

DIRECTIONS for questions 1 to 3: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

There is no better illustration to the life cycle of a civilization than The Course of Empire, a series of paintings by Thomas Cole that hang in the gallery of the New York Historical Society. Cole beautifully captured a theory to which most people remain in thrall to this day: the theory of cycles of civilization.

Each of the five imagined scenes depicts the mouth of a great river beneath a rocky outcrop. In the first, The Savage State, a lush wilderness is populated by a handful of hunter-gatherers eking out a primitive existence at the break of a stormy dawn. Imagine history from Columbus' discovery of America in 1492 on through four more centuries as they savagely expanded across the continent. The second picture, 'The Arcadian or Pastoral State,' is of an agrarian idyll: the inhabitants have cleared the trees, planted fields, and built an elegant Greek temple. The third and largest of the paintings is 'The Consummation of Empire.' Now, the landscape is covered by a magnificent marble entrepôt, and the contented farmer-philosophers of the previous tableau have been replaced by a throng of opulently clad merchants, proconsuls and citizen-consumers. It is midday in the life cycle.

Then comes 'The Destruction of Empire,' the fourth stage in Ferguson's grand drama about the life-cycle of all empires. In 'Destruction' the city is ablaze, its citizens fleeing an invading horde that rapes and pillages beneath a brooding evening sky. Finally, the moon rises over the fifth painting, 'Desolation,' says Ferguson. There is not a living soul to be seen, only a few decaying columns and colonnades overgrown by briars and ivy.

Conceived in the mid-1830s, Cole's pentaptych, a five-piece work of art, has a clear message: all civilizations, no matter how magnificent, are condemned to decline and fall. The implicit suggestion was that the young American republic of Cole's age would do better to stick to its bucolic first principles and resist the temptations of commerce, conquest and colonization. For centuries, historians, political theorists, anthropologists and the public at large have tended to think about the rise and fall of civilizations in such cyclical and gradual terms...

More recently, it is the anthropologist Jared Diamond who has captured the public imagination with a grand theory of rise and fall. His book, *Collapse: How Societies Choose to Fail or Succeed*, is cyclical history for the Green Age: tales of societies, from 17th century Easter Island to 21st century China, that risked, or now risk, destroying themselves by abusing their natural environments. Diamond quotes John Lloyd Stevens, the American explorer and amateur archaeologist who discovered the eerily dead Mayan cities of Mexico: 'Here were the remains of a cultivated, polished, and peculiar people, who had passed through all the stages incident to the rise and fall of nations, reached their golden age, and perished.' According to Diamond, the Maya fell into a classic Malthusian trap as their population grew larger than their fragile and inefficient agricultural system could support. More people meant more cultivation, but that means deforestation, erosion, drought and soil exhaustion. The result was civil war over dwindling resources and, finally, collapse.

Q1. The Mayans were mentioned in the last para of the passage to signify that

- a) more people translates to more cultivation and subsequent deforestation.
- b) increasing population and limited resources always results in a civil war.
- c) societies must resist the temptations of commerce, conquest and colonization.
- d) **societies follow the cyclical pattern of rise and fall, the latter caused by abusing their environments.** Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	149
Avg. time spent on this question by all students	328
Difficulty Level	M
Avg. time spent on this question by students who got this question right	316
% of students who attempted this question	62.49
% of students who got the question right of those who attempted	74.74

[Video Solution](#)

[Text Solution](#)

The answer can be inferred from the sentence: 'According to Diamond, the Maya fell into a classic Malthusian trap as their population'. The Mayans were mentioned as an example of great societies that went through the cyclical pattern of societies that rise and fall.

Option A: This is what happened with the Mayans as mentioned in the example. But, the Mayans were mentioned not just to talk about cultivation and deforestation. If that were the case, the author wouldn't have extended the explanation to civil war. Hence, Option A is not the answer.

Option B: While civil war was the logical conclusion in case of Mayans, the author doesn't mention that every society destroys itself only through a civil war. The result may not always be a civil war. Hence, Option B is the answer.

Option C: This was mentioned with respect to Cole's painting earlier in the passage and not with respect to the Mayans. Also, the Mayans were mentioned to demonstrate the cycle of societies and civilisations and not to depict how that can be avoided. Hence, Option C is not the answer.

Option D: 'More recently, it is the anthropologist Jared Diamond who has captured the public imagination with a grand theory of rise and fall'. His book, Collapse: How Societies Choose to Fail or Succeed, is cyclical history for the Green Age: tales of societies, from 17th century Easter Island to 21st century China, that risked, or now risk, destroying themselves by abusing their natural environments. Diamond quotes John Lloyd Stevens, the American explorer and amateur archaeologist who discovered the eerily dead Mayan cities of Mexico: 'Here were the remains of a cultivated, polished, and peculiar people, who had passed through all the stages incident to the rise and fall of nations, reached their golden age, and perished.' According to Diamond, the Maya fell into a classic Malthusian trap as their population grew larger than their fragile and inefficient agricultural system could support.'

From the underlined portions above we can understand that Diamond quoted John Lloyd and spoke about Mayans to talk about how societies that rise also eventually, fall, perishing because they grew in size and were unable to support their growing population after using up their environmental resources. Hence, Option D is the answer.

Choice (D)

undefined

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Each of the five imagined scenes depicts the mouth of a great river beneath a rocky outcrop. In the first, The Savage State, a lush wilderness is populated by a handful of hunter-gatherers eking out a primitive existence at the break of a stormy dawn. Imagine history from Columbus' discovery of America in 1492 on through four more centuries as they savagely expanded across the continent. The second picture, 'The Arcadian or Pastoral State,' is of an agrarian idyll: the inhabitants have cleared the trees, planted fields, and built an elegant Greek temple. The third and largest of the paintings is 'The Consummation of Empire.' Now, the landscape is covered by a magnificent marble entrepôt, and the contented farmer-philosophers of the previous tableau have been replaced by a throng of opulently clad merchants, proconsuls and citizen-consumers. It is midday in the life cycle.

Then comes 'The Destruction of Empire,' the fourth stage in Ferguson's grand drama about the life-cycle of all empires. In 'Destruction' the city is ablaze, its citizens fleeing an invading horde that rapes and pillages beneath a brooding evening sky. Finally, the moon rises over the fifth painting, 'Desolation,' says Ferguson. There is not a living soul to be seen, only a few decaying columns and colonnades overgrown by briars and ivy.

Conceived in the mid-1830s, Cole's pentaptych, a five-piece work of art, has a clear message: all civilizations, no matter how magnificent, are condemned to decline and fall. The implicit suggestion was that the young American republic of Cole's age would do better to stick to its bucolic first principles and resist the temptations of commerce, conquest and colonization. For centuries, historians, political theorists, anthropologists and the public at large have tended to think about the rise and fall of civilizations in such cyclical and gradual terms...

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21st century China, that risked, or now risk, destroying themselves by abusing their natural environments. Diamond quotes John Lloyd Stevens, the American explorer and amateur archaeologist who discovered the eerily dead Mayan cities of Mexico: 'Here were the remains of a cultivated, polished, and peculiar people, who had passed through all the stages incident to the rise and fall of nations, reached their golden age, and perished.' According to Diamond, the Maya fell into a classic Malthusian trap as their population grew larger than their fragile and inefficient agricultural system could support. More people meant more cultivation, but that means deforestation, erosion, drought and soil exhaustion. The result was civil war over dwindling resources and, finally, collapse.

Q2. Thomas Cole's purpose in painting his pentaptych seems to be to highlight

- a) the life cycles of a decadent civilisation
- b) that all civilizations are bound to die.
- c) **that civilizations will survive if they avoid advancement.** Your answer is incorrect
- d) **that ambitious societies are bound to perish.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	243
Avg. time spent on this question by all students	100
Difficulty Level	M
Avg. time spent on this question by students who got this question right	94
% of students who attempted this question	61.05
% of students who got the question right of those who attempted	62.22

[Video Solution](#)

[Text Solution](#)

Number of words: 522

From the two statements: 'Cole beautifully captured a theory to which most people remain in thrall to this day: the theory of cycles of civilization' and 'Conceived in the mid-1830s, Cole's pentaptych, a five-piece work of art, has a clear message: all civilizations, no matter how magnificent, are condemned to decline and fall' we can understand what was Cole's purpose in painting the The Course of Empire, his pentaptych.

Option A: The purpose of the painting was probably to cover every civilization and not just a 'decadent'(declining, decaying, rotten, deteriorating) civilisation. Hence, Option A is not the answer.

Option B: This is synonymous to 'all civilizations, no matter how magnificent, are condemned to decline and fall' mentioned in the passage. Hence, Option B is the answer.

Option C: *The implicit suggestion was that the young American republic of Cole's age would do better to stick to its bucolic first principles and resist the temptations of commerce, conquest and colonization.* As per the passage, it was an implicit suggestion (to the young American republic of Cole's time) and not the main purpose of the painting series. Hence, Option C is not the answer.

Option D: The painting was about all civilizations and not just the 'ambitious' ones. Hence, Option D is not the answer.

Choice (B)

undefined

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Q3. Which of the following needs to be true to validate the last statement of the passage: 'The result was civil war over dwindling resources and, finally, collapse'?

- a) Agriculture leads to loss of forests and therefore, dwindling resources.
- b) The increase in efficiency of cultivation didn't match the rate of population growth.
- c) **People are more likely to take control of dwindling resources by force than share them.**
- d) **Increasing population leads to dwindling resources.** Your answer is incorrect

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	54
Avg. time spent on this question by all students	99
Difficulty Level	D
Avg. time spent on this question by students who got this question right	92
% of students who attempted this question	59.37
% of students who got the question right of those who attempted	44.89

[Video Solution](#)

Text Solution

Number of words: 522

According to Diamond, the Maya fell into a classic Malthusian trap as their population grew larger than their fragile and inefficient agricultural system could support. More people meant more cultivation, but that means deforestation, erosion, drought and soil exhaustion. The result was civil war over dwindling resources and, finally, collapse.

To validate the conclusion that the result was a civil war, we need to understand the underlying assumptions that the author made. The author is of the opinion that more people leads to more cultivation and more deforestation, etc. leading to dwindling resources. This, the author states, leads to a civil war, assuming that shortage of resources leads to war.

Option A: This has been mentioned in the para by the author. But, the author didn't use this statement to conclude that there will be a civil war. Hence, Option A is not the answer.

Option B: The author has directly mentioned this line in '*their population grew larger than their fragile and inefficient agricultural system could support*'. That doesn't explain why the civil war has to be the eventual result. Hence, Option B is not the answer.

Option C: This option explains why there could be a civil war to resolve the issue of dwindling resources as people are more likely to use force than go for a peaceful sharing system. Hence, if Option C is true, the conclusion will hold. Option C is the answer.

Option D: This is a relationship that the author derived in the para, but it doesn't explain why there has to be a civil war. Hence, Option D can be eliminated.

Choice (C)

undefined

DIRECTIONS for questions 4 to 6: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

The origins of the people of the Indus Valley civilization has prompted a long-running argument that has lasted for more than five decades. Some scholars have suggested that they were originally migrants from upland plateaux to the west. Others have maintained the civilization was made up of indigenous local groups, while some have said it was a mixture of both, and part of a network of different communities in the region. Experts have also debated whether the civilization succumbed to a traumatic invasion by so-called "Aryans" whose chariots they were unable to resist, or in fact peacefully assimilated a series of waves of migration over many decades or centuries.

A new research will provide definitive answers, at least for the population of Rakhigarhi. It is a key site in the Indus Valley civilization which ruled a more than 1 million sq km swath of the Asian subcontinent during the bronze age and was as advanced and powerful as its better known contemporary counterparts in Egypt and Mesopotamia. "There is already evidence of intermarriage and mixing through trade and so forth for a long time and the DNA will tell us for sure," said Vasant Shinde, an Indian archaeologist leading current excavations at Rakhigarhi. Shinde's conclusions will be published in the new year. They are based on DNA sequences derived from four skeletons excavated eight months ago and checked against DNA data from tens of thousands of people from all across the subcontinent, central Asia and Iran.

The conclusions from the new research on the skeletal DNA sample are likely to be controversial in a region riven by religious, ethnic and nationalist tensions. Hostile neighbours India and Pakistan have fought three wars since winning their independence from the British in 1947, and have long squabbled over the true centre of the Indus civilization, which straddles the border between the countries. Shinde said Rakhigarhi might have been a bigger city than either Mohenjodaro or Harappa, two sites in Pakistan previously considered the centre of the Indus civilization. Some in India will also be keen to claim any new research supports their belief that the Rig Veda, an ancient text sacred to Hindus compiled shortly after the demise of the Indus Valley civilization, is reliable as an historical record.

The question of links between today's inhabitants of the area and those who lived, farmed, and died here millennia ago has also prompted fierce argument. There are other mysteries too. The Indus Valley civilization flourished for three thousand years before disappearing suddenly around 1500 BC. Theories range from the drying up of local rivers to an epidemic. Recently, research has focused on climate change undermining the irrigation-based agriculture on which an advanced urban society was ultimately dependent. Soil samples around the skeletons from which samples were sent for DNA analysis have also been despatched. Traces of parasites, found in these skeletons, may tell archaeologists what the people of the Indus Valley civilization ate. Three-dimensional modelling technology will also allow a reconstruction of the physical appearance of the dead. "For the first time we will see the face of these people," Shinde said.

In Rakhigarhi village, there are mixed emotions about the forthcoming revelations about the site. Chand, a self-appointed guide from Rakhigarhi, hopes the local government will finally fulfil longstanding promises to build a museum, an auditorium and hotel for tourists there. "This is a neglected site and now that will change. This place should be as popular as the Taj Mahal. There should be hundreds, thousands of visitors coming," Chand said.

Q4. Which of the following could be a possible reason as to why Chand thinks Rakhigarhi is a neglected site?

- a) Despite having a rich heritage similar to Taj Mahal, Rakhigarhi is not as popular as the Taj Mahal.
- b) The government has failed time and again in fulfilling its promises regarding the development of that site.
- c) **Rakhigarhi's rich history was not popular enough for people to take note.**
- d) **None of the above** Your answer is incorrect

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	144
Avg. time spent on this question by all students	317
Difficulty Level	M
Avg. time spent on this question by students who got this question right	308
% of students who attempted this question	60.49
% of students who got the question right of those who attempted	58.12

[Video Solution](#)

[Text Solution](#)

From the statements: 'Chand, a self-appointed guide from Rakhigarhi, hopes the local government will finally fulfil longstanding promises to build a museum, an auditorium and hotel for tourists there. "This is a neglected site and now that will change. This place should be as popular as the Taj Mahal. There should be hundreds, thousands of visitors coming," Chand said', we can understand that Chand thinks the place is neglected because of promises which were due for a long time.

Option A: Taj Mahal was an example given by Chand to compare Rakhigarhi's glory. But, his reason for calling it neglected is not because he thinks it should be as popular as Taj Mahal. Hence, Option A can be eliminated.

Option B: This statement agrees with the reason that has been mentioned and explained above, about how there are several unfulfilled/longstanding promises. Hence, Option B is the answer.

Option C: This is a cause-effect fallacy. Chand thinks Rakhigarhi is not as popular because of the promises not getting fulfilled/because it is a neglected site. It being neglected is not because it is not so popular. Hence, Option C is not the answer.

Option D: This is not true, since Option B does explain the reason why Chand thinks the place has been neglected.

Choice (B)

undefined

DIRECTIONS for questions 4 to 6: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

The origins of the people of the Indus Valley civilization has prompted a long-running argument that has lasted for more than five decades. Some scholars have suggested that they were originally migrants from upland plateaux to the west. Others have maintained the civilization was made up of indigenous local groups, while some have said it was a mixture of both, and part of a network of different communities in the region. Experts have also debated whether the civilization succumbed to a traumatic invasion by so-called "Aryans" whose chariots they were unable to resist, or in fact peacefully assimilated a series of waves of migration over many decades or centuries.

A new research will provide definitive answers, at least for the population of Rakhigarhi. It is a key site in the Indus Valley civilization which ruled a more than 1 million sq km swath of the Asian subcontinent during the bronze age and was as advanced and powerful as its better known contemporary counterparts in Egypt and Mesopotamia. "There is already evidence of intermarriage and mixing through trade and so forth for a long time and the DNA will tell us for sure," said Vasant Shinde, an Indian archaeologist leading current excavations at Rakhigarhi. Shinde's conclusions will be published in the new year. They are based on DNA sequences derived from four skeletons excavated eight months ago and checked against DNA data from tens of thousands of people from all across the subcontinent, central Asia and Iran.

The conclusions from the new research on the skeletal DNA sample are likely to be controversial in a region riven by religious, ethnic and nationalist tensions. Hostile neighbours India and Pakistan have fought three wars since winning their independence from the British in 1947, and have long squabbled over the true centre of the Indus civilization, which straddles the border between the countries. Shinde said Rakhigarhi might have been a bigger city than either Mohenjodaro or Harappa, two sites in Pakistan previously considered the centre of the Indus civilization. Some in India will also be keen to claim any new research supports their belief that the Rig Veda, an ancient text sacred to Hindus compiled shortly after the demise of the Indus Valley civilization, is reliable as an historical record.

The question of links between today's inhabitants of the area and those who lived, farmed, and died here millennia ago has also prompted fierce argument. There are other mysteries too. The Indus Valley civilization flourished for three thousand years before disappearing suddenly around 1500 BC. Theories range from the drying up of local rivers to an epidemic. Recently, research has focused on climate change undermining the irrigation-based agriculture on which an advanced urban society was ultimately dependent. Soil samples around the skeletons from which samples were sent for DNA analysis have also been despatched. Traces of parasites, found in these skeletons, may tell archaeologists what the people of the Indus Valley civilization ate. Three-dimensional modelling technology will also allow a reconstruction of the physical appearance of the dead. "For the first time we will see the face of these people," Shinde said.

In Rakhigarhi village, there are mixed emotions about the forthcoming revelations about the site. Chand, a self-appointed guide from Rakhigarhi, hopes the local government will finally fulfil longstanding promises to build a museum, an auditorium and hotel for tourists there. "This is a neglected site and now that will change. This place should be as popular as the Taj Mahal. There should be hundreds, thousands of visitors coming," Chand said.

Q5. Which of the following statements about Rakhigarhi can be understood from the passage?

- a) Rakhigarhi may have been a bigger city than either Harappa or Mohenjodaro, which were considered to be the centre of the Indus civilization.
- b) Rakhigarhi was the epicentre of trade during the Indus Valley civilization.
- c) **Rakhigarhi is famous for having the tradition of intermarriage and mixing through trade.**
- d) **Rakhigarhi was not as well-known as equally powerful contemporary counterparts in Egypt.** 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	123
Difficulty Level	M
Avg. time spent on this question by students who got this question right	115
% of students who attempted this question	61.55
% of students who got the question right of those who attempted	73.7

[Video Solution](#)

[Text Solution](#)

Number of words: 588

Option A: From the statements: 'Shinde said Rakhigarhi might have been a bigger city than either Mohenjodaro or Harappa, two sites in Pakistan previously considered the centre of the Indus civilization' it could be inferred that Rakhigarhi may be a bigger city. Hence, Option A is the answer.

Option B: Consider the statement: 'There is already evidence of intermarriage and mixing through trade and so forth for a long time and the DNA will tell us for sure,' said Vasant Shinde, an Indian archaeologist leading current excavations at Rakhigarhi'. From this we cannot infer that Rakhigarhi was the epicentre of trade. Hence, Option B is not the answer.

Option C: 'There is evidence' cannot be equated to 'it was famous for'. Hence, Option C is not the answer.

Option D: This option could possibly be a misreading of the statements: 'A new research will provide definitive answers, at least for the population of Rakhigarhi. It is a key site in the Indus Valley civilization which ruled a more than 1 million sq km swath of the Asian subcontinent during the bronze age and was as advanced and powerful as its better known contemporary counterparts in Egypt and Mesopotamia'. Here, it is not Rakhigarhi but the Indus Valley Civilization which is being compared to Egypt and Mesopotamia. Hence, Option D is not the answer.

Choice (A)

undefined

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Q6. According to the passage, which of the following can provide information about the people of Indus Valley civilization?

- I. Soil samples around Rakhigarhi's contours.
- II. DNA sequences derived from the four skeletons excavated near Rakhigarhi.
- III. Traces of parasites found in the skeletal structures.
- IV. Three-dimensional modelling technology.

- a) Only I, II and III
- b) Only II and IV Your answer is incorrect
- c) Only II, III and IV
- d) I, II, III and IV

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	98
Avg. time spent on this question by all students	127
Difficulty Level	D
Avg. time spent on this question by students who got this question right	130
% of students who attempted this question	60.37
% of students who got the question right of those who attempted	48.74

[Video Solution](#)

[Text Solution](#)

- I. From the statement 'Soil samples around the skeletons from which samples were sent for DNA analysis have also been despatched', we can understand that the soil around the skeletons, which are **in Rakhigarhi** (and not around Rakhigarhi) provides information about the people of the Indus Valley Civilization. Hence, this statement, which mentions 'soil samples **around** Rakhigarhi's contours' is incorrect.
- II. From the statement 'Shinde's conclusions will be published in the new year. They are based on **DNA sequences derived from four skeletons excavated eight months ago** and checked against DNA', we can understand that II can provide information about the people of the Indus Valley Civilization.
- III. From 'Traces of parasites, found in these skeletons, may tell archaeologists what the people of the Indus Valley civilization ate', we can understand that III can provide information.
- IV. From '**Three-dimensional modelling technology will also allow a reconstruction** of the physical appearance of the dead', we can understand that IV can provide information about the people of the Indus Valley Civilization.
- II, III and IV all provide information about the people of Indus Valley Civilization. Hence, Option C is the answer.

Choice (C)

undefined

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

The issues and preoccupations of the 21st century present new and often fundamentally different types of challenges from those that faced the world in 1945, when the United Nations was founded. As new realities and challenges have emerged, so too have new expectations for action and new standards of conduct in national and international affairs. Since, for example, the terrorist attacks of 11 September 2001 on the World Trade Centre and Pentagon, it has become evident that the war against terrorism the world must now fight – one with no contested frontiers and a largely invisible enemy – is one like no other war before it.

Many new international institutions have been created to meet these changed circumstances. In key respects, however, the mandates and capacity of international institutions have not kept pace with international needs or modern expectations. Above all, the issue of international intervention for human protection purposes is a clear and compelling example of concerted action urgently being needed to bring international norms and institutions in line with international needs and expectations.

The current debate on intervention for human protection purposes is itself both a product and a reflection of how much has changed since the UN was established. The current debate takes place in the context of a broadly expanded range of state, non-state, and institutional actors, and increasingly evident interaction and interdependence among them. It is a debate that reflects new sets of issues and new types of concerns. It is a debate that is being conducted within the framework of new standards of conduct for states and individuals, and in a context of greatly increased expectations for action. And it is a debate that takes place within an institutional framework that since the end of the Cold War has held out the prospect of effective joint international action to address issues of peace, security, human rights and sustainable development on a global scale.

With new actors – not least new states, with the UN growing from 51 member states in 1945 to 189 today – has come a wide range of new voices, perspectives, interests, experiences and aspirations. Together, these new international actors have added both depth and texture to the increasingly rich tapestry of international society and important institutional credibility and practical expertise to the wider debate.

Prominent among the range of important new actors are a number of institutional actors and mechanisms, especially in the areas of human rights and human security. They have included, among others, the UN High Commissioner for Human Rights and the International Criminal Tribunal for the former Yugoslavia, both created in 1993, and its sister tribunals for Rwanda established in 1994 and Sierra Leone in 2001. The International Criminal Court, whose creation was decided in 1998, will begin operation when 60 countries have ratified its Statute. In addition to the new institutions, established ones such as the UN High Commissioner for Refugees, and the ICRC and International Federation of Red Cross and Red Crescent Societies, have been ever more active.

Nearly as significant has been the emergence of many new non-state actors in international affairs – including especially a large number of NGOs dealing with global matters; a growing number of media and academic institutions with worldwide reach; and an increasingly diverse array of armed non-state actors ranging from national and international terrorists to traditional rebel movements and various organized criminal groupings. These new non-state actors, good or bad, have forced the debate about intervention for human protection purposes to be conducted in front of a broader public, while at the same time adding new elements to the agenda.

Q7. A criticism that the author levies against international institutions is that

- a) they are not capable of taking concerted action to bring expectations in line with international norms.
- b) **the ones that are newly established have not kept pace with modern expectations.**
- c) **they have not decentralized their authority to meet modern expectations.**
- d) **they have not modified their directives and capabilities to meet modern expectations.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	327
Difficulty Level	M
Avg. time spent on this question by students who got this question right	323
% of students who attempted this question	48.88
% of students who got the question right of those who attempted	42.19

[Video Solution](#)

Text Solution

Number of words: 597

In the second paragraph of the passage, the author talks about how international institutions have not kept pace with "international needs or modern expectations".

Option A: The author states that "In key respects, however, the mandates and capacity of international institutions have not kept pace with international needs or modern expectations". However, he/she was not so harsh as to rephrase this as them not being capable of taking concerted action. Further, the asks for mandates and capacities to be brought in line with modern expectations and not the other way round. Hence, this option is incorrect.

Option B: When talking about how the international institutions have not "kept pace with international needs or modern expectations", the author does not limit himself to the newly established institutions. Note that he talks about "the mandates and capacity **of international institutions**" and not only about new international institutions. Hence, this option is incorrect.

Option C: The author does not talk about decentralizing the authority of international institutions in the passage. Hence, this is not the correct answer.

Option D: The mandates and capacities have not kept pace with modern expectations, according to the author. Hence, this is the correct answer.

Choice (D)

undefined

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

The issues and preoccupations of the 21st century present new and often fundamentally different types of challenges from those that faced the world in 1945, when the United Nations was founded. As new realities and challenges have emerged, so too have new expectations for action and new standards of conduct in national and international affairs. Since, for example, the terrorist attacks of 11 September 2001 on the World Trade Centre and Pentagon, it has become evident that the war against terrorism the world must now fight – one with no contested frontiers and a largely invisible enemy – is one like no other war before it.

Many new international institutions have been created to meet these changed circumstances. In key respects, however, the mandates and capacity of international institutions have not kept pace with international needs or modern expectations. Above all, the issue of international intervention for human protection purposes is a clear and compelling example of concerted action urgently being needed to bring international norms and institutions in line with international needs and expectations.

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With new actors – not least new states, with the UN growing from 51 member states in 1945 to 189 today – has come a wide range of new voices, perspectives, interests, experiences and aspirations. Together, these new international actors have added both depth and texture to the increasingly rich tapestry of international society and important institutional credibility and practical expertise to the wider debate.

Prominent among the range of important new actors are a number of institutional actors and mechanisms, especially in the areas of human rights and human security. They have included, among others, the UN High Commissioner for Human Rights and the International Criminal Tribunal for the former Yugoslavia, both created in 1993, and its sister tribunals for Rwanda established in 1994 and Sierra Leone in 2001. The International Criminal Court, whose creation was decided in 1998, will begin operation when 60 countries have ratified its Statute. In addition to the new institutions, established ones such as the UN High Commissioner for Refugees, and the ICRC and International Federation of Red Cross and Red Crescent Societies, have been ever more active.

Nearly as significant has been the emergence of many new non-state actors in international affairs – including especially a large number of NGOs dealing with global matters; a growing number of media and academic institutions with worldwide reach; and an increasingly diverse array of armed non-state actors ranging from national and international terrorists to traditional rebel movements and various organized criminal groupings. These new non-state actors, good or bad, have forced the debate about intervention for human protection purposes to be conducted in front of a broader public, while at the same time adding new elements to the agenda.

Q8. The author presents the example of the terrorists attacks of September 9, 2011 to

- a) highlight the increase in the number of terrorists attacks in the recent past.
- b) point out the changes in expectations for facing new challenges in national and international affairs.
- c) demonstrate the emergence of new non-state actors in international affairs.
- d) emphasize why terrorism has brought about new realities and challenges in international affairs.

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	92
Difficulty Level	M
Avg. time spent on this question by students who got this question right	89
% of students who attempted this question	52.87
% of students who got the question right of those who attempted	76.02

[Video Solution](#)

[Text Solution](#)

Number of words: 597

The author talks about the emergence of "**new realities and challenges**" and the emergence of "**new expectations for action and new standards of conduct**". He provides the example of September 9, 2011 terrorist attacks as an example of this.

Option A: The author does not talk about terrorism in particular, when providing this example. He provides this as an example of the new realities ("the war against terrorism the world must now fight ...is **one like no other war before it**"). Hence, this is not the correct answer.

Option B: This terrorist attack resulted in a war that is **like no other war before it**, with **no contested frontiers and a largely invisible enemy**. These emphasizes the new realities that the author talks about and the new expectations for facing these challenges. Hence, the statement given in this option is the reason for the author to present the example.

Option C: The example talks about a new non-state actor, which is mentioned in the last paragraph - **ranging from national and international terrorists**. However, in the last paragraph, the author does not refer to this example. If he did, we could have inferred that this example served a dual purpose – first, to highlight the change in reality and second, to emphasize the influence of non-state actors. Since the author does not refer to this example again in the passage, we cannot infer this option to be the purpose for citing this example.

Option D: The purpose of the author is not to highlight why terrorism has changed the world. In fact, he does not address this question ("why terrorism has brought about new realities and challenges in international affairs?") anywhere in the passage. Therefore, this is not the correct answer.

Therefore, the correct answer is option B.

Choice (B)

undefined

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

The issues and preoccupations of the 21st century present new and often fundamentally different types of challenges from those that faced the world in 1945, when the United Nations was founded. As new realities and challenges have emerged, so too have new expectations for action and new standards of conduct in national and international affairs. Since, for example, the terrorist attacks of 11 September 2001 on the World Trade Centre and Pentagon, it has become evident that the war against terrorism the world must now fight – one with no contested frontiers and a largely invisible enemy – is one like no other war before it.

Many new international institutions have been created to meet these changed circumstances. In key respects, however, the mandates and capacity of international institutions have not kept pace with international needs or modern expectations. Above all, the issue of international intervention for human protection purposes is a clear and compelling example of concerted action urgently being needed to bring international norms and institutions in line with international needs and expectations.

The current debate on intervention for human protection purposes is itself both a product and a reflection of how much has changed since the UN was established. The current debate takes place in the context of a broadly expanded range of state, non-state, and institutional actors, and increasingly evident interaction and interdependence among them. It is a debate that reflects new sets of issues and new types of concerns. It is a debate that is being conducted within the framework of new standards of conduct for states and individuals, and in a context

of greatly increased expectations for action. And it is a debate that takes place within an institutional framework that since the end of the Cold War has held out the prospect of effective joint international action to address issues of peace, security, human rights and sustainable development on a global scale.

With new actors – not least new states, with the UN growing from 51 member states in 1945 to 189 today – has come a wide range of new voices, perspectives, interests, experiences and aspirations. Together, these new international actors have added both depth and texture to the increasingly rich tapestry of international society and important institutional credibility and practical expertise to the wider debate.

Prominent among the range of important new actors are a number of institutional actors and mechanisms, especially in the areas of human rights and human security. They have included, among others, the UN High Commissioner for Human Rights and the International Criminal Tribunal for the former Yugoslavia, both created in 1993, and its sister tribunals for Rwanda established in 1994 and Sierra Leone in 2001. The International Criminal Court, whose creation was decided in 1998, will begin operation when 60 countries have ratified its Statute. In addition to the new institutions, established ones such as the UN High Commissioner for Refugees, and the ICRC and International Federation of Red Cross and Red Crescent Societies, have been ever more active.

Nearly as significant has been the emergence of many new non-state actors in international affairs – including especially a large number of NGOs dealing with global matters; a growing number of media and academic institutions with worldwide reach; and an increasingly diverse array of armed non-state actors ranging from national and international terrorists to traditional rebel movements and various organized criminal groupings. These new non-state actors, good or bad, have forced the debate about intervention for human protection purposes to be conducted in front of a broader public, while at the same time adding new elements to the agenda.

Q9. Which of the following is true regarding the debate on intervention for human protection purposes?

- a) The debate is now more accessible to the public than it was before.
- b) **Non-state actors now play as significant a role as that played by new institutional actors in this debate.**
- c) **The debate calls for a change in institutional framework so that effective joint international action becomes possible.**
- d) **The emergence of non-state actors has brought about an unwelcome change in the nature of the debate.**

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	M
Avg. time spent on this question by students who got this question right	167
% of students who attempted this question	42.2
% of students who got the question right of those who attempted	20.57

[Video Solution](#)

[Text Solution](#)

The debate on intervention for human protection purposes has been mentioned in multiple places in the passage. It is introduced in the third paragraph of the passage, where the author talks about its impact. It also has been mentioned in the last paragraph of the passage, when talking about the emergence of non-state actors.

Option A: In the last paragraph of the passage, the author mentions that "These new non-state actors, good or bad, **have forced the debate** ... to be conducted **in front of a broader public**". From this we can infer that, the debate is not more accessible to public than it was before. Hence, this can be inferred from the passage.

