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

Is your company the hub of a network of partners that don't interact with one another? If so, you may be well positioned to produce radical innovations, but you could be on your own if trouble strikes. Or are you part of a web of interconnected allies? Then you may be limited to incremental innovations – but you'll probably be much less isolated during a crisis.

In 12 years of research, we've learned which kinds of alliance networks are best for which types of firms and how you can tailor your network to suit your strategy, positions, and business environment. Consider the alliances formed by Samsung and Sony with suppliers, sales channels, and R&D partners from 2008 to 2011. Samsung is at the centre of its network – a vantage point from which it can combine insights from such diverse partners as DreamWorks and KT, which do interesting things with 3D technologies but don't typically work together. Like Apple, which invented the iPhone after gleaning insights from Motorola and disparate other partners, Samsung is well placed to look to the future and conceive a breakthrough product – perhaps the first handheld device for watching 3D movies without special glasses. (Its Galaxy S4 has cutting-edge gesture and eye-tracking features.) But, it risks the isolation experienced by another hub firm, Boeing, whose network did not foster the deeply integrated partnerships needed to tackle manufacturing problems on its innovative 787 Dreamliner and to avoid product launch delays.

Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. Although highly integrated networks like this one are less likely to yield breakthrough innovations, they have a big advantage on another front: Their members often reach out to partners in need. For example, after the March 2011 earthquake in Japan, customers and suppliers of Renesas Electronics sent 2500 workers to help rebuild a damaged plant.

In a fast-changing environment, it's crucial to be at the centre of a hub-and-spoke network so that you are constantly exposed to new ideas. Firms in dynamic industries had higher returns on assets if they were part of this type of network. Highly diversified firms gain a lot from being hubs, because employees with different backgrounds can see more opportunities in diverse ideas coming in from the spokes. Integrated networks can be particularly beneficial for companies whose small size leaves them vulnerable to shocks. With either type of network, a company must ensure that information about partners flows freely so that an executive managing a relationship with one partner knows what others are learning from different partners.

Our analysis suggests that Sony – large, diversified, and in a fast-changing industry – would be better off with a hub-and-spoke network like Samsung's. The difference in network structures is one reason Samsung has outpaced Sony in creating innovative products in recent years.

Many companies fail to look beyond their own partner relationships to consider whether their partners are interacting with one another. This prevents them from gaining the greatest possible competitive advantage from their alliances.

Q1. Which of the following is possibly true based on the analysis cited in the penultimate para of the passage?

- a) **Sony needs risk aversion more than it needs breakthrough innovation.** **Your answer is incorrect**
- b) Sony doesn't have enough diversity to ensure it will not suffer the problems Boeing suffered.
- c) Sony can compete with Samsung only if it develops deeply integrated partnerships.
- d) Sony needs radical innovations more than incremental ones in its current situation.

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**353**
Avg. time spent on this question by all students	**386**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**381**
% of students who attempted this question	**61.86**
% of students who got the question right of those who attempted	**61.34**

Video Solution

Text Solution

From 'Our analysis suggests that Sony - large, diversified, and in a fast-changing industry- ***would be better off with a hub-and-spoke network like Samsung's'***, 'Although ***highly integrated networks*** like this one (Sony) are less likely to yield breakthrough innovations, they have a big advantage on another front: Their ***members often reach out to partners in need'***, we can understand that the major difference between Sony and Samsung is in the type of networks they have. Sony is part of an integrated network where other partners help it out during crisis. However, they do not really manage to have breakthrough innovations. Samsung on the other hand, because of its disparate partners will have breakthrough innovations but will be isolated during a crisis. According to the penultimate para, Sony should transform its alliances to a partnership similar to that of Samsung. That means, according to the analysis, Sony needs to lean towards breakthrough innovations, rather than trying to stay safe.

Option A: As explained above, Sony needs innovation more than security according to the analysis. That contradicts Choice A, which is therefore, not the answer.

Option B: From 'it risks the isolation experienced by another hub firm, Boeing, whose network ***did not foster the deeply integrated partnerships*** needed to tackle manufacturing problems', Boeing suffered problems because it had a Samsung-style hub-and-spoke network which didn't help when Boeing needed help with manufacturing related problems. The network of Sony is precisely advantageous to avoid Boeing's problems. Hence, Choice B is not the answer.

Option C: Sony is already part of a deeply integrated network/partnership and according to the analysis it is better off with a hub-and-spoke network. Hence, Choice C is not the answer.

Option D: This option agrees with the analysis that Sony, which has the security of an integrated network needs innovative ideas, more akin to a hub-and-spoke network. The incremental innovations are usually characteristic of a highly integrated network. The radical innovations are characteristic of a hub-and-spoke network. Hence, Choice D is the answer.

Choice (D)

undefined

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

Is your company the hub of a network of partners that don't interact with one another? If so, you may be well positioned to produce radical innovations, but you could be on your own if trouble strikes. Or are you part of a web of interconnected allies? Then you may be limited to incremental innovations – but you'll probably be much less isolated during a crisis.

In 12 years of research, we've learned which kinds of alliance networks are best for which types of firms and how you can tailor your network to suit your strategy, positions, and business environment. Consider the alliances formed by Samsung and Sony with suppliers, sales channels, and R&D partners from 2008 to 2011. Samsung is at the centre of its network – a vantage point from which it can combine insights from such diverse partners as DreamWorks and KT, which do interesting things with 3D technologies but don't typically work together. Like Apple, which invented the iPhone after gleaning insights from Motorola and disparate other partners, Samsung is well placed to look to the future and conceive a breakthrough product – perhaps the first handheld device for watching 3D movies without special glasses. (Its Galaxy S4 has cutting-edge gesture and eye-tracking features.) But, it risks the isolation experienced by another hub firm, Boeing, whose network did not foster the deeply integrated partnerships needed to tackle manufacturing problems on its innovative 787 Dreamliner and to avoid product launch delays.

Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. Although highly integrated networks like this one are less likely to yield breakthrough innovations, they have a big advantage on another front: Their members often reach out to partners in need. For example, after the March 2011 earthquake in Japan, customers and suppliers of Renesas Electronics sent 2500 workers to help rebuild a damaged plant.

In a fast-changing environment, it's crucial to be at the centre of a hub-and-spoke network so that you are constantly exposed to new ideas. Firms in dynamic industries had higher returns on assets if they were part of this type of network. Highly diversified firms gain a lot from being hubs, because employees with different backgrounds can see more opportunities in diverse ideas coming in from the spokes. Integrated networks can be particularly beneficial for companies whose small size leaves them vulnerable to shocks. With either type of network, a company must ensure that information about partners flows freely so that an executive managing a relationship with one partner knows what others are learning from different partners.

Our analysis suggests that Sony – large, diversified, and in a fast-changing industry – would be better off with a hub-and-spoke network like Samsung's. The difference in network structures is one reason Samsung has outpaced Sony in creating innovative products in recent years.

Many companies fail to look beyond their own partner relationships to consider whether their partners are interacting with one another. This prevents them from gaining the greatest possible competitive advantage from their alliances.

Q2. Which of the following is an advantage for a hub in a hub-and-spoke network, according to the passage?

- a) **Growth opportunities for employees from diverse firms in dynamic industries.**
- b) **A vantage point to combine insights and diverse ideas from a disparate group of partners** **Your answer is correct**
- c) Competitive advantage because of alliance partners constantly engaging with each other
- d) Assistance from deeply integrated networks to tackle manufacturing problems

Time spent / Accuracy Analysis

Time taken by you to answer this question	**221**
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	**115**
% of students who attempted this question	**65.05**
% of students who got the question right of those who attempted	**58.94**

Video Solution

Text Solution

It's crucial to be at the centre of a hub-and-spoke network so that you are ***constantly exposed to new ideas***. Firms in dynamic industries had ***higher returns on assets*** if they were part of this type of network. Highly diversified firms gain a lot from being hubs, because ***employees with different backgrounds can see more opportunities in diverse ideas*** coming in from the spokes.
Option A: Employees with different backgrounds can see more opportunities because of diverse ideas coming in from various partners, in a hub-and-spoke network. However, that cannot be extrapolated to call these opportunities 'growth' opportunities and there is no evidence to believe that growth is fuelled from 'diverse firms'(just diverse ideas). Hence, Choice A is not the answer.
Option B: From 'Samsung is at the centre of its network – a vantage point from which it can combine insights from such diverse partners' we can understand that a hub-and-spoke network (like Samsung) enjoys a vantage point, to benefit from the innovative ideas at work in the partner companies. Hence, Choice B is the answer.
Option C: Alliance partners could be engaging with each other in both types of networks: deeply integrated ones as well as hub-and-spoke ones. It is not specific to the latter alone. Hence, Choice C is not the answer.
Option D: Hub-and-spoke networks aren't the same as deeply integrated networks in that the partners are disparate. Hence, the chance of receiving assistance to tackle manufacturing problems is virtually absent, as in the case of Boeing. Hence, Choice D doesn't represent an advantage. Choice (B)

undefined

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Is your company the hub of a network of partners that don't interact with one another? If so, you may be well positioned to produce radical innovations, but you could be on your own if trouble strikes. Or are you part of a web of interconnected allies? Then you may be limited to incremental innovations – but you'll probably be much less isolated during a crisis.

In 12 years of research, we've learned which kinds of alliance networks are best for which types of firms and how you can tailor your network to suit your strategy, positions, and business environment. Consider the alliances formed by Samsung

and Sony with suppliers, sales channels, and R&D partners from 2008 to 2011. Samsung is at the centre of its network – a vantage point from which it can combine insights from such diverse partners as DreamWorks and KT, which do interesting things with 3D technologies but don't typically work together. Like Apple, which invented the iPhone after gleaning insights from Motorola and disparate other partners, Samsung is well placed to look to the future and conceive a breakthrough product – perhaps the first handheld device for watching 3D movies without special glasses. (Its Galaxy S4 has cutting-edge gesture and eye-tracking features.) But, it risks the isolation experienced by another hub firm, Boeing, whose network did not foster the deeply integrated partnerships needed to tackle manufacturing problems on its innovative 787 Dreamliner and to avoid product launch delays.

Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. Although highly integrated networks like this one are less likely to yield breakthrough innovations, they have a big advantage on another front: Their members often reach out to partners in need. For example, after the March 2011 earthquake in Japan, customers and suppliers of Renesas Electronics sent 2500 workers to help rebuild a damaged plant.

In a fast-changing environment, it's crucial to be at the centre of a hub-and-spoke network so that you are constantly exposed to new ideas. Firms in dynamic industries had higher returns on assets if they were part of this type of network. Highly diversified firms gain a lot from being hubs, because employees with different backgrounds can see more opportunities in diverse ideas coming in from the spokes. Integrated networks can be particularly beneficial for companies whose small size leaves them vulnerable to shocks. With either type of network, a company must ensure that information about partners flows freely so that an executive managing a relationship with one partner knows what others are learning from different partners.

Our analysis suggests that Sony – large, diversified, and in a fast-changing industry – would be better off with a hub-and-spoke network like Samsung's. The difference in network structures is one reason Samsung has outpaced Sony in creating innovative products in recent years.

Many companies fail to look beyond their own partner relationships to consider whether their partners are interacting with one another. This prevents them from gaining the greatest possible competitive advantage from their alliances.

Q3. Which of the following best summarises the difference between Samsung and Sony as explained in the passage?

- a) **Sony's alliance network of disparate partners allows it to be more innovative than Samsung.**
- b) **Samsung's alliance network offers it a better cushion than that of Sony during a crisis.**
- c) **Samsung's hub-and-spoke network make it more innovative than Sony but increase its fragility during a crisis.**

Your answer is correct

- d) Sony's hub-and-spoke network with companies like Toshiba and Sharp make it better suited than Samsung to a fast-changing industry.

