted	79.78

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}\frac{1}{(4+2\sqrt{5})} &= \frac{(2\sqrt{5}-4)}{4} \\ \frac{1}{(7+3\sqrt{5})} &= \frac{(7-3\sqrt{5})}{4} \\ \frac{\sqrt{5}}{(1+\sqrt{5})} &= \frac{(5-\sqrt{5})}{4} \\ \text{Sum of the three terms} &= \frac{(8-2\sqrt{5})}{4} = 2 - \frac{\sqrt{5}}{2}\end{aligned}$$

Choice (A)

undefined

**Q2. DIRECTIONS for questions 1 to 5:** Select the correct alternative from the given choices.

Qureshi bought four identical packets of chocolates and distributed all the chocolates among his daughters. It is known that each daughter got exactly one chocolate less than the total number of daughters Qureshi has. If each packet of chocolates that Qureshi bought contained at least 45 chocolates, find the minimum number of daughters that Qureshi has.

- a) 16
- b) 14
- c) 13
- d) 12

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>195</b>
Avg. time spent on this question by all students	<b>177</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>175</b>
% of students who attempted this question	<b>36.36</b>
% of students who got the question right of those who attempted	<b>28.44</b>

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

Let the number of daughters of Qureshi be  $x$ .  
 $\Rightarrow$  Each daughter got exactly  $(x - 1)$  chocolates  
Now  $x(x - 1) = 4 \times$  (No. of chocolates per packet)  
= A multiple of 4 greater than or equal to  $4 \times 45$  (since it is given that each packet contained at least 45 chocolates)  
 $\Rightarrow x(x - 1) \geq 180$  and  $x(x - 1)$  is of the form  $4k$ .  
By trial and error,  $x = 16$  is the least possible value.

**Alternative Solution:**

The product  $x(x - 1)$  should be a multiple of 4 which is greater than or equal to 180.  
Only option (A) satisfies that condition.

Choice (A)

undefined

**Q3. DIRECTIONS for questions 1 to 5: Select the correct alternative from the given choices.**

If  $a = \log_{343} 1024$ ,  $b = \log_{81} 49$ ,  $c = \log_{16} 25$  and  $d = \log_4 9$ , what is the value of the product  $abcd$ ?

- a)  $\frac{5}{3} \log_2 5$
- b)  $\frac{5}{6} \log_2 3$
- c)  $\log_{64} 3125$  Your answer is correct
- d)  $\log_{32} 125$

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	<b>214</b>
Avg. time spent on this question by all students	<b>188</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>186</b>
% of students who attempted this question	<b>19.26</b>
% of students who got the question right of those who attempted	<b>61.43</b>

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

$$\begin{aligned}
a &= \log_{343} 1024 = \log_{7^3} 2^{10} = \frac{10}{3} \log_7 2 \\
b &= \log_{81} 49 = \log_{3^4} 7^2 = \frac{1}{2} \log_3 7 \\
c &= \log_{16} 25 = \log_{2^4} 5^2 = \frac{1}{2} \log_2 5 \\
d &= \log_4 9 = \log_{2^2} 3^2 = \log_2 3 \\
a.b.c.d &= \frac{10}{3} \cdot \frac{1}{2} \cdot \frac{1}{2} \log_7 2 \cdot \log_3 7 \cdot \log_2 5 \cdot \log_2 3 \\
(\therefore \log_a a \log_c c &= \log_b b) \\
ab \cdot cd &= \frac{5}{6} \cdot \log_3 2 \cdot \log_2 5 \cdot \log_2 3 \\
&= \frac{5}{6} \log_3 5 \cdot \log_2 3 \\
&= \frac{5}{6} \log_2 5 \\
&= \log_{2^6} 5^5 = \log_{64} 3125
\end{aligned}$$

Choice (C)

undefined

**Q4. DIRECTIONS for questions 1 to 5: Select the correct alternative from the given choices.**

A two digit number,  $ab$ , when written in the number system to the base  $n$  is represented as  $(ab)_n$ . If  $(ab)_x + (ab)_y = (ab)_z$ , then which of the following is definitely true?

- a)  $z \leq x + y$
- b)  $z = x + y$
- c)  $z > x + y$
- d)  $z \geq x + y$

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	7
Avg. time spent on this question by all students	92
Difficulty Level	E
Avg. time spent on this question by students who got this question right	91
% of students who attempted this question	21.41
% of students who got the question right of those who attempted	32.95

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

The value of  $(ab)_x$ , when written in decimal system =  $a(x) + b$ .  
The value of  $(ab)_y$ , when written in decimal system =  $a(y) + b$ .  
The value of  $(ab)_z$ , when written in decimal system =  $a(z) + b$ .  
 $\Rightarrow ax + b + ay + b = az + b$   
 $\Rightarrow a(x + y) + 2b = az + b$   
If  $b = 0$  then  $z = x + y$   
If  $b \neq 0$ , then  $z > x + y$ .  
 $\therefore z \geq x + y$ .

Choice (D)

undefined

**Q5. DIRECTIONS for questions 1 to 5:** Select the correct alternative from the given choices.

A group of 18 students wrote a test. If in the test, one of the students made exactly 15 mistakes, which was the maximum number of mistakes made by any of the students, which of the following statements is necessarily true?