Option B: In the third para, the author states that "The current debate takes place in the context of **a broadly expanded range of state, non-state, and institutional actors**". In the last para, the author states that "**Nearly as significant** has been the emergence of many new non-state actors". The author compares the significance of the emergence of non-state actors with the "**range of important new actors**" (mentioned in the penultimate para). Combining these two, we can infer that **the emergence of new non-state actors** is nearly as significant as **the range of new actors**. But, we cannot infer from this that **the role of non-state actors** is as significant as **the role new institutional actors**. Hence, this option is incorrect.

Option C: In the third para, the author states that "it is a debate that **takes place within** an institutional framework that ... has held out the prospect of effective joint international action". From this, we can infer that the institutional framework has made it possible to hope for effective joint international action. Therefore, the debate does not **call for a change** in institutional framework. It happens within this framework and this framework has "held out the prospect of effective joint international action". Therefore, this is not the correct answer.

Option D: In the last paragraph of the passage, the author mentions that these new non-state actors "good or bad, have forced the debate about intervention for human protection purposes to be conducted in front of a broader public, while at the same time adding new elements to the agenda." We cannot infer from this that the change in the nature of the debate is an unwelcome one. Therefore, this is not the correct answer.

Hence, the correct answer is option A.

Choice (A)

undefined

DIRECTIONS for questions 10 to 12: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

The first era of innovation – that of the lone inventor – encompassed much of human history. Innovators occasionally formed or latched on to companies to exploit the full potential of their ideas, but most seminal innovations developed before about 1915 are closely associated with the individuals behind them: Gutenberg's press. Whitney's cotton gin. Edison's lightbulb. The Wright brothers' plane. Ford's assembly line (actually as much a business model as a technology).

With the perfection of the assembly line, a century ago, the increasing complexity and cost of innovation pushed it out of individuals' reach, driving more company-led efforts. A combination of longer-term perspectives and less stifling corporate bureaucracies meant that many organizations would happily tolerate experimental efforts. Thus, the heroes of this second era worked in corporate labs, and corporations evolved from innovation exploiters into innovation creators. Many of the notable commercial inventions of the next 60 years came from these labs: DuPont's miracle molecules (including nylon); Procter & Gamble's Crest, Pampers, and Tide brands; the U-2 spy plane and SR-71 Blackbird fighter jet from Lockheed Martin's famed Skunk Works.

The seeds of the third era were planted in the late 1950s and the 1960s, as companies started to become too big and bureaucratic to handle at-the-fringes exploration. The restless individualism of baby boomers clashed with increasingly hierarchical organizations. Innovators began to leave companies, band with like-minded "rebels," and form new companies. Given the scale required to innovate, however, these rebels needed new forms of funding. Hence the emergence of the VC-backed start-up. The third era came into its own in the 1970s, with the establishment of Kleiner Perkins Caufield & Byers and Sequoia Capital. These and similar institutions helped to support the formation of Apple, Microsoft, Cisco Systems, Amazon, Facebook, and Google. Life became even harder for innovators in big companies as the capital markets' expectations for short-term performance grew.

The technologies birthed during this era and the globalization of world markets have dramatically accelerated the pace of change. Over the past 50 years corporate life spans by some measures have decreased by close to 50%. Back in 2000, Microsoft was an unstoppable monopoly, Apple was playing at the fringes of the computer market, Facebook founder Mark Zuckerberg was a student at Phillips Exeter Academy, and Google was a technology in search of a business model.

This breathless pace, and the conditions and tools that enable it, bring us to the fourth era – when corporate catalysts can have a transformational impact. Whereas the inventions that characterized the first three eras were typically (but not always) technological breakthroughs, fourth-era innovations are likely to involve business models. One analysis shows that from 1997 to 2007 more than half of the

companies that made it onto the Fortune 500 before their 25th birthdays – including Amazon, Starbucks, and AutoNation – were business model innovators.

Today it's easier than ever to innovate, which may suggest that it's an ideal time to start a business. After all, a wealth of low-cost or no-cost online tools, coupled with hyperconnected markets, put innovation capabilities into the hands of the masses and allow ideas to rapidly spread.

Q10. All the following can be understood from the passage EXCEPT:

- a) The second era of innovation was marked by corporations exploiting the innovators to make them work in their own corporate labs.
- b) **The need for new forms of funding led to the blossoming of VC-backed start-ups in the third era of innovation.**
- c) **The first era of innovation was predominantly marked by the lone inventor working on his or her ideas.**
- d) **Technological breakthroughs are less likely to drive innovation than business models in the fourth era of innovation.**

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	343
Difficulty Level	M
Avg. time spent on this question by students who got this question right	338
% of students who attempted this question	51.52
% of students who got the question right of those who attempted	58.28

[Video Solution](#)

[Text Solution](#)

Number of words: 517

Option A: '*Thus, the heroes of this second era worked in corporate labs, and corporations evolved from innovation exploiters into innovation creators.*' Corporations evolved from being 'innovation exploiters' – this part proves that in the second era corporations weren't exploiting the innovators. Hence, Option A cannot be understood. Option A is the answer.

Option B: '*The seeds of the third era were planted in the late 1950s and the 1960s, as companies started to become too big and bureaucratic to handle at-the-fringes exploration. The restless individualism of baby boomers clashed with increasingly hierarchical organizations. Innovators began to leave companies, band with like-minded "rebels," and form new companies. Given the scale required to innovate, however, these rebels needed new forms of funding. Hence the emergence of the VC-backed start-up.*' From the underscored line, this option can be understood. Hence, Option B is not the answer.

Option C: '**The first era of innovation—that of the lone inventor**—encompassed much of human history.' This option can be understood from the underscored line. Hence, Option C is not the answer.

Option D: '*This breathless pace, and the conditions and tools that enable it, bring us to the fourth era—when corporate catalysts can have a transformational impact. Whereas the inventions that characterized the first three eras were typically (but not always) technological breakthroughs, fourth-era innovations are likely to involve business models.*' From the underlined portions, this option can be understood. Hence, Option D is not the answer.

Choice (A)

undefined

DIRECTIONS for questions 10 to 12: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

The first era of innovation – that of the lone inventor – encompassed much of human history. Innovators occasionally formed or latched on to companies to exploit the full potential of their ideas, but most seminal innovations developed before about 1915 are closely associated with the individuals behind them: Gutenberg's press. Whitney's cotton gin. Edison's lightbulb. The Wright brothers' plane. Ford's assembly line (actually as much a business model as a technology).

With the perfection of the assembly line, a century ago, the increasing complexity and cost of innovation pushed it out of individuals' reach, driving more company-led efforts. A combination of longer-term perspectives and less stifling corporate bureaucracies meant that many organizations would happily tolerate experimental efforts. Thus, the heroes of this second era worked in corporate labs, and corporations evolved from innovation exploiters into innovation creators. Many of the notable commercial inventions of the next 60 years came from these labs: DuPont's miracle molecules (including nylon); Procter & Gamble's Crest, Pampers, and Tide brands; the U-2 spy plane and SR-71

Blackbird fighter jet from Lockheed Martin's famed Skunk Works.

The seeds of the third era were planted in the late 1950s and the 1960s, as companies started to become too big and bureaucratic to handle at-the-fringes exploration. The restless individualism of baby boomers clashed with increasingly hierarchical organizations. Innovators began to leave companies, band with like-minded "rebels," and form new companies. Given the scale required to innovate, however, these rebels needed new forms of funding. Hence the emergence of the VC-backed start-up. The third era came into its own in the 1970s, with the establishment of Kleiner Perkins Caufield & Byers and Sequoia Capital. These and similar institutions helped to support the formation of Apple, Microsoft, Cisco Systems, Amazon, Facebook, and Google. Life became even harder for innovators in big companies as the capital markets' expectations for short-term performance grew.

The technologies birthed during this era and the globalization of world markets have dramatically accelerated the pace of change. Over the past 50 years corporate life spans by some measures have decreased by close to 50%. Back in 2000, Microsoft was an unstoppable monopoly, Apple was playing at the fringes of the computer market, Facebook founder Mark Zuckerberg was a student at Phillips Exeter Academy, and Google was a technology in search of a business model.

This breathless pace, and the conditions and tools that enable it, bring us to the fourth era – when corporate catalysts can have a transformational impact. Whereas the inventions that characterized the first three eras were typically (but not always) technological breakthroughs, fourth-era innovations are likely to involve business models. One analysis shows that from 1997 to 2007 more than half of the companies that made it onto the Fortune 500 before their 25th birthdays – including Amazon, Starbucks, and AutoNation – were business model innovators.

Today it's easier than ever to innovate, which may suggest that it's an ideal time to start a business. After all, a wealth of low-cost or no-cost online tools, coupled with hyperconnected markets, put innovation capabilities into the hands of the masses and allow ideas to rapidly spread.

Q11. Which of the following is not a reason mentioned in the passage that pushed innovators closer to organisations and corporate labs in the second era of innovation?

- a) The more encouraging stance by corporate bureaucracies towards innovation
- b) **The increasing complexity and cost of innovation**
- c) **A less stifling environment created by corporations preferring quick experiments over long-term projects**
- d) **The highly evolved nature of assembly line as a business model**

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	1
Avg. time spent on this question by all students	117
Difficulty Level	M
Avg. time spent on this question by students who got this question right	115
% of students who attempted this question	51.91
% of students who got the question right of those who attempted	43.24

[Video Solution](#)

[Text Solution](#)

Number of words: 517

All the reasons mentioned in the passage that pushed innovators closer to organisations and corporate labs in the second era of innovation can be found in the following lines: 'With the perfection of the assembly line, a century ago, the increasing complexity and cost of innovation pushed it (the assembly line) out of individuals' reach, driving more company-led efforts. A combination of longer-term perspectives and less stifling corporate bureaucracies meant that many organizations would happily tolerate experimental efforts. Thus, the heroes of this second era worked in corporate labs, and corporations evolved from innovation exploiters into innovation creators.'

Option A: Less stifling corporate bureaucracies meant that organisations would happily tolerate experimental efforts – this leads us to understanding that their stance towards innovation was more encouraging. Hence, Option A is a reason pushing innovators close to organisations, and not the answer.

Option B: This was mentioned in the para (second underscored portion above), and hence a reason for innovators working for organisations. Option B is not the answer.

Option C: A less stifling environment created by corporations(this part is true) preferring quick experiments over long-term perspectives (this part is not true).

Corporations were looking at longer-term perspectives according to the para. Hence, this option is not a reason mentioned in the passage. Option C is the answer.

Option D: The first line – 'with the perfection of the assembly line' – justifies this option as a reason for innovators working for corporates. Option D is not the answer.

Choice (C)

undefined

DIRECTIONS for questions 10 to 12: The passage given below is accompanied by a set of three questions. Choose the best answer to each question.

The first era of innovation – that of the lone inventor – encompassed much of human history. Innovators occasionally formed or latched on to companies to exploit the full potential of their ideas, but most seminal innovations developed before about 1915 are closely associated with the individuals behind them: Gutenberg's press. Whitney's cotton gin. Edison's lightbulb. The Wright brothers' plane. Ford's assembly line (actually as much a business model as a technology).

With the perfection of the assembly line, a century ago, the increasing complexity and cost of innovation pushed it out of individuals' reach, driving more company-led efforts. A combination of longer-term perspectives and less stifling corporate bureaucracies meant that many organizations would happily tolerate experimental efforts. Thus, the heroes of this second era worked in corporate labs, and corporations evolved from innovation exploiters into innovation creators. Many of the notable commercial inventions of the next 60 years came from these labs: DuPont's miracle molecules (including nylon); Procter & Gamble's Crest, Pampers, and Tide brands; the U-2 spy plane and SR-71 Blackbird fighter jet from Lockheed Martin's famed Skunk Works.

The seeds of the third era were planted in the late 1950s and the 1960s, as companies started to become too big and bureaucratic to handle at-the-fringes exploration. The restless individualism of baby boomers clashed with increasingly hierarchical organizations. Innovators began to leave companies, band with like-minded "rebels," and form new companies. Given the scale required to innovate, however, these rebels needed new forms of funding. Hence the emergence of the VC-backed start-up. The third era came into its own in the 1970s, with the establishment of Kleiner Perkins Caufield & Byers and Sequoia Capital. These and similar institutions helped to support the formation of Apple, Microsoft, Cisco Systems, Amazon, Facebook, and Google. Life became even harder for innovators in big companies as the capital markets' expectations for short-term performance grew.

The technologies birthed during this era and the globalization of world markets have dramatically accelerated the pace of change. Over the past 50 years corporate life spans by some measures have decreased by close to 50%. Back in 2000, Microsoft was an unstoppable monopoly, Apple was playing at the fringes of the computer market, Facebook founder Mark Zuckerberg was a student at Phillips Exeter Academy, and Google was a technology in search of a business model.

This breathless pace, and the conditions and tools that enable it, bring us to the fourth era – when corporate catalysts can have a transformational impact. Whereas the inventions that characterized the first three eras were typically (but not always) technological breakthroughs, fourth-era innovations are likely to involve business models. One analysis shows that from 1997 to 2007 more than half of the companies that made it onto the Fortune 500 before their 25th birthdays – including Amazon, Starbucks, and AutoNation – were business model innovators.

Today it's easier than ever to innovate, which may suggest that it's an ideal time to start a business. After all, a wealth of low-cost or no-cost online tools, coupled with hyperconnected markets, put innovation capabilities into the hands of the masses and allow ideas to rapidly spread.

Q12. Google being in search of a business model in 2000 was mentioned by the author to

- a) prove that corporates decline drastically.
- b) **attribute globalization of world markets to the birth of new technologies.**
- c) **show how VC-backed start-ups emerged to catalyse the corporate world.**
- d) **highlight the breathless pace of change over the last few years.**

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	103
Difficulty Level	M
Avg. time spent on this question by students who got this question right	95
% of students who attempted this question	52.07
% of students who got the question right of those who attempted	70.16

[Video Solution](#)

[Text Solution](#)

'The technologies birthed during this era and the globalization of world markets have dramatically accelerated the pace of change.' Over the past 50 years corporate life spans by some measures have decreased by close to 50%. Back in 2000, Microsoft was an unstoppable monopoly, Apple was playing at the fringes of the computer market, Facebook founder Mark Zuckerberg was a student at Phillips Exeter Academy, and **Google was a technology in search of a business model.**

This breathless pace, and the conditions and tools that enable it, bring us to the fourth era—when corporate catalysts can have a transformational impact.'

The biggest clue for this question lies in the pronoun – 'this breathless pace'. So, the examples in the previous line were all testimony of how fast things have changed/are changing.

Option A: The examples presented all point to shortening of corporate life span and not just to the decline. Further, we can infer that the companies mentioned are poised to grow drastically (and not fall drastically). Therefore, this option can be eliminated.

Option B: attribute globalization of world markets to the birth of new technologies – According to the para globalization and birth of new technologies are two separate reasons that accelerated the pace of change. So, one cannot be the reason for the other (causation fallacy). Hence, Option B is easy to eliminate.

Option C: VC-backed start-ups were discussed for the third era of innovation. The context in which Google was mentioned was leading the reader to the fourth era of innovation. Hence, Option C can be eliminated.

Option D: As explained above, the author calls all these examples 'this breathless pace'. So, the Google example was given to highlight how much things have changed in the recent past. Hence, Option D is the answer.

Choice (D)

undefined

Q13. DIRECTIONS for questions 13 to 15: Each of the questions consists of a paragraph with three blanks. For each blank choose one numbered word/ phrase from the corresponding column of choices that will best complete the text. Key in the appropriate numbers of the words/ phrases for each blank, in the correct sequential order, in the input box given below the question. For example, if you think that words/ phrases labelled (1), (5) and (9) can complete the text correctly, then enter 159 as your answer in the input box. (Note: Only one word/ phrase in each column can fill the respective blank correctly.)

Ecologists and economists made _____ (i) _____ partners -- indeed, these disciplines have often appeared at odds with, and determined to ignore, each other. As Robert Costanza, the founding president of the International Society for Ecological Economics, acknowledged, "Ecology, as it is currently practiced, sometimes deals with human impacts on ecosystems, but the more common tendency is to stick to 'natural' systems." The modeling of ecological communities or systems seemed purposely to leave out the human economy. At the same time, economists either took for granted or ignored the principles, powers, or forces that ecologists believed
 (ii) _____ the world's natural communities. The market mechanism, or competitive equilibrium, that mainstream economists studied assigned no role to the natural ecosystem. So the new discipline "Ecological economics" seeks to
 (iii) _____ the study of economics within a larger understanding of how ecosystems work.

Blank (i)	Blank (ii)	Blank (iii)
(1) apposite	(4) abnegated	(7) embed
(2) inscrutable	(5) governed	(8) impugn
(3) unlikely	(6) undermined	(9) discountenance

Your Answer:257 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	273
Avg. time spent on this question by all students	180
Difficulty Level	D
Avg. time spent on this question by students who got this question right	160
% of students who attempted this question	42.34
% of students who got the question right of those who attempted	36.07

[Video Solution](#)

[Text Solution](#)

A clue for the first blank is available in the second half of the first sentence – often appeared at odds with, and determined to ignore, each other. And also later on in the paragraph: modelling of ecological communities or systems seemed purposely to leave out the human economy. economists either took for granted or ignored the principles, powers, or forces that ecologists believed. From the list of words available for the first blank, only 'unlikely' can complete it meaningfully. Apposite means apt in the circumstances or in relation to something. Given the context, 'inapt' or 'unsuitable' or 'inapposite' would have conveyed the sense of the idea correctly. 'Inscrutable' means impossible to understand or interpret and is contextually inappropriate. So the correct answer for the first blank is (3).

For the second blank, only 'governed' (regulated or controlled or impacted) will work. One cannot use the word 'undermined' here – one cannot ignore the principles, powers, or forces that ecologists believed undermined the world's natural communities. Undermined means to weaken or to lessen the effectiveness, power, or ability of something. Abnegated means to renounce or reject (something desired or valuable). 'Ignored the principles' has a negative connotation already and so the use of another negative word like 'abnegated' makes the given sentence illogical. The correct answer for the second blank is (5).

The third blank is in the last sentence of the paragraph. The previous sentences of the paragraph have already discussed the limitations of the two independent disciplines – ecology and economics. The objective of the new discipline "Ecological economics" has been provided in the last sentence and it has a positive tone. So we need a positive word for the last blank. The only positive word for the last blank among those provided in the options is 'embed'. 'embed' means to 'fix firmly'. One should not ignore the principles related to the other field but must fix the study of one discipline firmly in the larger context of the other discipline. "Impugn" means to dispute the truth, validity, or honesty of (a statement or motive); call into question. "Impugn" would contradict the given context and is not suitable here. "Discountenance" is totally out of context. It means to refuse to approve of, to find unacceptable or to disturb the composure of. The correct answer for the second blank is (7).

The required answer is 357.

Ans: (357)

undefined

Q14. DIRECTIONS for questions 13 to 15: Each of the questions consists of a paragraph with three blanks. For each blank choose one numbered word/ phrase from the corresponding column of choices that will best complete the text. Key in the appropriate numbers of the words/ phrases for each blank, in the correct sequential order, in the input box given below the question. For example, if you think that words/ phrases labelled (1), (5) and (9) can complete the text correctly, then enter 159 as your answer in the input box. (Note: Only one word/ phrase in each column can fill the respective blank correctly.)

Many parts of India are familiar to us through their overexposure in the travel media, but images of the Taj Mahal bathed in the golden glow of sunrise offer a rather _____ (i) _____ view of a teeming, steaming, wild and wonderful country. This new, marvellous collection of photographs by Henri Cartier-Bresson and Sebastiao Salgado corrects the balance, gathering together images from 150 years to provide a true representation of India's many facets. It explores every aspect of the country's modern history from the demise of the Mughal Empire to the rise of Bollywood. Overall the collection has achieved its aim of _____ (ii) _____ the social and cultural progress of India. An elegant introduction provides a historical narrative to accompany the photographs, while a noted photojournalist explains how the images were selected. Together, these elements form a timely and thought-provoking addition to the ever-expanding _____ (iii) _____ of literature on India.

Blank (i)	Blank (ii)	Blank (iii)
(1) sanitized	(4) imaginatively compartmentalizing	(7) poignancy
(2) unexpurgated	(5) challenging metaphorically	(8) anthology
(3) baleful	(6) charting pictorially	(9) endorsement

Your Answer:368 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	278
Avg. time spent on this question by all students	149
Difficulty Level	M
Avg. time spent on this question by students who got this question right	157
% of students who attempted this question	37.48
% of students who got the question right of those who attempted	12.75

[Video Solution](#)

[Text Solution](#)

Notice the use of 'but' in the first sentence of the paragraph. We are familiar because of overexposure but Hence the first blank needs an opposite sense of 'familiarity' or 'true representation of India's many facets'. 'sanitized' means to make (something) more palatable by removing elements that are likely to be unacceptable or controversial. So images of the Taj Mahal give us a palatable view of India but the new collection of photographs provides the true picture of the good and the 'not so good' aspects of the country. We also get this idea from "corrects the balance" and the examples: the demise of the Mughal Empire to the rise of Bollywood (the whole range of events). 'Sanitized' is the correct answer for the first blank. "unexpurgated" means complete and containing all the original material; uncensored. But the opposite sense is indicated here. Titillating means pleasantly stimulating or exciting (also erotic) and does not fit the blank. The correct answer for the first blank is (1).

Since we are referring to a collection of photographs, the only correct word that can fill the second blank is 'charting pictorially' i.e. exhibiting or representing through pictures. With the depiction through pictures, one cannot 'challenge metaphorically'. Also 'challenge' gives a negative connotation and is inappropriate here. Further, the idea of compartmentalizing the social and cultural progress of the country does not emerge. So (4) and (5) are easy eliminations. The correct answer for the second blank is (6).

The collection of photographs is an addition to the ever-expanding available collection of literature on India. Now the word that could mean 'collection' is 'anthology'. 'Anthology' means "a collection of artistic works that have a similar form or subject, often those considered to be the best". Poignancy (the quality of evoking a keen sense of sadness or regret; pathos) and endorsement (recommendation, approval, backing) do not collocate with 'literature' and are also inappropriate. So, the correct answer for the third blank is (8).

The required answer is 168.

Ans: (168)

undefined

Q15. DIRECTIONS for questions 13 to 15: Each of the questions consists of a paragraph with three blanks. For each blank choose one numbered word/ phrase from the corresponding column of choices that will best complete the text. Key in the appropriate numbers of the words/ phrases for each blank, in the correct sequential order, in the input box given below the question. For example, if you think that words/ phrases labelled (1), (5) and (9) can complete the text correctly, then enter 159 as your answer in the input box. (Note: Only one word/ phrase in each column can fill the respective blank correctly.)

At the individual level, elements of emotional intelligence can be identified, assessed, and upgraded. At the group level, it means fine-tuning the interpersonal dynamics that make groups smarter. At the organizational level, it means revising the value hierarchy to make emotional intelligence a priority – in the concrete terms of hiring, training and development, performance evaluation, and promotions. At the corporate level, emotional intelligence is no _____ (i) _____, no guarantee of more market share or a healthier bottom line. The ecology of a corporation is extraordinarily _____ (ii) _____ and complex, and no single intervention or change can fix every problem. But, as the saying goes, "It's all done with people," and if the human _____ (iii) _____ is ignored, then nothing else will work as well as it might. In the years to come, companies in which people collaborate best will have a competitive edge.

Blank (i)	Blank (ii)	Blank (iii)
(1) mean feat	(4) stochastic	(7) overstatement
(2) magic bullet	(5) unimpeachable	(8) ingredient
(3) avowal	(6) ostensive	(9) triteness

Your Answer:248 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	139
Avg. time spent on this question by all students	127
Difficulty Level	D
Avg. time spent on this question by students who got this question right	131
% of students who attempted this question	31.92
% of students who got the question right of those who attempted	21.85

[Video Solution](#)

[Text Solution](#)

The paragraph discusses the application of emotional intelligence at the individual, group and organisational level. At the corporate level, Emotional intelligence is no guarantee of success? (a negative connotation). Hence we can use the term 'magic bullet'. Magic bullet means a medicine or other remedy with advanced or highly specific properties (panacea, quick-fix, solution). So 'emotional intelligence' is no remedy or antidote. Now 'mean feat' and 'avowal' cannot fit the first blank. 'No mean feat' is an idiom which means a laudable triumph of great difficulty.... Avowal means an open declaration, a statement in which you say or admit something that you believe, support, or intend to do. The correct answer for the first blank is (2).

The ecology of a corporation is extraordinarily complex, and no single intervention or change can fix every problem. This means that the ecology of a corporation is fluid or flexible or 'constantly changing'. Now, 'stochastic' means having a random probability distribution or pattern that may be analysed statistically but may not be predicted precisely and this word comes closest to the idea of 'fluidity' or 'flexibility' needed for the second blank. Unimpeachable means not able to be doubted, questioned, or criticized; entirely trustworthy. 'Unimpeachable' cannot be used to describe the ecology of a corporation and also does not provide the correct sense of 'fluid'. In fact, it provides an opposite sense of 'fluid'. 'Ostensive' means obviously or manifestly or directly demonstrative and is also incorrect. The correct answer for the second blank is (4).

The middle of the paragraph tells us that emotional intelligence is no guarantee but if the human angle or element is ignored, then nothing else will work as well as it might. Now, the word closest to 'human element' is 'human ingredient'. 'Ingredient' means component or element. 'overstatement' or 'exaggeration' or 'overemphasis' is contextually incorrect. 'triteness' means lacking in freshness or effectiveness because of constant use or excessive repetition; hackneyed; stale. The use of 'overstatement' and "triteness" is unwarranted here. The correct answer for the last blank is (8).

The required answer is 248.

Ans: (248)

undefined

Q16. DIRECTIONS for questions 16 to 18: In each of the following questions, the phrase in bold is used in four different sentences. Select the option in which the usage of the phrase is CORRECT or APPROPRIATE as your answer.

Sine qua non

- a) Bill was asked by his professor to submit his assignment before the 10th of the month, sine qua non.
- b) **The politician contesting in the elections knew that repairing the roads was a sine qua non for his victory.**
- c) **Overspeeding on a public road is a sine qua non for the traffic cops pulling you over.**
- d) **The initial sales of the phone has been impressive, which makes its failure a sine qua non.**

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	52
Avg. time spent on this question by all students	92
Difficulty Level	D
Avg. time spent on this question by students who got this question right	91
% of students who attempted this question	26.26
% of students who got the question right of those who attempted	64.4

[Video Solution](#)

[Text Solution](#)

Sine qua non means something absolutely indispensable or essential. The most common usage is of the form – A is a sine qua non for B implying A is essential for B.

Option A: The usage of the phrase in this sentence is incorrect. Submitting the assignment before the deadline might be a sine qua non (essential) for getting good grades. But using sine qua non to mean 'without fail' is incorrect.

Option B: The politician contesting in the elections knew that repairing the roads was essential for his victory. This statement is correct in terms of the usage of sine qua non.

Option C: Overspeeding might lead to traffic cops pulling you over. However, overspeeding is not necessarily essential for traffic cops to pull you over. Hence, this statement is incorrect.

Option D: If the initial sales were impressive, its failure is less likely. However, the statement seems to imply that its failure is essential, which makes this sentence incorrect.

Therefore, the correct answer is option B.

Choice (B)

undefined

Q17. DIRECTIONS for questions 16 to 18: In each of the following questions, the phrase in bold is used in four different sentences. Select the option in which the usage of the phrase is CORRECT or APPROPRIATE as your answer.

Carte blanche

- a) The new manager was given carte blanche by her employers so she could steer the company in a new direction.
- b) **The citizens of the city had carte blanche of preordained laws to protect their individual freedom.**
- c) **The Constitution is a carte blanche mechanism to deal with every kind of situation in society.**
- d) **The foundations of the American society are firmly entrenched in the carte blanche of their freedom struggle.**

You did not answer this question

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	70
Difficulty Level	D
Avg. time spent on this question by students who got this question right	68
% of students who attempted this question	23.61
% of students who got the question right of those who attempted	66.02

[Video Solution](#)

Text Solution

Carte blanche means full discretionary power/complete freedom to act as one wishes. Option A: The manager was given full discretionary powers to take the company in a new direction. Here the manager being given complete freedom fits the context. Hence, Option A is the answer.

Option B: 'Carte blanche of preordained laws' is not a logical construction because having complete freedom contradicts the meaning of 'preordained' laws.

Option C: Carte blanche is used as an adjective here, which is incorrect. It is used as a noun. Also, carte blanche mechanism is an illogical construction.

Option D: Carte blanche of its freedom struggle is an illogical construction since freedom struggle having complete discretion doesn't make sense.

Therefore, the correct answer is option A.

Choice (A)

undefined

Q18. DIRECTIONS for questions 16 to 18: In each of the following questions, the phrase in bold is used in four different sentences. Select the option in which the usage of the phrase is CORRECT or APPROPRIATE as your answer.

Prima facie

- a) The more John looked at his fiancé the more he thought her beauty prima facie ethereal.
- b) **Many managers consider diligence a prima facie for an employee's success.**
- c) Jhansi, the leading singer of the band, was considered by many to be the band's prima facie. Your answer is incorrect
- d) The attorney had a look at the agreement and found it prima facie valid.

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	45
Avg. time spent on this question by all students	59
Difficulty Level	D
Avg. time spent on this question by students who got this question right	61
% of students who attempted this question	38.63
% of students who got the question right of those who attempted	50.51

[Video Solution](#)

[Text Solution](#)

Prima facie means at first sight or at first glance.

Option A: The more John looked at his fiancé the more he thought her beauty at first sight ethereal. This statement does not make logical sense. When he looked at her first, he could have found her beauty prima facie ethereal. But this sentence contradicts itself by using the word prima facie. Hence, this is not the correct answer.
 Option B: Prima facie does not mean primary characteristic/necessity/pre-requisite as this statement seems to imply. Hence, this is not the correct answer.
 Option C: The leading singer of the band can be considered a prima donna but not a prima facie. Choice C is incorrect.
 Option D: The attorney found the agreement to be valid at first glance. This statement uses the phrase with its correct meaning.
 Hence, the correct answer is option D.

Choice (D)

undefined

Q19. DIRECTIONS for questions 19 to 21: Five sentences (labelled a, b, c, d, e) are given in each of the following questions out of which one sentence is highlighted in bold. Figure out the most logical order of the sentences that constructs a coherent paragraph and then **enter, in the input box given below the question, the number corresponding to the sequential position of the highlighted sentence in the coherent paragraph.** (For example, if the highlighted sentence is placed fourth in the paragraph after the sentences have been rearranged, then enter 4 as your answer in the input box.)

- a. **But advocates of the Iron Cross argue that the honour predates the Third Reich by 120 years.**
- b. The traditional Iron Cross is usually tainted by association with the Nazi era.
- c. A more gentle approach is being tried by the Association of Military Reservists which says that the important thing is not the Iron Cross, but the principle of a bravery medal to bring German troops into line with the soldiers from other countries serving alongside them.
- d. Hitler awarded his version of it – complete with a swastika stamped in its centre – to thousands of those who committed atrocities across Europe.
- e. A petition to the German parliament to revive the Iron Cross last year gathered more than 5,000 votes even as the Central Council of Jews in Germany objected strongly to its revival.

Your Answer:3 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	308
Avg. time spent on this question by all students	184
Difficulty Level	D
Avg. time spent on this question by students who got this question right	175
% of students who attempted this question	44.99
% of students who got the question right of those who attempted	30.26

[Video Solution](#)

[Text Solution](#)

On a careful reading of the sentences, it can be observed that sentence 'b' is a general sentence that can begin the paragraph. It establishes the background of the story: the Iron Cross is usually associated with the Nazi era. Sentence 'b' is followed by sentence 'd'. The pronoun 'it' in sentence 'd' refers to the 'Iron Cross'. 'Hitler' and 'swastika' in sentence 'd' refer to 'the Nazi era' in sentence 'b'. So sentence 'd' follows sentence 'b'. Sentence 'a' which has the contrast conjunction 'but' follows sentence 'd'. "the honour predates the Third Reich by 120 years" in sentence 'a' contradicts "usually tainted by association with the Nazi era" given earlier in sentence 'b'. Sentence 'e' brings in a new idea 'revive the Iron Cross last year' and follows sentence 'a'. So, bdae. Sentence 'c' follows sentence 'e' and concludes the para. "A more gentle approach" in sentence 'c' contrasts 'objected strongly to its revival' in sentence 'e'. Hence, bdaec. Now, sentence 'a' which is the highlighted sentence comes third in sequence in the coherent paragraph. So, the required answer is 3. Ans: (3)

undefined

Q20. DIRECTIONS for questions 19 to 21: Five sentences (labelled a, b, c, d, e) are given in each of the following questions out of which one sentence is highlighted in bold. Figure out the most logical order of the sentences that constructs a coherent paragraph and then enter, in the input box given below the question, the number corresponding to the sequential position of the highlighted sentence in the coherent paragraph. (For example, if the highlighted sentence is placed fourth in the paragraph after the sentences have been rearranged, then enter 4 as your answer in the input box.)

- a. China is the world's biggest market for these flash-fried snacks infused with monosodium glutamate (MSG), a chemical that makes flavourless food more palatable.
- b. It is less a sign that China's long consumer boom is waning than that Chinese tastes are changing; the volume of instant noodles gobbled last year fell by 12.5%.
- c. **Now comes news of a nasty noodle meltdown.**
- d. Locals are known to slurp down over 40 billion packets each year.
- e. Soaring sales of instant noodles have for years been a reliable indicator of the insatiable appetites of China's rising consumer class.