Time spent / Accuracy Analysis

Time taken by you to answer this question	**91**
Avg. time spent on this question by all students	**92**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**84**
% of students who attempted this question	**64.63**
% of students who got the question right of those who attempted	**83.49**

Video Solution

Text Solution

Samsung is part of a hub-and-spoke network with disparate partners which may not be able to help the company during a crisis but will definitely be a source of diverse innovative ideas. Sony is the opposite, which prevents Sony from making breakthrough innovations.
Option A: ***Sony is part of a web of allies***, including Sharp and Toshiba, that work with one another. Although ***highly integrated networks like this one are less likely to yield breakthrough innovation***. From this, we can understand that Choice A contradicts the author's analysis of Sony. Hence, Choice A is not the answer.
Option B: ***Samsung*** is well placed to look to the future….But, ***it risks the isolation experienced by another hub firm, Boeing,*** whose network did not foster the deeply integrated partnerships needed to tackle manufacturing problems. From this, it is clearly obvious that Samsung is vulnerable during a crisis. Hence, Choice B is not the answer.
Option C: While Samsung has an edge in innovation, its network cannot help it during a crisis. Hence it is fragile/vulnerable. Choice C depicts the scenario correctly.
Option D: From 'Our analysis suggests that ***Sony - large, diversified, and in a fast-changing industry- would be better off*** with a hub-and-spoke network like Samsung's', it is understandable that Samsung is better suited than Sony is. Hence, Choice D is not correct. Choice (C)

undefined

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Is your company the hub of a network of partners that don't interact with one another? If so, you may be well positioned to produce radical innovations, but you could be on your own if trouble strikes. Or are you part of a web of interconnected allies? Then you may be limited to incremental innovations – but you'll probably be much less isolated during a crisis.

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Many companies fail to look beyond their own partner relationships to consider whether their partners are interacting with one another. This prevents them from gaining the greatest possible competitive advantage from their alliances.

Q4. Which of the following companies is not a hub of a network of partners that don't interact with one another?

- a) **Samsung**
- b) **Apple**
- c) **Boeing**
- d) **Sony** **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	**77**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**68**
% of students who attempted this question	**65.88**
% of students who got the question right of those who attempted	**42.78**

Video Solution

Text Solution

'***Like Apple***, which invented the iPhone after gleaning insights from Motorola and ***disparate other partners***, ***Samsung is well placed*** to look to the future'. 'But, it risks the isolation experienced by ***another hub firm, Boeing***, whose network did not foster the deeply integrated partnerships.'
Option A: Samsung has been mentioned above as a hub-and-spoke network. Hence, Choice A is not the answer.
Option B: It is clearly mentioned that Apple picked up innovative ideas from partners like Motorola. Hence, Choice B is not the answer.
Option C: Boeing has been mentioned to be a hub firm above and hence, Choice C is not the answer.
Option D: Sony is part of a deeply integrated network from 'Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. Although ***highly integrated networks*** like this one'. Hence, it is not a hub of a network. Hence, Choice D is the answer. Choice (D)

undefined

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Is your company the hub of a network of partners that don't interact with one another? If so, you may be well positioned to produce radical innovations, but you could be on your own if trouble strikes. Or are you part of a web of interconnected allies? Then you may be limited to incremental innovations – but you'll probably be much less isolated during a crisis.

In 12 years of research, we've learned which kinds of alliance networks are best for which types of firms and how you can tailor your network to suit your strategy, positions, and business environment. Consider the alliances formed by Samsung and Sony with suppliers, sales channels, and R&D partners from 2008 to 2011. Samsung is at the centre of its network – a vantage point from which it can combine insights from such diverse partners as DreamWorks and KT, which do interesting things with 3D technologies but don't typically work together. Like Apple, which invented the iPhone after gleaning insights from Motorola and disparate other partners, Samsung is well placed to look to the future and conceive a breakthrough product – perhaps the first handheld device for watching 3D movies without special glasses. (Its Galaxy S4 has cutting-edge gesture and eye-tracking features.) But, it risks the isolation experienced by another hub firm, Boeing, whose network did not foster the deeply integrated partnerships needed to tackle manufacturing problems on its innovative 787 Dreamliner and

to avoid product launch delays.

Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. Although highly integrated networks like this one are less likely to yield breakthrough innovations, they have a big advantage on another front: Their members often reach out to partners in need. For example, after the March 2011 earthquake in Japan, customers and suppliers of Renesas Electronics sent 2500 workers to help rebuild a damaged plant.

In a fast-changing environment, it's crucial to be at the centre of a hub-and-spoke network so that you are constantly exposed to new ideas. Firms in dynamic industries had higher returns on assets if they were part of this type of network. Highly diversified firms gain a lot from being hubs, because employees with different backgrounds can see more opportunities in diverse ideas coming in from the spokes. Integrated networks can be particularly beneficial for companies whose small size leaves them vulnerable to shocks. With either type of network, a company must ensure that information about partners flows freely so that an executive managing a relationship with one partner knows what others are learning from different partners.

Our analysis suggests that Sony – large, diversified, and in a fast-changing industry – would be better off with a hub-and-spoke network like Samsung's. The difference in network structures is one reason Samsung has outpaced Sony in creating innovative products in recent years.

Many companies fail to look beyond their own partner relationships to consider whether their partners are interacting with one another. This prevents them from gaining the greatest possible competitive advantage from their alliances.

Q5. The author mentions the March 2011 earthquake in Japan to highlight which of the following points?

a) **Integrated networks ensure companies aren't left high and dry during precarious times.**

b) **Sony's decision to choose a hub-and-spoke network over a web of interconnected allies paid dividends during crisis.**

c) **The alliance network a company chooses can be tailored to suit strategy and business development.**

d) **Corporations which are part of alliance networks can beseech partners for assistance during a crisis.** **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**173**
Avg. time spent on this question by all students	**90**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**90**
% of students who attempted this question	**64.69**
% of students who got the question right of those who attempted	**45.89**

Video Solution

Text Solution

Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. ***Although*** [highly integrated networks like this one are less likely to yield breakthrough innovations], they have a ***big advantage*** on another front: [***Their members often reach out to partners in need***]. For example, after the March 2011 earthquake in Japan, ***customers and suppliers of Renesas Electronics sent 2500 workers to help rebuild a damaged plant***.

The example of the earthquake demonstrates that Sony has more help when it comes to a crisis. The author used the scenario to explain the advantages of a deeply integrated network.

Option A: Integrated networks ensure a company is not left in isolation during a crisis (for example, Sony, which had help). 'High and dry' is an idiomatic expression for being stranded during difficult times. Hence, Choice A is the right answer.

Option B: Sony is a part of a deeply integrated web of allies rather than a hub-and-spoke network like that of Samsung. Hence, Choice B is not the answer.

Option C: While the statement itself is true, it is not apt for this context, where the example was picked to highlight the advantage of a deeply integrated network during a crisis. Hence, Choice C is not the answer.

Option D: Corporations can request (beseech) partners of their deeply integrated network during a crisis, as explained above in the underlined parts. However, the option states 'alliance partners' not referring to any specific type of network. Alliance partnerships could be hub-and-spoke or deeply integrated. Hence, Choice D is not the answer.

Choice (A)

undefined

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Is your company the hub of a network of partners that don't interact with one another? If so, you may be well positioned to produce radical innovations, but you could be on your own if trouble strikes. Or are you part of a web of interconnected allies? Then you may be limited to incremental innovations – but you'll probably be much less isolated during a crisis.

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Sony is part of a web of allies, including Sharp and Toshiba, that work with one another. Although highly integrated networks like this one are less likely to yield breakthrough innovations, they have a big advantage on another front: Their members often reach out to partners in need. For example, after the March 2011 earthquake in Japan, customers and suppliers of Renesas Electronics sent 2500 workers to help rebuild a damaged plant.

In a fast-changing environment, it's crucial to be at the centre of a hub-and-spoke network so that you are constantly

exposed to new ideas. Firms in dynamic industries had higher returns on assets if they were part of this type of network. Highly diversified firms gain a lot from being hubs, because employees with different backgrounds can see more opportunities in diverse ideas coming in from the spokes. Integrated networks can be particularly beneficial for companies whose small size leaves them vulnerable to shocks. With either type of network, a company must ensure that information about partners flows freely so that an executive managing a relationship with one partner knows what others are learning from different partners.

Our analysis suggests that Sony – large, diversified, and in a fast-changing industry – would be better off with a hub-and-spoke network like Samsung's. The difference in network structures is one reason Samsung has outpaced Sony in creating innovative products in recent years.

Many companies fail to look beyond their own partner relationships to consider whether their partners are interacting with one another. This prevents them from gaining the greatest possible competitive advantage from their alliances.

Q6. Which of the following can be inferred about integrated networks from the passage?

- a) **Integrated networks benefit companies not diversified enough to foray into multiple industries.**
- b) **Integrated networks benefit companies which can leverage the diverse backgrounds of employees with diverse ideas.**
- c) **Integrated networks benefit companies which operate in industries prone to ups and downs.** **Your answer is incorrect**
- d) **Integrated networks benefit companies which are not too large to be affected by upheavals in an industry.**

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	**100**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**107**
% of students who attempted this question	**52.3**
% of students who got the question right of those who attempted	**28.58**

Video Solution

Text Solution

Or are you part of a web of interconnected allies? ***Then you may be limited to incremental innovations*** – but ***you'll probably be much less isolated during a crisis***. ***Sony is part of a web of allies***, including Sharp and Toshiba, that work with one another. Although ***highly integrated networks like this one are less likely to yield breakthrough innovations***, they have a big advantage on another front: ***Their members often reach out to partners in need***.

Option A: Advantages across ***multiple industries/sectors*** is not a parameter discussed as far as integrated networks are concerned. Hub-and-Spoke networks do have the advantage probably, leading to diverse ideas, but not integrated networks. This can be understood from '***Firms in dynamic industries*** had higher returns on assets if they were part of ***this type of network***' (hub-and-spoke). Hence, Choice A is not the answer.

Option B: From 'Highly diversified firms gain a lot from being hubs, because employees with different backgrounds can see more opportunities in diverse ideas coming in from the spokes' we can understand that diverse ideas is more a gain for hub-and-spoke networks. Also, it is not the employees who have diverse ideas. They benefit from diverse ideas coming in from other partner companies. Hence, Choice B is not the answer.

Option C: The assistance available to integrated networks is irrespective of the type of industry and is not limited just to those industries where there are ups and downs and volatility. Hence, Choice C is not the answer.

Option D: Integrated networks benefit companies which are not too large for upheavals in an industry. It means, they are not large enough to be immune to upheavals. This can be understood from 'Integrated networks can be particularly beneficial for companies whose ***small size*** leaves them ***vulnerable to shocks***(upheavals)'. Hence, Choice D is the answer.

Choice (D)

undefined

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

It is a rare innovation that earns science's top honour at the same time as its impact continues to mount. But this was a banner year for cryo–electron microscopy (cryo-EM), a technique that allows scientists to create freeze-frame images of complex molecules as they interact with each other. This year, cryo-EM delivered multiple insights into the way key protein complexes work; the U.S. National Institutes of Health set up a network of cryo-EM centers around the country, and some of the pioneers of the technique were awarded the Nobel Prize in Chemistry.

Cryo-EM uses liquid ethane to flash freeze molecules in midmovement in water. Researchers then view them under an electron microscope and employ computer programs to sort the images and assemble the data into a coherent structure. Unlike x-ray crystallography – the gold standard of structural biology – cryo-EM doesn't require target molecules to be crystallized, often a difficult task, and because it catches them midstride, it can reveal clues to function. The technique's roots go back decades, but improvements in instrumentation, software to speed up image processing and analysis, and new quality standards in the works to reduce errors have helped touch off an explosion of advances.