- a) At most three students made the same number of mistakes.
- b) At least two students made the same number of mistakes.
- c) The number of mistakes made by at least two students is different from that made by any of the remaining students. Your answer is incorrect
- d) More than one of the above.

[Show Correct Answer](#)**Time spent / Accuracy Analysis**

Time taken by you to answer this question	93
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	131
% of students who attempted this question	28.39
% of students who got the question right of those who attempted	18.76

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

The number of possible mistakes made by any of the students is any value from 0 to 15. Even if each of the 16 students makes a different number of mistakes, the 17<sup>th</sup> student has to make the same number of mistakes as one of the other students.

**Case i:** The 18<sup>th</sup> student makes the same number of mistakes as the 17<sup>th</sup> student. In this case three students make the same number of mistakes.

**Case ii:** The 18<sup>th</sup> student makes the same number of mistakes as one of the first 16 students but different from that of the 17<sup>th</sup> student. In this case, exactly two pairs of students make the same number of mistakes.  
Only Choice (B) is necessarily true.

Choice (B)

undefined

**Q6. DIRECTIONS for questions 6 and 7:** Type in your answer in the input box provided below the question.

At a Su-do-ku hobby club, the words 'SU', 'DO', 'KU' on the display board are flashed using neon lights. When the display is switched on, all the three words light up and remain lighted for one second. After that, the words 'SU', 'DO' and 'KU' remain until for  $2\frac{1}{5}$ ,  $4\frac{1}{4}$  and  $5\frac{3}{4}$  seconds respectively. Each word follows its cyclic pattern of lighting up for one second and remaining until for its respective duration. What is the smallest interval (in seconds) after which the entire display will glow together for one second?

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

Time taken by you to answer this question	36
Avg. time spent on this question by all students	159
Difficulty Level	M
Avg. time spent on this question by students who got this question right	174
% of students who attempted this question	22.94
% of students who got the question right of those who attempted	7.06

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

The entire display will glow for one second after LCM of  
 $\left[2\frac{1}{5} + 1, 4\frac{1}{4} + 1, 5\frac{3}{4} + 1\right]$  seconds  
 $= \text{LCM}\left[\frac{16}{5}, \frac{21}{4}, \frac{27}{4}\right]$  seconds = 3024 seconds

Ans: (3024)

undefined

**Q7. DIRECTIONS** for questions 6 and 7: Type in your answer in the input box provided below the question.

What is the remainder when  $2^{99}$  is divided by 33?

**Your Answer:** 17 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	105
Avg. time spent on this question by all students	120
Difficulty Level	E
Avg. time spent on this question by students who got this question right	119
% of students who attempted this question	37.1
% of students who got the question right of those who attempted	34.77

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}
 & \text{Rem}\left(\frac{2^{99}}{33}\right) \\
 &= \text{Rem}\left(\frac{(2^5)^{19} \cdot 2^4}{32+1}\right) \\
 &= \text{Rem}\left(\frac{(2^5)^{19} \cdot 2^4}{2^5+1}\right) \\
 &= \left[ \text{Rem}\left(\frac{2^5}{2^5+1}\right) \right]^{19} \cdot \text{Rem}\left(\frac{2^4}{2^5+1}\right) \\
 &= (-1)^{19} \cdot 16 = -16 \\
 \therefore \text{Remainder} &= -16 + 33 = 17.
 \end{aligned}$$

Ans: (17)

undefined

**Q8. DIRECTIONS** for question 8: Select the correct alternative from the given choices.

Ramu takes 20 minutes to walk every km. Somu takes 16 minutes to walk every km. Both of them walk in a race. If Somu beat Ramu by 240 m, find the length of the race (in km).

- a) 1
- b) 1.5
- c) 1.2 **Your answer is correct**
- d) 1.4

Time spent / Accuracy Analysis

Time taken by you to answer this question	142
Avg. time spent on this question by all students	195
Difficulty Level	E
Avg. time spent on this question by students who got this question right	192
% of students who attempted this question	38.85
% of students who got the question right of those who attempted	76.91

[Video Solution](#)

[Text Solution](#)

$$\text{Ramu's speed} = \frac{1}{20} \text{ km/min}$$

$$\text{Somu's speed} = \frac{1}{16} \text{ km/min}$$

Let the length of the race be  $d$  km  
When Somu finished the race, Ramu had covered  $(d - 0.24)$  km.

$$\therefore \text{Ratio of Somu's and Ramu's speeds} = \frac{\frac{1}{16}}{\frac{1}{20}} = \frac{5}{4}$$

$$\therefore \frac{d}{d-0.24} = \frac{5}{4} \Rightarrow d = 1.2$$

Choice (C)

undefined

**Q9. DIRECTIONS for questions 9 to 11:** Type in your answer in the input box provided below the question.

Find the greatest perfect square which is less than 20,000 and is divisible by each of 2, 5, 7 and 8.