Your Answer:4 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	88
Avg. time spent on this question by all students	124
Difficulty Level	M
Avg. time spent on this question by students who got this question right	125
% of students who attempted this question	49.29
% of students who got the question right of those who attempted	54.31

[Video Solution](#)

Text Solution

On a careful reading of the sentences, it can be observed that sentence 'e' is a general sentence that can begin the paragraph. It has the introductory words 'have for years been'. It introduces the topic of discussion: Soaring sales of instant noodles are an indicator of the insatiable appetites of China's rising consumer class. Sentences 'e' and 'a' form a mandatory pair. "insatiable appetites of China's rising consumer class" in sentence 'e' links with "China is the world's biggest market for these flash-fried snacks" in sentence 'a'. Sentence 'd' furthers the discussion and follows sentence 'a'. So, sentence 'e' (soaring sales) is followed by sentence 'a' (world's biggest market) which is followed by sentence 'd' (locals are known to slurp down). Sentence 'c' paints a negative picture by talking about a current scenario. "nasty noodle meltdown" in sentence 'c' contrasts "soaring sales", "world's biggest market" and "locals are known to slurp down" given in sentences 'e', 'a' and 'd'. Sentences 'c' and 'b' form a mandatory pair. "nasty noodle meltdown" in sentence 'c' is substantiated by "Chinese tastes are changing (rather than 'China's long consumer boom is waning') and "volume of instant noodles gobbled last year fell by 12.5%" in sentence 'b'. So, eadcb. Now, sentence 'c' which is the highlighted sentence can be sequentially placed at the fourth position. Since sentence 'c' comes fourth in sequence in the coherent paragraph, the required answer is 4.

Ans: (4)

undefined

Q21. DIRECTIONS for questions 19 to 21: Five sentences (labelled a, b, c, d, e) are given in each of the following questions out of which one sentence is highlighted in bold. Figure out the most logical order of the sentences that constructs a coherent paragraph and then **enter, in the input box given below the question, the number corresponding to the sequential position of the highlighted sentence in the coherent paragraph.** (For example, if the highlighted sentence is placed fourth in the paragraph after the sentences have been rearranged, then enter 4 as your answer in the input box.)

- a. This helped mobile telephony to get going, and thereafter provided a mechanism for persuading consumers to keep on trading their old phones for ever more sophisticated new ones.
- b. **However, now that most mobile devices can connect through Wi-Fi, their SIM cards no longer seem quite so indispensable.**
- c. For as long as wireless networks carried mostly voice calls, SIMs worked well; their chips are hard to hack: prying them open to get at the stored information can make them self-destruct.
- d. The job of the SIM (subscriber identity module) is to store some unique numbers and an encryption key, which are used to identify the subscriber when the device is communicating with the network.
- e. Since only mobile operators were allowed to issue SIMs, and were given much leeway over the terms on which they did so, they were able to create monthly payment schemes which subsidized the upfront cost of a handset.

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

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	220
Avg. time spent on this question by all students	124
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	126
% of students who attempted this question	44.37
% of students who got the question right of those who attempted	57.03

[Video Solution](#)

Text Solution

On a careful reading of the sentences, it can be observed that sentence 'd' is a general sentence that can begin the paragraph. The remaining sentences need a precedent and more substantiation. It introduces the topic of discussion: The job of the SIM. Sentence 'd' is followed by sentence 'c'. "identify the subscriber when the device is communicating with the network" in sentence 'd' links with "for as long as wireless networks carried mostly voice calls" in sentence 'c'. Sentence 'c' is followed by sentence 'e' as sentence 'e' continues the discussion of why SIMs worked well. Sentences 'e' and 'a' form a mandatory pair. "create monthly payment schemes which subsidized the upfront cost of a handset" in sentence 'e' links with "consumers to keep on trading their old phones for ever more sophisticated new ones" and "helped mobile telephony to get going" in sentence 'a'. So sentence 'a' follows sentence 'e'. Sentence 'b' which bring in a negative aspect is a standalone sentence which can be best placed at the end of the paragraph. "However, now that most mobile devices can connect through Wi-Fi, their SIM cards no longer seem quite so indispensable" in sentence 'b' seems to contradict "For as long as wireless networks carried mostly voice calls, SIMs worked well" in sentence 'c'. So, dceab. Now, sentence 'b' which is the highlighted sentence can be sequentially placed at the fifth position i.e. at the end of the paragraph. Since sentence 'b' comes fifth in sequence in the coherent paragraph, the required answer is 5.

Ans: (5)

undefined

Q22. DIRECTIONS for questions 22 to 24: Five sentences are given with a blank in the following question. Four words are also given below the sentences. The blank in each sentence can be filled by one or more of the five words given. Each word can go into any number of sentences. Note that the sentence can change contexts depending on the use of different words which can be appropriate. **Identify the number of sentences each word can go into and enter the maximum number of sentences that any word can fit in.** For example, if you think that a word goes into a maximum of three sentences, then enter 3 as your answer in the input box given below the question.

- i. The college students who were creating a scene became _____ when they were threatened with severe punishment.
- ii. The prime minister of the country realized that the people became more _____ when they thought there was a definite threat of war.
- iii. The prisoner of war became _____ after he was given a sedative.
- iv. I have always found dogs to be _____ when treated with loving kindness.
- v. The natives could not be easily manipulated because of an intelligent, _____ disposition.

- (A) tractable
- (B) kind
- (C) calm
- (D) gentle

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

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	133
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	149
% of students who attempted this question	47.28
% of students who got the question right of those who attempted	29.37

[Video Solution](#)

[Text Solution](#)

The word 'tractable' means easily managed or controlled; governable; malleable. It will fit in sentences i, ii, iii and iv.
The word 'kind' does not fit in sentences iii and iv.
The word 'calm' does not fit in sentence ii.
The word 'gentle' does not fit in sentence iii.
Since the word 'tractable' fits in a maximum of four sentences, the correct answer is 4.
Ans: (4)

undefined

Q23. DIRECTIONS for questions 22 to 24: Five sentences are given with a blank in the following question. Four words are also given below the sentences. The blank in each sentence can be filled by one or more of the five words given. Each word can go into any number of sentences. Note that the sentence can change contexts depending on the use of different words which can be appropriate. **Identify the number of sentences each word can go into and enter the maximum number of sentences that any word can fit in.** For example, if you think that a word goes into a maximum of three sentences, then enter 3 as your answer in the input box given below the question.

- i. The senator's admission of indulging in corrupt practices and licentious behaviour brought him much _____ and ended his political career.
- ii. The lack of donations is the _____ that caused many NGOs in Karimnagar to reduce the number of services to the marginalized and the disadvantaged.
- iii. His stories were always characterized by _____ and the bored audience would seldom remain till the end of his talks.
- iv. The king's incurable _____ caused turmoil in his court.
- v. The approach of the CAT examination gives _____ to an aspirant's preparation.

- (A) vacillation
(B) vapidly
(C) obloquy
(D) impetus

Your Answer:2 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	78
Avg. time spent on this question by all students	53
Difficulty Level	D
Avg. time spent on this question by students who got this question right	66
% of students who attempted this question	26.27
% of students who got the question right of those who attempted	38.18

[Video Solution](#)

[Text Solution](#)

The word 'vacillation' means 'waver', fluctuate, sway, to be undecided between different courses of action or opinion. The word 'vacillation' will best fit in sentence 'iv'.
The word 'vapidity' means lacking liveliness, animation, or interest; dull. The word 'vacillation' will best fit in sentence 'iii'.
The word 'obloquy' means bad repute, the condition of disgrace suffered as a result of abuse or vilification. The word best fits in sentence 'i'.
The word 'impetus' means increased activity in response to a stimulus. This word best fits in sentences 'ii' and 'v'.
Since the word 'impetus' fits in a maximum of two sentences, the correct answer is 2.
Ans: (2)

undefined

Q24. DIRECTIONS for questions 22 to 24: Five sentences are given with a blank in the following question. Four words are also given below the sentences. The blank in each sentence can be filled by one or more of the five words given. Each word can go into any number of sentences. Note that the sentence can change contexts depending on the use of different words which can be appropriate. **Identify the number of sentences each word can go into and enter the maximum number of sentences that any word can fit in.** For example, if you think that a word goes into a maximum of three sentences, then enter 3 as your answer in the input box given below the question.

- i. All radars are programmed to _____ the satellite's progress across the stratosphere.
- ii. Meteorologists _____ an active hurricane season because of warmer ocean-surface temperatures.
- iii. The new principal of the college thought it necessary to _____ regular tests for students.
- iv. The ideological group is driven by local grievances yet has global aspirations, helping to _____ rebellion in such troubled places as northern Nigeria and Yemen.
- v. It is difficult to _____ the movement of stocks in the share market without using fundamental and technical indicators.

- (A) track
- (B) stoke
- (C) predict
- (D) mandate

Your Answer:3 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	140
Avg. time spent on this question by all students	85
Difficulty Level	D
Avg. time spent on this question by students who got this question right	76
% of students who attempted this question	42.43
% of students who got the question right of those who attempted	37.64

[Video Solution](#)

[Text Solution](#)

The word 'track' can fit in sentences i and v.
The word 'stoke' can fit in sentence iv.
The word 'predict' can fit in sentences i, ii and v.
The word 'mandate' can fit in sentence iii.
Since the word 'predict' fits in a maximum of three sentences, the correct answer is 3.
Ans: (3)

undefined

Q25. DIRECTIONS for questions 25 to 27: Each of the following questions has a paragraph which is followed by four alternative summaries. Choose the alternative that best captures the essence of the paragraph.

The apotheosis of the pop in postmodernism art marked a whole new marriage between high and low art. For the artistic viability of postmodernism was a direct consequence, again, not of any new facts about art, but of facts about the new importance of mass commercial culture. We seem no longer united so much by common beliefs as by common images: what binds us became what we stand witness to. Nobody sees this as a good change.

- a) Postmodernism is a blend of high and low art, which enhanced its commercial value albeit lowering its image.
- b) **Postmodernism art as a union of high and low art became viable because of the replacement of what we believe with what we witness.**
- c) **The infusion of mass commercial culture into postmodernism art has enhanced the former's artistic viability, an unwelcome change.**
- d) **What we see now binds us more than what we believe and the amalgamation of pop with postmodernism art made postmodernism viable.** Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	214
Avg. time spent on this question by all students	165
Difficulty Level	D
Avg. time spent on this question by students who got this question right	166
% of students who attempted this question	32.65
% of students who got the question right of those who attempted	30.48

[Video Solution](#)

[Text Solution](#)

Consider the para: The **apotheosis** (elevation) of the pop in postmodernism art **marked a whole new marriage** between **high and low art**. For the **artistic viability** of post-modernism **was a direct consequence**, again, not of any new facts about art, but **of facts about the new importance of mass commercial culture**. We seem no longer united so much by common beliefs as by common images: **what binds us became what we stand witness to. Nobody sees this as a good** change.

Introduction – Pop in postmodernism art is the culmination of high and low art.

Elaboration – The artistic viability (popularity/feasibility, etc.) is a consequence of growing importance of mass commercial culture.

Conclusion – What we witness binds us (and now what we believe in) but this is not a good(welcome) change.

Option A: Postmodernism is a blend of high and low art (the first half has been depicted here), which enhanced its commercial value albeit lowering its image. (the commercial value has not been discussed. Only the 'artistic' viability was discussed. 'Commercial' was used with respect to mass culture's objectives in the elaboration part. Hence, Option A is not the answer.

Option B: Postmodernism art as a union of high and low art (this is the introduction of the para depicted fairly accurately) became more feasible (this can be understood from the statement stub – '**the artistic viability of post-modernism was a direct consequence**' – meaning postmodernism became more viable because of the new importance of mass commercial culture) because of the replacement of what we believe with what we witness. Option B is the answer.

Option C: The infusion of mass commercial culture into postmodernism art has enhanced **the former's artistic viability**, an unwelcome change. This is one of the easier options to eliminate. The former here refers to mass commercial culture. According to the passage, the artistic viability of postmodernism was the consequence of increase in importance of mass commercial culture. Mass commercial culture's artistic viability has not been spoken about. Hence, Option C is not the answer.

Option D: What we see now binds us more than what we believe and the amalgamation of pop with postmodernism art **made postmodernism more feasible**. What became more feasible according to this option – the shift from what we believe binding us to what we see binding us. That shift has become more feasible because of amalgamation of pop with postmodernism art. According to the passage, that amalgamation has led to artistic feasibility of postmodernism **because** what we see now binds us (this is the cause and not the effect). Option D is not the answer.

Choice (B)

undefined

Q26. DIRECTIONS for questions 25 to 27: Each of the following questions has a paragraph which is followed by four alternative summaries. Choose the alternative that best captures the essence of the paragraph.

The concept of personal rights and freedoms that guides our legal institutions is outdated. It is built on a model of a free individual who enjoys an untouchable inner life. Now, though, our thoughts can be invaded before they have even been developed – and in a way, perhaps this is nothing new. The Nobel Prize-winning physicist Richard Feynman used to say that he thought with his notebook. Without a pen and pencil, a great deal of complex reflection and analysis would never have been possible. If the extended mind view is right, then even technologies such as those used in the smartphone would merit recognition and protection as a part of the essential toolkit of the mind.

- a) While there is legal protection for a free individual's rights and freedoms, the laws have not evolved enough to protect those technologies which are just an extension of our mind.
- b) Our smartphone is just an extension of our mind and hence merits protection and recognition just the same way as legal institutions protect personal rights and freedoms.
- c) The idea of a free individual with a private inner life has been rendered obsolete by technologies which are just extensions of our mind, and there are no laws to protect them.
- d) Complex reflection is impossible without a technological toolkit acting as an extension of the mind and the legal system based on an obsolete concept of individual freedom must be enhanced to protect the same. Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	189
Avg. time spent on this question by all students	169
Difficulty Level	D
Avg. time spent on this question by students who got this question right	168
% of students who attempted this question	35.97

Time spent / Accuracy Analysis

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

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

Ideas mentioned in the para:

1. The legal system is based on the concept of individual freedom.
2. This legal system is outdated because it doesn't protect the technologies like smartphones.
3. These technologies make complex reflection possible.
4. By virtue of being an extension of our mind, the law should be extended to protect these technologies as well.

Option A: While there is legal protection for a free individual's rights and freedoms (this is point 1), the laws have not evolved enough (point 2 about the laws being outdated) to protect those technologies which are just an extension of our mind (Point 4). This option misses out on Point 3. Hence, Option A doesn't represent the essence of the para in the best possible way.

Option B: Our smartphone is just an extension of our mind and hence merits protection and recognition (Point 4) just the same way as legal institutions protect personal rights and freedoms (Point 1). The second and third sub-idea have not been mentioned in this option. Hence, Option B is not the best possible essence.

Option C: The idea of a free individual with a private inner life has been rendered obsolete by technologies - The underlined portion is incorrect. The idea of a free individual with a private inner life has not been made obsolete by technology. (If that were the case, technology is being portrayed in a negative light, which is not what the para seems to do.) The concept of personal rights and freedoms that guides our laws is obsolete and that too, because it doesn't consider technologies, which are nothing but extensions of our minds. Hence, Option C is not the answer.

Option D: Complex reflection is impossible without a technological toolkit acting as an extension of the mind (Point 3) and the legal system based on an obsolete concept of individual freedom (Point 1 & 2) must be enhanced to protect the same. (Point 4). All the points have been covered. Hence, Option D best represents the essence of the para.

Choice (D)

undefined

Q27. DIRECTIONS for questions 25 to 27: Each of the following questions has a paragraph which is followed by four alternative summaries. Choose the alternative that best captures the essence of the paragraph.

When Thomas Steitz, Ada Yonath, and Venkatraman Ramakrishnan were jointly awarded the Nobel Prize in Chemistry for their research, in 2009, they acknowledged a debt. Without the work of two of the Physics Laureates that year, the chemists would have lacked the CCD detectors, or high-quality imaging hardware, they used to model and image ribosomes, sites of protein synthesis within a cell. Collaboration in science has become commonplace today, and we're seeing the benefits. But many of its fruits are unintended. As Ramakrishnan points out, inventions in one discipline can build on – and spur – basic research in many others, often unwittingly. It's a virtuous cycle, and scientists take joy in exploiting all of it. "Scientists are very promiscuous," he says, "and the good ones are the most promiscuous."

- a) Collaboration has unexpected windfalls in that inventions in one discipline of science trigger research in other disciplines, and good scientists know how to exploit that.
- b) There is a certain level of promiscuity that good scientists involve in when they unwittingly exploit inventions in other disciplines for their own gain.
- c) Scientists can find success only by willingly exploiting developments in other disciplines of science.
- d) Nobel Prize winners often benefit from pathbreaking work in other disciplines of science and it is only justified that they acknowledge the debt of collaboration.

You did not answer this question

[Show Correct Answer](#)**Time spent / Accuracy Analysis**

Time taken by you to answer this question

39

Avg. time spent on this question by all students

130

Difficulty Level

MAvg. time spent on this question by students who got this question right **126**

% of students who attempted this question

37.59

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

73[Video Solution](#)

[Text Solution](#)

Ideas mentioned in the para:

1. Collaboration is important and common in science.
2. However, not all consequences are intentional.
3. Developments in one field trigger developments in another, unintentionally.
4. Good scientists are promiscuous enough to exploit all those developments.

Option A: **Collaboration** (Point 1) has **unexpected windfalls** (Point 2) in that **inventions in one discipline of science trigger research in other disciplines** (Point 3), and **good scientists know how to exploit that** (Point 4). All the ideas have been represented in the passage. Hence, Option A is the answer.

Option B: Only point 4 is mentioned. Also, good scientists don't exploit developments 'unwittingly'. They do it deliberately. Hence, Option B is easy to eliminate.

Option C: There is misrepresentation of information because of the dependency of the two events. Good scientists exploit developments in science. We cannot reverse it to say scientists can find success only by exploiting developments. Hence, Option C can be eliminated.

Option D: Narrowing the moral down to just Nobel Prize winners is incorrect. Also, the para changes the essence and focuses on how acknowledging the importance of other developments is more important. The idea of the para was not the importance of acknowledgment (it was only mentioned as part of an example) but the importance of collaboration. Hence, Option D is not the answer.

Choice (A)

undefined

Q28. DIRECTIONS for questions 28 to 30: Read each of the following paragraphs and answer the question given below it.

When asked to account for the cultural backwardness of Aboriginal Australians, many white Australians have a simple answer: supposed deficiencies of the Aborigines themselves. How else can one account for the fact that white English colonists created a literate, food-producing, industrial democracy within a few decades of colonizing a continent whose inhabitants after more than 40000 years were still nonliterate hunter-gatherers. It seems like a perfectly controlled experiment in evolution of human societies. The continent was the same; only the people were different. The explanation for the differences between Native Australian and European-Australian societies must lie in the different people composing them. The logic behind this racist conclusion appears compelling. However, it contains a simple error.

Which of the following, if true, most likely highlights that error?

- a) Aboriginal Australians never had any outside contact that could have accelerated their evolution.
- b) **Australia's aridity, infertility, and climatic unpredictability limited its hunter-gatherer population to only a few hundred thousand compared with tens of millions of people in more innovative cultures.**
- c) **Australia's resource unpredictability forced aboriginal Australians to practise nomadism and hunter-gatherer lifestyle, and minimal investment in shelter and possessions.**
- d) **The Europeans who colonized Australia imported all of the elements – livestock, crops, technology, writing, germs – from outside Australia, elements which were end products of 10000 years of development of all cultures.**

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	170
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	158
% of students who attempted this question	26.38
% of students who got the question right of those who attempted	49.98

[Video Solution](#)

[Text Solution](#)

The underlying logic of the racist explanation is that in the same land, colonists were able to create an evolved society whereas Aborigines living there for thousands of years couldn't.
Option A: This will be the error, only if the underlying assumption is that 'outside contact' is what increases the chances of evolution, and the colonists once they arrived had outside contact, which has not been mentioned in the passage. Also, accelerated the evolution – signifies there was an evolutionary process in place. Option A doesn't highlight the flaw.

Option B: This will be the error, only if the underlying assumption is that the colonists were more in number than the present native population. However, numbers have not been mentioned in the para. Hence, Option B is not the answer.
Option C: This indicates that the Aborigines couldn't get around the constraints of their environment, which strengthens the racist logic that colonists who came in could do better than natives. Hence, Option C is not the answer.

Option D: This option states that the assumption that the colonists were racially superior is flawed. They cannot be credited for doing in a few decades what the Aborigines couldn't do in thousands of years. That is because they may not have really done anything excepting using what was already available to them from the outside world. This is the flaw in the racist logic.

Option D and Option A are particularly close, and one needs to understand that while D directly talks about importing whatever is a sign of evolution, A only talks about 'outside contact', which is vague and doesn't really demonstrate the nature of the flaw in the racist logic.

Choice (D)

undefined

Q29. DIRECTIONS for questions 28 to 30: Read each of the following paragraphs and answer the question given below it.

A large group of students were each given a headset and told that a company making high-tech headphones wanted to test how well they worked when the listener was in motion or moving his or her head. All of the students listened to the same songs and then heard a radio editorial arguing that tuition at their university should be raised from its present level of \$587 to \$750. A third was told that while they listened to the taped radio editorial they should nod their heads vigorously up and down, an action usually associated with approval; the next third to shake their heads from side to side, an action usually associated with refusal; the final third to keep their heads still. Later, the students were given a questionnaire asking them questions about the quality of the songs and effect of the shaking on the quality. Slipped in at the end was the question the experimenters really wanted an answer to: "What do you feel would be an appropriate dollar amount for undergraduate tuition per year?"

Which of the following combinations of statements, if true, would point to a conclusion that the mere act of nodding their head or shaking their head would positively or adversely affect their estimation of the persuasiveness of the radio editorial, respectively?

- I. Those who were told to nod their heads wanted the tuition to rise to \$646, on average.
- II. Those who were told to nod their heads wanted the tuition to fall on average to \$467 a year.
- III. Those who were told to shake their heads wanted the tuition to rise to \$646, on average.
- IV. Those who were told not to move their heads on an average guessed that \$585 would be appropriate for the tuition, just about where the tuition was already.

a) I and IV Your answer is correct

b) I, III, and IV

c) III and IV

d) II and IV

Time spent / Accuracy Analysis

Time taken by you to answer this question	342
Avg. time spent on this question by all students	194
Difficulty Level	D
Avg. time spent on this question by students who got this question right	187
% of students who attempted this question	19.76
% of students who got the question right of those who attempted	68.77

[Video Solution](#)

Text Solution

The conclusion is that the head movement affected the perception of the survey-taker towards the radio editorial. Those who were nodding their head (associated with approval) should agree with the radio editorial (if the conclusion is to be true) and hence accept a higher tuition fee. Similarly, those who were shaking their head side to side (associated with refusal) should go against raising the tuition fee. The control group (those who weren't shaking their head) should not ask for increase or decrease in the tuition fee – however, just the control group's data will not suffice to prove the conclusion, as it is possible that they don't change their opinion in any of the three cases. We need a combination of control group data and another option where either nodding led to agreement to raising the fee or shaking of head led to disagreement with the radio editorial.

- I. Those who were told to nod should agree for a raise in the tuition fee. This statement fits the intended conclusion.
- II. Those who were told to nod should agree for a raise in the tuition fee. In this statement, they want the tuition fee to fall, contradicting the conclusion. Hence, this statement cannot support the conclusion. II shouldn't be part of the answer.
- III. Those who were asked to shake their head side to side should refuse the proposal in the radio editorial if the conclusion were to be true. However, according to the option they want a raise, which means they agree with the radio editorial. This contradicts the conclusion. III shouldn't be part of the answer.
- IV. This represents information about the control group which doesn't help in ascertaining the conclusion directly but is needed to ascertain that nodding/shaking the head actually produced a different result from the one produced when not shaking the head. Hence, IV should be part of the answer.

Option A gives us a combination of I and IV.

Choice (A)

undefined

Q30. DIRECTIONS for questions 28 to 30: Read each of the following paragraphs and answer the question given below it.

It's perhaps ironic that Fermat's greatest fame rests on a theorem that he almost certainly didn't prove. He apparently claimed a proof and the result is now known to be true, but the verdict of history is that the methods available to him weren't up to the task. His claim to possess a proof exists only as a marginal note in a book, which doesn't even survive as an original document, so it could have been made prematurely. In mathematical research it's not unusual to wake up in the morning convinced you've proved something important only to see the proof evaporate by noon when you find a mistake.

Which of the following, if proven to be true, would strengthen the case for Fermat proving his most famous theorem?

- a) Laws needed to prove Fermat's theorem were developed after Fermat's death.
- b) Fermat had access to advanced methods which weren't recorded anywhere.
- c) The marginal note thought to be Fermat's claim to possess a proof is not in Fermat's handwriting.
- d) Fermat was known to find mistakes, later, in mathematical theorems he managed to prove earlier. Your answer is incorrect

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	153
Avg. time spent on this question by all students	167
Difficulty Level	M
Avg. time spent on this question by students who got this question right	155
% of students who attempted this question	32.68
% of students who got the question right of those who attempted	58.41

[Video Solution](#)

Text Solution

Option A: This shows that Fermat couldn't possibly have proven his theorem. Hence, Option A does not strengthen the case for his proving the theorem. Option A is not the answer.

Option B: This shows that 'verdict of history is that the methods available to him weren't up to the task' doesn't hold water, and that it is possible Fermat had a proof, because we cannot judge whether he really had the methods he needed to prove the theorem. Hence, Option B strengthens Fermat's case for his proving the theorem. Option B is the answer.

Option C: This shows that the evidence cited to strengthen Fermat's case may not even be his claim, and could be someone else's. Hence, Option C does not strengthen the case for his proving the theorem. Option C is not the answer.

Option D: This shows that Fermat may not have been able to prove his theorem at the point of time of developing it, because he often found mistakes later. Hence, Option D is not the answer, as it does not strengthen the case for his proving the theorem.

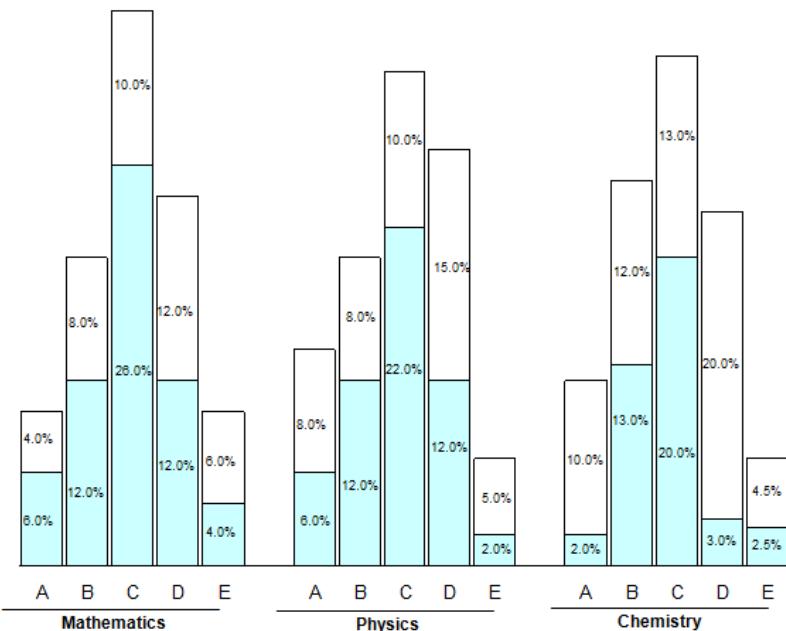
Choice (B)

undefined

DIRECTIONS for questions 1 to 5: Answer the questions on the basis of the information given below.

The students in a college study different subjects among Mathematics, Physics and Chemistry. In each subject, every student receives a grade among A, B, C, D, and E. The number of students that studied Mathematics, Physics and Chemistry during a certain year was 150, 200, and 200 respectively. The cluster bar-chart given below shows the percentage wise split up of the students studying each subject according to the grades received by them. The area shaded white in each bar gives the percentage of students who received the same grade in at least one other subject. The area shaded grey in each bar gives the percentage of students who received that grade only in that subject. Further, the following information is known:

- Any student who receives the same grade in all the three subjects is considered to be *consistent* in that grade.
- The number of students who were *consistent* in a grade is a distinct natural number for each grade.



For example: 12% of the students who studied Mathematics received a 'B' grade in that subject and only in that subject, while 8% of the students who studied Mathematics received a 'B' grade in that subject and in at least one other subject.

Q1. DIRECTIONS for question 1 to 3: Type in your answer in the input box provided below the question.

How many students are *consistent* in grade A?

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

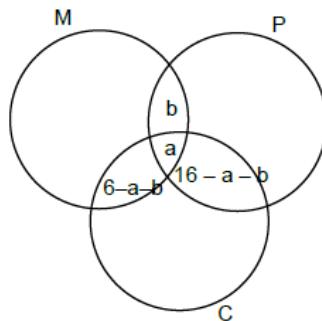
Time taken by you to answer this question	37
Avg. time spent on this question by all students	407
Difficulty Level	D
Avg. time spent on this question by students who got this question right	520
% of students who attempted this question	26.51
% of students who got the question right of those who attempted	11.06

[Video Solution](#)

[Text Solution](#)

From the graph we can find out that 6 students received an A in Mathematics and at least one other subject, 16 students got an A in Physics and at least one other subject, and 20 students got A in Chemistry and at least one other subject.

Let a be the number of students *consistent* in grade A (i.e., received grade A in all three subjects) and let b be the number of students that got A in only Mathematics and Physics. Now consider the following diagram:



Therefore, $(6 - a - b)$ students must have got A in only Mathematics and Chemistry and $(16 - a - b)$ students must have got A in only Physics and Chemistry. However, the total number of chemistry students who got A in Chemistry and only one other subject will be $20 - a$.

Hence, $(6 - a - b) + (16 - a - b) = (20 - a) \Rightarrow a + 2b = 2$

The only possible integral solutions to this equation are $a=0, b=1$ and $a=2, b=0$. Since the number of students *consistent* in any grade is a natural number, a cannot be 0. Hence, $a = 2$.

Hence, 2 students are *consistent* in grade A.

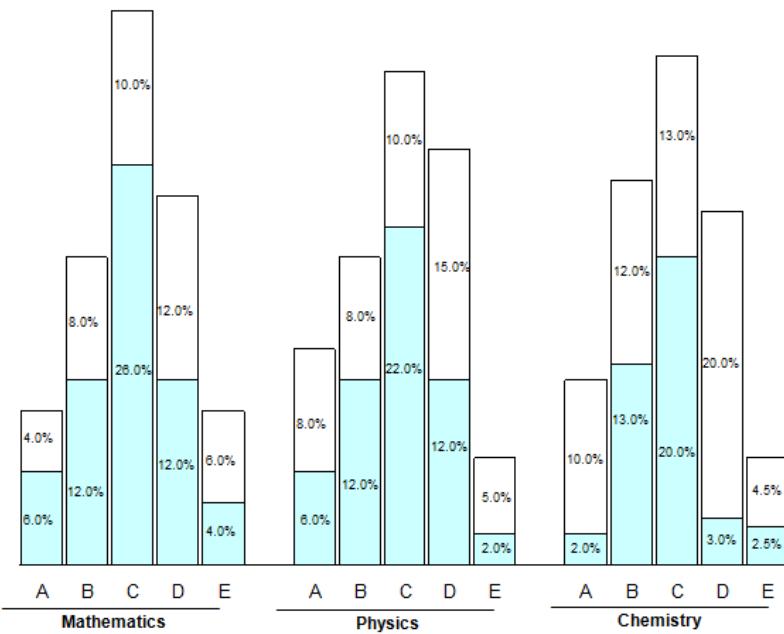
Ans: (2)

undefined

DIRECTIONS for questions 1 to 5: Answer the questions on the basis of the information given below.

The students in a college study different subjects among Mathematics, Physics and Chemistry. In each subject, every student receives a grade among A, B, C, D, and E. The number of students that studied Mathematics, Physics and Chemistry during a certain year was 150, 200, and 200 respectively. The cluster bar-chart given below shows the percentage wise split up of the students studying each subject according to the grades received by them. The area shaded white in each bar gives the percentage of students who received the same grade in at least one other subject. The area shaded grey in each bar gives the percentage of students who received that grade only in that subject. Further, the following information is known:

- Any student who receives the same grade in all the three subjects is considered to be *consistent* in that grade.
- The number of students who were *consistent* in a grade is a distinct natural number for each grade.



For example: 12% of the students who studied Mathematics received a 'B' grade in that subject, while 8% of the students who studied Mathematics received a 'B' grade in that subject and in at least one other subject.

Q2. DIRECTIONS for question 1 to 3: Type in your answer in the input box provided below the question.

If the number of students who are *consistent* in grades C, D, and E is 5, 8 and 6 respectively, what is the total number of students in the college who are *consistent* in any grade?