By delivering near–atomic-resolution to structures never seen before, cryo-EM is helping explain decades of biochemical and genetic observations. This year, it gave researchers new looks at how spliceosomes – key machines for processing RNA – function, a clearer view of the proteins that remodel membranes during the life of a cell, and insights into the enzymes that fix breaks in DNA. The technology also produced high-resolution models of the tangles and plaque-forming fibrils that accumulate in the brains of Alzheimer's patients, and showed how the gene-editing complex CRISPR captures and manipulates DNA. And researchers pushed cryo-EM's ability to tackle large and small molecules, solving the structures of a red alga's gigantic light-harvesting complex and several small protein complexes that were previously out of its reach.

Q7. Which of the following is an inference that can be drawn from the passage?

a) **The interaction of complex molecules can only be studied accurately at near-atomic-resolution.**

b) **It is hard to use x-ray crystallography for biological structures because not all target molecules can be crystallised.**

c) **Top honours in science are only awarded for rare innovations.**

d) **Examination of molecules captured in a state of action can possibly reveal information about their structures.**

Your answer is correct

Time spent / Accuracy Analysis

Time taken by you to answer this question	**259**
Avg. time spent on this question by all students	**281**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**278**
% of students who attempted this question	**43.26**
% of students who got the question right of those who attempted	**47**

Video Solution

Text Solution

Option A: This option alludes to these lines 'By delivering ***near–atomic-resolution to structures never seen before***, cryo-EM is helping explain decades of biochemical and genetic observations' (third para) and 'a technique that allows scientists to create freeze-frame images of ***complex molecules as they interact with each other***' (first para). However, there is no evidence to determine whether all complex molecules are difficult enough to be studied or only some. It is true that near-atomic-resolution makes life easier for researchers. However, from the passage, we cannot infer that the interaction wasn't possibly studied before near-atomic-resolution images became possible. Some structures were never seen before. Can we generalize it to make this inference? No. Hence, A is not the answer.
Option B: From '***Unlike x-ray crystallography*** **–** the gold standard of structural biology – cryo-EM doesn't require target molecules to be crystallized, ***often a difficult task***', we can understand that crystallizing target molecules is difficult. This option seems to suggest it is not possible at all. Hence, B is not the answer.
Option C: This option points to selective selection fallacy. From 'It is a rare innovation that earns science's top honour at the same time as its impact continues to mount' it is understandable that the author is NOT saying that only rare innovations win the top honour. The author is saying that only a rare innovation wins the honour ***while its impact continues to mount***. That part has been omitted. Hence, C is not the answer.
Option D: From 'to flash freeze molecules in midmovement in water' and 'because it catches them midstride, it can reveal clues to function' we can understand that cryo-EM's advantage lies in catching molecules while they are moving, i.e., in a state of action, and that helps reveal a lot of information. From: 'And researchers pushed cryo-EM's ability to tackle large and small molecules, ***solving the structures*** of a red alga's gigantic light-harvesting complex and several small protein complexes that were previously out of its reach',
'Cryo-EM uses liquid ethane to flash freeze molecules in midmovement in water. Researchers then view them under an electron microscope and employ computer programs to ***sort the images and assemble the data into a coherent structure***', and 'The technology also produced high-resolution ***models*** of the tangles and plaque-forming fibrils'
we can understand that it is possible to understand structures through this method.
Hence, D is the answer. Choice (D)

undefined

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

It is a rare innovation that earns science's top honour at the same time as its impact continues to mount. But this was a banner year for cryo–electron microscopy (cryo-EM), a technique that allows scientists to create freeze-frame images of complex molecules as they interact with each other. This year, cryo-EM delivered multiple insights into the way key protein complexes work; the U.S. National Institutes of Health set up a network of cryo-EM centers around the country, and some of the pioneers of the technique were awarded the Nobel Prize in Chemistry.

Cryo-EM uses liquid ethane to flash freeze molecules in midmovement in water. Researchers then view them under an electron microscope and employ computer programs to sort the images and assemble the data into a coherent structure. Unlike x-ray crystallography – the gold standard of structural biology – cryo-EM doesn't require target molecules to be crystallized, often a difficult task, and because it catches them midstride, it can reveal clues to function. The technique's roots go back decades, but improvements in instrumentation, software to speed up image processing and analysis, and new quality standards in the works to reduce errors have helped touch off an explosion of advances.

By delivering near–atomic-resolution to structures never seen before, cryo-EM is helping explain decades of biochemical and genetic observations. This year, it gave researchers new looks at how spliceosomes – key machines for processing RNA – function, a clearer view of the proteins that remodel membranes during the life of a cell, and insights into the enzymes that fix breaks in DNA. The technology also produced high-resolution models of the tangles and plaque-forming

fibrils that accumulate in the brains of Alzheimer's patients, and showed how the gene-editing complex CRISPR captures and manipulates DNA. And researchers pushed cryo-EM's ability to tackle large and small molecules, solving the structures of a red alga's gigantic light-harvesting complex and several small protein complexes that were previously out of its reach.

Q8. Which of the following has been mentioned as a reason why the Cryo-EM technique has become more advanced now than it was in the past?

○ a) **The cryo-EM technique doesn't require target molecules to be crystallized which has made catching the molecules midstride easier.**

○ b) **The instrumentation and software have led to the introduction of a higher standard of quality which has reduced errors.** **Your answer is incorrect**

○ c) **Better instruments and expeditiousness in processing of images coupled with raising the bar in quality of work have advanced the technique.**

○ d) **Cryo-EM uses liquid ethane which can flash freeze molecules in midmovement in water, so they could be viewed under an electron microscope.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**63**
Avg. time spent on this question by all students	**102**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**99**
% of students who attempted this question	**51.62**
% of students who got the question right of those who attempted	**50.79**

Video Solution

Text Solution

The technique's roots go back decades, but ***improvements in instrumentation***, ***software to speed up image processing and analysis***, and ***new quality standards in the works to reduce errors*** have helped touch off an explosion of advances. These lines show that while the cryo-EM technique itself is not a recent innovation, it has gotten more effective because of enhancements and advancements. The question is focusing on what has helped the technique get better.
Option A: This option gives a reason why cryo-EM is better than x-ray crystallography, which needs crystallization of target molecules, a difficult task. This option doesn't tell us why cryo-EM has become better than earlier. Hence, choice A is not the answer.
Option B: The comma after the word 'analysis' (above) clearly indicates that it is a separate parameter. The sentence says three factors are responsible for an explosion of advances: a. Improvements in instrumentation b. software to speed up processing c. New quality standards. Hence, choice B misrepresents the information and is not the answer.
Option C: This line tells us what has changed in the technique from the past: better instruments (improvements in instrumentation) and expeditiousness in processing (software to speed up image processing and analysis). Hence, choice C is the answer.
Option D: This line gives us the process of using cryo-EM, while there is no indication about why it is better than the cryo-EM technique of the past. Hence, choice D is not 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.

It is a rare innovation that earns science's top honour at the same time as its impact continues to mount. But this was a banner year for cryo–electron microscopy (cryo-EM), a technique that allows scientists to create freeze-frame images of complex molecules as they interact with each other. This year, cryo-EM delivered multiple insights into the way key protein

complexes work; the U.S. National Institutes of Health set up a network of cryo-EM centers around the country, and some of the pioneers of the technique were awarded the Nobel Prize in Chemistry.

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By delivering near–atomic-resolution to structures never seen before, cryo-EM is helping explain decades of biochemical and genetic observations. This year, it gave researchers new looks at how spliceosomes – key machines for processing RNA – function, a clearer view of the proteins that remodel membranes during the life of a cell, and insights into the enzymes that fix breaks in DNA. The technology also produced high-resolution models of the tangles and plaque-forming fibrils that accumulate in the brains of Alzheimer's patients, and showed how the gene-editing complex CRISPR captures and manipulates DNA. And researchers pushed cryo-EM's ability to tackle large and small molecules, solving the structures of a red alga's gigantic light-harvesting complex and several small protein complexes that were previously out of its reach.

Q9. All the following are benefits of the cryo-EM technique EXCEPT:

○ a) **The technique helps identify the proteins that remodel membranes during the life of a cell.** **Your answer is correct**

○ b) **The technique can help better visualization of the brains of Alzheimer's patients.**

○ c) **The technique can help study an increased range of molecules, both large and small.**

○ d) **Biochemical and genetic observations made in the past can be better understood by structures delivered by the technique with near-atomic-resolution.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**136**
Avg. time spent on this question by all students	**123**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**132**
% of students who attempted this question	**49.12**
% of students who got the question right of those who attempted	**24.92**

Video Solution

Text Solution

The last para explains all the benefits provided by the cryo-EM technique.
Option A: From 'it gave researchers new looks at how spliceosomes – key machines for processing RNA – function, ***a clearer view of the proteins that remodel membranes during the life of a cell***', we can understand that the technique gives us a clearer picture of the proteins, a better look. However, from this, we cannot infer that the technique helped us ***identify*** the proteins. Hence, A is not a benefit and is the answer.
Option B: From 'The technology also produced high-resolution models of the tangles and plaque-forming fibrils that ***accumulate in the brains of Alzheimer's patients***' justifies what this option says. Hence, B is a benefit and therefore, not the answer.
Option C: 'And researchers ***pushed cryo-EM's ability to tackle large and small molecules***, solving the structures of a red alga's gigantic light-harvesting complex and several small protein complexes that were previously out of its reach.' '***Pushed the ability*** to tackle large and small molecules' means the technique was enhanced to deal with a wider range. Hence, the option asserting that 'the technique can help study an ***increased range*** of molecules, large and small' is correct. Hence, C is a benefit, and hence, is not the answer.
Option D: From 'By delivering near–atomic-resolution to structures never seen before, cryo-EM is helping explain ***decades of biochemical and genetic observations***', we can understand that the observations are already available with us but we have been unable to understand why. With the latest information on structures, we are getting clarity on the same. So, D is a benefit, and hence, not the answer.

Choice (A)

undefined

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

America is having a bit of a moment right now. Powerful men long considered beyond retribution are being called out for their transgressions. Behaviour long tolerated in a culture where female objectification is in the very air we breathe is being re-examined.

As we look again at our culture, why stop with behaviour? It is also time to re-examine the hardware of our societies. The very infrastructure that we have built – roads, buildings, public spaces, steel, dirt, and concrete – encodes a set of values too. Are these the values we aspire to as a society and civilization?

The cities we've built don't provide perfectly equal access to everyone. An obvious case in point: wheelchair ramps, or lack thereof. But even healthy, active residents of all genders may not consider all of a city accessible to them. Men, for instance, typically don't consider a dimly lit street lined by bars or clubs an unsafe or inaccessible part of town. For women, braving the same street past midnight has completely different connotations. Like video game players who have been leveled up, men can simply access a much larger part of a city or town at a wider variety of times. One Europe-wide survey found that 30 percent of all physical violence and 16 percent of sexual violence against women happens in bars, clubs, discos and other public places – something that women are very much aware of and which influences how they move around a city.

Then there are cars. The American urban landscape is pockmarked by sprawling suburbs that can be entirely devoid of pedestrian traffic. In many metros it is actually impossible to safely access certain parts of the city without a car. It can be difficult to buy bread without having to cross a road that has no marked pedestrian crossing – many streets don't even have sidewalks. This car-centric design puts women at a double disadvantage: Not only are they at greater risk while traveling through some of these areas, but gender disparity in incomes means it can be harder for them to buy and maintain an automobile, making what James Howard Kunstler calls "the national automobile slum" even more inaccessible for them.