**Your Answer:19600 Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	287
Avg. time spent on this question by all students	155
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	148
% of students who attempted this question	25.17
% of students who got the question right of those who attempted	68.2

[Video Solution](#)

[Text Solution](#)

The least no exactly divisible by 2, 5, 7 and 8 is the L.C.M of 2, 5, 7 and 8 which is equal to 280.  
Since 280 is not a perfect square, the multiples of 280 are checked to get a perfect square.  
On prime factorization, 280 gives  $= 2 \times 2 \times 2 \times 5 \times 7$   
 $280 = 2^3 \times 5^1 \times 7^1$ .  
280 must be multiplied with a minimum of  $2 \times 5 \times 7$ , i.e., 70, to obtain a perfect square.  
 $\therefore 280 \times 70 = 19,600$ ,  
which is the greatest perfect square less than 20,000. Ans: (19600)

undefined

**Q10. DIRECTIONS for questions 9 to 11:** Type in your answer in the input box provided below the question.

Rohan is given 275 one rupee coins. He has been asked to allocate them into a number of bags such that any amount from Rs.1 to Rs.275 can be given by handing out a certain number of bags without opening them. What is the minimum number of bags required?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	238
Avg. time spent on this question by all students	128
Difficulty Level	M
Avg. time spent on this question by students who got this question right	143
% of students who attempted this question	24.77
% of students who got the question right of those who attempted	13.11

[Video Solution](#)

[Text Solution](#)

In order to count from 1 to 275 the following are the number of coins which have to be allocated into the bags required. 1, 2, 4, 8, 16, 32, 64, 128, and the remaining 20 in a separate bag. (i.e., successive powers of 2).  
Hence, the minimum number of bags required is 9. Ans: (9)

undefined

**Q11. DIRECTIONS for questions 9 to 11:** Type in your answer in the input box provided below the question.

By selling an article at a discount of 25%, a shopkeeper gets Rs.16 less as profit than by selling it at  $16\frac{2}{3}\%$  discount. If the cost of 12 articles is equal to the marked price of 8 articles, find the cost price (in rupees) of each article.

**Your Answer:128 Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	221
Avg. time spent on this question by all students	193
Difficulty Level	E

#### Time spent / Accuracy Analysis

Avg. time spent on this question by students who got this question right **188**

% of students who attempted this question **23.32**

% of students who got the question right of those who attempted **57.47**

[Video Solution](#)

[Text Solution](#)

Let the cost price and the marked price be C and M respectively.

$$\text{Given, } \left(1 - \frac{25}{100}\right)M = \left(1 - \frac{16 - 2}{100}\right)M = 16$$

$$\frac{25}{100} \times M = 16 \Rightarrow M = ₹192$$

Given  $12C = 8M$

$$C = \frac{8}{12} \times 192$$

$$C = ₹128.$$

Ans: (128)

undefined

**Q12. DIRECTIONS** for questions 12 to 14: Select the correct alternative from the given choices.

If  $a = \sqrt{3} + 1$ , the value of  $a^4 - 6a^2 + 8a$  is

- a)  $12a - 3$ .
- b)  $12a$ . Your answer is correct
- c)  $4a$ .
- d)  $8a - 3$ .

#### Time spent / Accuracy Analysis

Time taken by you to answer this question **100**

Avg. time spent on this question by all students **151**

Difficulty Level **E**

Avg. time spent on this question by students who got this question right **146**

% of students who attempted this question **35.06**

% of students who got the question right of those who attempted **77.46**

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned} \text{Given } a &= \sqrt{3} + 1 \Rightarrow a^2 = 4 + 2\sqrt{3} \text{ and } a^4 = 28 + 16\sqrt{3} \\ \therefore a^4 - 6a^2 + 8a &= 28 + 16\sqrt{3} - 24 - 12\sqrt{3} + 8\sqrt{3} + 8 \\ &= 12\sqrt{3} + 12 = 12 \end{aligned}$$

Choice (B)

undefined

**Q13. DIRECTIONS** for questions 12 to 14: Select the correct alternative from the given choices.

If  $f(x) = f(x-1) + f(x+1)$ , where  $f(6) = 6$  and  $f(10) = 3f(11)$ , find  $f(20)$ .

- a) 3.
- b) 6.
- c) -3.
- d) -6.

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

#### Time spent / Accuracy Analysis

Time taken by you to answer this question **25**

Avg. time spent on this question by all students **168**

Difficulty Level **D**

Avg. time spent on this question by students who got this question right **208**

% of students who attempted this question **7.87**

% of students who got the question right of those who attempted **33.42**

[Video Solution](#)

[Text Solution](#)

Given  $f(10) = 3f(11)$  and also  
 $f(10) = f(9) + f(11)$   
 $\Rightarrow 3f(11) = f(9) + f(11)$   
 $\Rightarrow f(9) = 2f(11) = 2x$ (say)  
 $\Rightarrow f(10) = 3x$   
Now,  $f(9) = f(8) + f(10)$   
 $\Rightarrow 2x = f(8) + 3x$   
 $\Rightarrow f(8) = -x$   
Similarly, the values of  $f(6)$  and  $f(7)$  are  $-2x$  and  $-3x$  respectively.  
 $\Rightarrow f(6) = -2x = 6$   
 $\Rightarrow x = -3$   
 $f(11) = f(10) + f(12)$   
 $\Rightarrow f(12) = x - 3x = -2x$   
i.e.,  $f(6) = f(12)$   
 $f(7) = f(13)$  and so on  
Hence the values repeat for every six terms.  
 $\Rightarrow f(20) = f(8) = -x = -(-3) = 3$