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	151
Difficulty Level	D
Avg. time spent on this question by students who got this question right	195
% of students who attempted this question	12.8
% of students who got the question right of those who attempted	18.55

[Video Solution](#)

[Text Solution](#)

We need to find the number of students *consistent* in each grade. We have already found the same for grade A in the preceding solution. Also, the values for grades C, D and E are given in the question. Hence, we need to only find the value for grade B. Therefore, following the same process that was done for grade A (in the preceding solution) for grade B also, we get

For B:

$a + 2b = 12 + 16 - 24 = 4$ (i.e., white part in Maths + white part in Physics – white part in Chemistry).

Hence, a can be 2 or 4. But since the value of a is distinct for each grade, and a = 2 in case of grade A, the value of a for grade B can only be 4. Hence, 4 students are *consistent* in grade B.

Therefore, the total number of students *consistent* in any grade

$$= 2(A) + 4(B) + 5(C) + 8(D) + 6(E) = 25$$

Ans: (25)

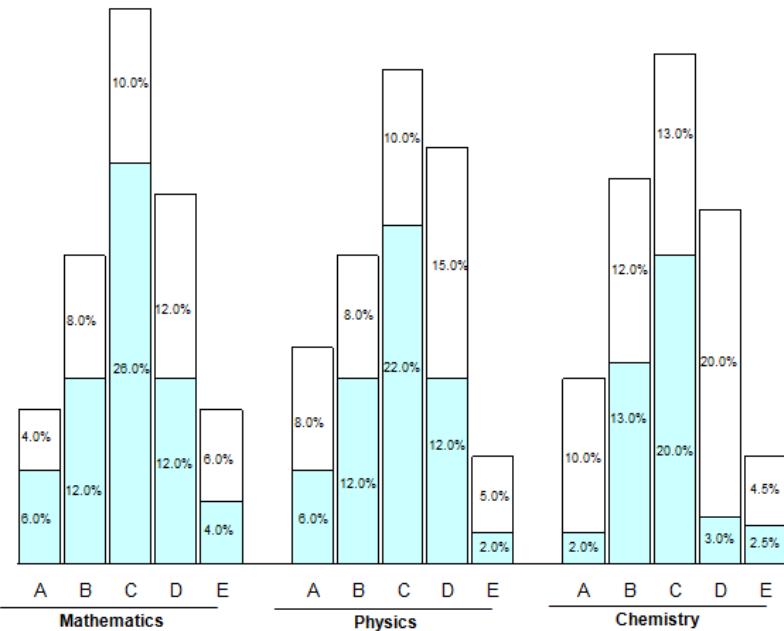
undefined

DIRECTIONS for questions 1 to 5: Answer the questions on the basis of the information given below.

The students in a college study different subjects among Mathematics, Physics and Chemistry. In each subject, every student receives a grade among A, B, C, D, and E. The number of students that studied Mathematics, Physics and Chemistry during a certain year was 150, 200, and 200 respectively. The cluster bar-chart given below shows the percentage wise split up of the students studying each subject according to the grades received by them. The area shaded white in each bar gives the percentage of students who received the same grade in at least one other subject. The area shaded grey in each bar gives the percentage of students who received that grade only in that subject.

Further, the following information is known:

- Any student who receives the same grade in all the three subjects is considered to be *consistent* in that grade.
- The number of students who were *consistent* in a grade is a distinct natural number for each grade.



For example: 12% of the students who studied Mathematics received a 'B' grade in that subject and only in that subject, while 8% of the students who studied Mathematics received a 'B' grade in that subject and in at least one other subject.

Q3. DIRECTIONS for question 1 to 3: Type in your answer in the input box provided below the question.

If the number of students *consistent* in grade D is 6, how many students would have got a 'D' grade in Mathematics and Chemistry?

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

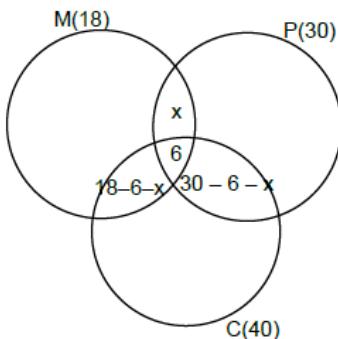
Time spent / Accuracy Analysis

Time taken by you to answer this question	1
Avg. time spent on this question by all students	118
Difficulty Level	D
Avg. time spent on this question by students who got this question right	191
% of students who attempted this question	13.19
% of students who got the question right of those who attempted	4.45

[Video Solution](#)

[Text Solution](#)

Given the number of students consistent in grade D = 6.
 Also, from the white part the bar-chart we get, number of students who got D grade in at least one other subject along with Mathematics, Physics and Chemistry are 18, 30 and 40. Let the number of students who received grade D in only Maths and Physics be x .



Now, from the diagram given above, we get the equation $(18 - 6 - x) + (30 - 6 - x) = 40 - 6$.

$$\Rightarrow 12 - x + 24 - x = 34$$

$$\Rightarrow x = 1$$

Therefore, $12 - 1 = 11$ students must have got grade D in only Mathematics and Chemistry.

Hence, a total of $11 + 6 = 17$ students got grade D in Mathematics and Chemistry.

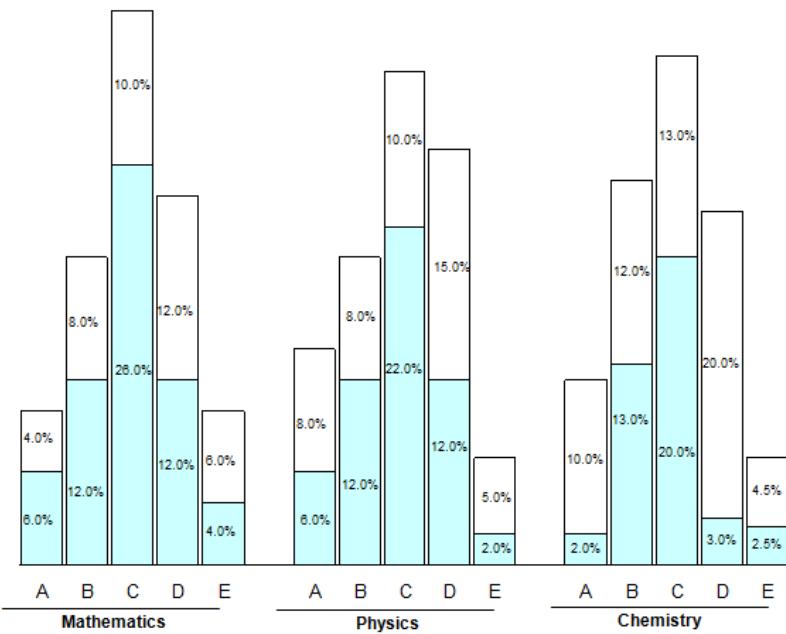
Ans: (17)

undefined

DIRECTIONS for questions 1 to 5: Answer the questions on the basis of the information given below.

The students in a college study different subjects among Mathematics, Physics and Chemistry. In each subject, every student receives a grade among A, B, C, D, and E. The number of students that studied Mathematics, Physics and Chemistry during a certain year was 150, 200, and 200 respectively. The cluster bar-chart given below shows the percentage wise split up of the students studying each subject according to the grades received by them. The area shaded white in each bar gives the percentage of students who received the same grade in at least one other subject. The area shaded grey in each bar gives the percentage of students who received that grade only in that subject. Further, the following information is known:

- Any student who receives the same grade in all the three subjects is considered to be *consistent* in that grade.
- The number of students who were *consistent* in a grade is a distinct natural number for each grade.



For example: 12% of the students who studied Mathematics received a 'B' grade in that subject, while 8% of the students who studied Mathematics received a 'B' grade in that subject and in at least one other subject.

Q4. DIRECTIONS for question 4: Select the correct alternative from the given choices.

If the number of students who are consistent in grades C, D, and E is 5, 6 and 8 respectively, the value represented by which of the following options is the highest?

- a) Number of students who received a 'B' in only Physics
- b) Number of students who received an 'A' in only Physics and Chemistry
- c) Number of students who received a 'C' in only Physics and Chemistry
- d) **Number of students who received a 'D' in Mathematics and Chemistry**

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

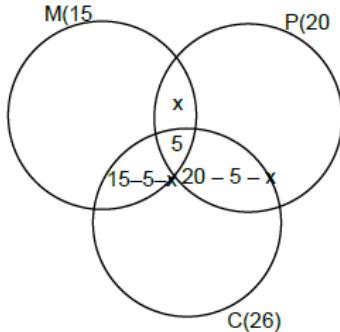
Time taken by you to answer this question	5
Avg. time spent on this question by all students	126
Difficulty Level	D
Avg. time spent on this question by students who got this question right	150
% of students who attempted this question	4.26
% of students who got the question right of those who attempted	41.67

[Video Solution](#)

[Text Solution](#)

- Option A: The number of students that received B in only Physics = $12\% \times 200 = 24$
Option B: The number of students that received A in only Physics and Chemistry is $16 - a - b = 14$ (since $a = 2$ and $b = 0$ for grade A, as solved in an earlier solution)
Option C: The number of students that received C in only Physics and Chemistry can be calculated as follows:

Let the number of students who received grade C in only Physics and Chemistry be x .



Now, from the diagram given above, we get the equation $(15 - 5 - x) + (20 - 5 - x) = 26 - 5$.
 $\Rightarrow 10 - x + 15 - x = 21$
 $\Rightarrow x = 2$
Therefore, $(20 - 5 - x) = 13$ students must have received grade C in only Physics and Chemistry.
Option D: The number of students that got D in Mathematics and Chemistry will be 17 (from earlier solution).
Hence, option A has the highest numerical value among all the options.

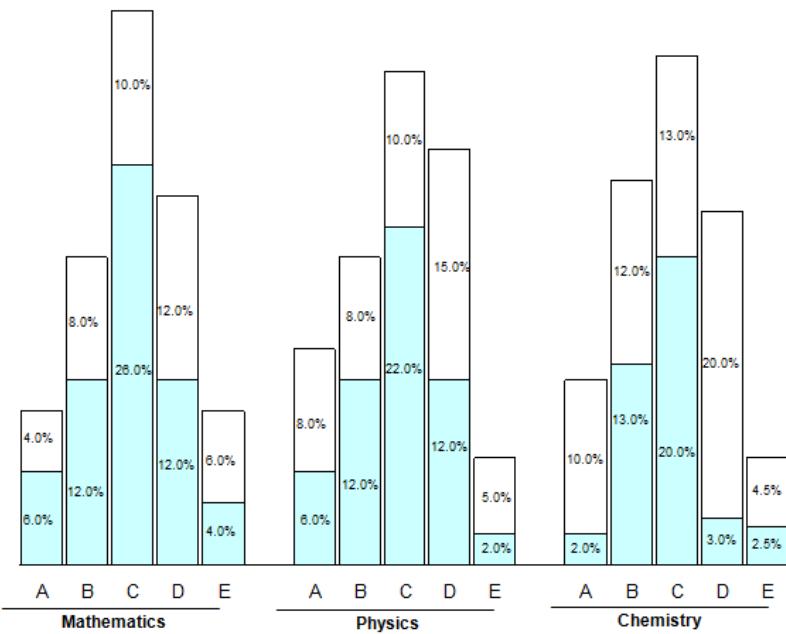
Choice (A)

undefined

DIRECTIONS for questions 1 to 5: Answer the questions on the basis of the information given below.

The students in a college study different subjects among Mathematics, Physics and Chemistry. In each subject, every student receives a grade among A, B, C, D, and E. The number of students that studied Mathematics, Physics and Chemistry during a certain year was 150, 200, and 200 respectively. The cluster bar-chart given below shows the percentage wise split up of the students studying each subject according to the grades received by them. The area shaded white in each bar gives the percentage of students who received the same grade in at least one other subject. The area shaded grey in each bar gives the percentage of students who received that grade only in that subject. Further, the following information is known:

- Any student who receives the same grade in all the three subjects is considered to be *consistent* in that grade.
- The number of students who were *consistent* in a grade is a distinct natural number for each grade.



For example: 12% of the students who studied Mathematics received a 'B' grade in that subject, while 8% of the students who studied Mathematics received a 'B' grade in that subject and in at least one other subject.

Q5. DIRECTIONS for question 5: Type in your answer in the input box provided below the question.

If the total number of students that received the same grade in all the three subjects is 25, how many students received a 'C' grade in only Mathematics and Chemistry?

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	78
Difficulty Level	D
Avg. time spent on this question by students who got this question right	82
% of students who attempted this question	6.31
% of students who got the question right of those who attempted	14.35

[Video Solution](#)

[Text Solution](#)

We need to find the number of students consistent in each grade. Therefore, following the process that was done for grade A (in an earlier solution) for the other grades also, we get

For B:

$a + 2b = 4$ (White part in Maths + White part in Physics – white part in Chemistry, i.e., $12 + 16 - 24$). Hence, a can be 2 or 4. But since the value of a is distinct for each grade, a can only be 4.

Hence, 4 students received B grade in all the three subjects.

For C:

$a + 2b = 9$ ($15 + 20 - 26$). Hence, a can be 1,3,5,7, or 9.

For D:

$a + 2b = 8$ ($18 + 30 - 40$). Hence, a can be 2, 4, 6 or 8. Since a cannot be 2 and 4, a can only be 6 or 8.

For E:

$a + 2b = 10$ ($9 + 10 - 9$). In this case, a can be 6 or 8 or 10. But the number students who got E in Mathematics and at least one other subject is 9. Hence, a cannot be 10. Hence, a can be 6 or 8 (and cannot be the same value as that for D).

Therefore, the minimum number of students who got the same grade in all three subjects = 2 (A) + 4 (B) + any of {1, 3, 5, 7, 9} (C) + 6 or 8 (D) + 8 or 6 (E) = 20 + any of {1, 3, 5, 7, 9} (C)

But it is given that the number is 25. Hence, the value of a for C grade has to be 5. Hence, the remaining number of students across the three subjects is 10, 15, and 21. The number of students that would have got C in Mathematics and Chemistry has to be 8.
Ans: (8)

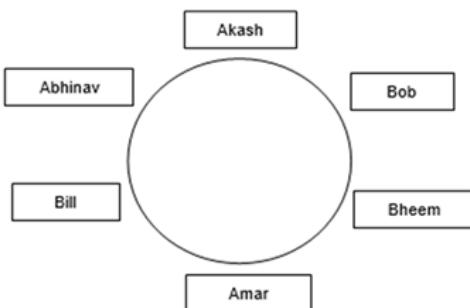
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DIRECTIONS for questions 6 to 10: Answer the questions on the basis of the information given below.

A standard deck of 52 cards comprises four suits – hearts (♥), clubs (♣), spades (♠) and diamonds (♦) – of 13 cards each. The 13 cards in each suite are 2, 3, 4, ..., 10 and J, Q, K and A.

Six friends, Amar, Akash, Abhinav, Bob, Bill, and Bheem, are playing a game of cards sitting around a circular table. In the game, each player, in his turn, draws exactly one card from a single standard deck of cards, without replacing the drawn card. After drawing a card, the player passes the card to the player on his right, if the card is a heart (♥); passes it to the player on his left, if it is a club (♣), passes it to the player opposite him, if it is a spade (♠) and keeps it with him, if the card is a diamond (♦). In a single round, every player draws a card exactly once. In each round, each player gets exactly one turn to draw a card.

The following information is known about the seating arrangement of the six friends around the table and the cards that each friend had after the end of a certain number of rounds:



Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	6 (?)	4(?)	2(?)	A♣	A(?)
7(?)	9♥	Q♦	6♦	K(?)	K♣
Q(?)		4♦		2♣	4♣
8♥		10(?)		7♦	10♦
		5♣		2♦	J♦
		4(?)			

The suites of some of the cards in the above table have intentionally been left blank. Further, it is also known that,

- i. the cards '7' and 'Q' that Amar has are both of the same suite.
- ii. a total of seven spades were drawn from the deck.

Q6. DIRECTIONS for questions 6 to 10: Select the correct alternative from the given choices.

Who among the six friends drew the 'K' of spades?

- a) Abhinav
- b) Amar
- c) Bob
- d) **Cannot be determined**

You did not answer this question

[Show Correct Answer](#)

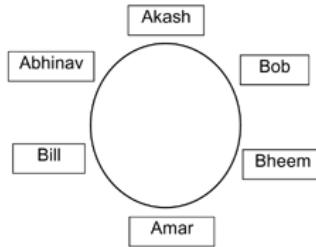
Time spent / Accuracy Analysis

Time taken by you to answer this question	11
Avg. time spent on this question by all students	359
Difficulty Level	E
Avg. time spent on this question by students who got this question right	358
% of students who attempted this question	30.25
% of students who got the question right of those who attempted	84.01

[Video Solution](#)

[Text Solution](#)

The arrangement given in question is as follows:



Since there are a total of 24 cards, four rounds would have been played. Rearranging the table, to the extent possible, to show the cards each player drew, we get

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦		Q♦	6♦	7♦	10♦
A♣		4♦	4♣	2♦	J♦
		K♣	9♥	8♥	5♣
			2♣		

The two 4's that Abhinav has must be spade and heart, since diamond and club 4 are already present. Hence, Bheem must have drawn 4 of spades and Akash must have drawn 4 of hearts. Bheem could not have drawn any more cards. The cards for which the suits are not known are 7, Q, 6, 10, 2, K, and A.

Of these, 7 and Q cannot be diamonds (already drawn) and they also cannot be clubs (since Bheem could not have drawn any more cards). From (i), both the cards have to be either hearts or spades. But they cannot be hearts because Bill could not have drawn two more cards. Hence, 7 and Q must be spades and Akash would have drawn these cards.

The '2' that Bob has cannot be a spade or a diamond (already drawn) and also cannot be a heart (since Bheem already drew 4 cards). Hence, the 2 has to be a club drawn by Akash.

The 10 that Abhinav has, has to be drawn by Bill (since Akash could not have drawn more than 4 cards) and it has to be a club.

The remaining cards are A, 6 and K. A has to be either hearts or spades (drawn by either Amar or Abhinav). 6 has to be either spades or clubs (drawn by either Amar or Abhinav) and K has to be either hearts or club (drawn by either Amar or Abhinav). Also, from (ii), since there are 7 spades in total, only one of these cards has to be a spade (as there are already 6 spades)

If A is a spade, i.e., drawn by Abhinav, both 6 and K would have been drawn by Amar. This means that 6 also has to be a spade. This is not possible.

If A is a heart, it would have been drawn by Amar. If 6 is a club in this case, K also would have to be a club. This cannot be possible. Hence 6 has to be a spade drawn by Amar and K has to be a heart drawn by Abhinav. This is the only possible case.

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	7♦	Q♦	6♦	7♦	10♦
A♣	Q♣	4♦	4♣	2♦	J♦
6♦	2♦	K♣	9♥	8♥	5♣
A♥	4♥	K♥	2♣	10♣	4♣

Abhinav drew the king of spades.

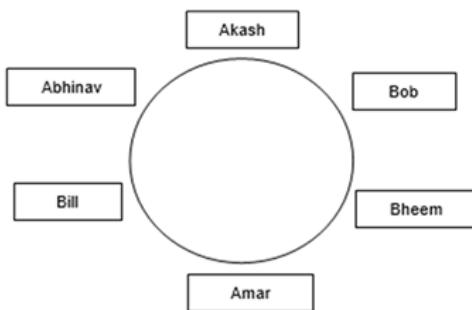
Choice (A)

DIRECTIONS for questions 6 to 10: Answer the questions on the basis of the information given below.

A standard deck of 52 cards comprises four suits – hearts (♥), clubs (♣), spades (♠) and diamonds (♦) – of 13 cards each. The 13 cards in each suite are 2, 3, 4, ..., 10 and J, Q, K and A.

Six friends, Amar, Akash, Abhinav, Bob, Bill, and Bheem, are playing a game of cards sitting around a circular table. In the game, each player, in his turn, draws exactly one card from a single standard deck of cards, without replacing the drawn card. After drawing a card, the player passes the card to the player on his right, if the card is a heart (♥); passes it to the player on his left, if it is a club (♣), passes it to the player opposite him, if it is a spade (♠) and keeps it with him, if the card is a diamond (♦). In a single round, every player draws a card exactly once. In each round, each player gets exactly one turn to draw a card.

The following information is known about the seating arrangement of the six friends around the table and the cards that each friend had after the end of a certain number of rounds:



Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	6 (?)	4 (?)	2 (?)	A♣	A (?)
7 (?)	9♥	Q♦	6♦	K (?)	K♣
Q (?)		4♦		2♣	4♣
8♥		10 (?)		7♦	10♦
		5♣		2♦	J♦
		4 (?)			

The suites of some of the cards in the above table have intentionally been left blank. Further, it is also known that,

- i. the cards '7' and 'Q' that Amar has are both of the same suite.
- ii. a total of seven spades were drawn from the deck.

Q7. DIRECTIONS for questions 6 to 10: Select the correct alternative from the given choices.

How many spades did Bheem draw?

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

You did not answer this question

[Show Correct Answer](#)

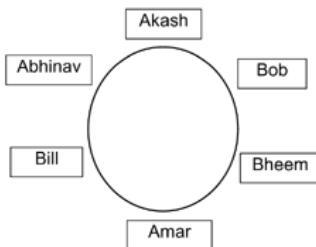
Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	252
Difficulty Level	D
Avg. time spent on this question by students who got this question right	275
% of students who attempted this question	20.91
% of students who got the question right of those who attempted	58.78

[Video Solution](#)

Text Solution

The arrangement given in question is as follows:



Since there are a total of 24 cards, four rounds would have been played. Rearranging the table, to the extent possible, to show the cards each player drew, we get

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦		Q♦	6♦	7♦	10♦
A♣		4♦	4♣	2♦	J♦
		K♦	9♥	8♥	5♣
			2♣		

The two 4's that Abhinav has must be spade and heart, since diamond and club 4 are already present. Hence, Bheem must have drawn 4 of spades and Akash must have drawn 4 of hearts. Bheem could not have drawn any more cards. The cards for which the suits are not known are 7, Q, 6, 10, 2, K, and A. Of these, 7 and Q cannot be diamonds (already drawn) and they also cannot be clubs (since Bheem could not have drawn any more cards). From (i), both the cards have to be either hearts or spades. But they cannot be hearts because Bill could not have drawn two more cards. Hence, 7 and Q must be spades and Akash would have drawn these cards.

The '2' that Bob has cannot be a spade or a diamond (already drawn) and also cannot be a heart (since Bheem already drew 4 cards). Hence, the 2 has to be a club drawn by Akash.

The 10 that Abhinav has, has to be drawn by Bill (since Akash could not have drawn more than 4 cards) and it has to be a club.

The remaining cards are A, 6 and K. A has to be either hearts or spades (drawn by either Amar or Abhinav). 6 has to be either spades or clubs (drawn by either Amar or Abhinav) and K has to be either hearts or club (drawn by either Amar or Abhinav). Also, from (ii), since there are 7 spades in total, only one of these cards has to be a spade (as there are already 6 spades)

If A is a spade, i.e., drawn by Abhinav, both 6 and K would have been drawn by Amar. This means that 6 also has to be a spade. This is not possible.

If A is a heart, it would have been drawn by Amar. If 6 is a club in this case, K also would have to be a club. This cannot be possible. Hence 6 has to be a spade drawn by Amar and K has to be a heart drawn by Abhinav. This is the only possible case.

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	7♦	Q♦	6♦	7♦	10♦
A♣	Q♦	4♦	4♣	2♦	J♦
6♦	2♣	K♦	9♥	8♥	5♣
A♥	4♥	K♥	2♣	10♣	4♣

Bheem drew two spades.

Choice (B)

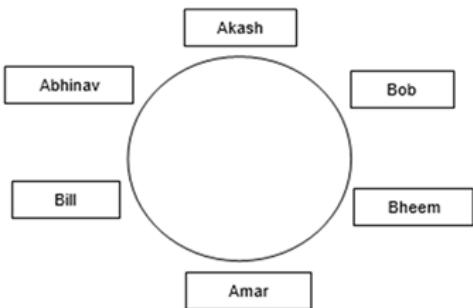
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DIRECTIONS for questions 6 to 10: Answer the questions on the basis of the information given below.

A standard deck of 52 cards comprises four suits – hearts (♥), clubs (♣), spades (♠) and diamonds (♦) – of 13 cards each. The 13 cards in each suite are 2, 3, 4, ..., 10 and J, Q, K and A.

Six friends, Amar, Akash, Abhinav, Bob, Bill, and Bheem, are playing a game of cards sitting around a circular table. In the game, each player, in his turn, draws exactly one card from a single standard deck of cards, without replacing the drawn card. After drawing a card, the player passes the card to the player on his right, if the card is a heart (♥); passes it to the player on his left, if it is a club (♣), passes it to the player opposite him, if it is a spade (♠) and keeps it with him, if the card is a diamond (♦). In a single round, every player draws a card exactly once. In each round, each player gets exactly one turn to draw a card.

The following information is known about the seating arrangement of the six friends around the table and the cards that each friend had after the end of a certain number of rounds:



Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	6 (?)	4(?)	2(?)	A♠	A(?)
7(?)	9♥	Q♦	6♦	K(?)	K♠
Q(?)		4♦		2♠	4♠
8♥		10(?)		7♦	10♦
		5♦		2♦	J♦
		4(?)			

The suites of some of the cards in the above table have intentionally been left blank. Further, it is also known that,

- i. the cards '7' and 'Q' that Amar has are both of the same suite.
- ii. a total of seven spades were drawn from the deck.

Q8. DIRECTIONS for questions 6 to 10: Select the correct alternative from the given choices.

How many cards from the hearts suite were drawn in total?

- a) 2
- b) 3
- c) 4
- d) 5

You did not answer this question

[Show Correct Answer](#)

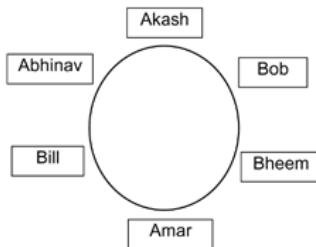
Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	200
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	269
% of students who attempted this question	10.89
% of students who got the question right of those who attempted	26.1

[Video Solution](#)

[Text Solution](#)

The arrangement given in question is as follows:



Since there are a total of 24 cards, four rounds would have been played. Rearranging the table, to the extent possible, to show the cards each player drew, we get

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦		Q♦	6♦	7♦	10♦
A♣		4♦	4♣	2♦	J♦
		K♦	9♥	8♥	5♣
			2♣		

The two 4's that Abhinav has must be spade and heart, since diamond and club 4 are already present. Hence, Bheem must have drawn 4 of spades and Akash must have drawn 4 of hearts. Bheem could not have drawn any more cards. The cards for which the suits are not known are 7, Q, 6, 10, 2, K, and A.

Of these, 7 and Q cannot be diamonds (already drawn) and they also cannot be clubs (since Bheem could not have drawn any more cards). From (i), both the cards have to be either hearts or spades. But they cannot be hearts because Bill could not have drawn two more cards. Hence, 7 and Q must be spades and Akash would have drawn these cards.

The '2' that Bob has cannot be a spade or a diamond (already drawn) and also cannot be a heart (since Bheem already drew 4 cards). Hence, the 2 has to be a club drawn by Akash.

The 10 that Abhinav has, has to be drawn by Bill (since Akash could not have drawn more than 4 cards) and it has to be a club.

The remaining cards are A, 6 and K. A has to be either hearts or spades (drawn by either Amar or Abhinav). 6 has to be either spades or clubs (drawn by either Amar or Abhinav) and K has to be either hearts or club (drawn by either Amar or Abhinav). Also, from (ii), since there are 7 spades in total, only one of these cards has to be a spade (as there are already 6 spades)

If A is a spade, i.e., drawn by Abhinav, both 6 and K would have been drawn by Amar. This means that 6 also has to be a spade. This is not possible.

If A is a heart, it would have been drawn by Amar. If 6 is a club in this case, K also would have to be a club. This cannot be possible. Hence 6 has to be a spade drawn by Amar and K has to be a heart drawn by Abhinav. This is the only possible case.

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	7♦	Q♦	6♦	7♦	10♦
A♣	Q♦	4♦	4♣	2♦	J♦
6♦	2♣	K♦	9♥	8♥	5♣
A♥	4♥	K♥	2♣	10♣	4♦

A total of 5 cards were drawn from the hearts suite.

Choice (D)

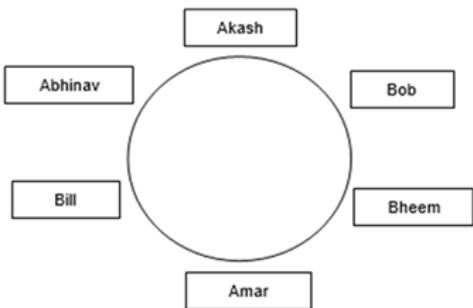
undefined

DIRECTIONS for questions 6 to 10: Answer the questions on the basis of the information given below.

A standard deck of 52 cards comprises four suits – hearts (♥), clubs (♣), spades (♠) and diamonds (♦) – of 13 cards each. The 13 cards in each suite are 2, 3, 4, ..., 10 and J, Q, K and A.

Six friends, Amar, Akash, Abhinav, Bob, Bill, and Bheem, are playing a game of cards sitting around a circular table. In the game, each player, in his turn, draws exactly one card from a single standard deck of cards, without replacing the drawn card. After drawing a card, the player passes the card to the player on his right, if the card is a heart (♥); passes it to the player on his left, if it is a club (♣), passes it to the player opposite him, if it is a spade (♠) and keeps it with him, if the card is a diamond (♦). In a single round, every player draws a card exactly once. In each round, each player gets exactly one turn to draw a card.

The following information is known about the seating arrangement of the six friends around the table and the cards that each friend had after the end of a certain number of rounds:



Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	6 (?)	4(?)	2(?)	A♠	A(?)
7(?)	9♥	Q♦	6♦	K(?)	K♠
Q(?)		4♦		2♠	4♠
8♥		10(?)		7♦	10♦
		5♠		2♦	J♦
		4(?)			

The suites of some of the cards in the above table have intentionally been left blank. Further, it is also known that,

- i. the cards '7' and 'Q' that Amar has are both of the same suite.
- ii. a total of seven spades were drawn from the deck.

Q9. DIRECTIONS for questions 6 to 10: Select the correct alternative from the given choices.

Which of the following cards did Abhinav draw?

- a) K♥
- b) 6♠
- c) A♥
- d) **None of the above**

You did not answer this question

[Show Correct Answer](#)

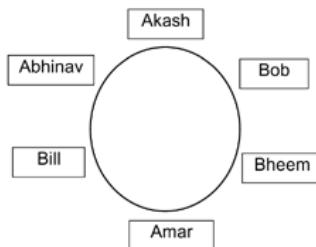
Time spent / Accuracy Analysis

Time taken by you to answer this question	45
Avg. time spent on this question by all students	103
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	108
% of students who attempted this question	21.24
% of students who got the question right of those who attempted	64.62

[Video Solution](#)

[Text Solution](#)

The arrangement given in question is as follows:



Since there are a total of 24 cards, four rounds would have been played. Rearranging the table, to the extent possible, to show the cards each player drew, we get

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦		Q♦	6♦	7♦	10♦
A♦		4♦	4♦	2♦	J♦
		K♦	9♥	8♥	5♦
			2♣		

The two 4's that Abhinav has must be spade and heart, since diamond and club 4 are already present. Hence, Bheem must have drawn 4 of spades and Akash must have drawn 4 of hearts. Bheem could not have drawn any more cards. The cards for which the suits are not known are 7, Q, 6, 10, 2, K, and A.

Of these, 7 and Q cannot be diamonds (already drawn) and they also cannot be clubs (since Bheem could not have drawn any more cards). From (i), both the cards have to be either hearts or spades. But they cannot be hearts because Bill could not have drawn two more cards. Hence, 7 and Q must be spades and Akash would have drawn these cards.

The '2' that Bob has cannot be a spade or a diamond (already drawn) and also cannot be a heart (since Bheem already drew 4 cards). Hence, the 2 has to be a club drawn by Akash.

The 10 that Abhinav has, has to be drawn by Bill (since Akash could not have drawn more than 4 cards) and it has to be a club.

The remaining cards are A, 6 and K. A has to be either hearts or spades (drawn by either Amar or Abhinav). 6 has to be either spades or clubs (drawn by either Amar or Abhinav) and K has to be either hearts or club (drawn by either Amar or Abhinav). Also, from (ii), since there are 7 spades in total, only one of these cards has to be a spade (as there are already 6 spades)

If A is a spade, i.e., drawn by Abhinav, both 6 and K would have been drawn by Amar. This means that 6 also has to be a spade. This is not possible.

If A is a heart, it would have been drawn by Amar. If 6 is a club in this case, K also would have to be a club. This cannot be possible. Hence 6 has to be a spade drawn by Amar and K has to be a heart drawn by Abhinav. This is the only possible case.

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	7♣	Q♦	6♦	7♦	10♦
A♦	Q♦	4♦	4♦	2♦	J♦
6♦	2♣	K♦	9♥	8♥	5♦
A♥	4♥	K♥	2♣	10♣	4♦

Among the choices given, Abhinav drew the king of hearts.