Cities around the globe are starting to pay more attention to these experiences. In Sweden, spurred on by its gender equality officer, Umea's city council adopted a formal strategy for gender equality in 2011 with the goal of creating "the conditions for women and men, girls and boys to have the same power to shape society and their own lives." Umea's skating park is attracting female skaters through an organization called "You skate girl." Lights have been installed next to parks, and city tunnels and passageways have been built with a view to safety and accessibility.

Karlskroga has discovered that doing something as simple as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men. "The community development staff made jokes about how at least snow clearing is something the gender people won't get involved in," Karlskroga's gender equality strategist is quoted as saying. "But then they thought about it and realized that maybe snow clearing is not gender neutral after all." In Kalmar, after women were found to be avoiding night-time bus service because of safety concerns, buses began letting passengers off between stops to get them closer to their destination. In Gothenburg, the municipal parking company replaced concrete facades with glass and improved lighting, noting that insecurity is the primary impediment to women's moving around the city. Simple changes are making a real difference. These examples are not from America, or from sprawling cities. But they show the power of rethinking how design is done.

Q10. Which of the following best defines the basic premise about a good design for a city according to the author?

- a) **It should offer universal accessibility.**
- b) **It should keep both the male and female genders in mind.** **Your answer is incorrect**
- c) **It should keep up with the trends of the contemporary times.**
- d) **It should create the right conditions for men and women to shape society.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**209**
Avg. time spent on this question by all students	**330**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**318**
% of students who attempted this question	**57.03**
% of students who got the question right of those who attempted	**46.38**

Video Solution

Text Solution

Option A: 'The cities we've built don't provide ***perfectly equal access to everyone***. An obvious case in point: wheelchair ramps, or lack thereof. ***But even healthy, active residents of all genders*** may not consider all of a city accessible to them.' The passage has one predominant point – the inaccessibility of some parts of the city to women. However, the author does make it a point to highlight the most major flaw – they don't provide perfectly equal access to everyone. Hence, Option A is the answer.
Option B: While Option B is partially true, it is narrow. A good design is not just about healthy men and women. The above lines clearly indicate that there is a need to be aware of the non-healthy, non-active residents as well. Hence, Option B is not the best answer.
Option C: Since, the passage talks about revisiting old transgressions, it is definitely not about what is right for contemporary times and what is not. In fact, time and era have got nothing to do with the idea of a good city design. Hence, Option C is not the answer.
Option D: While this can be inferred about a good design, (from the skating rink example), it is not the premise that defines what is a good design. A good design in turn may lead to giving equal opportunity to men and women, to shape society. Hence, Option D is not the answer. Choice (A)

undefined

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

America is having a bit of a moment right now. Powerful men long considered beyond retribution are being called out for their transgressions. Behaviour long tolerated in a culture where female objectification is in the very air we breathe is being re-examined.

As we look again at our culture, why stop with behaviour? It is also time to re-examine the hardware of our societies. The very infrastructure that we have built – roads, buildings, public spaces, steel, dirt, and concrete – encodes a set of values too. Are these the values we aspire to as a society and civilization?

The cities we've built don't provide perfectly equal access to everyone. An obvious case in point: wheelchair ramps, or lack thereof. But even healthy, active residents of all genders may not consider all of a city accessible to them. Men, for instance, typically don't consider a dimly lit street lined by bars or clubs an unsafe or inaccessible part of town. For women, braving the same street past midnight has completely different connotations. Like video game players who have been leveled up, men can simply access a much larger part of a city or town at a wider variety of times. One Europe-wide survey found that 30 percent of all physical violence and 16 percent of sexual violence against women happens in bars, clubs, discos and other public places – something that women are very much aware of and which influences how they move around a city.

Then there are cars. The American urban landscape is pockmarked by sprawling suburbs that can be entirely devoid of pedestrian traffic. In many metros it is actually impossible to safely access certain parts of the city without a car. It can be difficult to buy bread without having to cross a road that has no marked pedestrian crossing – many streets don't even have sidewalks. This car-centric design puts women at a double disadvantage: Not only are they at greater risk while traveling through some of these areas, but gender disparity in incomes means it can be harder for them to buy and maintain an automobile, making what James Howard Kunstler calls "the national automobile slum" even more inaccessible for them.

Cities around the globe are starting to pay more attention to these experiences. In Sweden, spurred on by its gender equality officer, Umea's city council adopted a formal strategy for gender equality in 2011 with the goal of creating "the conditions for women and men, girls and boys to have the same power to shape society and their own lives." Umea's skating park is attracting female skaters through an organization called "You skate girl." Lights have been installed next to parks, and city tunnels and passageways have been built with a view to safety and accessibility.

Karlskroga has discovered that doing something as simple as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men. "The community development staff made jokes about how at least snow clearing is something the gender people won't get involved in," Karlskroga's gender equality strategist is quoted as saying. "But then they thought about it and realized that maybe snow clearing is not gender neutral after all." In Kalmar, after women were found to be avoiding night-time bus service because of safety concerns, buses began letting passengers off between stops to get them closer to their destination. In Gothenburg, the municipal parking company replaced concrete facades with glass and improved lighting, noting that insecurity is the primary impediment to women's moving around the city. Simple changes are making a real difference. These examples are not from America, or from sprawling cities. But they

show the power of rethinking how design is done.

Q11. 'America is having a bit of a moment right now.' Which of the following could aptly describe this moment?

I. Hitherto untouchable men are being exposed for their violations.

II. Behaviour that was once acceptable is now being re-examined.

III. A gender lens is being used during the development and execution of new policies.

IV. A culture of female objectification is pervading the air we breathe.

a) **I, II and III** **Your answer is incorrect**

b) **I, II and IV**

c) **II, III, and IV**

d) **I and II**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**231**
Avg. time spent on this question by all students	**113**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**112**
% of students who attempted this question	**51.49**
% of students who got the question right of those who attempted	**27.8**

Video Solution

Text Solution

America is having a bit of a moment right now. ***Powerful men*** long considered beyond retribution ***are being called out for their transgressions***. ***Behaviour long tolerated*** in a culture where female objectification is in the very air we breathe ***is being re-examined***.

From the underlined portions above, we can understand that the moment being discussed is a good one, a change from the long-standing discrimination against women/transgressions/chauvinistic behaviour.

Hitherto untouchable men (powerful men long considered beyond retribution) are being exposed (called out) for their violations (transgressions). I aptly describes the moment.

Behaviour long tolerated is being re-examined. This has directly been mentioned in the para above. Hence, II aptly describes the moment.

New policies, in other countries, for example, are considering all genders. That is definitely a positive moment. However, while there are examples of this in other cities, there is no explicit mention of policies undertaken in America. III doesn't aptly describe the moment in America. In fact, at the start of the piece the author asks 'why don't Americans look beyond the matter of men's behaviour as well?'

The moment we are discussing is positive and this moment is a digression/clash against the pervading atmosphere of existing female objectification. Hence, IV doesn't describe the moment; rather it discusses what the 'moment' is fighting against.

So, I and II describe the moment aptly, but III and IV don't. Option D is the answer.

Choice (D)

undefined

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As we look again at our culture, why stop with behaviour? It is also time to re-examine the hardware of our societies. The very infrastructure that we have built – roads, buildings, public spaces, steel, dirt, and concrete – encodes a set of values too. Are these the values we aspire to as a society and civilization?

The cities we've built don't provide perfectly equal access to everyone. An obvious case in point: wheelchair ramps, or lack thereof. But even healthy, active residents of all genders may not consider all of a city accessible to them. Men, for instance, typically don't consider a dimly lit street lined by bars or clubs an unsafe or inaccessible part of town. For women, braving the same street past midnight has completely different connotations. Like video game players who have been leveled up, men can simply access a much larger part of a city or town at a wider variety of times. One Europe-wide survey found that 30 percent of all physical violence and 16 percent of sexual violence against women happens in bars, clubs, discos and other public places – something that women are very much aware of and which influences how they move around a city.

Then there are cars. The American urban landscape is pockmarked by sprawling suburbs that can be entirely devoid of pedestrian traffic. In many metros it is actually impossible to safely access certain parts of the city without a car. It can be difficult to buy bread without having to cross a road that has no marked pedestrian crossing – many streets don't even have sidewalks. This car-centric design puts women at a double disadvantage: Not only are they at greater risk while traveling through some of these areas, but gender disparity in incomes means it can be harder for them to buy and maintain an automobile, making what James Howard Kunstler calls "the national automobile slum" even more inaccessible for them.

Cities around the globe are starting to pay more attention to these experiences. In Sweden, spurred on by its gender equality officer, Umea's city council adopted a formal strategy for gender equality in 2011 with the goal of creating "the conditions for women and men, girls and boys to have the same power to shape society and their own lives." Umea's skating park is attracting female skaters through an organization called "You skate girl." Lights have been installed next to parks, and city tunnels and passageways have been built with a view to safety and accessibility.

Karlskroga has discovered that doing something as simple as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men. "The community development staff made jokes about how at least snow clearing is something the gender people won't get involved in," Karlskroga's gender equality strategist is quoted as saying. "But then they thought about it and realized that maybe snow clearing is not gender neutral after all." In Kalmar, after women were found to be avoiding night-time bus service because of safety concerns, buses began letting passengers off between stops to get them closer to their destination. In Gothenburg, the municipal parking company replaced concrete facades with glass and improved lighting, noting that insecurity is the primary impediment to women's moving around the city. Simple changes are making a real difference. These examples are not from America, or from sprawling cities. But they show the power of rethinking how design is done.

Q12. Which of the following goes against the grain of what James Howard Kunstler called “the national automobile slum”?

- a) **A car-centric design that has no room for pedestrians.**
- b) **A design that has sidewalks and pedestrian crossings.** Your answer is correct
- c) **Suburbs that can be entirely devoid of pedestrian traffic.**
- d) **A dimly lit street lined by bars or clubs.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**208**
Avg. time spent on this question by all students	**95**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**90**
% of students who attempted this question	**55.9**
% of students who got the question right of those who attempted	**61.62**

Video Solution

Text Solution

This ***car-centric design*** puts women at a double disadvantage: Not only ***are they(women) at greater risk*** while traveling through some of these areas, but ***gender disparity in incomes means it can be harder for them to buy and maintain an automobile***, making what James Howard Kunstler calls ***“the national automobile slum” even more inaccessible*** for them. From these lines, we can understand that women cannot easily access ‘the national automobile slum’ because of two reasons: traveling through some of these areas is not safe, and traveling to these areas needs one to own a vehicle. ‘Going against the grain’ means something that disagrees or weakens this concept – the concept of a car-centric design that deters women from accessing them.

Option A: This is a reason behind calling the areas ‘automobile slum’ making them inaccessible to women. Hence, Option A is not the answer.

Option B: This design opposes the idea of a ‘car-centric design’ and makes areas more accessible for women, who according to the passage, are less likely to own a car. Hence, Option B goes against the grain of a ‘national automobile slum’. Option B is the answer.

Option C: Suburbs entirely devoid of pedestrian traffic are unsafe for women. This can be understood from ‘Then there are cars. The American urban landscape is pockmarked by sprawling suburbs that can be entirely devoid of pedestrian traffic. In many metros it is actually ***impossible to safely access certain parts of the city without a car***.’ Hence, Option C contributes to turning some areas into ‘an automobile slum’. Hence, Option C is not the answer.

Option D: A dimly-lit street lined with bars or clubs has been called unsafe for women in the passage. So, while it is not in the same context as ‘an automobile slum’, this option definitely isn’t against the grain (some areas inaccessible to women because of bad or unimaginative city design) of the ‘automobile slum’. Hence, Option D is not the answer.