**Alternative Solution:**

Let  $f(1) = a$  and  $f(2) = b$ .  
 $\Rightarrow f(3) = b - a$  ( $\because f(2) = f(1) + f(3)$ )  
Similarly, we get  $f(4) = -a$ ;  $f(5) = -b$ ;  $f(6) = a - b$   
 $f(7) = a$ ,  $f(8) = b$ ,  $f(9) = b - a$  ..... and so on.  
Clearly the terms repeat after a periodicity of 6.  
Therefore,  $f(6) = a - b = 6$  (given)  $\rightarrow$  (1)  
and  $f(10) = -a = 3f(11) = 3(-b)$  (given)  $\rightarrow$  (2)  
from (1) and (2), we get  $a = 9$  and  $b = 3$ .  
Now,  $f(20) = f(2) = b = 3$ .

Choice (A)

undefined

**Q14. DIRECTIONS for questions 12 to 14:** Select the correct alternative from the given choices.

If the roots of the quadratic equation  $2x^2 + 109x + 624 = 0$  are  $\alpha$  and  $\beta$ , where  $|\beta| > |\alpha|$ , then

- a)  $\alpha$  and  $\beta$  are both negative.
- b)  $\alpha$  and  $\beta$  are both positive.
- c)  $\alpha$  and  $\beta$  are positive and negative respectively.
- d)  $\alpha$  and  $\beta$  are negative and positive respectively.

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	6
Avg. time spent on this question by all students	99
Difficulty Level	E
Avg. time spent on this question by students who got this question right	106
% of students who attempted this question	33.51
% of students who got the question right of those who attempted	60.16

[Video Solution](#)

[Text Solution](#)

Sum of the roots =  $-109/2$   
Product of the roots =  $624/2$   
Since the sum of the roots is negative and the product is positive, the roots must both be negative.

**Alternative Solution:**

Roots of the given equation are  $-14$  and  $-13/2$   
Hence, Choice (A)

Choice (A)

undefined

**Q15. DIRECTIONS for questions 15:** Type in your answer in the input box provided below the question.

If the eight-digit number  $N = 76542\alpha 3\beta$  is divisible by 18, find the number of possible values of  $N$ .

Your Answer:5 Your answer is incorrect

[Show Correct Answer](#)

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	83
Avg. time spent on this question by all students	135
Difficulty Level	M
Avg. time spent on this question by students who got this question right	138
% of students who attempted this question	32.88
% of students who got the question right of those who attempted	19.23

[Video Solution](#)

### [Text Solution](#)

As the number  $N = 76542ab$  is divisible by 18, it is divisible by both 9 and 2.  
 As it is divisible by 2,  $b$  can take any even value i.e., 0, 2, 4, 6 or 8. As it is divisible by 9, sum of its digits is divisible by 9.  
 Sum of its digits =  $27 + a + b$ .  
 Hence as  $a + b$  should be divisible by 9,  $a + b = 0$  or  $a + b = 9$  or  $a + b = 18$ .  
 If  $a + b = 18$  then  $a = b = 9$  which is not possible because  $b$  can only be even.  
 If  $a + b = 0$ , then  $a = 0, b = 0$ . (one pair)  
 If  $a + b = 9$  then for every even value of  $b$  we get a corresponding value of  $a$  i.e., 5 pairs.  
 $\therefore$  Total number of possible values of  $N$  is 6.

Ans: (6)

undefined

### **Q16. DIRECTIONS for questions 16 to 19:** Select the correct alternative from the given choices.

Thomas bought 2 kg of rice and 3 kg of wheat for a total of Rs.66. If 4 kg of rice costs as much as 5 kg of wheat, what is the cost of 3 kg of rice and 2 kg of wheat?

- a) **Rs.66**
- b) **Rs.69** Your answer is correct
- c) **Rs.63**
- d) **Rs.72**

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>95</b>
Avg. time spent on this question by all students	<b>118</b>
Difficulty Level	<b>E</b>
Avg. time spent on this question by students who got this question right	<b>115</b>
% of students who attempted this question	<b>50.59</b>
% of students who got the question right of those who attempted	<b>88.01</b>

[Video Solution](#)

### [Text Solution](#)

Let the cost of one kg of rice and one kg of wheat be ₹ $r$  and ₹ $w$  respectively.

Given that  
 $2r + 3w = 66$  \_\_\_\_\_ (1)  
 and  $4r = 5w$  \_\_\_\_\_ (2)  
 solving (1) and (2), we get  $r = 15$  and  $w = 12$   
 $\therefore$  The cost of 3 kg of rice and 2 kg of wheat is ₹69.