Choice (A)

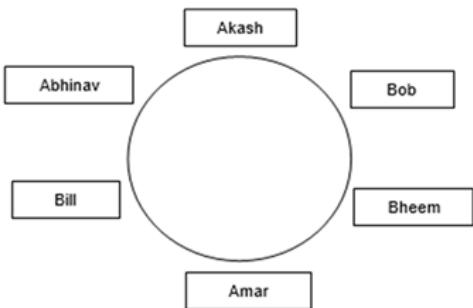
undefined

DIRECTIONS for questions 6 to 10: Answer the questions on the basis of the information given below.

A standard deck of 52 cards comprises four suits – hearts (♥), clubs (♣), spades (♠) and diamonds (♦) – of 13 cards each. The 13 cards in each suite are 2, 3, 4, ..., 10 and J, Q, K and A.

Six friends, Amar, Akash, Abhinav, Bob, Bill, and Bheem, are playing a game of cards sitting around a circular table. In the game, each player, in his turn, draws exactly one card from a single standard deck of cards, without replacing the drawn card. After drawing a card, the player passes the card to the player on his right, if the card is a heart (♥); passes it to the player on his left, if it is a club (♣), passes it to the player opposite him, if it is a spade (♠) and keeps it with him, if the card is a diamond (♦). In a single round, every player draws a card exactly once. In each round, each player gets exactly one turn to draw a card.

The following information is known about the seating arrangement of the six friends around the table and the cards that each friend had after the end of a certain number of rounds:



Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	6 (?)	4(?)	2(?)	A♠	A(?)
7(?)	9♥	Q♦	6♦	K(?)	K♠
Q(?)		4♦		2♠	4♠
8♥		10(?)		7♦	10♦
		5♦		2♦	J♦
		4(?)			

The suites of some of the cards in the above table have intentionally been left blank. Further, it is also known that,

- i. the cards '7' and 'Q' that Amar has are both of the same suite.
- ii. a total of seven spades were drawn from the deck.

Q10. DIRECTIONS for questions 6 to 10: Select the correct alternative from the given choices.

Who among the following drew four cards of different suites?

- a) Abhinav
- b) Bob
- c) Bill
- d) **Bheem**

You did not answer this question

[Show Correct Answer](#)

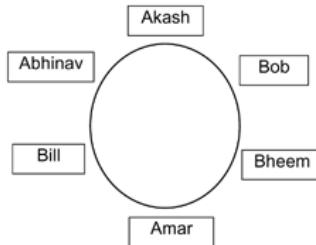
Time spent / Accuracy Analysis

Time taken by you to answer this question	2
Avg. time spent on this question by all students	87
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	84
% of students who attempted this question	16.27
% of students who got the question right of those who attempted	69.47

[Video Solution](#)

[Text Solution](#)

The arrangement given in question is as follows:



Since there are a total of 24 cards, four rounds would have been played. Rearranging the table, to the extent possible, to show the cards each player drew, we get

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦		Q♦	6♦	7♦	10♦
A♣		4♦	4♣	2♦	J♦
		K♦	9♥	8♥	5♣
			2♣		

The two 4's that Abhinav has must be spade and heart, since diamond and club 4 are already present. Hence, Bheem must have drawn 4 of spades and Akash must have drawn 4 of hearts. Bheem could not have drawn any more cards. The cards for which the suits are not known are 7, Q, 6, 10, 2, K, and A.

Of these, 7 and Q cannot be diamonds (already drawn) and they also cannot be clubs (since Bheem could not have drawn any more cards). From (i), both the cards have to be either hearts or spades. But they cannot be hearts because Bill could not have drawn two more cards. Hence, 7 and Q must be spades and Akash would have drawn these cards.

The '2' that Bob has cannot be a spade or a diamond (already drawn) and also cannot be a heart (since Bheem already drew 4 cards). Hence, the 2 has to be a club drawn by Akash.

The 10 that Abhinav has, has to be drawn by Bill (since Akash could not have drawn more than 4 cards) and it has to be a club.

The remaining cards are A, 6 and K. A has to be either hearts or spades (drawn by either Amar or Abhinav). 6 has to be either spades or clubs (drawn by either Amar or Abhinav) and K has to be either hearts or club (drawn by either Amar or Abhinav). Also, from (ii), since there are 7 spades in total, only one of these cards has to be a spade (as there are already 6 spades)

If A is a spade, i.e., drawn by Abhinav, both 6 and K would have been drawn by Amar. This means that 6 also has to be a spade. This is not possible.

If A is a heart, it would have been drawn by Amar. If 6 is a club in this case, K also would have to be a club. This cannot be possible. Hence 6 has to be a spade drawn by Amar and K has to be a heart drawn by Abhinav. This is the only possible case.

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	7♦	Q♦	6♦	7♦	10♦
A♣	Q♣	4♦	4♣	2♦	J♦
6♣	2♣	K♦	9♥	8♥	5♣
A♥	4♥	K♥	2♣	10♣	4♦

Among the given choices only Bob drew cards of four different suites.

Choice (B)

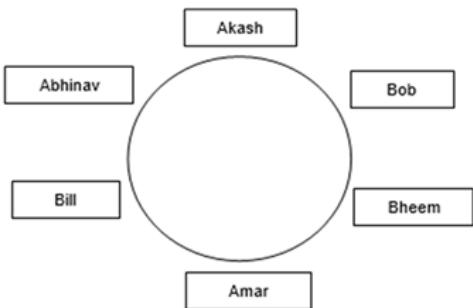
undefined

DIRECTIONS for questions 6 to 10: Answer the questions on the basis of the information given below.

A standard deck of 52 cards comprises four suits – hearts (♥), clubs (♣), spades (♠) and diamonds (♦) – of 13 cards each. The 13 cards in each suite are 2, 3, 4, ..., 10 and J, Q, K and A.

Six friends, Amar, Akash, Abhinav, Bob, Bill, and Bheem, are playing a game of cards sitting around a circular table. In the game, each player, in his turn, draws exactly one card from a single standard deck of cards, without replacing the drawn card. After drawing a card, the player passes the card to the player on his right, if the card is a heart (♥); passes it to the player on his left, if it is a club (♣), passes it to the player opposite him, if it is a spade (♠) and keeps it with him, if the card is a diamond (♦). In a single round, every player draws a card exactly once. In each round, each player gets exactly one turn to draw a card.

The following information is known about the seating arrangement of the six friends around the table and the cards that each friend had after the end of a certain number of rounds:



Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	6 (?)	4(?)	2(?)	A♠	A(?)
7(?)	9♥	Q♦	6♦	K(?)	K♠
Q(?)		4♦		2♠	4♠
8♥		10(?)		7♦	10♦
		5♦		2♦	J♦
		4(?)			

The suites of some of the cards in the above table have intentionally been left blank. Further, it is also known that,

- i. the cards '7' and 'Q' that Amar has are both of the same suite.
- ii. a total of seven spades were drawn from the deck.

Q10. DIRECTIONS for questions 6 to 10: Select the correct alternative from the given choices.

Who among the following drew four cards of different suites?

- a) Abhinav
- b) Bob
- c) Bill
- d) **Bheem**

You did not answer this question

[Show Correct Answer](#)

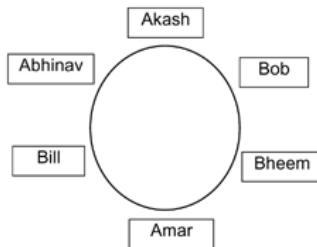
Time spent / Accuracy Analysis

Time taken by you to answer this question	2
Avg. time spent on this question by all students	87
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	84
% of students who attempted this question	16.27
% of students who got the question right of those who attempted	69.47

[Video Solution](#)

[Text Solution](#)

The arrangement given in question is as follows:



Since there are a total of 24 cards, four rounds would have been played. Rearranging the table, to the extent possible, to show the cards each player drew, we get

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦		Q♦	6♦	7♦	10♦
A♣		4♦	4♣	2♦	J♦
		K♦	9♥	8♥	5♣
			2♣		

The two 4's that Abhinav has must be spade and heart, since diamond and club 4 are already present. Hence, Bheem must have drawn 4 of spades and Akash must have drawn 4 of hearts. Bheem could not have drawn any more cards. The cards for which the suits are not known are 7, Q, 6, 10, 2, K, and A.

Of these, 7 and Q cannot be diamonds (already drawn) and they also cannot be clubs (since Bheem could not have drawn any more cards). From (i), both the cards have to be either hearts or spades. But they cannot be hearts because Bill could not have drawn two more cards. Hence, 7 and Q must be spades and Akash would have drawn these cards.

The '2' that Bob has cannot be a spade or a diamond (already drawn) and also cannot be a heart (since Bheem already drew 4 cards). Hence, the 2 has to be a club drawn by Akash.

The 10 that Abhinav has, has to be drawn by Bill (since Akash could not have drawn more than 4 cards) and it has to be a club.

The remaining cards are A, 6 and K. A has to be either hearts or spades (drawn by either Amar or Abhinav). 6 has to be either spades or clubs (drawn by either Amar or Abhinav) and K has to be either hearts or club (drawn by either Amar or Abhinav). Also, from (ii), since there are 7 spades in total, only one of these cards has to be a spade (as there are already 6 spades)

If A is a spade, i.e., drawn by Abhinav, both 6 and K would have been drawn by Amar. This means that 6 also has to be a spade. This is not possible.

If A is a heart, it would have been drawn by Amar. If 6 is a club in this case, K also would have to be a club. This cannot be possible. Hence 6 has to be a spade drawn by Amar and K has to be a heart drawn by Abhinav. This is the only possible case.

Amar	Akash	Abhinav	Bob	Bill	Bheem
5♦	7♦	Q♦	6♦	7♦	10♦
A♣	Q♣	4♦	4♣	2♦	J♦
6♣	2♣	K♦	9♥	8♥	5♣
A♥	4♥	K♥	2♣	10♣	4♦

Among the given choices only Bob drew cards of four different suites.

Choice (B)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class \	2011	2012	2013
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q11. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

How many students in the school failed in the annual exams in the year 2011?

- a) 30
- b) **33** Your answer is correct
- c) 35
- d) **38**

Time spent / Accuracy Analysis

Time taken by you to answer this question	26
Avg. time spent on this question by all students	482
Difficulty Level	M
Avg. time spent on this question by students who got this question right	479
% of students who attempted this question	28.21
% of students who got the question right of those who attempted	79.79

[Video Solution](#)

[Text Solution](#)

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

∴ All the students who are in class X in the year 2013 are those who were promoted from class IX.

∴ Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only 39 ($48 - 9$) students got promoted from class VIII and $52 - 39 = 13$ of them had failed. The details of the students in each class in the different years would be as follows.

Year Class \	2011	2012	2013
Class			
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2011, the number of new students who joined is also given.

The number of students who failed in the year 2011 is $8 + 4 + 11 + 7 + 3 = 33$

Choice (B)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class \	2011	2012	2013
Class			
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q11. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

How many students in the school failed in the annual exams in the year 2011?

a) 30

b) 33 Your answer is correct

c) 35

d) 38

Time spent / Accuracy Analysis

Time taken by you to answer this question	26
Avg. time spent on this question by all students	482
Difficulty Level	M
Avg. time spent on this question by students who got this question right	479
% of students who attempted this question	28.21
% of students who got the question right of those who attempted	79.79

[Video Solution](#)

Text Solution

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

∴ All the students who are in class X in the year 2013 are those who were promoted from class IX.

∴ Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only 39 (48 – 9) students got promoted from class VIII and $52 - 39 = 13$ of them had failed. The details of the students in each class in the different years would be as follows.

Year Class \	2011	2012	2013
V	56	48 → 57 8 ↓	44 → 62 13 ↓
VI	43	39 → 52 4 → 53	43 → 53 9 ↓
VII	56	45 → 50 11 → 37	56
VIII	55	48 → 52 7 → 39	50 → 39 13 → 39
IX	48	45 → 51 3 → 42	48 → 42 9 → 42
X	40	45	42

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2011, the number of new students who joined is also given.

The number of students who failed in the year 2011 is $8 + 4 + 11 + 7 + 3 = 33$
Choice (B)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class \	2011	2012	2013
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q12. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

Which class in the school had the lowest pass percentage in the year 2011?

a) Class V

b) Class VI

c) Class VII Your answer is correct

d) Class VIII

Time spent / Accuracy Analysis

Time taken by you to answer this question	32
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	110
% of students who attempted this question	30.6
% of students who got the question right of those who attempted	70.74

[Video Solution](#)

[Text Solution](#)

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

∴ All the students who are in class X in the year 2013 are those who were promoted from class IX.

∴ Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only 39 (48 – 9) students got promoted from class VIII and $52 - 39 = 13$ of them had failed. The details of the students in each class in the different years would be as follows.

Year Class	2011	2012	2013
V	56	48 → 57 → 44 → 62	49 ↓ 13 ↓ 49
VI	43	39 → 52 → 43 → 53	4 → 9 → 43
VII	56	45 → 50 → 37 → 56	11 → 13 → 37
VIII	55	48 → 52 → 39 → 50	7 → 13 → 39
IX	48	45 → 51 → 42 → 48	3 → 9 → 42
X	40	45	42

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2011, the number of new students who joined is also given.

In class VII, 11 students out of a total of 56 students failed in the year 2011 and this was the lowest pass percentage.
Choice (C)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class	2011	2012	2013
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q12. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

Which class in the school had the lowest pass percentage in the year 2011?

- a) Class V
- b) **Class VI**
- c) **Class VII** Your answer is correct
- d) **Class VIII**

Time spent / Accuracy Analysis

Time taken by you to answer this question	32
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	110
% of students who attempted this question	30.6
% of students who got the question right of those who attempted	70.74

[Video Solution](#)

[Text Solution](#)

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

\therefore All the students who are in class X in the year 2013 are those who were promoted from class IX.

\therefore Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only $39 (48 - 9)$ students got promoted from class VIII and $52 - 39 = 13$ of them had failed. The details of the students in each class in the different years would be as follows.

Year Class \	2011	2012	2013
V	56	48 → 57 → 62 8 ↓ 13 ↓ 49 49	44
VI	43	39 → 52 → 53 4 ↓ 9 ↓ 43 53	
VII	56	45 → 50 → 56 11 ↓ 13 ↓ 37 56	
VIII	55	48 → 52 → 50 7 ↓ 13 ↓ 39 50	
IX	48	45 → 51 → 48 3 ↓ 9 ↓ 42 48	
X	40	45	42

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2011, the number of new students who joined is also given.

In class VII, 11 students out of a total of 56 students failed in the year 2011 and this was the lowest pass percentage. Choice (C)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class \	2011	2012	2013
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q13. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

What is the difference in the number of students who joined the school in the year 2012 and those who joined the school in the year 2013?

- a) 0
- b) 1
- c) 2 Your answer is incorrect
- d) 3

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	979
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	154
% of students who attempted this question	26.58
% of students who got the question right of those who attempted	63.16

[Video Solution](#)

[Text Solution](#)

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

∴ All the students who are in class X in the year 2013 are those who were promoted from class IX.

∴ Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only 39 (48 – 9) students got promoted from class VIII and 52 – 39 = 13 of them had failed. The details of the students in each class in the different years would be as follows.

Year Class \	2011	2012	2013
V	56	48 → 57 → 62 8 ↘ 49 ↓ 13 → 62	49 ↓ 44 → 62
VI	43	39 → 52 → 53 4 ↗ 9 ↗ 43 → 53	
VII	56	45 → 50 → 56 11 ↗ 13 ↗ 37 → 56	
VIII	55	48 → 52 → 50 7 ↗ 13 ↗ 39 → 50	
IX	48	45 → 51 → 48 3 ↗ 9 ↗ 42 → 48	
X	40	45 → 42	42

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2013, the number of new students who joined is also given.

The number of students who joined class V in both 2012 and 2013 is the same, i.e., 49.
Choice (A)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class \	2011	2012	2013
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q14. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

What was the overall pass percentage of the students in the school in the year 2012?

- a) 76.2%
- b) **78.5%**
- c) **80.5%**
- d) **81.4%** Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	143
Avg. time spent on this question by all students	142
Difficulty Level	M
Avg. time spent on this question by students who got this question right	142
% of students who attempted this question	21.34
% of students who got the question right of those who attempted	78.11

[Video Solution](#)

Text Solution

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

∴ All the students who are in class X in the year 2013 are those who were promoted from class IX.

∴ Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only 39 (48 – 9) students got promoted from class VIII and 52 – 39 = 13 of them had failed. The details of the students in each class in the different years would be as follows.

Year Class \	2011	2012	2013
V	56	48 → 57 → 62 8 ↓ 13 → 44 → 62 49 ↓ 40	
VI	43	39 → 52 → 53 4 → 9 → 43 → 53	
VII	56	45 → 50 → 56 11 → 13 → 37 → 56	
VIII	55	48 → 52 → 50 7 → 13 → 39 → 50	
IX	48	45 → 51 → 48 3 → 9 → 42 → 48	
X	40	45 → 42	

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2011, the number of new students who joined is also given.

Total students in all the classes = 307.

$$\text{Number of students who passed} \\ = 45 + 42 + 39 + 37 + 43 + 44 = 250$$

$$\text{Pass percentage} = \frac{250}{307} \times 100 = 81.4\%$$

Choice (D)

undefined

DIRECTIONS for questions 11 to 15: Answer the questions on the basis of the information given below.

The following table gives the details of the students in all the classes of The New International School. Students join the school only in class V and do not leave until they pass out of class X. The students who pass the annual exams in any year are promoted to the next higher class in the next year, while the students who fail have to study in the same class the next year also. No student fails in the same class more than once and the school had a 100% pass percentage in class X in all the years.

Year Class \	2011	2012	2013
V	56	57	62
VI	43	52	53
VII	56	50	56
VIII	55	52	50
IX	48	51	48
X	40	45	42

Q15. DIRECTIONS for questions 11 to 15: Select the correct alternative from the given choices.

In how many of the given classes was the number of students who failed in that class in 2012, more than the corresponding value in 2011?

- a) 2
- b) 3
- c) 4
- d) 5

You did not answer this question

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	35
Avg. time spent on this question by all students	59
Difficulty Level	M
Avg. time spent on this question by students who got this question right	56
% of students who attempted this question	23.13
% of students who got the question right of those who attempted	78.3

[Video Solution](#)

Text Solution

It is given that the school had a cent percent pass percentage in each of the given years. That is, 40 students passed out of class X in 2011 and 45 students passed out in 2012.

∴ All the students who are in class X in the year 2013 are those who were promoted from class IX.

∴ Of the 51 students in class IX in 2012, only 42 of them got promoted and 9 of them failed. So these 9 stay in class IX in the year 2013 also and so only 39 (48 – 9) students got promoted from class VIII and $52 - 39 = 13$ of them had failed. The details of the students in each class in the different years would be as follows.

Year Class \	2011	2012	2013
V	56	48 → 57 → 44 → 62 8 ↓ 49 ↓ 13 ↓	
VI	43	39 → 52 → 43 → 53 4 ↓ 9 ↓	
VII	56	45 → 50 → 37 → 56 11 ↓ 13 ↓	
VIII	55	48 → 52 → 39 → 50 7 ↓ 13 ↓	
IX	48	45 → 51 → 42 → 48 3 ↓ 9 ↓	
X	40	45 → 42	

The table shows the number of students in each year who passed the annual exams and are promoted to the next class and students who failed and stay in the same class. For class V in the years 2012 and 2011, the number of new students who joined is also given.

In each of the classes from V to IX, the number of students who failed in 2012 was more than that in 2011.

Choice (D)

undefined

DIRECTIONS for questions 16 to 20: Answer the questions on the basis of the information given below.

Exactly eight delegates, A through H, attended a conference and each of them gave a presentation at the conference. All the eight presentations were scheduled continuously, one after the other, and no other presentations were made at the conference. Further, all the eight delegates arrived at different times and departed at different times, in such a way that each of them arrived exactly ten minutes after the previous delegate arrived, and they also left in a similar manner. The order in which the delegates arrived, gave their presentations and departed was not necessarily the same. It is also known that

- i. H arrived immediately before E arrived but after F arrived and he left before G left.
- ii. C left before D's presentation started.
- iii. F, who gave the last presentation, arrived at exactly 11:00 a.m. and left immediately after D left but he was not the last delegate to leave.

- iv. exactly three delegates gave their presentations after C's presentation but before G's presentation.
- v. D arrived immediately after A's arrival and gave his presentation immediately before E's presentation.
- vi. Exactly one delegate arrived between A's arrival and B's arrival; exactly one gave a presentation between A's presentation and B's presentation; and exactly one left between A's departure and B's departure.
- vii. G arrived immediately after C and also left immediately after C, while A finished his presentation before either of them arrived.

Q16. DIRECTIONS for questions 16 to 20: Select the correct alternative from the given choices.

Who gave his presentation immediately after H?

- a) F
- b) A
- c) C
- d) Cannot be determined Your answer is incorrect

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	836
Avg. time spent on this question by all students	625
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	639
% of students who attempted this question	15.93
% of students who got the question right of those who attempted	25.24

[Video Solution](#)

[Text Solution](#)

From condition iv, three delegates gave a presentation between C and G and from vi, one delegate presented between A and B and from iii, F gave the last presentation. Therefore, C should have presented 1st, 2nd, or 3rd.

If C presented first, G must have presented 5th. Hence, A and B must have presented 2nd and 4th or 4th and 6th (from vi). But from vii, C and G arrived after A's presentation. C and G could not have presented before they arrived. This case is not possible.

If C presented second, G must have presented 6th. In this case, A should have presented first. Any other case will contradict condition vii. As A presented 1st, B would have presented 3rd. D and E would have presented 4th and 5th whereas H would have presented 7th. This is a possible case.

If C presented third, G would have presented 7th. A could not have presented 1st because B could not have presented 3rd. A presented second and B presented 4th. This is the only possible case (from vii). D and E would have presented 5th and 6th and H would have presented 1st.

Therefore, there are two possible cases for the order of presentations.

Case 1: A C B D E G H F Case 2: H A C B D E G F

The order of departure can be deduced as follows.

From ii, C left before D's presentation started. In the cases for order of presentation, E, G and F give their presentations after D's. Hence C left before D, E, G, and F.

From i, H left before G left. Hence, H left before C left as well since C and G left one after the other. Therefore, C could have left 2nd or 3rd or 4th.

If C left 2nd, G would have left 3rd. D and F left in that order in 4th and 5th places. A or B would have left 6th and 8th. H would have left 1st and E last. This is a possibility.

If C left 3rd, G left 4th. In this case, A and B could not have with exactly one person leaving between them. Hence this case is not possible.

If C left 4th, G left 5th. D and F left 6th and 7th. E left 8th. A and B would have left 1st or 3rd. H would have left 2nd.

The possible cases for the order of departures are

Case x: H C G D F A/B E B/A Case y: A/B H B/A C G D F E

In both these cases H left before C. Also C left before D's presentation started. Hence, H would have left before D's presentation started. Hence, H could not have presented after D. Therefore, Case 1 is not possible.

Therefore the order of presentations is H A C B D E G F.

The order of arrival can be found out as follows.

From i, H arrived immediately before E. From v, D arrived immediately after A. From vi, exactly one delegate arrived between A and B. Also, from vii, C and G arrived after A's presentation which means they arrived after A. Since H's presentation is before A, they arrived after H as well.

Assume B arrived before A. C could have arrived 5th but not after that because D, C and G arrived after him. If A arrived 5th, B arrived 3rd, D arrived 6th, C arrived 7th and G arrived 8th. H and E should arrive immediately after one another. They could have arrived 1st and 2nd. But they cannot arrive before F in this case. If A arrived 4th, B arrived 2nd. D arrived 5th. C and would have arrived after D immediately after one another. In this case, H and E could not have arrive immediately after one another. If A arrived 3rd, B arrived 1st. D arrived 3rd. C and G should have arrived 7th and 8th, after H and E arrived. H and E should have arrived 5th and 6th. F would have arrived 2nd. This is a possible case.

If A arrived before B, then A, D, B must have arrived one after the other. C and G arrived after A, D, and B. If A, D, B arrived 4th, 5th, 6th, C and G would have arrived 7th and 8th. F would be the first to arrive, H and E, 2nd and 3rd. This one possible case.

A, D, B could not have arrive 3rd, 4th and 5th because H and E cannot arrive after F and one after the other in such case.

A, D, B could have arrived 2nd, 3rd and 4th. F could have arrived 1st. H, E and C, G in last four places.

A, D, B also could have arrived 1st, 2nd, and 3rd. F could have arrived 4th and H, E, C, G in the last four places.

Therefore, there are 4 possible cases for the order of arrival.

Case a: B F A D H E C G Case b: A D B F H E C G

Case c: F H E A D B C G Case d: F A D B H E C G

The following table summarizes the possible cases.

Order of Arrival	Order of Presentation	Order of Departure
B F A D H E C G	H A C B D E G F	H C G D F A/B E B/A
A D B F H E C G		A/B H B/A C G D F E
F H E A D B C G		
F A D B H E C G		

A gave his presentation immediately after H.

Choice (B)

Exactly eight delegates, A through H, attended a conference and each of them gave a presentation at the conference. All the eight presentations were scheduled continuously, one after the other, and no other presentations were made at the conference. Further, all the eight delegates arrived at different times and departed at different times, in such a way that each of them arrived exactly ten minutes after the previous delegate arrived, and they also left in a similar manner. The order in which the delegates arrived, gave their presentations and departed was not necessarily the same. It is also known that

- i. H arrived immediately before E arrived but after F arrived and he left before G left.
- ii. C left before D's presentation started.
- iii. F, who gave the last presentation, arrived at exactly 11:00 a.m. and left immediately after D left but he was not the last delegate to leave.
- iv. exactly three delegates gave their presentations after C's presentation but before G's presentation.
- v. D arrived immediately after A's arrival and gave his presentation immediately before E's presentation.
- vi. Exactly one delegate arrived between A's arrival and B's arrival; exactly one gave a presentation between A's presentation and B's presentation; and exactly one left between A's departure and B's departure.
- vii. G arrived immediately after C and also left immediately after C, while A finished his presentation before either of them arrived.

Q17. DIRECTIONS for questions 16 to 20: Select the correct alternative from the given choices.

If H left the conference at 11:30 a.m., who was the first delegate to arrive?

- a) A
- b) B
- c) D
- d) F Your answer is incorrect

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	586
Avg. time spent on this question by all students	162
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	175
% of students who attempted this question	12.72
% of students who got the question right of those who attempted	54.91

[Video Solution](#)

[Text Solution](#)

From condition iv, three delegates gave a presentation between C and G and from vi, one delegate presented between A and B and from iii, F gave the last presentation. Therefore, C should have presented 1st, 2nd, or 3rd.

If C presented first, G must have presented 5th. Hence, A and B must have presented 2nd and 4th or 4th and 6th (from vi). But from vii, C and G arrived after A's presentation. C and G could not have presented before they arrived. This case is not possible.

If C presented second, G must have presented 6th. In this case, A should have presented first. Any other case will contradict condition vii. As A presented 1st, B would have presented 3rd. D and E would have presented 4th and 5th whereas H would have presented 7th. This is a possible case.

If C presented third, G would have presented 7th. A could not have presented 1st because B could not have presented 3rd. A presented second and B presented 4th. This is the only possible case (from vii). D and E would have presented 5th and 6th and H would have presented 1st.

Therefore, there are two possible cases for the order of presentations.

Case 1: A C B D E G H F Case 2: H A C B D E G F

The order of departure can be deduced as follows.

From ii, C left before D's presentation started. In the cases for order of presentation, E, G and F give their presentations after D's. Hence C left before D, E, G, and F.

From i, H left before G left. Hence, H left before C left as well since C and G left one after the other. Therefore, C could have left 2nd or 3rd or 4th.

If C left 2nd, G would have left 3rd. D and F left in that order in 4th and 5th places. A or B would have left 6th and 8th. H would have left 1st and E last. This is a possibility.

If C left 3rd, G left 4th. In this case, A and B could not have with exactly one person leaving between them. Hence this case is not possible.

If C left 4th, G left 5th. D and F left 6th and 7th. E left 8th. A and B would have left 1st or 3rd. H would have left 2nd.

The possible cases for the order of departures are

Case x: H C G D F A/B E B/A Case y: A/B H B/A C G D F E

In both these cases H left before C. Also C left before D's presentation started. Hence, H would have left before D's presentation started. Hence, H could not have presented after D. Therefore, Case 1 is not possible.

Therefore the order of presentations is H A C B D E G F.

The order of arrival can be found out as follows.

From i, H arrived immediately before E. From v, D arrived immediately after A. From vi, exactly one delegate arrived between A and B. Also, from vii, C and G arrived after A's presentation which means they arrived after A. Since H's presentation is before A, they arrived after H as well.

Assume B arrived before A. A could have arrived 5th but not after that because D, C and G arrived after him. If A arrived 5th, B arrived 3rd, D arrived 6th, C arrived 7th and G arrived 8th. H and E should arrive immediately after one another. They could have arrived 1st and 2nd. But they cannot arrive before F in this case. If A arrived 4th, B arrived 2nd, D arrived 5th. C and G would have arrived after D immediately after one another. In this case, H and E could not have arrived immediately after one another. If A arrived 3rd, B arrived 1st, D arrived 3rd, C and G should have arrived 7th and 8th, after H and E arrived. H and E should have arrived 5th and 6th. F would have arrived 2nd. This is a possible case.

If A arrived before B, then A, D, B must have arrived one after the other. C and G arrived after A, D, and B. If A, D, B arrived 4th, 5th, 6th, C and G would have arrived 7th and 8th. F would be the first to arrive, H and E, 2nd and 3rd. This one possible case.

A, D, B could not have arrived 3rd, 4th and 5th because H and E cannot arrive after F and one after the other in such case.

A, D, B could have arrived 2nd, 3rd and 4th. F could have arrived 1st. H, E and C, G in last four places.

A, D, B also could have arrived 1st, 2nd, and 3rd. F could have arrived 4th and H, E, C, G in the last four places.

Therefore, there are 4 possible cases for the order of arrival.

Case a: B F A D H E C G Case b: A D B F H E C G

Case c: F H E A D B C G Case d: F A D B H E C G

The following table summarizes the possible cases.

Order of Arrival	Order of Presentation	Order of Departure
B F A D H E C G	H A C B D E G F	H C G D F A/B E B/A
A D B F H E C G		A/B H B/A C G D F E
F H E A D B C G		
F A D B H E C G		

If H left the conference at 11:30 am, he should have arrived before 11:30 am. Also, G should have left by 11:50. The possible times by which G could arrive is 12, 11:40, 12:10, 12:10. Hence only Case b is possible and A arrived first.

Choice (A)

undefined

DIRECTIONS for questions 16 to 20: Answer the questions on the basis of the information given below.

Exactly eight delegates, A through H, attended a conference and each of them gave a presentation at the conference. All the eight presentations were scheduled continuously, one after the other, and no other presentations were made at the conference. Further, all the

eight delegates arrived at different times and departed at different times, in such a way that each of them arrived exactly ten minutes after the previous delegate arrived, and they also left in a similar manner. The order in which the delegates arrived, gave their presentations and departed was not necessarily the same. It is also known that

- i. H arrived immediately before E arrived but after F arrived and he left before G left.
- ii. C left before D's presentation started.
- iii. F, who gave the last presentation, arrived at exactly 11:00 a.m. and left immediately after D left but he was not the last delegate to leave.
- iv. exactly three delegates gave their presentations after C's presentation but before G's presentation.
- v. D arrived immediately after A's arrival and gave his presentation immediately before E's presentation.
- vi. Exactly one delegate arrived between A's arrival and B's arrival; exactly one gave a presentation between A's presentation and B's presentation; and exactly one left between A's departure and B's departure.
- vii. G arrived immediately after C and also left immediately after C, while A finished his presentation before either of them arrived.

Q18. DIRECTIONS for questions 16 to 20: Select the correct alternative from the given choices.

At which of the following times was E definitely **not** giving his presentation?

- a) 11:15 a.m.
- b) **11:25 a.m.**
- c) **11:35 a.m.**
- d) **More than one of the above**

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	50
Avg. time spent on this question by all students	69
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	68
% of students who attempted this question	10.43
% of students who got the question right of those who attempted	61.78

[Video Solution](#)

[Text Solution](#)

From condition iv, three delegates gave a presentation between C and G and from vi, one delegate presented between A and B and from iii, F gave the last presentation. Therefore, C should have presented 1st, 2nd, or 3rd. If C presented first, G must have presented 5th. Hence, A and B must have presented 2nd and 4th or 4th and 6th (from vi). But from vii, C and G arrived after A's presentation. C and G could not have presented before they arrived. This case is not possible.

If C presented second, G must have presented 6th. In this case, A should have presented first. Any other case will contradict condition vii. As A presented 1st, B would have presented 3rd. D and E would have presented 4th and 5th whereas H would have presented 7th. This is a possible case.

If C presented third, G would have presented 7th. A could not have presented 1st because B could not have presented 3rd. A presented second and B presented 4th. This is the only possible case (from vii). D and E would have presented 5th and 6th and H would have presented 1st.

Therefore, there are two possible cases for the order of presentations.

Case 1: A C B D E G H F Case 2: H A C B D E G F

The order of departure can be deduced as follows.

From ii, C left before D's presentation started. In the cases for order of presentation, E, G and F give their presentations after D's. Hence C left before D, E, G, and F.