Choice (B)

undefined

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Q13. Karlskroga's gender equality strategist believes snow clearing, as a civic activity, is not gender-neutral because

- a) **it is not required in a car-centric design.**
- b) **it is irrelevant in cities without walking or biking lanes.** **Your answer is incorrect**
- c) **women walk or cycle more than they drive.**
- d) **women have the strength to clear snow, which is not acknowledged in a chauvinistic world.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**143**
Avg. time spent on this question by all students	**109**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**96**
% of students who attempted this question	**49.86**
% of students who got the question right of those who attempted	**63.42**

Video Solution

Text Solution

'Snow-clearing is not gender neutral after all' means that snow-clearing has something to do with genders. We understand that from 'Karlskroga has discovered that doing something as simple ***as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men***'. So snow-clearing is not gender-neutral because snow on the lanes is more trouble for women than it is for men.

Option A: Snow-clearing may not be required in a car-centric design but a car-centric design in itself, as established in the passage, is not friendly to women. Option A doesn't explain why snow-clearing is not a gender-neutral activity. Hence, Option A is not the answer.

Option B: While this sentence may be true, it doesn't explain the relevance of gender in this argument. Hence, Option B is not the answer.

Option C: This option explains why snow-clearing is important on biking and walking lanes. It can be clearly understood that it is women who walk or cycle more often and are hence more affected by the absence of snow-clearing. Snow-clearing can make their life easier. Hence, Option C explains the gender-relevance of snow-clearing. Option C is the answer.

Option D: This line talks about the effort needed to clear snow which has not been discussed in the passage. Also, while the passage does deal with chauvinism, there is no indication about chauvinism with respect to considering women weak. Hence, Option D is not the answer.

Choice (C)

undefined

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

America is having a bit of a moment right now. Powerful men long considered beyond retribution are being called out for their transgressions. Behaviour long tolerated in a culture where female objectification is in the very air we breathe is being re-examined.

As we look again at our culture, why stop with behaviour? It is also time to re-examine the hardware of our societies. The very infrastructure that we have built – roads, buildings, public spaces, steel, dirt, and concrete – encodes a set of values too. Are these the values we aspire to as a society and civilization?

The cities we've built don't provide perfectly equal access to everyone. An obvious case in point: wheelchair ramps, or lack thereof. But even healthy, active residents of all genders may not consider all of a city accessible to them. Men, for instance, typically don't consider a dimly lit street lined by bars or clubs an unsafe or inaccessible part of town. For women, braving the same street past midnight has completely different connotations. Like video game players who have been leveled up, men can simply access a much larger part of a city or town at a wider variety of times. One Europe-wide survey found that 30 percent of all physical violence and 16 percent of sexual violence against women happens in bars, clubs, discos and other public places – something that women are very much aware of and which influences how they move around a city.

Then there are cars. The American urban landscape is pockmarked by sprawling suburbs that can be entirely devoid of pedestrian traffic. In many metros it is actually impossible to safely access certain parts of the city without a car. It can be difficult to buy bread without having to cross a road that has no marked pedestrian crossing – many streets don't even have sidewalks. This car-centric design puts women at a double disadvantage: Not only are they at greater risk while traveling through some of these areas, but gender disparity in incomes means it can be harder for them to buy and maintain an automobile, making what James Howard Kunstler calls "the national automobile slum" even more inaccessible for them.

Cities around the globe are starting to pay more attention to these experiences. In Sweden, spurred on by its gender equality officer, Umea's city council adopted a formal strategy for gender equality in 2011 with the goal of creating "the conditions for women and men, girls and boys to have the same power to shape society and their own lives." Umea's skating park is attracting female skaters through an organization called "You skate girl." Lights have been installed next to parks, and city tunnels and passageways have been built with a view to safety and accessibility.

Karlskroga has discovered that doing something as simple as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men. “The community development staff made jokes about how at least snow clearing is something the gender people won’t get involved in,” Karlskroga’s gender equality strategist is quoted as saying. “But then they thought about it and realized that maybe snow clearing is not gender neutral after all.” In Kalmar, after women were found to be avoiding night-time bus service because of safety concerns, buses began letting passengers off between stops to get them closer to their destination. In Gothenburg, the municipal parking company replaced concrete facades with glass and improved lighting, noting that insecurity is the primary impediment to women’s moving around the city. Simple changes are making a real difference. These examples are not from America, or from sprawling cities. But they show the power of rethinking how design is done.

Q14. All of the following aspects of a city’s design highlight gender bias EXCEPT:

- a) **Accumulation of snow on walking and biking lanes.** **Your answer is correct**
- b) **Inaccessibility to ‘automobile slums’.**
- c) **Absence of sidewalks and pedestrian crossings.**
- d) **Predesignated bus stops that force passengers to walk longer.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**206**
Avg. time spent on this question by all students	**83**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**80**
% of students who attempted this question	**52.8**
% of students who got the question right of those who attempted	**29.84**

Video Solution

Text Solution

Option A: The accumulation of snow is not a result of the design of the city. Snow-clearing helps women, true, but the accumulation itself is not a ‘design’ aspect of the city that highlights gender bias. Hence, choice A is the answer.
Option B: This points to the bias against those who don’t own cars, more likely to be women. That makes certain areas of the city inaccessible to them. Hence, choice B is not the answer.
Option C: This option points to the bias against women who are less likely to own a car and are more insecure going to certain parts of the city on foot, especially when there are no sidewalks or pedestrian crossings (car-centric design). Hence, choice C is not the answer.
Option D: The passage mentions that buses started dropping passengers off between stops to make it easier for those passengers to reach home safely. They were getting dropped closer to their homes rather than forcing them to walk a longer distance from the designated bus-stop. The predesignated bus-stops were especially difficult for those who had to walk a longer distance from the stop. That put women at greater risk – ‘In Kalmar, after women were found to be avoiding night-time bus service because of safety concerns, buses began letting passengers off between stops to get them closer to their destination.’ Hence, choice D is not the answer. Choice (A)

undefined

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

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As we look again at our culture, why stop with behaviour? It is also time to re-examine the hardware of our societies. The very infrastructure that we have built – roads, buildings, public spaces, steel, dirt, and concrete – encodes a set of values

too. Are these the values we aspire to as a society and civilization?

The cities we've built don't provide perfectly equal access to everyone. An obvious case in point: wheelchair ramps, or lack thereof. But even healthy, active residents of all genders may not consider all of a city accessible to them. Men, for instance, typically don't consider a dimly lit street lined by bars or clubs an unsafe or inaccessible part of town. For women, braving the same street past midnight has completely different connotations. Like video game players who have been leveled up, men can simply access a much larger part of a city or town at a wider variety of times. One Europe-wide survey found that 30 percent of all physical violence and 16 percent of sexual violence against women happens in bars, clubs, discos and other public places – something that women are very much aware of and which influences how they move around a city.

Then there are cars. The American urban landscape is pockmarked by sprawling suburbs that can be entirely devoid of pedestrian traffic. In many metros it is actually impossible to safely access certain parts of the city without a car. It can be difficult to buy bread without having to cross a road that has no marked pedestrian crossing – many streets don't even have sidewalks. This car-centric design puts women at a double disadvantage: Not only are they at greater risk while traveling through some of these areas, but gender disparity in incomes means it can be harder for them to buy and maintain an automobile, making what James Howard Kunstler calls "the national automobile slum" even more inaccessible for them.

Cities around the globe are starting to pay more attention to these experiences. In Sweden, spurred on by its gender equality officer, Umea's city council adopted a formal strategy for gender equality in 2011 with the goal of creating "the conditions for women and men, girls and boys to have the same power to shape society and their own lives." Umea's skating park is attracting female skaters through an organization called "You skate girl." Lights have been installed next to parks, and city tunnels and passageways have been built with a view to safety and accessibility.

Karlskroga has discovered that doing something as simple as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men. "The community development staff made jokes about how at least snow clearing is something the gender people won't get involved in," Karlskroga's gender equality strategist is quoted as saying. "But then they thought about it and realized that maybe snow clearing is not gender neutral after all." In Kalmar, after women were found to be avoiding night-time bus service because of safety concerns, buses began letting passengers off between stops to get them closer to their destination. In Gothenburg, the municipal parking company replaced concrete facades with glass and improved lighting, noting that insecurity is the primary impediment to women's moving around the city. Simple changes are making a real difference. These examples are not from America, or from sprawling cities. But they show the power of rethinking how design is done.

Q15. Given all the measures mentioned in the passage that have been taken for making cities more women-friendly, all of the following can be understood EXCEPT

- a) **Dimly-lit avenues are not safe for women.**
- b) **Women prefer buses with more predesignated stops.** **Your answer is correct**
- c) **Women are less likely to drive cars than men.**
- d) **Sexual violence impedes women from moving freely in the city.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**110**
Avg. time spent on this question by all students	**86**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**78**
% of students who attempted this question	**51.82**
% of students who got the question right of those who attempted	**51.58**

Video Solution

Text Solution

Option A: From 'Lights have been installed next to parks, and city tunnels and passageways have been built with a view to safety and accessibility', we can understand that lights make an area safer. This can also be understood from 'Men, for instance, typically don't consider a dimly lit street lined by bars or clubs an unsafe or inaccessible part of town. For women, braving the same street past midnight has completely different connotations.' Hence, Option A can be understood from the measures taken.
Option B: Women avoid buses when they have to walk longer from the stop, to avoid risk. However, this doesn't tell us anything about their preference for buses with more or fewer stops. The discussion is around the distance one has to walk from a stop and has got nothing to do with the number of stops a bus has. It has more to do with an increase in the number of stops per km, or within a given route, but statement B is not specific in such a manner. Option B is the answer.
Option C: From 'Karlskroga has discovered that doing something as simple as cleaning snow from walking and biking lanes improves access for women, who are more likely to walk and bike than men' and 'city tunnels and passageways have been built with a view to safety and accessibility', we can understand that women are less likely to drive cars, since the above measures are keeping pedestrians and bikers in mind. The same can also be understood from 'This car-centric design puts women at a double disadvantage: Not only are they at greater risk while traveling through some of these areas, but gender disparity in incomes means it can be harder for them to buy and maintain an automobile'. Hence, Option C is not the answer.
Option D: From 'insecurity is the primary impediment to women's moving around the city' and '30 percent of all physical violence and 16 percent of sexual violence against women happens in bars, clubs, discos and other public places – something that women are very much aware of and which influences how they move around a city' we can understand that sexual violence does impede women from freely moving around the city. Option D can be understood. Hence, it is not the answer.

Choice (B)

undefined

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

It seems indisputable that there are holes. For example, there are keyholes, black holes and sinkholes; and there are holes *in* things such as sieves, golf courses and doughnuts… But what *are* these holes and what are they made of?... To help us investigate this issue, let us first dissect the anatomy of the hole.

So, imagine a doughnut. The dough of the doughnut is an example of what is called the 'host' of the hole – the stuff that surrounds the hole. Now imagine you put your finger through the hole in the doughnut, and wear the doughnut like a ring. Your finger is then an example of what is called a 'guest' in the hole – the stuff that is inside the hole. But now consider the doughnut in an early stage of its creation in a factory, about to get the hole cut out of the dough. What do we call the part of the dough that gets removed to create the hole? Should it be called a guest-in-residence, about to be evicted?...

Now, if we do not take the removed dough to be the hole, then what do we take the hole to be?...

This issue is discussed in the paper 'Holes' (1970) by the American philosophers Stephanie and David Lewis, which contains a dialogue between the characters Argle and Bargle. Argle is a materialist, that is, someone who rejects the existence of anything immaterial. … Bargle, on the other hand, challenges Argle's materialism by introducing two further plausible positions, namely, that holes exist and that such holes are immaterial objects. It is plausible that holes exist: we seem to perceive holes; we refer to them in our language… It is also plausible that holes are immaterial things since our intuitive view of holes is that they are not tangible objects but rather seem more like gaps, and so are not material things themselves but are rather where the material things are not. Argle and Bargle's debate is therefore over which of the following individually plausible but collectively inconsistent claims to reject:

(1) There are no immaterial objects.