#### Alternative solution:

Given 4 kg of rice costs as much as 5 kg of wheat, then (2 kg of rice) + (3 kg of wheat) will cost as much as  $\left(\frac{2}{4} \times 5\text{kg of wheat}\right) + (3\text{ kg of wheat})$ , i.e., 5.5 kg of wheat (given as ₹66).  
 Similarly, (3 kg of rice) + (2 kg of wheat) will cost as much as 5.75 kg of wheat  
 $= ₹66 \times \frac{5.75}{5.5} = ₹69$  Choice (B)

undefined

### **Q17. DIRECTIONS for questions 16 to 19:** Select the correct alternative from the given choices.

In a certain number system, the product of 51 and 22 is 1452. The number 1231 in this number system when converted to the decimal system becomes

- a) **463.**
- b) **505.**
- c) **469.**
- d) **511.**

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

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	<b>7</b>
Avg. time spent on this question by all students	<b>141</b>
Difficulty Level	<b>M</b>
Avg. time spent on this question by students who got this question right	<b>165</b>
% of students who attempted this question	<b>6.66</b>
% of students who got the question right of those who attempted	<b>52.56</b>

[Video Solution](#)

### [Text Solution](#)

Let n be the base of the number system under consideration.  
 $(5n + 1)(2n + 2) = n^3 + 4n^2 + 5n + 2$   
 $\Rightarrow 10n^2 + 12n + 2 = n^3 + 4n^2 + 5n + 2$   
 $\Rightarrow n^3 - 6n^2 - 7n = 0 \Rightarrow n(n^2 - 6n - 7) = 0$   
 $\Rightarrow n(n + 1)(n - 7) = 0$   
Since  $n > 0$ ,  $n = 7$ .  
 $(1231)_7 = 1(7^3) + 2(7^2) + 3(7^1) + 1(7^0)$   
 $= 343 + 98 + 21 + 1 = 463$

Choice (A)

undefined

**Q18. DIRECTIONS** for questions 16 to 19: Select the correct alternative from the given choices.

A regular octagon of side 2 cm is cut into exactly five pieces, four of which are identical and symmetric trapeziums and the fifth is a square. What is the maximum area (in sq.cm.) of the square?

- a)  $(12 + 8\sqrt{2})$
- b) 8
- c) 16
- d)  $(6 + 4\sqrt{2})$

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

Time spent / Accuracy Analysis

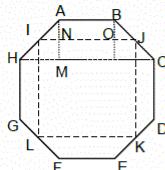
Time taken by you to answer this question	120
Avg. time spent on this question by all students	127
Difficulty Level	M
Avg. time spent on this question by students who got this question right	146
% of students who attempted this question	7.58
% of students who got the question right of those who attempted	39.45

[Video Solution](#)

[Text Solution](#)

There are two possible ways of cutting the octagon in a manner satisfying the given conditions:

**First Case:**



The five pieces from the octagon are ABJI, CDKJ, EFLK, GHIL and IJKL.  
For IJKL to be a square, I, J, K, L have to be midpoints of HA, BC, DE, FG respectively.

From  $\triangle AMH$   
 $AM = MH$ . (Since  $\angle BAH = 135^\circ$ ,  $\angle MAH = 45^\circ = \angle MHA$ )

$$\Rightarrow AH^2 = AM^2 + MH^2$$

$$\Rightarrow AM = \frac{2}{\sqrt{2}} \text{ cm} = \sqrt{2} \text{ cm.}$$

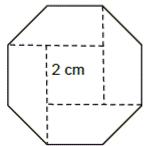
$$\text{Now, } NI = \frac{AM}{2} = \frac{1}{\sqrt{2}} \text{ cm.}$$

$\therefore$  Side of the square IJKL = IN + NO + OJ

$$= \frac{1}{\sqrt{2}} + 2 + \frac{1}{\sqrt{2}} = 2 + \sqrt{2}$$

$$\text{Area of the square} = (2 + \sqrt{2})^2 = (6 + 4\sqrt{2}) \text{ sq.cm.}$$

**Second Case:**



In this case, the side of the square obtained will be 2 cm.  
But this will give the minimum area of the square.

$$\therefore \text{Maximum area is } 6 + 4\sqrt{2} \text{ cm}^2$$

Choice (D)

undefined

**Q19. DIRECTIONS** for questions 16 to 19: Select the correct alternative from the given choices.

A cyclist moving at a constant speed of 2.5 meters per second was able to pass a stationary train,  $T_1$ , in 1 minute and 12 seconds. The cyclist, moving at the same speed, overtook another train,  $T_2$ , of length twice that of  $T_1$ , moving at a certain speed in the same direction as the cyclist, in 5 minutes and 12 seconds. What is the approximate speed at which the train  $T_2$  was moving?

- a) 1.247 meters per second
- b) 1.436 meters per second
- c) 1.154 meters per second
- d) 1.346 meters per second

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	175
Difficulty Level	E
Avg. time spent on this question by students who got this question right	178
% of students who attempted this question	19.65
% of students who got the question right of those who attempted	69.08

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned} \text{Length of } T_1 &= 2.5 \times 72 = 180 \text{ m} \\ \text{Let the speed of } T_2 \text{ be } v, \text{ and length} &= 2 \times 180 = 360 \text{ m} \\ \text{Time taken to cross } T_2 &= 300 + 12 = 312 \text{ seconds} \\ \Rightarrow 360 &= (2.5 - v) \times 312 \\ \Rightarrow 360 &= 780 - 312v \\ \Rightarrow v &= 1.346 \text{ m/s} \end{aligned}$$

Choice (D)

undefined

**Q20. DIRECTIONS** for question 20: Type in your answer in the input box provided in the question.

If  $2x + 4y + 3z = 10$ ,  $3x + y + z = 15$  and  $x + 3y + 2z = 17$ , then  $x =$ .