From i, H left before G left. Hence, H left before C left as well since C and G left one after the other. Therefore, C could have left 2nd or 3rd or 4th.

If C left 2nd, G would have left 3rd. D and F left in that order in 4th and 5th places. A or B would have left 6th and 8th. H would have left 1st and E last. This is a possibility.

If C left 3rd, G left 4th. In this case, A and B could not have with exactly one person leaving between them. Hence this case is not possible.

If C left 4th, G left 5th. D and F left 6th and 7th. E left 8th. A and B would have left 1st or 3rd. H would have left 2nd.

The possible cases for the order of departures are

Case x: H C G D F A/B E B/A Case y: A/B H B/A C G D F E

In both these cases H left before C. Also C left before D's presentation started. Hence, H would have left before D's presentation started. Hence, H could not have presented after D. Therefore, Case 1 is not possible.

Therefore the order of presentations is H A C B D E G F.

The order of arrival can be found out as follows.

From i, H arrived immediately before E. From v, D arrived immediately after A. From vi, exactly one delegate arrived between A and B. Also, from vii, C and G arrived after A's presentation which means they arrived after A. Since H's presentation is before A, they arrived after H as well.

Assume B arrived before A. A could have arrived 5th but not after that because D, C and G arrived after him. If A arrived 5th, B arrived 3rd, D arrived 6th, C arrived 7th and G arrived 8th. H and E should arrive immediately after one another. They could have arrived 1st and 2nd. But they cannot arrive before F in this case. If A arrived 4th, B arrived 2nd, D arrived 5th. C and G would have arrived after D immediately after one another. In this case, H and E could not have arrive immediately after one another. If A arrived 3rd, B arrived 1st, D arrived 3rd. C and G should have arrived 7th and 8th, after H and E arrived. H and E should have arrived 5th and 6th. F would have arrived 2nd. This is a possible case.

If A arrived before B, then A, D, B must have arrived one after the other. C and G arrived after A, D, and B. If A, D, B arrived 4th, 5th, 6th, C and G would have arrived 7th and 8th. F would be the first to arrive, H and E, 2nd and 3rd. This one possible case.

A, D, B could not have arrive 3rd, 4th and 5th because H and E cannot arrive after F and one after the other in such case.

A, D, B could have arrived 2nd, 3rd and 4th. F could have arrived 1st. H, E and C, G in last four places.

A, D, B also could have arrived 1st, 2nd, and 3rd, F could have arrived 4th and H, E, C, G in the last four places.

Therefore, there are 4 possible cases for the order of arrival.

Case a: B F A D H E C G Case b: A D B F H E C G

Case c: F H E A D B C G Case d: F A D B H E C G

The following table summarizes the possible cases.

Order of Arrival	Order of Presentation	Order of Departure
B F A D H E C G	H A C B D E G F	H C G D F A/B E B/A
A D B F H E C G		
F H E A D B C G		
F A D B H E C G		A/B H B/A C G D F E

The arrival time of E in the four cases are 11:40 am, 11:20 am, 11:20 am, and 11:50 am. Hence, option A is not possible. The arrival times of C are 11:50, 11:30, 12:00 and 12:00. Since, C has to present fist, E's presentation cannot happen before 11:30. Hence, option B is also not possible.

Choice (D)

undefined

DIRECTIONS for questions 16 to 20: Answer the questions on the basis of the information given below.

Exactly eight delegates, A through H, attended a conference and each of them gave a presentation at the conference. All the eight presentations were scheduled continuously, one after the other, and no other presentations were made at the conference. Further, all the

eight delegates arrived at different times and departed at different times, in such a way that each of them arrived exactly ten minutes after the previous delegate arrived, and they also left in a similar manner. The order in which the delegates arrived, gave their presentations and departed was not necessarily the same. It is also known that

- i. H arrived immediately before E arrived but after F arrived and he left before G left.
- ii. C left before D's presentation started.
- iii. F, who gave the last presentation, arrived at exactly 11:00 a.m. and left immediately after D left but he was not the last delegate to leave.
- iv. exactly three delegates gave their presentations after C's presentation but before G's presentation.
- v. D arrived immediately after A's arrival and gave his presentation immediately before E's presentation.
- vi. Exactly one delegate arrived between A's arrival and B's arrival; exactly one gave a presentation between A's presentation and B's presentation; and exactly one left between A's departure and B's departure.
- vii. G arrived immediately after C and also left immediately after C, while A finished his presentation before either of them arrived.

Q19.

DIRECTIONS for questions 16 to 20: Select the correct alternative from the given choices. Which of the following statements is definitely true?

- a) The duration of B's presentation was less than 10 minutes.
- b) **The duration of E's presentation was less than 10 minutes.**
- c) **The duration of A's presentation was less than 10 minutes.**
- d) **The duration of C's presentation was less than 10 minutes.**

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	9
Avg. time spent on this question by all students	65
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	69
% of students who attempted this question	3.14
% of students who got the question right of those who attempted	29.19

[Video Solution](#)

[Text Solution](#)

From condition iv, three delegates gave a presentation between C and G and from vi, one delegate presented between A and B and from iii, F gave the last presentation. Therefore, C should have presented 1st, 2nd, or 3rd.

If C presented first, G must have presented 5th. Hence, A and B must have presented 2nd and 4th or 4th and 6th (from vi). But from vii, C and G arrived after A's presentation. C and G could not have presented before they arrived. This case is not possible.

If C presented second, G must have presented 6th. In this case, A should have presented first. Any other case will contradict condition vii. As A presented 1st, B would have presented 3rd. D and E would have presented 4th and 5th whereas H would have presented 7th. This is a possible case.

If C presented third, G would have presented 7th. A could not have presented 1st because B could not have presented 3rd. A presented second and B presented 4th. This is the only possible case (from vii). D and E would have presented 5th and 6th and H would have presented 1st.

Therefore, there are two possible cases for the order of presentations.

Case 1: A C B D E G H F Case 2: H A C B D E G F

The order of departure can be deduced as follows.

From ii, C left before D's presentation started. In the cases for order of presentation, E, G and F give their presentations after D's. Hence C left before D, E, G, and F.

From i, H left before G left. Hence, H left before C left as well since C and G left one after the other. Therefore, C could have left 2nd or 3rd or 4th.

If C left 2nd, G would have left 3rd. D and F left in that order in 4th and 5th places. A or B would have left 6th and 8th. H would have left 1st and E last. This is a possibility.

If C left 3rd, G left 4th. In this case, A and B could not have with exactly one person leaving between them. Hence this case is not possible.

If C left 4th, G left 5th. D and F left 6th and 7th. E left 8th. A and B would have left 1st or 3rd. H would have left 2nd.

The possible cases for the order of departures are

Case x: H C G D F A/B E B/A Case y: A/B H B/A C G D F E

In both these cases H left before C. Also C left before D's presentation started. Hence, H would have left before D's presentation started. Hence, H could not have presented after D. Therefore, Case 1 is not possible.

Therefore the order of presentations is H A C B D E G F.

The order of arrival can be found out as follows.

From i, H arrived immediately before E. From v, D arrived immediately after A. From vi, exactly one delegate arrived between A and B. Also, from vii, C and G arrived after A's presentation which means they arrived after A. Since H's presentation is before A, they arrived after H as well.

Assume B arrived before A. A could have arrived 5th but not after that because D, C and G arrived after him. If A arrived 5th, B arrived 3rd, D arrived 6th, C arrived 7th and G arrived 8th. H and E should arrive immediately after one another. They could have arrived 1st and 2nd. But they cannot arrive before F in this case. If A arrived 4th, B arrived 2nd, D arrived 5th. C and G would have arrived after D immediately after one another. In this case, H and E could not have arrived immediately after one another. If A arrived 3rd, B arrived 1st, D arrived 3rd. C and G should have arrived 7th and 8th, after H and E arrived. H and E should have arrived 5th and 6th. F would have arrived 2nd. This is a possible case.

If A arrived before B, then A, D, B must have arrived one after the other. C and G arrived after A, D, and B. If A, D, B arrived 4th, 5th, 6th, C and G would have arrived 7th and 8th. F would be the first to arrive, H and E, 2nd and 3rd. This one possible case.

A, D, B could not have arrived 3rd, 4th and 5th because H and E cannot arrive after F and one after the other in such case.

A, D, B could have arrived 2nd, 3rd and 4th. F could have arrived 1st. H, E and C, G in the last four places.

A, D, B also could have arrived 1st, 2nd, and 3rd. F could have arrived 4th and H, E, C, G in the last four places.

Therefore, there are 4 possible cases for the order of arrival.

Case a: B F A D H E C G Case b: A D B F H E C G

Case c: F H E A D B C G Case d: F A D B H E C G

The following table summarizes the possible cases.

Order of Arrival	Order of Presentation	Order of Departure
B F A D H E C G	H A C B D E G F	H C G D F A/B E B/A
A D B F H E C G		A/B H B/A C G D F E
F H E A D B C G		
F A D B H E C G		

C left before D's presentation started and G left immediately after C. Hence, G must have finished his presentation within ten minutes of C's departure. For this to happen, D, E, and G must have finished all their presentations within ten minutes. Hence, E's presentation must have been for less than ten minutes.

Choice (B)

undefined

DIRECTIONS for questions 16 to 20: Answer the questions on the basis of the information given below.

Exactly eight delegates, A through H, attended a conference and each of them gave a presentation at the conference. All the eight presentations were scheduled continuously, one after the other, and no other presentations were made at the conference. Further, all the eight delegates arrived at different times and departed at different times, in such a way that each of them arrived exactly ten minutes after the

previous delegate arrived, and they also left in a similar manner. The order in which the delegates arrived, gave their presentations and departed was not necessarily the same. It is also known that

- i. H arrived immediately before E arrived but after F arrived and he left before G left.
- ii. C left before D's presentation started.
- iii. F, who gave the last presentation, arrived at exactly 11:00 a.m. and left immediately after D left but he was not the last delegate to leave.
- iv. exactly three delegates gave their presentations after C's presentation but before G's presentation.
- v. D arrived immediately after A's arrival and gave his presentation immediately before E's presentation.
- vi. Exactly one delegate arrived between A's arrival and B's arrival; exactly one gave a presentation between A's presentation and B's presentation; and exactly one left between A's departure and B's departure.
- vii. G arrived immediately after C and also left immediately after C, while A finished his presentation before either of them arrived.

Q20.

DIRECTIONS for questions 16 to 20: Select the correct alternative from the given choices. If D stayed at the conference for the maximum duration among the eight, who left the conference immediately after F?

- a) A
- b) **B**
- c) **D**
- d) **E**

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	24
Avg. time spent on this question by all students	76
Difficulty Level	VD
Avg. time spent on this question by students who got this question right	82
% of students who attempted this question	8.05
% of students who got the question right of those who attempted	58.68

[Video Solution](#)

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From condition iv, three delegates gave a presentation between C and G and from vi, one delegate presented between A and B and from iii, F gave the last presentation. Therefore, C should have presented 1st, 2nd, or 3rd.

If C presented first, G must have presented 5th. Hence, A and B must have presented 2nd and 4th or 4th and 6th (from vi). But from vii, C and G arrived after A's presentation. C and G could not have presented before they arrived. This case is not possible.

If C presented second, G must have presented 6th. In this case, A should have presented first. Any other case will contradict condition vii. As A presented 1st, B would have presented 3rd. D and E would have presented 4th and 5th whereas H would have presented 7th. This is a possible case.

If C presented third, G would have presented 7th. A could not have presented 1st because B could not have presented 3rd. A presented second and B presented 4th. This is the only possible case (from vii). D and E would have presented 5th and 6th and H would have presented 1st.

Therefore, there are two possible cases for the order of presentations.

Case 1: A C B D E G H F Case 2: H A C B D E G F

The order of departure can be deduced as follows.

From ii, C left before D's presentation started. In the cases for order of presentation, E, G and F give their presentations after D's. Hence C left before D, E, G, and F.

From i, H left before G left. Hence, H left before C left as well since C and G left one after the other. Therefore, C could have left 2nd or 3rd or 4th.

If C left 2nd, G would have left 3rd. D and F left in that order in 4th and 5th places. A or B would have left 6th and 8th. H would have left 1st and E last. This is a possibility.

If C left 3rd, G left 4th. In this case, A and B could not have with exactly one person leaving between them. Hence this case is not possible.

If C left 4th, G left 5th. D and F left 6th and 7th. E left 8th. A and B would have left 1st or 3rd. H would have left 2nd.

The possible cases for the order of departures are

Case x: H C G D F A/B E B/A Case y: A/B H B/A C G D F E

In both these cases H left before C. Also C left before D's presentation started. Hence, H would have left before D's presentation started. Hence, H could not have presented after D. Therefore, Case 1 is not possible.

Therefore the order of presentations is H A C B D E G F.

The order of arrival can be found out as follows.

From i, H arrived immediately before E. From v, D arrived immediately after A. From vi, exactly one delegate arrived between A and B. Also, from vii, C and G arrived after A's presentation which means they arrived after A. Since H's presentation is before A, they arrived after H as well.

Assume B arrived before A. A could have arrived 5th but not after that because D, C and G arrived after him. If A arrived 5th, B arrived 3rd, D arrived 6th, C arrived 7th and G arrived 8th. H and E should arrive immediately after one another. They could have arrived 1st and 2nd. But they cannot arrive before F in this case. If A arrived 4th, B arrived 2nd, D arrived 5th. C and G would have arrived after D immediately after one another. In this case, H and E could not have arrived immediately after one another. If A arrived 3rd, B arrived 1st, D arrived 3rd, C and G should have arrived 7th and 8th, after H and E arrived. H and E should have arrived 5th and 6th. F would have arrived 2nd. This is a possible case.

If A arrived before B, then A, D, B must have arrived one after the other. C and G arrived after A, D, and B. If A, D, B arrived 4th, 5th, 6th, C and G would have arrived 7th and 8th. F would be the first to arrive, H and E, 2nd and 3rd. This one possible case.

A, D, B could not have arrived 3rd, 4th and 5th because H and E cannot arrive after F and one after the other in such case.

A, D, B could have arrived 2nd, 3rd and 4th. F could have arrived 1st. H, E and C, G in last four places.

A, D, B also could have arrived 1st, 2nd, and 3rd. F could have arrived 4th and H, E, C, G in the last four places.

Therefore, there are 4 possible cases for the order of arrival.

Case a: B F A D H E C G Case b: A D B F H E C G

Case c: F H E A D B C G Case d: F A D B H E C G

The following table summarizes the possible cases.

Order of Arrival	Order of Presentation	Order of Departure
B F A D H E C G	H A C B D E G F	H C G D F A/B E B/A
A D B F H E C G		A/B H B/A C G D F E
F H E A D B C G		
F A D B H E C G		

If D stayed at the conference for the longest time, anyone who arrived before D should not leave after him. From cases a, b, c, and d, A should not leave after D. Therefore, only case y is possible. In this case, E left the conference after F.

Choice (D)

undefined

DIRECTIONS for questions 21 to 25: Answer the questions on the basis of the information given below.

Five friends, Manish, Naresh, Pavan, Salman, and Tarun, who live in the same flat, bought a cake one evening. All of them decided to eat the cake together the next morning and stored the cake in the refrigerator. However, during the night, at different times, each of the five friends

sneaked off to the refrigerator and ate some portion of the cake without each other's knowledge. The next morning, the five friends found that only one-eighth of the cake was remaining. Further, it is also known that

- i. none of them ate more than half of the cake that was remaining at the time they went to eat the cake.
- ii. Tarun ate half of the cake that was remaining when he went to eat it and Manish ate the same quantity of cake as Tarun did.
- iii. Salman ate the cake after Pavan did, and after Salman finished eating, more than one-eighth of the cake was remaining.
- iv. the person who ate last ate only one-fourth of the cake that was remaining when he went to eat it and Tarun ate the cake before Salman did.
- v. when Manish went to eat a portion of the cake, only four-fifths of the cake was remaining.

Q21. DIRECTIONS for question 21 to 25: Select the correct alternative from the given choices.

Who was the last person to eat the cake during the night?

- a) Salman
- b) **Tarun**
- c) Naresh Your answer is correct
- d) Manish

Time spent / Accuracy Analysis

Time taken by you to answer this question	442
Avg. time spent on this question by all students	441
Difficulty Level	E
Avg. time spent on this question by students who got this question right	442
% of students who attempted this question	46.45
% of students who got the question right of those who attempted	91.26

[Video Solution](#)

[Text Solution](#)

From (i) and (ii), Tarun should have eaten after Manish because Manish and Tarun ate the same quantity of cake and Tarun ate half the cake that was remaining. If Manish ate after Tarun, he would have violated condition (i).

From (v), Manish was not the first to eat the cake. From (iv), Tarun ate before Salman and from (iii), Salman was not the last to eat. Pavan must have been the first to eat and Naresh, the last person to eat the cake. Hence, the order in which they ate the cake is

Pavan Manish Tarun Salman Naresh
Hence, Naresh was the last person to eat the cake.

Choice (C)

undefined

DIRECTIONS for questions 21 to 25: Answer the questions on the basis of the information given below.

Five friends, Manish, Naresh, Pavan, Salman, and Tarun, who live in the same flat, bought a cake one evening. All of them decided to eat the cake together the next morning and stored the cake in the refrigerator. However, during the night, at different times, each of the five friends sneaked off to the refrigerator and ate some portion of the cake without each other's knowledge. The next morning, the five friends found that only one-eighth of the cake was remaining. Further, it is also known that

- i. none of them ate more than half of the cake that was remaining at the time they went to eat the cake.
- ii. Tarun ate half of the cake that was remaining when he went to eat it and Manish ate the same quantity of cake as Tarun did.
- iii. Salman ate the cake after Pavan did, and after Salman finished eating, more than one-eighth of the cake was remaining.
- iv. the person who ate last ate only one-fourth of the cake that was remaining when he went to eat it and Tarun ate the cake before Salman did.
- v. when Manish went to eat a portion of the cake, only four-fifths of the cake was remaining.

Q22. DIRECTIONS for question 21 to 25: Select the correct alternative from the given choices.

What percentage of the entire cake did Pavan eat?

- a) 10%
- b) 15%
- c) 20% Your answer is correct
- d) 25%

Time spent / Accuracy Analysis

Time taken by you to answer this question	93
Avg. time spent on this question by all students	177
Difficulty Level	M
Avg. time spent on this question by students who got this question right	172
% of students who attempted this question	32.77
% of students who got the question right of those who attempted	84.55

[Video Solution](#)

[Text Solution](#)

From (v), Manish found four fifths of the cake remaining. Hence, Pavan must have eaten one fifth of the cake. Hence, Pavan ate 20% of the cake. Choice (C)

undefined

DIRECTIONS for questions 21 to 25: Answer the questions on the basis of the information given below.

Five friends, Manish, Naresh, Pavan, Salman, and Tarun, who live in the same flat, bought a cake one evening. All of them decided to eat the cake together the next morning and stored the cake in the refrigerator. However, during the night, at different times, each of the five friends sneaked off to the refrigerator and ate some portion of the cake without each other's knowledge. The next morning, the five friends found that only one-eighth of the cake was remaining. Further, it is also known that

- i. none of them ate more than half of the cake that was remaining at the time they went to eat the cake.
- ii. Tarun ate half of the cake that was remaining when he went to eat it and Manish ate the same quantity of cake as Tarun did.
- iii. Salman ate the cake after Pavan did, and after Salman finished eating, more than one-eighth of the cake was remaining.

- iv. the person who ate last ate only one-fourth of the cake that was remaining when he went to eat it and Tarun ate the cake before Salman did.
- v. when Manish went to eat a portion of the cake, only four-fifths of the cake was remaining.

Q23. DIRECTIONS for question 21 to 25: Select the correct alternative from the given choices.

Who among the following ate the least quantity of cake, as a percentage of the quantity of cake that was remaining when he went to eat it?

- a) **Manish** Your answer is incorrect
- b) **Tarun**
- c) **Salman**
- d) **Pavan**

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	45
Avg. time spent on this question by all students	173
Difficulty Level	M
Avg. time spent on this question by students who got this question right	206
% of students who attempted this question	30.34
% of students who got the question right of those who attempted	49.29

[Video Solution](#)

[Text Solution](#)

From (iv), the person who ate the last ate one fourth of the cake that was remaining. Since one eighth cake was remaining in the morning, Naresh must have eaten $1/24$ of the cake and before he ate there must have been $1/6$ of the cake remaining.

Let x be the quantity of cake that was remaining after Manish finished eating. Given that Tarun ate $x/2$ and Manish also ate $x/2$.

Hence, $4/5 - x/2 = x$. Solving for x , we get $x = 8/15$ and $x/2 = 4/15$.

The following table gives the quantity of cake remaining and the quantity of cake that each person ate.

Person	Quantity before eating	Quantity after eating	Quantity ate
Pavan	1	$4/5$	$1/5$
Manish	$4/5$	$8/15$	$4/15$
Tarun	$8/15$	$4/15$	$4/15$
Salman	$4/15$	$1/6$	$1/10$
Naresh	$1/6$	$1/8$	$1/24$

Among the five friends, Pavan ate 20% of the cake that was remaining when he started to eat, which is lower than that of any of the other friends. Choice (D)

undefined

DIRECTIONS for questions 21 to 25: Answer the questions on the basis of the information given below.

Five friends, Manish, Naresh, Pavan, Salman, and Tarun, who live in the same flat, bought a cake one evening. All of them decided to eat the cake together the next morning and stored the cake in the refrigerator. However, during the night, at different times, each of the five friends sneaked off to the refrigerator and ate some portion of the cake without each other's knowledge. The next morning, the five friends found that only one-eighth of the cake was remaining. Further, it is also known that

- i. none of them ate more than half of the cake that was remaining at the time they went to eat the cake.

- ii. Tarun ate half of the cake that was remaining when he went to eat it and Manish ate the same quantity of cake as Tarun did.
- iii. Salman ate the cake after Pavan did, and after Salman finished eating, more than one-eighth of the cake was remaining.
- iv. the person who ate last ate only one-fourth of the cake that was remaining when he went to eat it and Tarun ate the cake before Salman did.
- v. when Manish went to eat a portion of the cake, only four-fifths of the cake was remaining.

Q24. DIRECTIONS for question 21 to 25: Select the correct alternative from the given choices.

Who among the following ate the maximum quantity of cake?

- a) **Manish** Your answer is correct
- b) **Naresh**
- c) **Pavan**
- d) **Salman**

Time spent / Accuracy Analysis

Time taken by you to answer this question	35
Avg. time spent on this question by all students	70
Difficulty Level	M
Avg. time spent on this question by students who got this question right	72
% of students who attempted this question	31.82
% of students who got the question right of those who attempted	66.71

[Video Solution](#)

[Text Solution](#)

Manish and Tarun ate the maximum quantity of cake.

Choice (A)

undefined

DIRECTIONS for questions 21 to 25: Answer the questions on the basis of the information given below.

Five friends, Manish, Naresh, Pavan, Salman, and Tarun, who live in the same flat, bought a cake one evening. All of them decided to eat the cake together the next morning and stored the cake in the refrigerator. However, during the night, at different times, each of the five friends sneaked off to the refrigerator and ate some portion of the cake without each other's knowledge. The next morning, the five friends found that only one-eighth of the cake was remaining. Further, it is also known that

- i. none of them ate more than half of the cake that was remaining at the time they went to eat the cake.
- ii. Tarun ate half of the cake that was remaining when he went to eat it and Manish ate the same quantity of cake as Tarun did.
- iii. Salman ate the cake after Pavan did, and after Salman finished eating, more than one-eighth of the cake was remaining.
- iv. the person who ate last ate only one-fourth of the cake that was remaining when he went to eat it and Tarun ate the cake before Salman did.

- v. when Manish went to eat a portion of the cake, only four-fifths of the cake was remaining.

Q25. DIRECTIONS for question 21 to 25: Select the correct alternative from the given choices.

Which of the following options denote the quantity of cake that was remaining after Tarun finished eating the cake during the night?

a) $\frac{8}{15}$

b) $\frac{2}{5}$

c) $\frac{7}{15}$

d) $\frac{4}{15}$

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	98
Difficulty Level	M
Avg. time spent on this question by students who got this question right	95
% of students who attempted this question	22.63
% of students who got the question right of those who attempted	73.26

[Video Solution](#)

[Text Solution](#)

After Tarun finished eating the cake, $\frac{4}{15}$ of the cake was remaining. Choice (D)

undefined

DIRECTIONS for questions 21 to 25: Answer the questions on the basis of the information given below.

Five friends, Manish, Naresh, Pavan, Salman, and Tarun, who live in the same flat, bought a cake one evening. All of them decided to eat the cake together the next morning and stored the cake in the refrigerator. However, during the night, at different times, each of the five friends sneaked off to the refrigerator and ate some portion of the cake without each other's knowledge. The next morning, the five friends found that only one-eighth of the cake was remaining. Further, it is also known that

- i. none of them ate more than half of the cake that was remaining at the time they went to eat the cake.
- ii. Tarun ate half of the cake that was remaining when he went to eat it and Manish ate the same quantity of cake as Tarun did.
- iii. Salman ate the cake after Pavan did, and after Salman finished eating, more than one-eighth of the cake was remaining.
- iv. the person who ate last ate only one-fourth of the cake that was remaining when he went to eat it and Tarun ate the cake before Salman did.
- v. when Manish went to eat a portion of the cake, only four-fifths of the cake was remaining.

Q25. DIRECTIONS for question 21 to 25: Select the correct alternative from the given choices.

Which of the following options denote the quantity of cake that was remaining after Tarun finished eating the cake during the night?

a) $\frac{8}{15}$

b) $\frac{2}{5}$

c) $\frac{7}{15}$

d) $\frac{4}{15}$

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 **98**

Difficulty Level **M**

Avg. time spent on this question by students who got this question right **95**

% of students who attempted this question **22.63**

% of students who got the question right of those who attempted **73.26**

[Video Solution](#)

[Text Solution](#)

After Tarun finished eating the cake, $\frac{4}{15}$ of the cake was remaining. Choice (D)

undefined

DIRECTIONS for questions 26 to 30: Answer the questions on the basis of the information given below.

Raghu, who was preparing for an examination, had 72 days remaining for studying nine subjects. For this purpose he approached his professor for help. The professor prepared a schedule for Raghu in which he specified the total time (in hours) that Raghu needs to spend studying each subject in the 72 days. Further, the professor divided the 72 days into four equal quarters and at the end of every quarter, he assessed the total amount of time (in hours) Raghu had spent studying each subject in that quarter. The following table gives the number of hours that was given as a target by the professor and the number of hours Raghu spent studying during the first three quarters.

Subject	Total Targeted Time (in hrs.)	Time Studied (in hrs.)		
		First Quarter	Second Quarter	Third Quarter
Mathematics	37	8	10	7
Physics	68	24	14	10
Chemistry	81	9	24	17
Botany	47	8	11	15
Zoology	54	3	8	11
Civics	18	1	3	1
Geography	28	8	5	7
Economics	46	7	6	9
History	53	4	11	7

Q26. DIRECTIONS for question 26: Select the correct alternative from the given choices.

In the second quarter, the average amount of time spent per day by Raghu studying any of the subjects was

a) **10.22 hours.**

b) **5.11 hours.**

c) **6.11 hours.**

d) **5.33 hours.**

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	224
Difficulty Level	E
Avg. time spent on this question by students who got this question right	237
% of students who attempted this question	45.7
% of students who got the question right of those who attempted	60.38

[Video Solution](#)

Text Solution

Number of hours Raghu spent studying any subject = 92
Average time per day = $92 \times 4 / 72 = 5.11$ hours.

Choice (B)

undefined

DIRECTIONS for questions 26 to 30: Answer the questions on the basis of the information given below.

Raghu, who was preparing for an examination, had 72 days remaining for studying nine subjects. For this purpose he approached his professor for help. The professor prepared a schedule for Raghu in which he specified the total time (in hours) that Raghu needs to spend studying each subject in the 72 days. Further, the professor divided the 72 days into four equal quarters and at the end of every quarter, he assessed the total amount of time (in hours) Raghu had spent studying each subject in that quarter. The following table gives the number of hours that was given as a target by the professor and the number of hours Raghu spent studying during the first three quarters.

Subject	Total Targeted Time (in hrs.)	Time Studied (in hrs.)		
		First Quarter	Second Quarter	Third Quarter
Mathematics	37	8	10	7
Physics	68	24	14	10
Chemistry	81	9	24	17
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Zoology	54	3	8	11
Civics	18	1	3	1
Geography	28	8	5	7
Economics	46	7	6	9
History	53	4	11	7

Q27. DIRECTIONS for question 27: Type your answer in the text box provided below the question.

If during the last quarter, the maximum amount of time that Raghu can spend studying any one subject in a day is 1.5 hours, how many subjects will Raghu be able to finish studying the targeted time?

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	21
Avg. time spent on this question by all students	204
Difficulty Level	E
Avg. time spent on this question by students who got this question right	203
% of students who attempted this question	40.38
% of students who got the question right of those who attempted	65.97

[Video Solution](#)

Text Solution

Since Raghu can spend at most 1.5 hours per day on any one subject, the maximum time he can study a subject during the last quarter is $1.5 \times 18 = 27$ hours.

Therefore, any subject which has more than 27 hours of preparation remaining (after the first three quarters) cannot be studied completely.

By a quick observation, Chemistry, Zoology and History have more than 27 hours remaining.

Hence, the answer is $9 - 3 = 6$.

Ans: (6)

undefined

DIRECTIONS for questions 26 to 30: Answer the questions on the basis of the information given below.

Raghu, who was preparing for an examination, had 72 days remaining for studying nine subjects. For this purpose he approached his professor for help. The professor prepared a schedule for Raghu in which he specified the total time (in hours) that Raghu needs to spend studying each subject in the 72 days. Further, the professor divided the 72 days into four equal quarters and at the end of every quarter, he assessed the total amount of time (in hours) Raghu had spent studying each subject in that quarter. The following table gives the number of hours that was given as a target by the professor and the number of hours Raghu spent studying during the first three quarters.

Subject	Total Targeted Time (in hrs.)	Time Studied (in hrs.)		
		First Quarter	Second Quarter	Third Quarter
Mathematics	37	8	10	7
Physics	68	24	14	10
Chemistry	81	9	24	17
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Zoology	54	3	8	11
Civics	18	1	3	1
Geography	28	8	5	7
Economics	46	7	6	9
History	53	4	11	7

Q27. DIRECTIONS for question 27: Type your answer in the text box provided below the question.

If during the last quarter, the maximum amount of time that Raghu can spend studying any one subject in a day is 1.5 hours, how many subjects will Raghu be able to finish studying for the targeted time?

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

Time spent / Accuracy Analysis

Time taken by you to answer this question	21
Avg. time spent on this question by all students	204
Difficulty Level	E
Avg. time spent on this question by students who got this question right	203
% of students who attempted this question	40.38
% of students who got the question right of those who attempted	65.97

[Video Solution](#)

[Text Solution](#)

Since Raghu can spend at most 1.5 hours per day on any one subject, the maximum time he can study a subject during the last quarter is $1.5 \times 18 = 27$ hours.

Therefore, any subject which has more than 27 hours of preparation remaining (after the first three quarters) cannot be studied completely.

By a quick observation, Chemistry, Zoology and History have more than 27 hours remaining.

Hence, the answer is $9 - 3 = 6$.

Ans: (6)

undefined

DIRECTIONS for questions 26 to 30: Answer the questions on the basis of the information given below.

Raghu, who was preparing for an examination, had 72 days remaining for studying nine subjects. For this purpose he approached his professor for help. The professor prepared a schedule for Raghu in which he specified the total time (in hours) that Raghu needs to spend studying each subject in the 72 days. Further, the professor divided the 72 days into four equal quarters and at the end of every quarter, he assessed the total amount of time (in hours) Raghu had spent studying each subject in that quarter. The following table gives the number of hours that was given as a target by the professor and the number of hours Raghu spent studying during the first three quarters.

Subject	Total Targeted Time (in hrs.)	Time Studied (in hrs.)		
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Botany	47	8	11	15
Zoology	54	3	8	11
Civics	18	1	3	1
Geography	28	8	5	7
Economics	46	7	6	9
History	53	4	11	7

Q28. DIRECTIONS for questions 28 to 30: Select the correct alternative from the given choices.

What is the average time for which Raghu must study per day during the last quarter to finish studying all the subjects for the targeted time?

- a) **11.33 hours**
- b) **10.22 hours**
- c) **10.67 hours**
- d) **9.67 hours**

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	0
Avg. time spent on this question by all students	156
Difficulty Level	E
Avg. time spent on this question by students who got this question right	153
% of students who attempted this question	38.71
% of students who got the question right of those who attempted	79.37

[Video Solution](#)

[Text Solution](#)

The total time left for all the subjects combined = 184
Time to be spent per day = $184/18 = 10.22$ hours.

Choice (B)

undefined

DIRECTIONS for questions 26 to 30: Answer the questions on the basis of the information given below.