(2) There are holes.

(3) Holes are immaterial objects.

…So which should we reject? We could reject (1), which says that there are no immaterial objects, and instead hold that there *are* immaterial things in the world, including holes. But this option is not available to Argle, since Argle is a committed materialist and so doesn't want to say that any immaterial things exist.

What about rejecting (2), then, which says that there are holes? The problem with this is that we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes. When we utter such a sentence, our words point to the hole in the bucket. If there are no holes, and so no such hole for our words to point at, then we need to reinterpret such sentences without making reference to holes. For example, we could make do with the language of objects being perforated, rather than objects having holes.... But can every truth about holes be reinterpreted and systematically paraphrased as truths about perforated host objects? And does the eliminability of the word in our language really provide us with evidence regarding the thing's actual existence? Ordinarily, we do not think that, by simply not talking about something, it ceases to exist.

As for (3), which says that holes are immaterial objects: can that be rejected? Could holes be material rather than immaterial? Well, this was our central issue. If holes are material, *which* material thing are they?... Could they be part of the host, perhaps the lining of the hole? Maybe. But how thick is the lining for the hole? Should we take one millimetre thickness of the doughnut around the hole as constituting the hole? Or the entire width of the doughnut, namely, the entire host?... There are so many candidate linings of the hole, and it seems there is no reason to choose one over another, leaving it an arbitrary matter as to which lining we define and identify the hole with. And if we did not pick one of the linings, leaving a multitude of linings, then there would be a multitude of holes, one per each lining, all somewhere within the one doughnut. This seems like far too many holes in one place! It also leads to further oddities. For example, we do not think that we *eat* the *hole* of a doughnut when we eat the host lining of dough, do we? Again, this is further food for thought.

But why does all this matter? What's in a hole? Because a better understanding of where holes lie on the material/immaterial and thing/nothing divides fills a gap in our knowledge of reality.

Q16. Which of the following can be inferred about the author's discussion of the three claims mentioned in the passage?

- a) **The author believes that all the three claims must be accepted.**
- b) **The author is inclined to accept the second and third claims**
- c) **The author does not question the first claim, considers the second claim difficult to reject and the third claim difficult to accept.**
- d) **The author considers the first claim to be true and the other two to be false.**

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	**415**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**422**
% of students who attempted this question	**38.98**
% of students who got the question right of those who attempted	**28.66**

Video Solution

Text Solution

The author starts the discussion on the three claims by saying that the claims are "individually plausible but collectively inconsistent". The author states that Argle cannot reject the first claim (that "there are no immaterial objects") because of his nature (i.e., "a materialist, that is, someone who rejects the existence of anything immaterial").
The author questions whether we can reject the second claim. He proposes not using words which refer to holes directly. But then he questions whether this is enough to say that there are no holes ("Ordinarily, we do not think that, by simply not talking about something, it ceases to exist").
For the third claim, the author discusses the possibilities for the material aspect of holes but does not come to any specific conclusion.
Option A: The author tells us, in so many words, that the 3 claims are inconsistent with one another. Hence, all the three claims cannot be accepted simultaneously.
Option B: The author talks about the second claim from a linguistic perspective. Also, from the fourth paragraph, we know that the author believes that holes do, probably, exist ("It is plausible that holes exist") and that they are immaterial objects ("It is also plausible that holes are immaterial things"). As such we can infer that he is inclined to consider claims 2 and 3 to be consistent with each other.
Option C: This option states that the author considers the third claim hard to accept. This implies that the author believes that holes are material things. However, when discussing the third claim, the author comes to no such conclusion. Further, in the fourth paragraph of the passage, the author says "It is also plausible that holes are immaterial things". From this we can infer that the author is more likely to accept the third claim (which says that holes are immaterial objects) than reject it. Hence, this option is not true.
Option D: The author does not express his opinion on the first claim. Further, he does not state that the other two are false. Hence, this option is also incorrect.
Therefore, the correct answer is option B. Choice (B)

undefined

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

It seems indisputable that there are holes. For example, there are keyholes, black holes and sinkholes; and there are holes *in* things such as sieves, golf courses and doughnuts… But what *are* these holes and what are they made of?... To help us investigate this issue, let us first dissect the anatomy of the hole.

So, imagine a doughnut. The dough of the doughnut is an example of what is called the 'host' of the hole – the stuff that surrounds the hole. Now imagine you put your finger through the hole in the doughnut, and wear the doughnut like a ring. Your finger is then an example of what is called a 'guest' in the hole – the stuff that is inside the hole. But now consider the doughnut in an early stage of its creation in a factory, about to get the hole cut out of the dough. What do we call the part of the dough that gets removed to create the hole? Should it be called a guest-in-residence, about to be evicted?...

Now, if we do not take the removed dough to be the hole, then what do we take the hole to be?...

This issue is discussed in the paper 'Holes' (1970) by the American philosophers Stephanie and David Lewis, which contains a dialogue between the characters Argle and Bargle. Argle is a materialist, that is, someone who rejects the existence of anything immaterial. … Bargle, on the other hand, challenges Argle's materialism by introducing two further plausible positions, namely, that holes exist and that such holes are immaterial objects. It is plausible that holes exist: we seem to perceive holes; we refer to them in our language… It is also plausible that holes are immaterial things since our intuitive view of holes is that they are not tangible objects but rather seem more like gaps, and so are not material things themselves but are rather where the material things are not. Argle and Bargle's debate is therefore over which of the following individually plausible but collectively inconsistent claims to reject:

(1) There are no immaterial objects.

(2) There are holes.

(3) Holes are immaterial objects.

…So which should we reject? We could reject (1), which says that there are no immaterial objects, and instead hold that there *are* immaterial things in the world, including holes. But this option is not available to Argle, since Argle is a committed materialist and so doesn't want to say that any immaterial things exist.

What about rejecting (2), then, which says that there are holes? The problem with this is that we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes. When we utter such a sentence, our words point to the hole in the bucket. If there are no holes, and so no such hole for our words to point at, then we need to reinterpret such sentences without making reference to holes. For example, we could make do with the language of objects being perforated, rather than objects having holes.... But can every truth about holes be reinterpreted and systematically paraphrased as truths about perforated host objects? And does the eliminability of the word in our language really provide us with evidence regarding the thing's actual existence? Ordinarily, we do not think that, by simply not talking about something, it ceases to exist.

As for (3), which says that holes are immaterial objects: can that be rejected? Could holes be material rather than immaterial? Well, this was our central issue. If holes are material, *which* material thing are they?... Could they be part of the host, perhaps the lining of the hole? Maybe. But how thick is the lining for the hole? Should we take one millimetre thickness of the doughnut around the hole as constituting the hole? Or the entire width of the doughnut, namely, the entire host?... There are so many candidate linings of the hole, and it seems there is no reason to choose one over another, leaving it an arbitrary matter as to which lining we define and identify the hole with. And if we did not pick one of the linings, leaving a multitude of linings, then there would be a multitude of holes, one per each lining, all somewhere within the one doughnut. This seems like far too many holes in one place! It also leads to further oddities. For example, we do not think that we *eat* the *hole* of a doughnut when we eat the host lining of dough, do we? Again, this is further food for thought.

But why does all this matter? What's in a hole? Because a better understanding of where holes lie on the material/immaterial and thing/nothing divides fills a gap in our knowledge of reality.

Q17. Which of the following statements will Argle most likely agree with?

- a) **Holes exist and are immaterial objects.**
- b) **Holes are immaterial objects but they are imaginary.**
- c) **There are immaterial objects but holes are not immaterial.**
- d) **There are no material objects and holes are immaterial objects.**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**110**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**106**
% of students who attempted this question	**42.9**
% of students who got the question right of those who attempted	**72.18**

Video Solution

Text Solution

According to the passage, Argle is "a materialist, that is, someone who rejects the existence of anything immaterial".
Option A: This options states that holes exist and are immaterial objects. However, this is not similar to any of the above sets of statements. Further, if Argles agrees that holes exist and are immaterial objects, he agrees that there are immaterial objects (with an example being holes). However, this is in contradiction with the first claim and his belief that there are no immaterial objects. Hence, Argle would not agree with this.
Option B: This is similar to the first set of statements given above. If holes are imaginary, i.e., they are not real, and they are immaterial objects, this implies that there are no immaterial objects. This is in line with the materialism of Argle. Hence, Argle can probably agree with this.
Option C: This statement directly opposes Argle's belief that there are no immaterial objects. Hence, Argle will not agree with this statement.
Option D: Since this option states that there are no material objects, Argle cannot agree with this statement as he believes that there are no immaterial objects.
Among the given statements, Argle can agree with only one of the statements, i.e., the one in option B. Hence, the answer is option B. Choice (B)

undefined

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But why does all this matter? What’s in a hole? Because a better understanding of where holes lie on the material/immaterial and thing/nothing divides fills a gap in our knowledge of reality.

Q18. Which of the following issues does the author face when discussing the lining of the hole to be the material aspect of a hole?

- a) **It is difficult to decide the thickness of the lining of a hole if there are a multitude of holes in an object.**
- b) **If the lining of a hole is considered a part of the hole, then the lining will become an immaterial object.**
- c) **If the thickness of the lining of the hole is defined, the hole may become a material object.**
- d) **It is difficult to reasonably decide the thickness of the lining of the hole, which constitutes the material aspect of the hole.**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**109**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**102**
% of students who attempted this question	**35.84**
% of students who got the question right of those who attempted	**67.72**

Video Solution

Text Solution

The author poses several questions when talking about the lining of the hole to be a part of the hole. "how thick is the lining for the hole? Should we take one millimetre thickness of the doughnut around the hole as constituting the hole? Or the entire width of the doughnut, namely, the entire host?".
Option A: From the questions that the author poses, we can infer that it is difficult to decide what the thickness of the lining should be. However, he does not talk about a situation where there are many holes in an object. He states that if there are a multitude of linings, "then there would be a multitude of holes, one per each lining". These are not actual holes in the object. Rather these are the holes that are defined by the different thicknesses of the lining. The author's discussion is about the difficulty in deciding the thickness of lining of a hole in general and not particularly for a situation where there are many holes in an object. Hence, this option is incorrect.
Option B: The author poses the question about considering the lining of the hole to be a part of the hole so that the hole can be deemed as a material object. Hence, with the lining, the lining does not become an immaterial object, rather the hole becomes a material object. Therefore, this option is incorrect.
Option C: If we can decide the thickness of any hole, it is possible that the hole becomes a material object. However, the hole becoming a material object is not an issue that the author faces. It is the objective of the author for considering the lining of the hole to be a part of the hole. Hence, this is not the correct answer.
Option D: The author says that "it seems there is no reason to choose one over another, leaving it an arbitrary matter as to which lining we define and identify the hole with". Hence, the author feels that it seems difficult to decide the thickness of the lining. Therefore, this is the correct answer. Choice (D)

undefined

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

It seems indisputable that there are holes. For example, there are keyholes, black holes and sinkholes; and there are holes *in* things such as sieves, golf courses and doughnuts… But what *are* these holes and what are they made of?... To help us investigate this issue, let us first dissect the anatomy of the hole.

So, imagine a doughnut. The dough of the doughnut is an example of what is called the 'host' of the hole – the stuff that surrounds the hole. Now imagine you put your finger through the hole in the doughnut, and wear the doughnut like a ring. Your finger is then an example of what is called a 'guest' in the hole – the stuff that is inside the hole. But now consider the doughnut in an early stage of its creation in a factory, about to get the hole cut out of the dough. What do we call the part of the dough that gets removed to create the hole? Should it be called a guest-in-residence, about to be evicted?...