**Your Answer:** 11 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	92
Avg. time spent on this question by all students	151
Difficulty Level	E
Avg. time spent on this question by students who got this question right	137
% of students who attempted this question	40.82
% of students who got the question right of those who attempted	66.3

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned} \text{Adding the second and third equations and subtracting the sum from the first, we get} \\ (4x + 4y + 3z) - (2x + 4y + 3z) &= 22 \\ \Rightarrow 2x = 22 \Rightarrow x = 11 & \end{aligned}$$

Ans: (11)

undefined

**Q21. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

If the roots of the equation  $ax^2 + bx + c = 0$  are reciprocals of each other and if the sum of the roots is 3, then one of the roots of the equation is

- a)  $\frac{(3+2\sqrt{5})}{2}$
- b)  $3-2\sqrt{5}$
- c)  $\frac{(2-3\sqrt{5})}{2}$
- d)  $\frac{(3+\sqrt{5})}{2}$  **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	76
Avg. time spent on this question by all students	116
Difficulty Level	E
Avg. time spent on this question by students who got this question right	118
% of students who attempted this question	24.3
% of students who got the question right of those who attempted	83.62

[Video Solution](#)

[Text Solution](#)

Since the roots are reciprocals, the product of roots = 1.  
 Sum of roots = 3 (given)  
 Hence, the given equation is same as  $x^2 - 3x + 1 = 0$   
 $\therefore$  Roots of the equation =  $\frac{3+\sqrt{5}}{2}$  and  $\frac{3-\sqrt{5}}{2}$   
 Hence, the answer is option D.

Choice (D)

undefined

**Q22. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

If  $(2a+b):(2b+a) = 131:16$ , then find  $(a+b):(a-b)$ .

- a) 147 : 115
- b) 7 : 5
- c) 147 : 345
- d) 147 : 125

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	185
Avg. time spent on this question by all students	158
Difficulty Level	E
Avg. time spent on this question by students who got this question right	159
% of students who attempted this question	28.22
% of students who got the question right of those who attempted	68.09

[Video Solution](#)

[Text Solution](#)

Given  $(2a+b):(2b+a) = 131:16$   
 By componendo and dividend we get  

$$\frac{[(2a+b)+(2b+a)]}{[(2a+b)-(2b+a)]} = \frac{(131+16)}{(131-16)}$$

$$\Rightarrow \frac{3(a+b)}{(a-b)} = 147 : 115$$

$$\Rightarrow \frac{(a+b)}{(a-b)} = 147 : 345$$
Choice (C)

undefined

**Q23. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

The price of a phone is marked up by A%. After giving a discount of B% on the marked price, the seller gets a profit of C%. If A : B : C = 5 : 2 : 1 and the cost price of the phone is Rs.12,345, what is the approximate selling price of the phone?

- a) Rs.13,333
- b) Rs.13,580
- c) Rs.14,814
- d) Rs.15,432

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	127
Avg. time spent on this question by all students	174
Difficulty Level	M
Avg. time spent on this question by students who got this question right	187
% of students who attempted this question	10.89
% of students who got the question right of those who attempted	43.95

[Video Solution](#)

[Text Solution](#)

Cost Price = 12, 345  
 Let mark up percentage, discount percentage and profit percentage be 5X, 2X and X  
 respectively and let  $\frac{X}{100} = x$  (for convenience).  
 Marked Price = 12, 345(1 + 5x)  
 Selling Price after discount  
 = 12, 345(1 + 5x)(1 - 2x)  
 Selling price with profit on Cost Price  
 = 12, 345(1 + x)  
 $12, 345(1 + 5x)(1 - 2x) = 12, 345(1 + x)$   
 $1 + 5x - 2x - 10x^2 = 1 + x$   
 $2x = 10x^2$   
 $x = 0.2$   
 Now, S.P = 12, 345(1 + 0.2)  
 $= 12, 345 \times 1.2$   
 $= ₹14, 814$

Choice (C)

undefined

**Q24. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

Three workers, A, B and C, start a work. A is twice as fast as B, but only one-third as fast as C. If all three of them together can finish the work in 24 days, then in how many days can A and C, working alternately, for one day each, complete the work?

- a) 27
- b) 36
- c) 54
- d) Depends on who among A and C starts on the first day.

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	143
Difficulty Level	M
Avg. time spent on this question by students who got this question right	164
% of students who attempted this question	25.3
% of students who got the question right of those who attempted	25.85

[Video Solution](#)

[Text Solution](#)

Let C do 6 units of work per day. Then A does 2 units of work per day and B, 1 unit.  
 Hence total work =  $(2 + 1 + 6)$  units  $\times$  24 days = 216 units.  
 Now, if A and C work on alternate days (irrespective of who starts the work) then for every couple of days,  $2 + 6 = 8$  units of work is done.

Hence,  $\frac{216}{8} = 27$  such pairs of days are required. That is, a total of  $27 \times 2 = 54$  days.