Raghu, who was preparing for an examination, had 72 days remaining for studying nine subjects. For this purpose he approached his professor for help. The professor prepared a schedule for Raghu in which he specified the total time (in hours) that Raghu needs to spend studying each subject in the 72 days. Further, the professor divided the 72 days into four equal quarters and at the end of every quarter, he assessed the total amount of time (in hours) Raghu had spent studying each subject in that quarter. The following table gives the number of hours that was given as a target by the professor and the number of hours Raghu spent studying during the first three quarters.

Subject	Total Targeted Time (in hrs.)	Time Studied (in hrs.)		
		First Quarter	Second Quarter	Third Quarter
Mathematics	37	8	10	7
Physics	68	24	14	10
Chemistry	81	9	24	17
Botany	47	8	11	15
Zoology	54	3	8	11
Civics	18	1	3	1
Geography	28	8	5	7
Economics	46	7	6	9
History	53	4	11	7

Q29. DIRECTIONS for questions 28 to 30: Select the correct alternative from the given choices.

The amount of time that Raghu has to study in the fourth quarter as a percentage of the total targeted time is the maximum for

- a) **Zoology.**
- b) **History.**
- c) **Civics.**
- d) **Economics.**

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	122

Time spent / Accuracy Analysis

Difficulty Level	E
Avg. time spent on this question by students who got this question right	133
% of students who attempted this question	41.35
% of students who got the question right of those who attempted	70.42

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

For Zoology, required percentage = $32/54 * 100 = 59.26\%$
 For History, required percentage = $31/53 * 100 = 58.49\%$
 For Civics, required percentage = $13/18 * 100 = 72.22\%$
 For Economics, required percentage = $24/46 * 100 = 52.17\%$

Choice (C)

undefined

DIRECTIONS for questions 26 to 30: Answer the questions on the basis of the information given below.

Raghu, who was preparing for an examination, had 72 days remaining for studying nine subjects. For this purpose he approached his professor for help. The professor prepared a schedule for Raghu in which he specified the total time (in hours) that Raghu needs to spend studying each subject in the 72 days. Further, the professor divided the 72 days into four equal quarters and at the end of every quarter, he assessed the total amount of time (in hours) Raghu had spent studying each subject in that quarter. The following table gives the number of hours that was given as a target by the professor and the number of hours Raghu spent studying during the first three quarters.

Subject	Total Targeted Time (in hrs.)	Time Studied (in hrs.)		
		First Quarter	Second Quarter	Third Quarter
Mathematics	37	8	10	7
Physics	68	24	14	10
Chemistry	81	9	24	17
Botany	47	8	11	15
Zoology	54	3	8	11
Civics	18	1	3	1
Geography	28	8	5	7
Economics	46	7	6	9
History	53	4	11	7

Q30. DIRECTIONS for questions 28 to 30: Select the correct alternative from the given choices.

How many hours per day, on an average, must Raghu spend studying Physics in the last quarter so that he is able to study the subject for the total targeted time?

- a) **1.08 hours**
- b) **1.11 hours**
- c) **1.17 hours**
- d) **1.21 hours**

You did not answer this question

[Show Correct Answer](#)**Time spent / Accuracy Analysis**

Time taken by you to answer this question	0
Avg. time spent on this question by all students	89
Difficulty Level	E
Avg. time spent on this question by students who got this question right	76
% of students who attempted this question	37.49
% of students who got the question right of those who attempted	93.35

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

Amount of time that Raghu should study Physics in fourth quarter = $68 - 24 - 14 - 10 = 20$
 Amount of time per day = $20/18 = 1.11$ hours. Choice (B)

undefined

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

A paints $\frac{1}{3}$ rd of a barn and B paints $\frac{1}{8}$ th of the remainder. If now C paints k^{th} part of the unpainted barn, such that $\frac{3}{4}$ th of the barn stands painted overall, find the value of 210k.

Your Answer:120 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	179
Avg. time spent on this question by all students	189
Difficulty Level	VE
Avg. time spent on this question by students who got this question right	181
% of students who attempted this question	49.74
% of students who got the question right of those who attempted	42.38

[Video Solution](#)

[**Text Solution**](#)

Let the total area of the barn be 24

$$\text{Part painted by A} = \frac{1}{3}(24) = 8$$

$$\text{Part painted by B} = \frac{1}{8}(16) = 2$$

Part painted by A and B = 10.

Remaining area = $24 - (8 + 2) = 24 - 10 = 14$

Finally, $3/4^{\text{th}}$ or 18 has to be painted

\therefore C has to paint 8 out of the 14 parts

$$\text{i.e., } k = \frac{8}{14} = \frac{4}{7}$$

$$\Rightarrow 210k = 120$$

Ans: (120)

undefined

Q2. 2.DIRECTIONS for question 2: Select the correct alternative from the given choices.

If $\log_{0.4}(x - 1) < \log_{0.16}(x - 1)$, then x lies in the interval

- a) $[2, \infty)$.
- b) $(0, 1) \cup (2, \infty)$.
- c) $(2, \infty)$.
- d) $(1, \infty)$.

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	171
Avg. time spent on this question by all students	153
Difficulty Level	E
Avg. time spent on this question by students who got this question right	153
% of students who attempted this question	29.59
% of students who got the question right of those who attempted	52.91

[Video Solution](#)

[**Text Solution**](#)

Given $\log_{0.4}(x-1) < \log_{0.16}(x-1)$
i.e., $\log_{0.4}(x-1) < \log_{(0.4)^2}(x-1)$ or
 $\log_{0.4}(x-1) < \frac{1}{2} \log_{0.4}(x-1)$
 $\Rightarrow \log_{0.4}(x-1) - \frac{1}{2} \log_{0.4}(x-1) < 0$ or $\log_{0.4}(x-1) < 0$
 $\therefore x-1 > 1$ or $x > 2$
 $\therefore x \in (2, \infty)$

Choice (C)

undefined

Q3. DIRECTIONS for question 3: Type in your answer in the input box provided below the question.

If the "place value" of each letter of the Alphabet is defined as its sequential position in the Alphabet (i.e., place value of A = 1, B = 2, and so on) find the place value of the 256th term of the series A, B, B, C, C, C, D, D, D, D, E, E, E, E . . .

Your Answer:23 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	57
Avg. time spent on this question by all students	186
Difficulty Level	E
Avg. time spent on this question by students who got this question right	180
% of students who attempted this question	41.4
% of students who got the question right of those who attempted	65.55

[Video Solution](#)

[Text Solution](#)

The series has 1A, 2Bs, 3Cs and so on i.e. the nth letter of the alphabet occurs n times.

When n = 22, nth letter is V.

Total number of letters in the series upto the last V = $\frac{(22)(23)}{2} = 253$. The next 23 letters are W.

\therefore The 256th letter of the series is W.

The place value of W = 23

Ans: (23)

undefined

undefined

undefined

Q4. DIRECTIONS for question 4: Select the correct alternative from the given choices.

A shop keeper bought two toys – A and B – at Rs.180 and Rs.200 respectively. He marked their prices up by a certain percentage, x, and gave a discount of 10% to the purchasers. After marking up the prices, he inadvertently interchanged the price tags of both the toys. Find the percentage by which, he marked up the prices, if he earned a profit of 30% after selling toy A.

- a) **30%** Your answer is correct
- b) **20%**
- c) **25%**
- d) **40%**

Time spent / Accuracy Analysis

Time taken by you to answer this question	128
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Time spent / Accuracy Analysis

Avg. time spent on this question by all students	204
Difficulty Level	E
Avg. time spent on this question by students who got this question right	194
% of students who attempted this question	42.1
% of students who got the question right of those who attempted	84.38

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

$$\begin{aligned}\text{Selling price of toy A} &= 180 + 30\% \text{ of } 180 = ₹234 \\ \Rightarrow \text{Price of toy B after discount} &= ₹234 \\ \text{Price of toy B before discount} &= \frac{234}{0.9} = ₹260 \\ \text{Mark-up percentage} &= \frac{260 - 200}{200} \times 100 = 30\%\end{aligned}$$

Choice (A)

Q4. DIRECTIONS for question 4: Select the correct alternative from the given choices.

A shop keeper bought two toys – A and B – at Rs.180 and Rs.200 respectively. He marked their prices up by a certain percentage, x, and gave a discount of 10% to the purchasers. After marking up the prices, he inadvertently interchanged the price tags of both the toys. Find the percentage by which, he marked up the prices, if he earned a profit of 30% after selling toy A.

- a) **30%** Your answer is correct
- b) **20%**
- c) **25%**
- d) **40%**

Time spent / Accuracy Analysis

Time taken by you to answer this question	128
Avg. time spent on this question by all students	204
Difficulty Level	E
Avg. time spent on this question by students who got this question right	194
% of students who attempted this question	42.1
% of students who got the question right of those who attempted	84.38

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

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Choice (A)

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A shop keeper bought two toys – A and B – at Rs.180 and Rs.200 respectively. He marked their prices up by a certain percentage, x, and gave a discount of 10% to the purchasers. After marking up the prices, he inadvertently interchanged the price tags of both the toys. Find the percentage by which, he marked up the prices, if he earned a profit of 30% after selling toy A.

- a) **30%** Your answer is correct
- b) **20%**

c) 25%

d) 40%

Time spent / Accuracy Analysis

Time taken by you to answer this question	128
Avg. time spent on this question by all students	204
Difficulty Level	E
Avg. time spent on this question by students who got this question right	194
% of students who attempted this question	42.1
% of students who got the question right of those who attempted	84.38

[Video Solution](#)

[Text Solution](#)

$$\text{Selling price of toy A} = 180 + 30\% \text{ of } 180 = ₹234$$

$$\Rightarrow \text{Price of toy B after discount} = ₹234$$

$$\text{Price of toy B before discount} = \frac{234}{0.9} = ₹260$$

$$\text{Mark-up percentage} = \frac{260 - 200}{200} \times 100 = 30\%$$

Choice (A)

undefined

undefined

Q5. DIRECTIONS for question 5: Type in your answer in the input box provided below the question.

How many odd numbers between 150 and 350 are divisible neither by 9 nor by 11?

Your Answer: 19 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	258
Avg. time spent on this question by all students	253
Difficulty Level	M
Avg. time spent on this question by students who got this question right	275
% of students who attempted this question	35.19
% of students who got the question right of those who attempted	15.36

[Video Solution](#)

[Text Solution](#)

The multiples of 9, 11 and 99, between 150 and 350 are tabulated below:

9	9(17)	9(38)
153	342	
11	11(14)	11(31)
154	341	
99	198	297

There are $\frac{38-16}{2} = \frac{22}{2}$ odd multiples of 9, $\frac{(31-13)}{2} = \frac{18}{2}$ odd multiples of 11 and 1 odd multiple of 99. Thus there are $11 + 9 - 1 = 19$ odd numbers between 150 and 350 that are multiples of 9 or 11 and thus $100 - 19 = 81$ numbers between 150 and 350 are multiples of neither 9 nor 11.
Ans: (81)

Q5. DIRECTIONS for question 5: Type in your answer in the input box provided below the question.

How many odd numbers between 150 and 350 are divisible neither by 9 nor by 11?

Your Answer:19 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	258
Avg. time spent on this question by all students	253
Difficulty Level	M
Avg. time spent on this question by students who got this question right	275
% of students who attempted this question	35.19
% of students who got the question right of those who attempted	15.36

[Video Solution](#)

[Text Solution](#)

The multiples of 9, 11 and 99, between 150 and 350 are tabulated below:

9	9(17)	9(38)
153	342	
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99	198	297

There are $\frac{38-16}{2} = \frac{22}{2}$ odd multiples of 9, $\frac{(31-13)}{2} = \frac{18}{2}$ odd multiples of 11 and 1 odd multiple of 99. Thus there are $11 + 9 - 1 = 19$ odd numbers between 150 and 350 that are multiples of 9 or 11 and thus $100 - 19 = 81$ numbers between 150 and 350 are multiples of neither 9 nor 11. Ans: (81)

undefined

Q6. DIRECTIONS for questions 6 and 7: Select the correct alternative from the given choices.

If a and b are the roots of the equation $mx^2 + nx + p = 0$, and a^3 and b^3 are the roots of the equation $100x^2 - 133x + 1 = 0$, then find the roots of the equation $px^2 + nx + m = 0$.

- a) 2 and 3
- b) 2 and 5 □ Your answer is correct
- c) 3 and 5
- d) 4 and 5

Time spent / Accuracy Analysis

Time taken by you to answer this question	190
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	195
% of students who attempted this question	27.95
% of students who got the question right of those who attempted	94.05

[Video Solution](#)

[Text Solution](#)

The roots of $1000x^2 - 133x + 1 = 0$ are $\frac{1}{8}$ and $\frac{1}{125}$

$$\Rightarrow a^3 = \frac{1}{8} \text{ and } b^3 = \frac{1}{125}$$

$$\Rightarrow a = \frac{1}{2}, b = \frac{1}{5}$$

$\Rightarrow \frac{1}{2}$ and $\frac{1}{5}$ are the roots of $mx^2 + nx + p = 0$

Now, the roots of $px^2 + nx + m = 0$ will be the reciprocals of the roots of $mx^2 + nx + p = 0$

\Rightarrow the roots of $px^2 + nx + m = 0$ will be 2 and 5.

Choice (B)

undefined

Q6. DIRECTIONS for questions 6 and 7: Select the correct alternative from the given choices.

If a and b are the roots of the equation $mx^2 + nx + p = 0$, and a^3 and b^3 are the roots of the equation $1000x^2 - 133x + 1 = 0$, then find the roots of the equation $px^2 + nx + m = 0$.

- a) 2 and 3
- b) 2 and 5 Your answer is correct
- c) 3 and 5
- d) 4 and 5

Time spent / Accuracy Analysis

Time taken by you to answer this question **190**

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 **195**

% of students who attempted this question **27.95**

% of students who got the question right of those who attempted **94.05**

[Video Solution](#)

[Text Solution](#)

The roots of $1000x^2 - 133x + 1 = 0$ are $\frac{1}{8}$ and $\frac{1}{125}$

$$\Rightarrow a^3 = \frac{1}{8} \text{ and } b^3 = \frac{1}{125}$$

$$\Rightarrow a = \frac{1}{2}, b = \frac{1}{5}$$

$\Rightarrow \frac{1}{2}$ and $\frac{1}{5}$ are the roots of $mx^2 + nx + p = 0$

Now, the roots of $px^2 + nx + m = 0$ will be the reciprocals of the roots of $mx^2 + nx + p = 0$

\Rightarrow the roots of $px^2 + nx + m = 0$ will be 2 and 5.

Choice (B)

undefined

Q7. DIRECTIONS for questions 6 and 7: Select the correct alternative from the given choices.

How many pairs of non-negative integers (m, n) are there such that $m \cdot n = m + n$?

- a) 1

- b) 2
- c) 3
- d) More than 3

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	4
Avg. time spent on this question by all students	99
Difficulty Level	E
Avg. time spent on this question by students who got this question right	98
% of students who attempted this question	44.76
% of students who got the question right of those who attempted	40.54

[Video Solution](#)

Text Solution

$$mn = m + n \Rightarrow m = \frac{n}{n-1}$$

For integral values of n, $\frac{n}{n-1}$ is an integer only if n = 0 or n = 2. Correspondingly,
m = 0 or 2.

Choice (B)

undefined

Q7. DIRECTIONS for questions 6 and 7: Select the correct alternative from the given choices.

How many pairs of non-negative integers (m, n) are there such that m.n = m + n ?

- a) 1
- b) 2
- c) 3
- d) More than 3

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question	4
Avg. time spent on this question by all students	99
Difficulty Level	E
Avg. time spent on this question by students who got this question right	98
% of students who attempted this question	44.76
% of students who got the question right of those who attempted	40.54

[Video Solution](#)

Text Solution

$$mn = m + n \Rightarrow m = \frac{n}{n-1}$$

For integral values of n, $\frac{n}{n-1}$ is an integer only if n = 0 or n = 2. Correspondingly,
m = 0 or 2.

Choice (B)

undefined

undefined

Q8. DIRECTIONS for questions 8 to 10: Type in your answer in the input box provided below the question.

40 boys can construct a wall in 50 days, for which they are paid a total amount of Rs.3000. Now, if an identical wall is constructed by 80 boys, with the help of a certain number of girls, in 20 days, find the difference (in Rs.) between the total amount received by all the 80 boys put together and that received by all the girls put together.

Your Answer:4500 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	147
Avg. time spent on this question by all students	188
Difficulty Level	M
Avg. time spent on this question by students who got this question right	177
% of students who attempted this question	36.63
% of students who got the question right of those who attempted	71.5

[Video Solution](#)

[**Text Solution**](#)

Given that 40 boys take 50 days to complete the work.

∴ 80 boys will take 25 days to complete the work

But 80 boys worked for only 20 days.

∴ 80 boys would have contributed $\frac{20}{25}^{\text{th}}$ i.e., $\frac{4}{5}^{\text{th}}$ of the work.

The remaining $\frac{1}{5}$ th of the work is done by the girls.

Hence, the boys will be paid $\frac{4}{5}$ th of the money and the girls $\frac{1}{5}$ th of the money.

So the difference in their payments is $\frac{3}{5}(3000)$

= ₹1800

Ans: (1800)

Q8. DIRECTIONS for questions 8 to 10: Type in your answer in the input box provided below the question.

40 boys can construct a wall in 50 days, for which they are paid a total amount of Rs.3000. Now, if an identical wall is constructed by 80 boys, with the help of a certain number of girls, in 20 days, find the difference (in Rs.) between the total amount received by all the 80 boys put together and that received by all the girls put together.

Your Answer:4500 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	147
Avg. time spent on this question by all students	188
Difficulty Level	M
Avg. time spent on this question by students who got this question right	177
% of students who attempted this question	36.63
% of students who got the question right of those who attempted	71.5

[Video Solution](#)

[**Text Solution**](#)

Given that 40 boys take 50 days to complete the work.

∴ 80 boys will take 25 days to complete the work

But 80 boys worked for only 20 days.

∴ 80 boys would have contributed $\frac{20}{25}$ i.e., $\frac{4}{5}$ of the work.

The remaining $1/5$ of the work is done by the girls.

Hence, the boys will be paid $4/5$ of the money and the girls $1/5$ of the money.

So the difference in their payments is $3/5(3000)$

= ₹1800

Ans: (1800)

undefined

Q9. DIRECTIONS for questions 8 to 10: Type in your answer in the input box provided below the question.

There are two concentric circles. The radius of the outer circle is 8.5 cm and the length of the longest chord of the outer circle that does not cut through the inner circle is 8 cm. If the fraction of the bigger circle not covered by the smaller circle is p , find the value of $289p$.

Your Answer:64 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question 269

Avg. time spent on this question by all students 224

Difficulty Level E

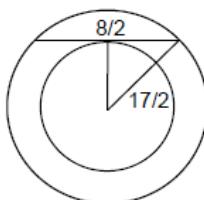
Avg. time spent on this question by students who got this question right 208

% of students who attempted this question 26.41

% of students who got the question right of those who attempted 51.61

[Video Solution](#)

[Text Solution](#)



The radius of the outer circle is $17/2$. Half the chord of the outer circle tangent to the inner circle is $8/2$.

∴ The radius of the inner circle is $15/2$ i.e., $15/17$ of the outer circle.

The area of the inner circle is $225/289$ of that of the outer circle. The part of the outer circle, not covered by the inner circle, is $(289 - 225) / 289 = 64/289$ Ans: (64)

undefined

undefined

undefined

Q10. DIRECTIONS for questions 8 to 10: Type in your answer in the input box provided below the question.

There are 8 points lying on a plane such that no two of the lines joining them are parallel and no three are concurrent except at the given points. If all the possible lines are drawn passing through every pair of these points, what is the number of points of intersection of the lines excluding the original 8 points?

Your Answer:21 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	158
Avg. time spent on this question by all students	112
Difficulty Level	M
Avg. time spent on this question by students who got this question right	198
% of students who attempted this question	16.35
% of students who got the question right of those who attempted	1.41

[Video Solution](#)

[Text Solution](#)

The given 8 points produce 8C_2 or 28 lines. The 28 lines can intersect among themselves in ${}^{28}C_2$, assuming each point of intersection to be a distinct point. Now at each of the 8 points, we have 7 lines passing through. Now these 7 lines were assumed to be giving 7C_2 points of intersection among themselves but as these points do not exist, the required number of points = ${}^{28}C_2 - 8 ({}^7C_2) = 378 - 168 = 210$.

Ans: (210)

Q10. DIRECTIONS for questions 8 to 10: Type in your answer in the input box provided below the question.

There are 8 points lying on a plane such that no two of the lines joining them are parallel and no three are concurrent except at the given points. If all the possible lines are drawn passing through every pair of these points, what is the number of points of intersection of the lines excluding the original 8 points?

Your Answer:21 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	158
Avg. time spent on this question by all students	112
Difficulty Level	M
Avg. time spent on this question by students who got this question right	198
% of students who attempted this question	16.35
% of students who got the question right of those who attempted	1.41

[Video Solution](#)

[Text Solution](#)

The given 8 points produce 8C_2 or 28 lines. The 28 lines can intersect among themselves in ${}^{28}C_2$, assuming each point of intersection to be a distinct point. Now at each of the 8 points, we have 7 lines passing through. Now these 7 lines were assumed to be giving 7C_2 points of intersection among themselves but as these points do not exist, the required number of points = ${}^{28}C_2 - 8 ({}^7C_2) = 378 - 168 = 210$.

Ans: (210)

Q10. DIRECTIONS for questions 8 to 10: Type in your answer in the input box provided below the question.

There are 8 points lying on a plane such that no two of the lines joining them are parallel and no three are concurrent except at the given points. If all the possible lines are drawn passing through every pair of these points, what is the number of points of intersection of the lines excluding the original 8 points?

Your Answer:21 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time spent / Accuracy Analysis

Time taken by you to answer this question	158
Avg. time spent on this question by all students	112
Difficulty Level	M
Avg. time spent on this question by students who got this question right	198
% of students who attempted this question	16.35
% of students who got the question right of those who attempted	1.41

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

The given 8 points produce 8C_2 or 28 lines. The 28 lines can intersect among themselves in ${}^{28}C_2$, assuming each point of intersection to be a distinct point. Now at each of the 8 points, we have 7 lines passing through. Now these 7 lines were assumed to be giving 7C_2 points of intersection among themselves but as these points do not exist, the required number of points = ${}^{28}C_2 - 8 ({}^7C_2) = 378 - 168 = 210$.

Ans: (210)

undefined

undefined

Q11. DIRECTIONS for questions 11 and 12: Select the correct alternative from the given choices.

If a and b are distinct non-zero integers, then which of the following two equations is/are sufficient to arrive at a unique value of?

I.
$$\frac{a^b - a^{b-1}}{2} =$$

II.
$$\frac{a^b}{ab} =$$

- a) I alone is sufficient.
- b) II alone is sufficient.
- c) Both I and II together are sufficient.
- d) Both I and II together are also not sufficient. Your answer is incorrect

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

Time taken by you to answer this question	158
Avg. time spent on this question by all students	122
Difficulty Level	E
Avg. time spent on this question by students who got this question right	117
% of students who attempted this question	33.97
% of students who got the question right of those who attempted	12.97

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

I. $a^b - a^{b-1} = 2$
 $a^{b-1}(a - 1) = 2$
since a and b are non-zero integers, the possible solutions are
a = -1, b = 2/4/6
a = 3, b = 1
so a distinct value of b is not possible
II. $a^b = ab$
Here, when b = 1, L.H.S and R.H.S are equal.
i.e., a = 2, 3, 4; b = 1
(Since a and b are distinct a = b = 2 is not possible)
∴ On solving Only statement II we can get a distinct value of b

Choice (B)

undefined

Q11. DIRECTIONS for questions 11 and 12: Select the correct alternative from the given choices.

If a and b are distinct non-zero integers, then which of the following two equations is/are sufficient to arrive at a unique value of?

I. $a^b - a^{b-1} =$
2

II. $a^b =$
ab

- a) I alone is sufficient.
- b) II alone is sufficient.
- c) Both I and II together are sufficient.
- d) Both I and II together are also not sufficient. Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	158
Avg. time spent on this question by all students	122
Difficulty Level	E
Avg. time spent on this question by students who got this question right	117
% of students who attempted this question	33.97
% of students who got the question right of those who attempted	12.97

[Video Solution](#)

[Text Solution](#)

I. $a^b - a^{b-1} = 2$
 $a^{b-1}(a - 1) = 2$
since a and b are non-zero integers, the possible solutions are
a = -1, b = 2/4/6
a = 3, b = 1
so a distinct value of b is not possible
II. $a^b = ab$
Here, when b = 1, L.H.S and R.H.S are equal.
i.e., a = 2, 3, 4; b = 1
(Since a and b are distinct a = b = 2 is not possible)
∴ On solving Only statement II we can get a distinct value of b

Choice (B)

Q11. DIRECTIONS for questions 11 and 12: Select the correct alternative from the given choices.

If a and b are distinct non-zero integers, then which of the following two equations is/are sufficient to arrive at a unique value of?

I.
 $a^b - a^{b-1} =$
2

II.
 $a^b =$
ab

- a) I alone is sufficient.
- b) II alone is sufficient.
- c) Both I and II together are sufficient.
- d) Both I and II together are also not sufficient. Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	158
Avg. time spent on this question by all students	122
Difficulty Level	E
Avg. time spent on this question by students who got this question right	117
% of students who attempted this question	33.97
% of students who got the question right of those who attempted	12.97

[Video Solution](#)

[Text Solution](#)

- I. $a^b - a^{b-1} = 2$
 $a^{b-1}(a - 1) = 2$
since a and b are non-zero integers, the possible solutions are
a = -1, b = 2/4/6
a = 3, b = 1
so a distinct value of b is not possible
- II. $a^b = ab$
Here, when b = 1, L.H.S and R.H.S are equal.
i.e., a = 2, 3, 4; b = 1
(Since a and b are distinct a = b = 2 is not possible)
∴ On solving Only statement II we can get a distinct value of b

Choice (B)

undefined

Q12. DIRECTIONS for questions 11 and 12: Select the correct alternative from the given choices.

There are two vessels, P and Q, containing only milk and only water respectively. The volume of milk in P is the same as the volume of water in Q. Now one-third the contents of P are poured into Q, after which one-fourth the contents of Q are poured back into P. If this process is repeated 15 more times, what is the approximate final concentration of milk in vessel P?

- a) 33.33% Your answer is incorrect
- b) 50%
- c) 66.66%
- d) 60%

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	174
Avg. time spent on this question by all students	201
Difficulty Level	M
Avg. time spent on this question by students who got this question right	198
% of students who attempted this question	13.97
% of students who got the question right of those who attempted	26.16

[Video Solution](#)

[Text Solution](#)

If the given procedure is repeated several times, the concentration of milk in both the vessels will tend to become equal i.e., the concentrations will approach 50% in each vessel.

Choice (B)

undefined

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

If the line $ax + by + c = 0$, makes equal intercepts on both the axes, and $\frac{c}{a} = \frac{5}{3}$, find the value of $\frac{60b}{c}$.

Your Answer:36 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	175
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	95
% of students who attempted this question	34.39
% of students who got the question right of those who attempted	80.08

[Video Solution](#)

[Text Solution](#)

For the line $ax + by + c = 0$, x intercept is $-c/a$ and y-intercept is $-c/b$.

$$\text{Given that } -c/a = -c/b \Rightarrow \frac{c}{a} = \frac{c}{b} \Rightarrow \frac{c}{b} = \frac{5}{3} \text{ and } \frac{b}{c} = \frac{3}{5}$$
$$\text{and } \frac{60b}{c} = 36.$$

Ans: (36)

undefined

Q14. DIRECTIONS for question 14: Select the correct alternative from the given choices.

A natural number N when divided by a certain divisor leaves a remainder of 19. If twice the number is divided by the same divisor, then the remainder is 7. Which of the following is true?

- a) N lies between 10 and 20.
- b) N can only be 50.
- c) The divisor is 31. **Your answer is correct**
- d) Both (B) and (C).

Time spent / Accuracy Analysis

Time taken by you to answer this question	196
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	141
% of students who attempted this question	43.46
% of students who got the question right of those who attempted	30.85

[Video Solution](#)

[Text Solution](#)

Number = divisor x quotient + remainder
Hence, when the number is doubled, the remainder is also doubled. $(19) \times 2 = 38$
if the remainder is 7, implies
the divisor is $38 - 7 = 31$ or a factor of 31.
Since, 31 is a prime number, divisor = 31

Choice (C)

undefined

undefined

Q15. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

A man walks 10 m towards a lamp post and notices that the angle of elevation of the top of the post increases from 30° to 45° . If the height of the lamp post is h metres, find the value of $(\sqrt{3} - 1) h$.

Your Answer:10 Your answer is correct

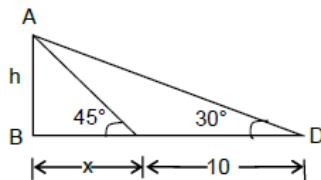
Time spent / Accuracy Analysis

Time taken by you to answer this question	109
Avg. time spent on this question by all students	118
Difficulty Level	M
Avg. time spent on this question by students who got this question right	111
% of students who attempted this question	43.94
% of students who got the question right of those who attempted	91.4

[Video Solution](#)

[Text Solution](#)

Let AB be the post and let the man move 10 m from D to C. Consider the following figure;



$$\begin{aligned}\frac{h}{h+10} &= \tan 30^\circ \\ \frac{h}{h+10} &= \frac{1}{\sqrt{3}} \\ h\sqrt{3} &= h + 10 \\ h(\sqrt{3} - 1) &= 10 \\ h = \frac{10(\sqrt{3} + 1)}{2} &= 5(\sqrt{3} + 1) \\ \text{and } (\sqrt{3} - 1)h &= 5(\sqrt{3}^2 - 1^2) = 10\end{aligned}$$

Ans: (10)

Q15. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

A man walks 10 m towards a lamp post and notices that the angle of elevation of the top of the post increases from 30° to 45° . If the height of the lamp post is h metres, find the value of $(\sqrt{3} - 1)h$.

Your Answer:10 Your answer is correct

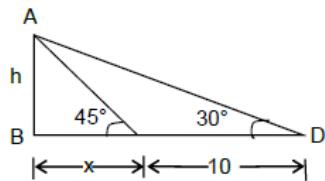
Time spent / Accuracy Analysis

Time taken by you to answer this question	109
Avg. time spent on this question by all students	118
Difficulty Level	M
Avg. time spent on this question by students who got this question right	111
% of students who attempted this question	43.94
% of students who got the question right of those who attempted	91.4

[Video Solution](#)

[Text Solution](#)

Let AB be the post and let the man move 10 m from D to C. Consider the following figure;



$$\begin{aligned}
 \frac{h}{h+10} &= \tan 30^\circ \\
 \frac{h}{h+10} &= \frac{1}{\sqrt{3}} \\
 h\sqrt{3} &= h + 10 \\
 h(\sqrt{3} - 1) &= 10 \\
 h = \frac{10(\sqrt{3} + 1)}{2} &= 5(\sqrt{3} + 1) \\
 \text{and } (\sqrt{3} - 1)h &= 5(\sqrt{3}^2 - 1^2) = 10
 \end{aligned}$$

Ans: (10)

undefined

undefined

Q16. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

In a particular examination, the maximum mark that can be scored is 250 and the pass mark is 50% of the maximum mark. Three persons – A, B and C – give the examination. B passes the exam by five times the number of marks by which A fails. C scores as many marks more than B as B does more than A. If C scores 72% marks in the examination, the marks scored by B are

Your Answer:300 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	194
Avg. time spent on this question by all students	222
Difficulty Level	E
Avg. time spent on this question by students who got this question right	207
% of students who attempted this question	37.1
% of students who got the question right of those who attempted	75.28

[Video Solution](#)

[Text Solution](#)

Given the total max marks in exam = 250
 Pass mark is 50% of 250 = 125;
 Since 'A' scores the least marks. Let us say he fails by 'x' marks.
 Then
 A B C
 $125 - x$ $125 + 5x$ $125 + 5x + 6x$
 Given 'c' scores 72%
 $\Rightarrow \frac{125+11x}{250} = \frac{72}{100} \Rightarrow 125 + 11x = 180 \Rightarrow x = 5$
 Hence 'B' scores 150 marks.

Ans: (150)

Q16. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

In a particular examination, the maximum mark that can be scored is 250 and the pass mark is 50% of the maximum mark. Three persons – A, B and C – give the examination. B passes the exam by five times the number of marks by which A fails. C scores as many marks more than B as B does more than A. If C scores 72% marks in the examination, the marks scored by B are

Your Answer:300 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	194
Avg. time spent on this question by all students	222
Difficulty Level	E
Avg. time spent on this question by students who got this question right	207
% of students who attempted this question	37.1
% of students who got the question right of those who attempted	75.28

[Video Solution](#)

[Text Solution](#)

Given the total max marks in exam = 250
 Pass mark is 50% of 250 = 125;
 Since 'A' scores the least marks. Let us say he fails by 'x' marks.
 Then
 A B C
 $125 - x$ $125 + 5x$ $125 + 5x + 6x$
 Given 'c' scores 72%
 $\Rightarrow \frac{125+11x}{250} = \frac{72}{100} \Rightarrow 125 + 11x = 180 \Rightarrow x = 5$
 Hence 'B' scores 150 marks.