Now, if we do not take the removed dough to be the hole, then what do we take the hole to be?...

This issue is discussed in the paper 'Holes' (1970) by the American philosophers Stephanie and David Lewis, which contains a dialogue between the characters Argle and Bargle. Argle is a materialist, that is, someone who rejects the existence of anything immaterial. … Bargle, on the other hand, challenges Argle's materialism by introducing two further plausible positions, namely, that holes exist and that such holes are immaterial objects. It is plausible that holes exist: we seem to perceive holes; we refer to them in our language… It is also plausible that holes are immaterial things since our intuitive view of holes is that they are not tangible objects but rather seem more like gaps, and so are not material things

themselves but are rather where the material things are not. Argle and Bargle's debate is therefore over which of the following individually plausible but collectively inconsistent claims to reject:

(1) There are no immaterial objects.

(2) There are holes.

(3) Holes are immaterial objects.

…So which should we reject? We could reject (1), which says that there are no immaterial objects, and instead hold that there *are* immaterial things in the world, including holes. But this option is not available to Argle, since Argle is a committed materialist and so doesn't want to say that any immaterial things exist.

What about rejecting (2), then, which says that there are holes? The problem with this is that we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes. When we utter such a sentence, our words point to the hole in the bucket. If there are no holes, and so no such hole for our words to point at, then we need to reinterpret such sentences without making reference to holes. For example, we could make do with the language of objects being perforated, rather than objects having holes.... But can every truth about holes be reinterpreted and systematically paraphrased as truths about perforated host objects? And does the eliminability of the word in our language really provide us with evidence regarding the thing's actual existence? Ordinarily, we do not think that, by simply not talking about something, it ceases to exist.

As for (3), which says that holes are immaterial objects: can that be rejected? Could holes be material rather than immaterial? Well, this was our central issue. If holes are material, *which* material thing are they?... Could they be part of the host, perhaps the lining of the hole? Maybe. But how thick is the lining for the hole? Should we take one millimetre thickness of the doughnut around the hole as constituting the hole? Or the entire width of the doughnut, namely, the entire host?... There are so many candidate linings of the hole, and it seems there is no reason to choose one over another, leaving it an arbitrary matter as to which lining we define and identify the hole with. And if we did not pick one of the linings, leaving a multitude of linings, then there would be a multitude of holes, one per each lining, all somewhere within the one doughnut. This seems like far too many holes in one place! It also leads to further oddities. For example, we do not think that we *eat* the *hole* of a doughnut when we eat the host lining of dough, do we? Again, this is further food for thought.

But why does all this matter? What's in a hole? Because a better understanding of where holes lie on the material/immaterial and thing/nothing divides fills a gap in our knowledge of reality.

Q19. Which of the following statements would correspond to the "anatomy of the hole" as discussed in the passage?

- a) **The mud that is dug out to make a hole in the ground is the guest in the hole.**
- b) **An object that accidentally falls into a hole in the ground is the host of the hole.**
- c) **The mud that surrounds a hole in the ground is the host of the hole.**
- d) **An object that accidentally falls into a hole in the ground is called a guest-in-residence, about to be evicted.**

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	**82**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**81**
% of students who attempted this question	**39.95**
% of students who got the question right of those who attempted	**81.51**

Video Solution

Text Solution

In the second paragraph of the passage, the author dissects the anatomy of the hole. He comes up with the following terms taking the example of the doughnut:
The dough of the doughnut is the host of the hole.
When you wear the doughnut like a ring around your finger, your finger is the guest in the hole.
The author questions whether the dough that is cut out to form the hole initially should be called guest-in-residence, about to be evicted.
Option A: The mud that is dug out to make the hole in the ground is similar to the dough that is removed to create the hole. This can probably be called guest-in-residence but this is not the guest in the hole.
Option B: An object that accidentally falls into the hole can be likened to your finger when you wear the doughnut like a ring. This can be called a guest in the hole. Hence, this option is incorrect.
Option C: The mud that surrounds the hole is similar to the dough that surrounds the hole in the doughnut example. Hence, the mud that surrounds the hole is called the host of the hole.
Option D: As explained in option B, this can be called a guest in the hole.
Therefore, the correct answer is option C. Choice (C)

undefined

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

It seems indisputable that there are holes. For example, there are keyholes, black holes and sinkholes; and there are holes *in* things such as sieves, golf courses and doughnuts… But what *are* these holes and what are they made of?... To help us investigate this issue, let us first dissect the anatomy of the hole.

So, imagine a doughnut. The dough of the doughnut is an example of what is called the 'host' of the hole – the stuff that surrounds the hole. Now imagine you put your finger through the hole in the doughnut, and wear the doughnut like a ring. Your finger is then an example of what is called a 'guest' in the hole – the stuff that is inside the hole. But now consider the doughnut in an early stage of its creation in a factory, about to get the hole cut out of the dough. What do we call the part of the dough that gets removed to create the hole? Should it be called a guest-in-residence, about to be evicted?...

Now, if we do not take the removed dough to be the hole, then what do we take the hole to be?...

This issue is discussed in the paper 'Holes' (1970) by the American philosophers Stephanie and David Lewis, which contains a dialogue between the characters Argle and Bargle. Argle is a materialist, that is, someone who rejects the existence of anything immaterial. … Bargle, on the other hand, challenges Argle's materialism by introducing two further plausible positions, namely, that holes exist and that such holes are immaterial objects. It is plausible that holes exist: we seem to perceive holes; we refer to them in our language… It is also plausible that holes are immaterial things since our intuitive view of holes is that they are not tangible objects but rather seem more like gaps, and so are not material things themselves but are rather where the material things are not. Argle and Bargle's debate is therefore over which of the following individually plausible but collectively inconsistent claims to reject:

(1) There are no immaterial objects.

(2) There are holes.

(3) Holes are immaterial objects.

…So which should we reject? We could reject (1), which says that there are no immaterial objects, and instead hold that there *are* immaterial things in the world, including holes. But this option is not available to Argle, since Argle is a committed materialist and so doesn't want to say that any immaterial things exist.

What about rejecting (2), then, which says that there are holes? The problem with this is that we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes. When we utter such a sentence, our words point to the hole in the bucket. If there are no holes, and so no such hole for our words to point at, then we need to reinterpret such sentences

without making reference to holes. For example, we could make do with the language of objects being perforated, rather than objects having holes.... But can every truth about holes be reinterpreted and systematically paraphrased as truths about perforated host objects? And does the eliminability of the word in our language really provide us with evidence regarding the thing's actual existence? Ordinarily, we do not think that, by simply not talking about something, it ceases to exist.

As for (3), which says that holes are immaterial objects: can that be rejected? Could holes be material rather than immaterial? Well, this was our central issue. If holes are material, *which* material thing are they?... Could they be part of the host, perhaps the lining of the hole? Maybe. But how thick is the lining for the hole? Should we take one millimetre thickness of the doughnut around the hole as constituting the hole? Or the entire width of the doughnut, namely, the entire host?... There are so many candidate linings of the hole, and it seems there is no reason to choose one over another, leaving it an arbitrary matter as to which lining we define and identify the hole with. And if we did not pick one of the linings, leaving a multitude of linings, then there would be a multitude of holes, one per each lining, all somewhere within the one doughnut. This seems like far too many holes in one place! It also leads to further oddities. For example, we do not think that we *eat* the *hole* of a doughnut when we eat the host lining of dough, do we? Again, this is further food for thought.

But why does all this matter? What's in a hole? Because a better understanding of where holes lie on the material/immaterial and thing/nothing divides fills a gap in our knowledge of reality.

Q20. What is the purpose of the author to use the statement 'There's a hole in my bucket, dear Liza,' when discussing about holes?

- a) **To illustrate that things exist irrespective of whether we have words for them or not.**
- b) **To demonstrate that we acknowledge the existence of holes in our everyday language.**
- c) **To show that holes are commonplace in our everyday life.**
- d) **To prove that by not talking about something, it will cease to exist.**

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	**77**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**63**
% of students who attempted this question	**40.19**
% of students who got the question right of those who attempted	**55.7**

Video Solution

Text Solution

The author, when discussing the acceptability of the second claim, states that "we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes".
According to the author, since we point to holes using our words, it implies that there are holes. He further proposes modifying our language so that we stop referring to holes (and talk about objects being perforated).
Option A: The author proposes this at the end of this paragraph "Ordinarily, we do not think that, by simply not talking about something, it ceases to exist". However, this is not the purpose for which the author uses the statement, 'There's a hole… Liza'.
Option B: From the first sentence of this para, we can infer that if there are no holes (if we reject the second claim), the problem is that "we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes. When we utter such a sentence, our words point to the hole in the bucket. If there are no holes, and so no such hole for our words to point at, then we need to reinterpret such sentences without making reference to holes." Hence, the author uses this sentence to highlight the fact that we refer to holes in our everyday language.
Option C: The author is not interested in showing how commonplace holes are in our everyday life. The author is exploring the very existence of holes when making this statement. Hence, this option is incorrect.
Option D: The author does not ***prove*** that by not talking about something, it will cease to exist. He suggest the opposite when he says "we do not think that, by simply not talking about something, it ceases to exist". Hence, this is not the correct answer.
Therefore, the correct answer is option B. Choice (B)

undefined

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

It seems indisputable that there are holes. For example, there are keyholes, black holes and sinkholes; and there are holes *in* things such as sieves, golf courses and doughnuts… But what *are* these holes and what are they made of?... To help us investigate this issue, let us first dissect the anatomy of the hole.

So, imagine a doughnut. The dough of the doughnut is an example of what is called the 'host' of the hole – the stuff that surrounds the hole. Now imagine you put your finger through the hole in the doughnut, and wear the doughnut like a ring. Your finger is then an example of what is called a 'guest' in the hole – the stuff that is inside the hole. But now consider the doughnut in an early stage of its creation in a factory, about to get the hole cut out of the dough. What do we call the part of the dough that gets removed to create the hole? Should it be called a guest-in-residence, about to be evicted?...

Now, if we do not take the removed dough to be the hole, then what do we take the hole to be?...

This issue is discussed in the paper 'Holes' (1970) by the American philosophers Stephanie and David Lewis, which contains a dialogue between the characters Argle and Bargle. Argle is a materialist, that is, someone who rejects the existence of anything immaterial. … Bargle, on the other hand, challenges Argle's materialism by introducing two further plausible positions, namely, that holes exist and that such holes are immaterial objects. It is plausible that holes exist: we seem to perceive holes; we refer to them in our language… It is also plausible that holes are immaterial things since our intuitive view of holes is that they are not tangible objects but rather seem more like gaps, and so are not material things themselves but are rather where the material things are not. Argle and Bargle's debate is therefore over which of the following individually plausible but collectively inconsistent claims to reject:

(1) There are no immaterial objects.

(2) There are holes.

(3) Holes are immaterial objects.

…So which should we reject? We could reject (1), which says that there are no immaterial objects, and instead hold that there *are* immaterial things in the world, including holes. But this option is not available to Argle, since Argle is a committed materialist and so doesn't want to say that any immaterial things exist.

What about rejecting (2), then, which says that there are holes? The problem with this is that we say things such as: 'There's a hole in my bucket, dear Liza,' and so we refer to holes. When we utter such a sentence, our words point to the hole in the bucket. If there are no holes, and so no such hole for our words to point at, then we need to reinterpret such sentences without making reference to holes. For example, we could make do with the language of objects being perforated, rather than objects having holes.... But can every truth about holes be reinterpreted and systematically paraphrased as truths about perforated host objects? And does the eliminability of the word in our language really provide us with evidence regarding the thing's actual existence? Ordinarily, we do not think that, by simply not talking about something, it ceases to exist.