Choice (C)

undefined

**Q25. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

If the mean of the observations  $2x^3 + 3, x, 3x^2 + 5, 4 - 2x^2, 2x + 5$  and  $9 - 2x^3$  is 6, where  $x$  is a natural number, then  $x =$

- a) 2. Your answer is correct
- b) 5.
- c) 4.
- d) 3.

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	140
Avg. time spent on this question by all students	139
Difficulty Level	E
Avg. time spent on this question by students who got this question right	139
% of students who attempted this question	26.92
% of students who got the question right of those who attempted	81.06

[Video Solution](#)

[Text Solution](#)

Given  $\frac{[2x^3 + 3] + x + (3x^2 + 5) + (4 - 2x^2) + (2x + 5) + (9 - 2x^3)}{6} = 6$   
 $\Rightarrow x^2 + 3x - 10 = 0 \Rightarrow x = -5 \text{ or } 2.$   
 Since  $x$  is a natural number,  $x = 2$ .

**Alternative Solution:**

The values of  $x$  could be substituted from the given answer choices and checked for the condition given.  
 Only  $x = 2$ , i.e., choice (A), satisfies.

Choice (A)

undefined

**Q26. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

In an empty tank of height  $h$ , there are two pipes, A and B, attached at a height of  $\frac{h}{2}$ . If instead, both the pipes were attached at the bottom of the tank, then A would fill an empty tank in 4 hours and B would empty a full tank in 12 hours. If both taps are opened simultaneously, then in how much time will the empty tank get filled?

- a) 6 hours
- b) 5 hours
- c) 4 hours 48 min
- d) 4 hours 24 min

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

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	50
Avg. time spent on this question by all students	124
Difficulty Level	E
Avg. time spent on this question by students who got this question right	138
% of students who attempted this question	14.61
% of students who got the question right of those who attempted	33.58

[Video Solution](#)

[Text Solution](#)

Since tap B is kept at mid point, it can only empty the tank after half the tank is full and it would take 6 hours to empty the top half of water tank.

Time taken by Pipe A to fill the bottom half of the tank = 2 hours.

$$\begin{aligned} \text{Time taken by Pipe A and B to fill the upper half of the tank} &= \frac{1}{2} - \frac{1}{6} \\ &= \frac{2}{6} = 3 \text{ hours} \\ \therefore \text{Total time taken to fill the tank} &= 5 \text{ hours.} \end{aligned}$$

Choice (B)

undefined

**Q27. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

The value of  $\left(\frac{x^2 y^{-3} z}{x^{-3} y^2 z^3}\right)^5 \div \left(\frac{x^{-1} y^3 z^{-2}}{x^2 y^{-1} z}\right)^4$  is

- a)  $\frac{x^{27} z^2}{y^{40}}$ .
- b)  $\frac{x^{35} z^2}{y^{41}}$ .
- c)  $\frac{x^{37} z^2}{y^{41}}$ . **Your answer is correct**
- d)  $\frac{x^{37} z^3}{y^{40}}$ .

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	253
Avg. time spent on this question by all students	133
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	134
% of students who attempted this question	27.9
% of students who got the question right of those who attempted	91.36

[Video Solution](#)

[Text Solution](#)

Using the laws of indices  $\left(\frac{x^2 y^{-3} z}{x^{-3} y^2 z^2}\right)^5 \div \left(\frac{x^{-1} y^3 z^{-2}}{x^2 y^{-1} z}\right)^4$   
 $\Rightarrow \left(\frac{x^5}{y^8 z^2}\right)^5 \div \left(\frac{y^4}{x^2 z^2}\right)^4$   
(writing all power of positive terms)  
 $\Rightarrow \frac{x^{25}}{y^{25} z^{10}} \div \frac{y^{16}}{x^{12} z^{12}}$   
 $\Rightarrow \frac{x^{25}}{y^{25} z^{10}} \times \frac{x^{12} z^{12}}{y^{16}} \Rightarrow \frac{x^{37} z^2}{y^{41}}$   
∴ The correct choice is (C). Choice (C)

undefined

**Q28. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

If  $a \ominus b = a \times (a + b)$ , then  $7 \ominus (8 \ominus 10) =$

- a) 1057. Your answer is correct
- b) 12075.
- c) 126.
- d) 882.

#### Time spent / Accuracy Analysis

Time taken by you to answer this question	47
Avg. time spent on this question by all students	86
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	85
% of students who attempted this question	33.28
% of students who got the question right of those who attempted	96.47

[Video Solution](#)

#### Text Solution

$$8 \ominus 10 = 8 \times 18 = 144$$

$$7 \ominus 144 = 7 \times 151 = 1057$$
Choice (A)

undefined

**Q29. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

A natural number, N, when successively divided by 4, 5 and 6 leaves remainders of 2, 4 and 5 respectively. What is the sum of the remainders obtained when N is successively divided by 12 and 10?