Ans: (150)

undefined

undefined

Q16. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

In a particular examination, the maximum mark that can be scored is 250 and the pass mark is 50% of the maximum mark. Three persons – A, B and C – give the examination. B passes the exam by five times the number of marks by which A fails. C scores as many marks more than B as B does more than A. If C scores 72% marks in the examination, the marks scored by B are

Your Answer:300 □ Your answer is incorrect

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

Time taken by you to answer this question	194
Avg. time spent on this question by all students	222
Difficulty Level	E
Avg. time spent on this question by students who got this question right	207
% of students who attempted this question	37.1
% of students who got the question right of those who attempted	75.28

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

Given the total max marks in exam = 250
 Pass mark is 50% of 250 = 125;
 Since 'A' scores the least marks. Let us say he fails by 'x' marks.

Then

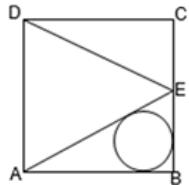
$$\begin{array}{ccc} A & B & C \\ 125 - x & 125 + 5x & 125 + 5x + 6x \\ \text{Given 'C' scores 72\%} \\ \Rightarrow \frac{125+11x}{250} = \frac{72}{100} \Rightarrow 125 + 11x = 180 \Rightarrow x = 5 \end{array}$$

Hence 'B' scores 150 marks.

Ans: (150)

undefined

Q17. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.



A square, ABCD, of side four units, is drawn as shown above. E is the midpoint of BC, and the circle drawn touches the sides AB, BE and AE. If the radius of the circle is R, find the value of $(3 + \sqrt{5})R$.

Your Answer:4 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	149
Avg. time spent on this question by all students	169
Difficulty Level	M
Avg. time spent on this question by students who got this question right	167
% of students who attempted this question	19.97
% of students who got the question right of those who attempted	62.26

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

Applying Pythagoras theorem in triangle ABE

$$AE^2 = AB^2 + BE^2$$

$$\Rightarrow AE = \sqrt{4^2 + 2^2} = 2\sqrt{5}$$

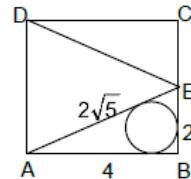
Now the radius of the required circle is the inradius (r) of triangle ABE. We know that $r = \frac{\Delta}{S}$

$$\Delta = \text{Area of } \triangle ABE = \frac{1}{2} \times 4 \times 2 = 4$$

$$S = \text{semi perimeter of } \triangle ABE = \frac{6 + 2\sqrt{5}}{2} = 3 + \sqrt{5};$$

$$\therefore R = \text{inradius} = \frac{4}{3 + \sqrt{5}}$$

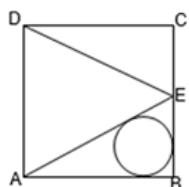
$$\Rightarrow (3 + \sqrt{5})R = 4$$



Ans: (4)

undefined

Q17. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.



A square, ABCD, of side four units, is drawn as shown above. E is the midpoint of BC, and the circle drawn touches the sides AB, BE and AE. If the radius of the circle is R , find the value of $(3 + \sqrt{5})R$.

Your Answer:4 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question **149**

Avg. time spent on this question by all students **169**

Difficulty Level **M**

Avg. time spent on this question by students who got this question right **167**

% of students who attempted this question **19.97**

% of students who got the question right of those who attempted **62.26**

[Video Solution](#)

[Text Solution](#)

Applying Pythagoras theorem in triangle ABE

$$AE^2 = AB^2 + BE^2$$

$$\Rightarrow AE = \sqrt{4^2 + 2^2} = 2\sqrt{5}$$

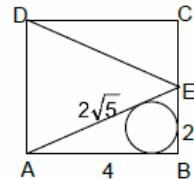
Now the radius of the required circle is the inradius (r) of triangle ABE. We know that $r = \frac{\Delta}{S}$

$$\Delta = \text{Area of } \triangle ABE = \frac{1}{2} \times 4 \times 2 = 4$$

$$S = \text{semi perimeter of } \triangle ABE = \frac{6 + 2\sqrt{5}}{2} = 3 + \sqrt{5};$$

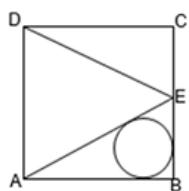
$$\therefore R = \text{inradius} = \frac{4}{3 + \sqrt{5}}$$

$$\Rightarrow (3 + \sqrt{5})R = 4$$



Ans: (4)

Q17. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.



A square, ABCD, of side four units, is drawn as shown above. E is the midpoint of BC, and the circle drawn touches the sides AB, BE and AE. If the radius of the circle is R , find the value of $(3 + \sqrt{5})R$.

Your Answer:4 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question **149**

Avg. time spent on this question by all students **169**

Difficulty Level **M**

Avg. time spent on this question by students who got this question right **167**

% of students who attempted this question **19.97**

% of students who got the question right of those who attempted **62.26**

[Video Solution](#)

[Text Solution](#)

Applying Pythagoras theorem in triangle ABE

$$AE^2 = AB^2 + BE^2$$

$$\Rightarrow AE = \sqrt{4^2 + 2^2} = 2\sqrt{5}$$

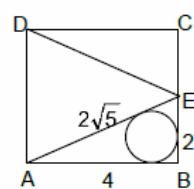
Now the radius of the required circle is the inradius (r) of triangle ABE. We know that $r = \frac{\Delta}{S}$

$$\Delta = \text{Area of } \triangle ABE = \frac{1}{2} \times 4 \times 2 = 4$$

$$S = \text{semi perimeter of } \triangle ABE = \frac{6 + 2\sqrt{5}}{2} = 3 + \sqrt{5};$$

$$\therefore R = \text{inradius} = \frac{4}{3 + \sqrt{5}}$$

$$\Rightarrow (3 + \sqrt{5})R = 4$$



Ans: (4)

undefined

Q18. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

Arrange the following quantities in the ascending order of their magnitudes by entering the numbers (1, 2, 3, 4) corresponding to the quantities in the correct order.

1. $\log_2 222$

2. $\log_3 444$

3. $\log_2(\log_2 102400)$

4. $\log_7 3^{16}$

Your Answer: 3241 □ Your answer is incorrect

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	139
Difficulty Level	M
Avg. time spent on this question by students who got this question right	166
% of students who attempted this question	23.08
% of students who got the question right of those who attempted	26.58

[Video Solution](#)

[Text Solution](#)

Let the four quantities be equal to a, b, c, d respectively.

$$a = \log_2 222$$

$$2^7 < 222 < 2^8$$

$$7 < a < 8$$

$$b = \log_3 444$$

$$3^5 < 444 < 3^6$$

$$5 < b < 6$$

$$c = \log_2(\log_2 102400)$$

$$102400 = 2^{10} \times 100$$

$$2^{10} < \log_2 102400 < 2^{11}$$

$$\log_2 10 < \log_2(\log_2 102400) < \log_2 11$$

$$\therefore c < 10$$

$$d = \log_7 3^{16}$$

$$\log_7 9^8$$

$$= \log_7 9 > 1$$

$$\Rightarrow d > 10$$

$$\therefore \text{Ascending order of numbers} = c \ b \ a \ d$$

$$\Rightarrow \text{Required answer} = 3214$$

Ans: (3214)

undefined

Q18. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

Arrange the following quantities in the ascending order of their magnitudes by entering the numbers (1, 2, 3, 4) corresponding to the quantities in the correct order.

1. $\log_2 222$

2. $\log_3 444$

3. $\log_2(\log_2 102400)$

4.
 $\log_7 3^{16}$

Your Answer:3241 □ **Your answer is incorrect**

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	139
Difficulty Level	M
Avg. time spent on this question by students who got this question right	166
% of students who attempted this question	23.08
% of students who got the question right of those who attempted	26.58

[Video Solution](#)

[Text Solution](#)

Let the four quantities be equal to a, b, c, d respectively.

$$\begin{aligned} a &= \log_2 222 \\ 2^7 &< 222 < 2^8 \\ 7 &< a < 8 \\ b &= \log_3 444 \\ 3^5 &< 444 < 3^6 \\ 5 &< b < 6 \\ c &= \log_2(\log_2 102400) \\ 102400 &= 2^{10} \times 100 \\ 2^{16} &< \log_2 102400 < 2^{17} \\ \log_2 16 &< \log_2(\log_2 102400) < \log_2 17 \\ \therefore c &< 5 \\ d &= \log_7 3^{16} \\ \log_7 9^8 &= \log_7 9 > 1 \\ \Rightarrow d &> 8 \\ \therefore \text{Ascending order of numbers} &= c \ b \ a \ d \\ \Rightarrow \text{Required answer} &= 3214 \end{aligned}$$

Ans: (3214)

undefined

undefined

Q19. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

If $\frac{1+\sin\theta}{\cos\theta} = 2\sqrt{2}$, find the value of $\frac{\theta_1 \sin 2\theta}{\sqrt{2}}$.

Your Answer:162 □ **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	40
Avg. time spent on this question by all students	184
Difficulty Level	D
Avg. time spent on this question by students who got this question right	217
% of students who attempted this question	12.78
% of students who got the question right of those who attempted	35.82

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}\frac{1+\sin\theta}{\cos\theta} &= 2\sqrt{2} \\ \Rightarrow 1+\sin\theta &= 2\sqrt{2} \left(\sqrt{1-\sin^2\theta} \right) \\ \text{Squaring on both sides, we get} \\ 1 + \sin^2\theta + 2\sin\theta &= 8(1 - \sin^2\theta) \\ \Rightarrow 9\sin^2\theta + 2\sin\theta - 7 &= 0 \\ \sin\theta &= \frac{-2 \pm \sqrt{4 + 252}}{18} = \frac{-2 \pm 16}{18} \text{ i.e., } -1 \text{ or } \frac{7}{9}.\end{aligned}$$

But if $\sin\theta = -1$, then $\cos\theta = 0$ and $\frac{1+\sin\theta}{\cos\theta}$ will not be defined $\Rightarrow \sin\theta = \frac{7}{9}$ and $\cos\theta = \frac{1+\frac{7}{9}}{2\sqrt{2}} = \frac{4\sqrt{2}}{9}$.

$$\begin{aligned}\sin 2\theta &= 2\sin\theta\cos\theta = 2\left(\frac{7}{9}\right)\left(\frac{4\sqrt{2}}{9}\right) = \frac{56\sqrt{2}}{81} \\ \therefore \frac{81\sin 2\theta}{\sqrt{2}} &= 56\end{aligned}$$

Alternative solution:

Given $\frac{1+\sin\theta}{\cos\theta} = 2\sqrt{2}$, i.e., $\frac{1}{\cos\theta} + \frac{\sin\theta}{\cos\theta} = \sec\theta + \tan\theta = 2\sqrt{2}$ (1)

We know that $\sec^2\theta - \tan^2\theta = 1$.

$$\therefore \sec\theta - \tan\theta = \frac{1}{2\sqrt{2}} \text{ [from (1)]} \dots \dots (2)$$

Solving (1) and (2) we get $\sec\theta = \frac{9}{4\sqrt{2}}$, i.e., $\cos\theta = \frac{4\sqrt{2}}{9}$ and hence

$$\sin\theta = \sqrt{1 - \left(\frac{4\sqrt{2}}{9}\right)^2} \Rightarrow \sin\theta = \frac{7}{9} \text{ and}$$

$$\sin 2\theta = 2\sin\theta\cos\theta = 2 \times \frac{7}{9} \times \frac{4\sqrt{2}}{9} = \frac{56\sqrt{2}}{81}.$$

$$\therefore \frac{81\sin 2\theta}{\sqrt{2}} = 56$$

Ans: (56)

Q19. DIRECTIONS for question 15 to 19: Type in your answer in the input box provided below the question.

If $\frac{1+\sin\theta}{\cos\theta} = 2\sqrt{2}$, find the value of $\frac{81\sin 2\theta}{\sqrt{2}}$.

Your Answer: 162 Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	40
Avg. time spent on this question by all students	184
Difficulty Level	D
Avg. time spent on this question by students who got this question right	217
% of students who attempted this question	12.78
% of students who got the question right of those who attempted	35.82

[Video Solution](#)

[Text Solution](#)

$$\begin{aligned}\frac{1+\sin\theta}{\cos\theta} &= 2\sqrt{2} \\ \Rightarrow 1+\sin\theta &= 2\sqrt{2} \left(\sqrt{1-\sin^2\theta} \right) \\ \text{Squaring on both sides, we get} \\ 1 + \sin^2\theta + 2\sin\theta &= 8(1 - \sin^2\theta) \\ \Rightarrow 9\sin^2\theta + 2\sin\theta - 7 &= 0 \\ \sin\theta &= \frac{-2 \pm \sqrt{4 + 252}}{18} = \frac{-2 \pm 16}{18} \text{ i.e., } -1 \text{ or } \frac{7}{9}.\end{aligned}$$

But if $\sin\theta = -1$, then $\cos\theta = 0$ and $\frac{1+\sin\theta}{\cos\theta}$ will not be defined $\Rightarrow \sin\theta = \frac{7}{9}$ and $\cos\theta = \frac{1+7}{2\sqrt{2}} = \frac{4\sqrt{2}}{9}$.

$$\begin{aligned}\sin 2\theta &= 2\sin\theta\cos\theta = 2\left(\frac{7}{9}\right)\left(\frac{4\sqrt{2}}{9}\right) = \frac{56\sqrt{2}}{81} \\ \therefore \frac{81\sin 2\theta}{\sqrt{2}} &= 56\end{aligned}$$

Alternative solution:

Given $\frac{1+\sin\theta}{\cos\theta} = 2\sqrt{2}$, i.e., $\frac{1}{\cos\theta} + \frac{\sin\theta}{\cos\theta} = \sec\theta + \tan\theta = 2\sqrt{2}$ (1)

We know that $\sec^2\theta - \tan^2\theta = 1$.

$$\therefore \sec\theta - \tan\theta = \frac{1}{2\sqrt{2}} \text{ [from (1)]} \dots \dots (2)$$

Solving (1) and (2) we get $\sec\theta = \frac{9}{4\sqrt{2}}$, i.e., $\cos\theta = \frac{4\sqrt{2}}{9}$ and hence

$$\sin\theta = \sqrt{1 - \left(\frac{4\sqrt{2}}{9}\right)^2} \Rightarrow \sin\theta = \frac{7}{9} \text{ and}$$

$$\sin 2\theta = 2\sin\theta\cos\theta = 2 \times \frac{7}{9} \times \frac{4\sqrt{2}}{9} = \frac{56\sqrt{2}}{81}.$$

$$\therefore \frac{81\sin 2\theta}{\sqrt{2}} = 56$$

Ans: (56)

undefined

Q20. DIRECTIONS for questions 20 and 21: Select the correct alternative from the given choices.

If p and q are non-negative integers and 6^p and 12^q are not multiples of 24, which of the following is not a possible value of $(p+q)$?

- a) 2
- b) 4 **Your answer is correct**
- c) 1
- d) 3

Time spent / Accuracy Analysis

Time taken by you to answer this question	114
Avg. time spent on this question by all students	119
Difficulty Level	E
Avg. time spent on this question by students who got this question right	118
% of students who attempted this question	38.18

Time spent / Accuracy Analysis

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

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

p and q are non-negative integers (i.e. 0, 1, 2 etc). If $6^p = (2^p)(3^p)$ is not a multiple of 24, (which is $2^3 \cdot 3$) then $p = 0, 1$ or 2 . Similarly if $12^q = (4)^q(3^q)$ is not a multiple of 24, then $q = 0$ or 1 . The possible values of $p + q$ are tabulated below

		p	0	1	2
		q	0	1	2
q	0	1	2	3	
	1	1	2	3	

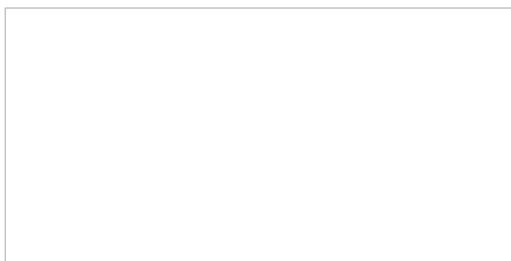
From the choices, 4 is not a possible value.

Choice (B)

undefined

Q21. DIRECTIONS for questions 20 and 21: Select the correct alternative from the given choices.

The graphs of two functions, $F(x)$ and $f(x)$, are given below. These are composed of line segments, shown as solid lines, in the domain $(-2, 2)$.

Which of the following relations between $F(x)$ and $f(x)$ is true?

- a) $F(x) = -f(x)$
- b) $F(-x) = -f(x)$
- c) $F(-x) = f(x)$ Your answer is correct
- d) None of the above

Time spent / Accuracy Analysis

Time taken by you to answer this question

61

Avg. time spent on this question by all students

85

Difficulty Level

EAvg. time spent on this question by students who got this question right **84**% of students who attempted this question **36.44**% of students who got the question right of those who attempted **66.3**[Video Solution](#)[Text Solution](#)

$$\begin{aligned}
 F(x) &= 0, \text{ if } x \geq 0 \\
 &= -x, \text{ if } x < 0 \\
 f(x) &= x, \text{ if } x > 0 \\
 &= 0, \text{ if } x \leq 0 \\
 \text{So, when } x > 0, \\
 F(-x) &= -(-x) = x \\
 \text{And } f(x) &= x \\
 \text{When } x \leq 0, \\
 F(-x) &= 0 \text{ and } f(x) = 0 \\
 \text{Hence, } F(-x) &= f(x)
 \end{aligned}$$

Choice (C)

undefined

Q22. DIRECTIONS for question 22: Type in your answer in the input box provided below the question.

There are seven boxes numbered 1, 2, 7. Each box is to be filled up with either a red or a green or a blue ball. It is required that at least five of the boxes are filled with a green ball and all the boxes containing either a red or a blue ball are consecutively numbered (i.e., for example GGRBGGG is allowed but not GGRGBGG). In how many ways can the boxes be filled?

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	131
Difficulty Level	M
Avg. time spent on this question by students who got this question right	162
% of students who attempted this question	19.46
% of students who got the question right of those who attempted	4.32

[Video Solution](#)

[Text Solution](#)

Consider the cases:

(1) There are 5 green balls:

There are 2 boxes with red or blue balls. The two boxes can be chosen in 6 ways (consecutive places) and filled in 2 (2) or 4 ways. Hence, the boxes can be filled in 4 (6) or 24 ways.

(2) There are 6 green balls: There is 1 box with a red or blue ball. This box can be chosen in 7 ways and filled in 2 ways. Hence, the boxes can be filled in 14 ways.

(3) There are 7 green balls: There is only one possible way. Therefore, there are a total of 24 + 14 + 1 or 39 ways.

Ans: (39)

undefined

Q23. DIRECTIONS for questions 23 and 24: Select the correct alternative from the given choices.

If k litres of a solution of $x\%$ milk, $2k$ litres of a solution of $y\%$ milk, and $3k$ litres of a solution of $(x+y)\%$ milk are all mixed in a vessel, the resultant solution has 50% milk. Find the resultant concentration of milk when 40 litres of the first solution and 50 litres of the second solution are mixed.

- a) 40%
- b) $33\frac{1}{3}\%$ Your answer is correct
- c) 50%
- d) $53\frac{1}{3}\%$

Time spent / Accuracy Analysis

Time taken by you to answer this question	46
Avg. time spent on this question by all students	176
Difficulty Level	E
Avg. time spent on this question by students who got this question right	180
% of students who attempted this question	16.61
% of students who got the question right of those who attempted	75.4

[Video Solution](#)

[Text Solution](#)

The resultant concentration, when the three solutions are mixed as given, will be

$$\frac{kx + 2ky + 3k(x+y)}{k + 2k + 3k} = \frac{4x + 5y}{6} = 50\% \text{ (given)}$$

Now, in the second case the resultant concentration will be $\frac{40x + 50y}{90} = \frac{4x + 5y}{9}$

However, since $\frac{4x + 5y}{6} = 50\%$

$$\frac{4x + 5y}{9} = 50\% \times \frac{2}{3} = 33\frac{1}{3}\%$$

Choice (B)

undefined

Q24. DIRECTIONS for questions 23 and 24: Select the correct alternative from the given choices.

A tank can be filled by two taps – Tap I and Tap II. The volume of the tank is 5000 litres. Tap I fills the tank at a rate of 1 litre/second, while Tap II fills the tank at a rate of 3 litres in 2 seconds. On a particular day, Tap I was opened $33\frac{1}{3}$ minutes after the time at which Tap I was opened. If after 45 minutes from the time when Tap I was opened, the tank developed a hole which empties the tank at the rate of 2.5 litres/second, what proportion of the tank was full exactly 2 hours from the time when Tap I was opened?

a) $\frac{1}{10}$

b) Full

c) $\frac{3}{4}$

d) $\frac{4218}{5000}$

You did not answer this question

[Show Correct Answer](#)

Time spent / Accuracy Analysis

Time taken by you to answer this question **20**

Avg. time spent on this question by all students **259**

Difficulty Level **E**

Avg. time spent on this question by students who got this question right **258**

% of students who attempted this question **19.73**

% of students who got the question right of those who attempted **73.05**

[Video Solution](#)

[Text Solution](#)

For the first $33\frac{1}{3}$ minutes, the amount of tank filled

$$= \frac{100}{3} \times 60 = 2000 \text{ l}$$

To be filled = 3000 l

For the next $45 - 33\frac{1}{3} = 11\frac{2}{3}$ min; amount of tank filled

$$= 2.5 \times 60 \times \frac{35}{3} = 1750 \text{ l}$$

\therefore Remaining = $3000 - 1750 = 1250 \text{ l}$

Now, rate = $2.5 - 2.5 = 0$

$$\therefore \text{The tank is } \frac{3750}{5000} = \frac{3}{4} \text{ full.}$$

Choice (C)

undefined

Q25. DIRECTIONS for question 25: Type in your answer in the input box provided below the question.

The area of a triangle is $18\sqrt{3}$ sq.cm. If the minimum possible perimeter of the triangle is P cm, find the value of P².

Your Answer:648 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	101
Difficulty Level	E
Avg. time spent on this question by students who got this question right	99
% of students who attempted this question	29.66
% of students who got the question right of those who attempted	59.95

[Video Solution](#)

Text Solution

For all triangles of a given area, the perimeter will be minimum when all the sides are equal, i.e., when it is an equilateral triangle

$$\text{Area of an equilateral triangle} = \frac{\sqrt{3}}{4} (\text{side})^2 = 18\sqrt{3}$$

$$\therefore (\text{side})^2 = 72 \Rightarrow \text{side} = 6\sqrt{2}$$

Therefore, the minimum value for the perimeter of the triangle is $p = 3(\text{side}) = 18\sqrt{2}$ cm
 $\Rightarrow p^2 = 648$

Ans: (648)

undefined

Q26. DIRECTIONS for question 26: Select the correct alternative from the given choices.

A man standing at a point A can take a step to the right with probability of $\frac{1}{2}$ and a step to the left with probability of $\frac{1}{2}$. If the man takes 19 steps at random, then find the probability that he is at the point A after 19 steps.

- a) $\frac{1}{2^{19}}$
- b) 1
- c) 0 **Your answer is correct**
- d) $\frac{1}{2^9}$

Time spent / Accuracy Analysis

Time taken by you to answer this question	48
Avg. time spent on this question by all students	74
Difficulty Level	M
Avg. time spent on this question by students who got this question right	74
% of students who attempted this question	28.43
% of students who got the question right of those who attempted	66.49

[Video Solution](#)

Text Solution

The man can never be at the starting point after an odd number of steps. He can be at A only after an even number of steps.
Choice (C)

undefined

Q26. DIRECTIONS for question 26: Select the correct alternative from the given choices.

A man standing at a point A can take a step to the right with probability of $\frac{1}{2}$ and a step to the left with probability of $\frac{1}{2}$. If the man takes 19 steps at random, then find the probability that he is at the point A after 19 steps.

- a) $\frac{1}{2^{19}}$
- b) 1
- c) 0 Your answer is correct
- d) $\frac{1}{2^9}$

Time spent / Accuracy Analysis

Time taken by you to answer this question	48
Avg. time spent on this question by all students	74
Difficulty Level	M
Avg. time spent on this question by students who got this question right	74
% of students who attempted this question	28.43
% of students who got the question right of those who attempted	66.49

[Video Solution](#)

[Text Solution](#)

The man can never be at the starting point after an odd number of steps. He can be at A only after an even number of steps.
Choice (C)

undefined

Q27. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

In the football world cup there are eight pools and each pool consists of exactly six teams. In each pool, every team plays against every other team. One team from each pool is selected depending on the highest number of wins (and in case of a tie, on the number of goals) scored by that team in the pool. The eight teams thus selected go to the next stage, which is an elimination (knock-out) stage where every team plays exactly one match in each round and only the winners in a round proceed to the next round. A number of games are thus played to decide the eventual winner. In all how many matches are played in the tournament?

Your Answer: 47 Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	94
Avg. time spent on this question by all students	130
Difficulty Level	E
Avg. time spent on this question by students who got this question right	128
% of students who attempted this question	20.78
% of students who got the question right of those who attempted	64.95

[Video Solution](#)

[Text Solution](#)

Given that in each pool, there are six teams which play with each other.

$$\therefore \text{Total matches played in each pool} = \frac{6 \times 5}{2} = 15$$

As there are eight pools, total matches in all the pools will be 120.

It is also known that the top team in each pool will qualify for the next stage which is a knock-out stage. Thus for one winner to emerge 7 teams have to be eliminated and this requires 7 matches.

$$\therefore \text{Total matches played in the tournament} = 120 + 7 = 127.$$

Ans: (127)

undefined

Q27. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

In the football world cup there are eight pools and each pool consists of exactly six teams. In each pool, every team plays against every other team. One team from each pool is selected depending on the highest number of wins (and in case of a tie, on the number of goals) scored by that team in the pool. The eight teams thus selected go to the next stage, which is an elimination (knock-out) stage where every team plays exactly one match in each round and only the winners in a round proceed to the next round. A number of games are thus played to decide the eventual winner. In all how many matches are played in the tournament?

Your Answer:47 □ **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	94
Avg. time spent on this question by all students	130
Difficulty Level	E
Avg. time spent on this question by students who got this question right	128
% of students who attempted this question	20.78
% of students who got the question right of those who attempted	64.95

[Video Solution](#)

[Text Solution](#)

Given that in each pool, there are six teams which play with each other.

$$\therefore \text{Total matches played in each pool} = \frac{6 \times 5}{2} = 15$$

As there are eight pools, total matches in all the pools will be 120.

It is also known that the top team in each pool will qualify for the next stage which is a knock-out stage. Thus for one winner to emerge 7 teams have to be eliminated and this requires 7 matches.

$$\begin{aligned}\therefore \text{Total matches played in the tournament} \\ &= 120 + 7 = 127.\end{aligned}$$

Ans: (127)

undefined

Q28. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

P is the product of the factorials of the first 10 natural numbers. What is the remainder when the quotient of $\frac{P}{10^6}$ is divided by 10?

Your Answer:0 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	64
Avg. time spent on this question by all students	111
Difficulty Level	M
Avg. time spent on this question by students who got this question right	101
% of students who attempted this question	30.38
% of students who got the question right of those who attempted	69.5

[Video Solution](#)

[Text Solution](#)

$$P = 1! 2! 3! 4! 5! 6! 7! 8! 9! 10!$$

There are 7 fives in P (1 each in 5! to 9! and 2 in 10!).

$$\therefore P \text{ ends with 7 zeroes i.e., } P/10^6 \text{ ends with a 0 and } \text{Rem } \frac{P/10^6}{10} = 0$$

Ans: (0)

undefined

Q28. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

P is the product of the factorials of the first 10 natural numbers. What is the remainder when the quotient of $\frac{P}{10^6}$ is divided by 10?

Your Answer:0 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	64
Avg. time spent on this question by all students	111
Difficulty Level	M
Avg. time spent on this question by students who got this question right	101
% of students who attempted this question	30.38
% of students who got the question right of those who attempted	69.5

[Video Solution](#)

[Text Solution](#)

$P = 1! 2! 3! 4! 5! 6! 7! 8! 9! 10!$
There are 7 fives in P (1 each in 5! to 9! and 2 in 10!)

$\therefore P$ ends with 7 zeroes i.e., $P/10^6$ ends with a 0 and $\text{Rem} \frac{P/10^6}{10} = 0$

Ans: (0)

undefined

Q29. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

Two towns X and Y are 2160 km apart. Train A starts from X towards Y. Train B simultaneously starts from Y towards X. Each of the two trains is 800 m long. When the trains meet, they take 10 seconds to cross each other. Find the time taken in (minutes) for the two trains to meet.

Your Answer:225 Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	179
Avg. time spent on this question by all students	170
Difficulty Level	E
Avg. time spent on this question by students who got this question right	165
% of students who attempted this question	32.4
% of students who got the question right of those who attempted	55.25

[Video Solution](#)

[Text Solution](#)

Let the speeds of the trains A and B be a m/s and b m/s respectively

$$\text{The time taken for A and B to cross each other in 10s. i.e., } a + b = \frac{800 + 800}{10} = 160.$$

$$\text{Time taken for A and B to meet} = \frac{2160}{(160) \times \frac{18}{5}} \text{ hr}$$

$$= 3.75 \text{ hr.} = 225 \text{ min}$$

Ans: (225)

undefined

undefined

Q29. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

Two towns X and Y are 2160 km apart. Train A starts from X towards Y. Train B simultaneously starts from Y towards X. Each of the two trains is 800 m long. When the trains meet, they take 10 seconds to cross each other. Find the time taken in (minutes) for the two trains to meet.

Your Answer:225 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question **179**

Avg. time spent on this question by all students **170**

Difficulty Level **E**

Avg. time spent on this question by students who got this question right **165**

% of students who attempted this question **32.4**

% of students who got the question right of those who attempted **55.25**

[Video Solution](#)

[Text Solution](#)

Let the speeds of the trains A and B be a m/s and b m/s respectively

$$\text{The time taken for A and B to cross each other in 10s. i.e., } a + b = \frac{800 + 800}{10} = 160.$$

$$\text{Time taken for A and B to meet} = \frac{2160}{(160) \times \frac{18}{5}} \text{ hr}$$

$$= 3.75 \text{ hr.} = 225 \text{ min}$$

Ans: (225)

Q30. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

Asses each of the following statements, given that $x = -\frac{1}{4}$, and identify those that are true. Then enter the number (1, 2, 3) corresponding to each of the correct statements, in the ascending order. For example, if you think that statements (1) and (2) are correct, then enter "12" and not "21".

1.

$$2^{\frac{1}{x}} > 2^x$$

2.

$$-\frac{1}{x} < \frac{1}{\sqrt{-x}}$$

$$3. \frac{-1}{2x} = \\ 16^{-x}$$

Your Answer: 13 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	77
Avg. time spent on this question by all students	142
Difficulty Level	E
Avg. time spent on this question by students who got this question right	141
% of students who attempted this question	26.13
% of students who got the question right of those who attempted	57.76

[Video Solution](#)

[Text Solution](#)

$$(1) 2^{\frac{1}{x}} = 2^{-4} = \frac{1}{16}$$

$$2^x = \frac{1}{\sqrt[4]{2}}$$

$$2^{\frac{1}{x}} < 2^x \\ \therefore (1) \text{ is false.}$$

$$(2) -\frac{1}{x} = 4$$

$$\frac{1}{\sqrt{-x}} = 2$$

$$-\frac{1}{x} > \frac{1}{\sqrt{-x}} \\ \therefore (2) \text{ is false.}$$

$$(3) 16^{-x} = 16^{\frac{1}{4}} = 2$$

$$\frac{-1}{2x} = 2$$

∴ (3) is true.

Hence only, (3) is true

Ans: (3)

undefined

Q30. DIRECTIONS for questions 27 to 30: Type in your answer in the input box provided below the question.

Asses each of the following statements, given that $x = -\frac{1}{4}$, and identify those that are true. Then enter the number (1, 2, 3) corresponding to each of the correct statements, in the ascending order. For example, if you think that statements (1) and (2) are correct, then enter "12" and not "21".

1.

$$\frac{1}{2^x} > 2^x$$

2.

$$-\frac{1}{x} < \frac{1}{\sqrt{-x}}$$

3.

$$\frac{-1}{2x} = \\ 16^{-x}$$

Your Answer:13 □ Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	77
Avg. time spent on this question by all students	142
Difficulty Level	E
Avg. time spent on this question by students who got this question right	141
% of students who attempted this question	26.13
% of students who got the question right of those who attempted	57.76

[Video Solution](#)

[Text Solution](#)

$$(1) \ 2^{\frac{1}{x}} = 2^{-4} = \frac{1}{16}$$

$$2^x = \frac{1}{\sqrt[4]{2}}$$

$$2^{\frac{1}{x}} < 2^x$$

∴ (1) is false.

$$(2) -\frac{1}{x} = 4$$

$$\frac{1}{\sqrt{-x}} = 2$$

$$-\frac{1}{x} > \frac{1}{\sqrt{-x}}$$

∴ (2) is false.

$$(3) 16^{-x} = 16^{\frac{1}{4}} = 2$$

$$\frac{-1}{2x} = 2$$

∴ (3) is true.

Hence only, (3) is true

Ans: (3)