- a) 19
- b) 20
- c) 10
- 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	152
Avg. time spent on this question by all students	128
Difficulty Level	M
Avg. time spent on this question by students who got this question right	139
% of students who attempted this question	13.99
% of students who got the question right of those who attempted	30.55

[Video Solution](#)

#### Text Solution

Divisors → 4 5 6  
↓ ↓ ↓  
Remainders → 2 4 5  
Let the last quotient = k (k is a natural number)  
Then  $N = [(6k + 5)5 + 4]4 + 2$   
=  $120k + 118$   
When N is divided by 12 remainder = 10 and  
quotient =  $10k + 9$   
When  $(10k + 9)$  is divided by 10 the remainder = 9  
∴ The sum of the remainders =  $10 + 9 = 19$  Choice (A)

undefined

**Q30. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

There are ten train stations in between two train stations A and B. The number of different kinds of tickets to be printed so that a passenger can make a reservation between any two stations is

- a) 66
- b) 45
- c) 90
- d) 132 Your answer is correct

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	202
Avg. time spent on this question by all students	92
Difficulty Level	E
Avg. time spent on this question by students who got this question right	94
% of students who attempted this question	25.46
% of students who got the question right of those who attempted	33.07

[Video Solution](#)

[Text Solution](#)

Total number of stations are  $10 + 2 = 12$   
 $\therefore$  The number of tickets required =  ${}^{12}C_2 \times 2$   
Since the reservation between any two stations can be done in two ways, one for the onward journey and the other for the return journey.  
Number of tickets required =  $66 \times 2 = 132$ . Choice (D)

undefined

**Q31. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

A merchant sold an apple and an orange at the same price but made a profit of 20% on the apple and a loss of 20% on the orange. What is the ratio of the cost price of the apple to that of the orange?

- a) 2 : 3 Your answer is correct
- b) 1 : 2
- c) 3 : 2
- d) 2 : 1

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	100
Avg. time spent on this question by all students	115
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	116
% of students who attempted this question	34.97
% of students who got the question right of those who attempted	72.4

[Video Solution](#)

[Text Solution](#)

Let x be the price at which the merchant sold each fruit.  
Cost price of apple =  $x/1.2$   
Cost price of orange =  $x/0.8$   
Required ratio =  $0.8/1.2 = 2/3$  Choice (A)

undefined

**Q32. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

If the geometric mean of two numbers is 8 and their arithmetic mean is 10, find the two numbers.

- a) 5, 15
- b) 8, 8
- c) 4, 12
- d) 4, 16 Your answer is correct

**Time spent / Accuracy Analysis**

Time taken by you to answer this question	56
Avg. time spent on this question by all students	83
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	82
% of students who attempted this question	29.73
% of students who got the question right of those who attempted	89.62

[Video Solution](#)

[Text Solution](#)

Let the numbers be  $x$  and  $y$ . Then the geometric mean is  $\sqrt{xy}$  and arithmetic mean is

$$\frac{x+y}{2}.$$

Given,  $\sqrt{xy} = 8 \Rightarrow xy = 64$  ----- (1)

$$\frac{x+y}{2} = 10 \Rightarrow x+y = 20 \text{ ----- (2)}$$

Solving (1) and (2), we get  $x = 16$  and  $y = 4$   
 $\therefore$  The correct choice is (D).

**Alternative Solution:**

Product  $xy = 8^2$

Only (D) satisfies

Choice (D)

undefined

**Q33. DIRECTIONS** for questions 21 to 33: Select the correct alternative from the given choices.

From a committee of seven men and eight ladies, a sub-committee of six members is to be formed. However, it is known that Mr. A will not join the sub-committee if Mr. B is included in it, while Mr. B will join the sub-committee only if Mrs. C is included in it. In how many ways can the sub-committee be formed?

- a)  ${}^{14}C_3 + {}^{13}C_4$
- b)  ${}^{14}C_6 + {}^{12}C_4$
- c)  ${}^{15}C_6 + {}^{12}C_5$
- d)  ${}^{15}C_6 + {}^{12}C_4$

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	145
Difficulty Level	E
Avg. time spent on this question by students who got this question right	158
% of students who attempted this question	10.56
% of students who got the question right of those who attempted	59.43

[Video Solution](#)

[Text Solution](#)

Consider the case when Mr. B is not included.

Number of ways of forming the committee

$$= (7-1) + 8C_6 = {}^{14}C_6$$

Consider the case when Mr. B is included.

Now, Mr. A is not included but Mrs. C is included.

Number of ways of forming the committee

$$= (7-2) + (8-1)C_4 = {}^{12}C_4$$

$\therefore$  Total number of ways =  ${}^{14}C_6 + {}^{12}C_4$

Choice (B)

undefined

**Q34. DIRECTIONS** for question 34: Type in your answer in the input box provided below the question.

If  $\frac{1}{6}$ th of a number is subtracted from  $\frac{770}{3}$ , the result is equal to 50% of that number. Find the number.

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	106
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	99
% of students who attempted this question	32
% of students who got the question right of those who attempted	75.01

[Video Solution](#)

[Text Solution](#)

Let the number be  $x$ .

$$\text{Given: } \frac{770}{3} - \frac{1}{6}x = \frac{1}{2}x$$

$$\Rightarrow \frac{770}{3} = \frac{x}{2} + \frac{x}{6}$$

$$\Rightarrow \frac{770}{3} = \frac{4x}{6}$$

$$\Rightarrow \frac{770}{3} = \frac{2x}{3}$$

$$\Rightarrow x = 385$$

Ans: (385)