As for (3), which says that holes are immaterial objects: can that be rejected? Could holes be material rather than immaterial? Well, this was our central issue. If holes are material, *which* material thing are they?... Could they be part of the host, perhaps the lining of the hole? Maybe. But how thick is the lining for the hole? Should we take one millimetre thickness of the doughnut around the hole as constituting the hole? Or the entire width of the doughnut, namely, the entire host?... There are so many candidate linings of the hole, and it seems there is no reason to choose one over another, leaving it an arbitrary matter as to which lining we define and identify the hole with. And if we did not pick one of the linings, leaving a multitude of linings, then there would be a multitude of holes, one per each lining, all somewhere within the one doughnut. This seems like far too many holes in one place! It also leads to further oddities. For example, we do not think that we *eat* the *hole* of a doughnut when we eat the host lining of dough, do we? Again, this is further food for thought.

But why does all this matter? What's in a hole? Because a better understanding of where holes lie on the material/immaterial and thing/nothing divides fills a gap in our knowledge of reality.

Q21. Consider the statement "After eating the dough surrounding the hole in a doughnut without eating the hole, nothing remains."

Applying the arguments mentioned in the passage in the context of this statement, which of the three claims can most likely be rejected?

a) **Claim (1)**

b) **Claim (2)**

c) **Claim (3)**

d) **Claim (2) and Claim (3)**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**8**
Avg. time spent on this question by all students	**88**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**88**
% of students who attempted this question	**28.84**
% of students who got the question right of those who attempted	**40.81**

Video Solution

Text Solution

The statement given is "After eating the dough surrounding the hole in a doughnut without eating the hole, nothing remains."
We can evaluate this statement from the perspective of each of the three claims.
This statement refers to holes. The argument that the author proposes for the second claim is that referring to holes in our language points to their existence. Since this statement points to hole, it is probable that the second claim that there are holes is correct.
The statement mentions that the dough is eaten but the hole is not eaten. For the third claim, if we consider the hole to include a lining (and that the hole is material object), then if the hole is not eaten, the lining and the hole should remain (the lining of the hole cannot be called nothing as the lining is a material object). Since nothing remains, we can infer that the hole does not include the lining. Since even by not eating the hole, nothing remains, the hole must be immaterial. This is further strengthened by the sentence "It is also plausible that holes are immaterial things since our intuitive view of holes is that they are not tangible objects but rather seem more like gaps, and so are not material things themselves but are rather where the material things are not". Hence, the third claim, that holes are immaterial objects, is also correct.
If these two claims are correct, then the first claim must be wrong. Hence, from the given statement, we can most likely reject the first claim. Therefore, the correct answer is option A. Choice (A)

undefined

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

Pollution is defined in UK law as contamination of the land, water or air by harmful or potentially harmful substances. The 'polluter pays' principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment. For instance, a factory that produces a potentially poisonous substance as a by-product of its activities is usually held responsible for its safe disposal. This principle underpins most of the regulation of pollution affecting land, water and air.

Part of a set of broader principles to guide sustainable development worldwide (formally known as the 1992 Rio Declaration), the 'polluter pays' principle has also been applied more specifically to emissions of greenhouse gases which cause climate change. Greenhouse gas emissions are considered a form of pollution because they cause potential harm and damage through impacts on the climate. However, in this case, society has been slow to recognise the link between greenhouse gases and climate change. Also, because the atmosphere is considered by some to be a 'global commons' (that everyone shares and has a right to use), emitters are generally not held responsible for controlling this form of pollution. But, it is possible to implement the 'polluter pays' principle through a so-called carbon price.

The carbon price imposes a charge on the emission of greenhouse gases equivalent to the corresponding potential cost caused through future climate change. In this way, a financial incentive is created for a factory, for instance, to minimise its costs by reducing emissions. However, this may lead to polluters moving their operations to so-called 'pollution havens'. These are countries where a lack of environmental regulation allows them to continue to pollute without restrictions. Many economists argue, therefore, that a carbon price should be global and uniform across countries and sectors.

Q22. All the following can be understood from the second para of the passage EXCEPT:

a) **There hasn't been much awareness about evidence linking greenhouse gases with climate change.**

b) **The atmosphere is considered by some to be a 'global commons'.**

c) **The adverse effect of greenhouse gas emissions on the climate has been established.** **Your answer is incorrect**

d) **The 1992 Rio Declaration lays down specific guidelines to deal with greenhouse gas emissions.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**93**
Avg. time spent on this question by all students	**233**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**235**
% of students who attempted this question	**54.73**
% of students who got the question right of those who attempted	**23.56**

Video Solution

Text Solution

Option A: The author has stated this option clearly in the line 'society has been slow to recognise the link between greenhouse gases and climate change' shows that the author has stated this option clearly. Option A can be understood from the para and hence, it is not the answer.
Option B: From 'because the atmosphere is considered by some to be a 'global commons', we can understand that the author did state it clearly. Option B can be understood from the para and hence, it is not the answer.
Option C: In mentioning that there isn't much awareness about the link between greenhouse gas emissions and climate change, the author has indirectly stated that there is a proven link that exists. Hence, Option C can be understood from the second para.
Option D: Part of a set of broader principles to guide sustainable development worldwide (formally known as the 1992 Rio Declaration), the 'polluter pays' principle has also been applied more specifically to emissions of greenhouse gases which cause climate change. From this, we can understand that the Polluter Pays principle is part of a set of broader principles. Those broader principles to guide sustainable development worldwide were referred to as 1992 Rio Declaration. We can also understand that this Polluter Pays principle mentioned in the Declaration is now 'also' being specifically applied to greenhouse gas emissions. So, while the Polluter Pays principle is also being applied, there is no direct connection or established link to prove that greenhouse gas emissions were mentioned in the Declaration. Option D cannot be understood from the second para. Choice (D)

undefined

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

Pollution is defined in UK law as contamination of the land, water or air by harmful or potentially harmful substances. The 'polluter pays' principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment. For instance, a factory that produces a potentially poisonous substance as a by-product of its activities is usually held responsible for its safe disposal. This principle underpins most of the regulation of pollution affecting land, water and air.

Part of a set of broader principles to guide sustainable development worldwide (formally known as the 1992 Rio Declaration), the 'polluter pays' principle has also been applied more specifically to emissions of greenhouse gases which cause climate change. Greenhouse gas emissions are considered a form of pollution because they cause potential harm

and damage through impacts on the climate. However, in this case, society has been slow to recognise the link between greenhouse gases and climate change. Also, because the atmosphere is considered by some to be a 'global commons' (that everyone shares and has a right to use), emitters are generally not held responsible for controlling this form of pollution. But, it is possible to implement the 'polluter pays' principle through a so-called carbon price.

The carbon price imposes a charge on the emission of greenhouse gases equivalent to the corresponding potential cost caused through future climate change. In this way, a financial incentive is created for a factory, for instance, to minimise its costs by reducing emissions. However, this may lead to polluters moving their operations to so-called 'pollution havens'. These are countries where a lack of environmental regulation allows them to continue to pollute without restrictions. Many economists argue, therefore, that a carbon price should be global and uniform across countries and sectors.

Q23. Which of the following, if assumed to be true, most weakens the argument behind the author's concern regarding the implementation of carbon price?

a) **Carbon price is monitored by an international organisation that has jurisdiction across most countries and sectors.**

b) **Not all factories intend to minimise costs by reducing emissions.**

c) **Enormous logistical challenges are involved when a company shifts operations from one country to another.**
Your answer is incorrect

d) **The cost of shifting operations from one country to another does not justify avoiding carbon price.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**293**
Avg. time spent on this question by all students	**112**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**113**
% of students who attempted this question	**42.46**
% of students who got the question right of those who attempted	**26.45**

Video Solution

Text Solution

In this way, ***a financial incentive*** is created for a factory, for instance, ***to minimise its costs by reducing emissions***. However, this ***may lead*** to ***polluters moving their operations to so-called 'pollution havens'***. These are countries where a ***lack of environmental regulation*** allows them to continue to ***pollute without restrictions***. This is the author's concern regarding implementation of carbon price.
This is confirmed by the solution offered that the punitive measures (in this case, carbon price) should be global so that companies cannot shift operations to a less regulated country. So, we need to spot an option that asserts that the author's concerns are not valid (weakens the author's argument/concern).
Option A: If the organisation has jurisdiction in all countries then creating 'pollution havens' can be restricted. However, if it has jurisdiction in most countries, and NOT ALL, those remaining countries can become havens. Hence, Choice A doesn't weaken the argument, but rather strengthens it by asserting that the 'carbon price' doesn't apply everywhere. Choice A is not the answer.
Option B: Not all factories intend to minimise costs by reducing emissions. From this line we can understand that there are factories for which reducing emissions as a way of reducing costs is not the priority. This option doesn't tell us whether those factories will reduce costs by moving to 'pollution havens' (instead of reducing emissions) or are uninterested in reducing costs in the first place. So, this option is irrelevant to the author's argument. Choice B is not the answer.
Option C: This option explains why companies may not really think of shifting their operations to 'pollution havens'. This option cannot be eliminated.
Option D: This option also explains why companies may not want to create 'pollution havens' or move to countries which are 'pollution havens'.
When we compare Option C and Option D, the former talks about enormous logistical challenges but doesn't give us a true insight on whether companies could still take that route. However, the latter clears the air by saying that avoiding carbon price is not worth it if one has to bear a higher cost of shifting operations. Hence, Choice D if assumed to be true, weakens the argument against creation of 'pollution havens'.

Choice (D)

undefined

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

Pollution is defined in UK law as contamination of the land, water or air by harmful or potentially harmful substances. The 'polluter pays' principle is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment. For instance, a factory that produces a potentially poisonous substance as a by-product of its activities is usually held responsible for its safe disposal. This principle underpins most of the regulation of pollution affecting land, water and air.

Part of a set of broader principles to guide sustainable development worldwide (formally known as the 1992 Rio Declaration), the 'polluter pays' principle has also been applied more specifically to emissions of greenhouse gases which cause climate change. Greenhouse gas emissions are considered a form of pollution because they cause potential harm and damage through impacts on the climate. However, in this case, society has been slow to recognise the link between greenhouse gases and climate change. Also, because the atmosphere is considered by some to be a 'global commons' (that everyone shares and has a right to use), emitters are generally not held responsible for controlling this form of pollution. But, it is possible to implement the 'polluter pays' principle through a so-called carbon price.

The carbon price imposes a charge on the emission of greenhouse gases equivalent to the corresponding potential cost caused through future climate change. In this way, a financial incentive is created for a factory, for instance, to minimise its costs by reducing emissions. However, this may lead to polluters moving their operations to so-called 'pollution havens'. These are countries where a lack of environmental regulation allows them to continue to pollute without restrictions. Many economists argue, therefore, that a carbon price should be global and uniform across countries and sectors.

Q24. Which of the following assumptions has been made in order to arrive at the 'polluter pays' principle?

- a) **Development is not worth it if it leads to an adverse effect on the environment.**
- b) **The harm done by pollution can be undone by making the polluter pay for the damage.** **Your answer is incorrect**
- c) **The cost of managing the damage caused by pollution is tangible.**
- d) **Greenhouse emissions are definitely the main culprits of environmental damage.**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**102**
Avg. time spent on this question by all students	**87**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**87**
% of students who attempted this question	**49.42**
% of students who got the question right of those who attempted	**37.21**

Video Solution

Text Solution

Note: One must remember that an assumption when negated negates the conclusion. That is one way of identifying the assumptions and differentiating them from close wrong options.
Polluters pay principle: 'Those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment'.
Option A: The principle doesn't talk about stalling development to stall pollution. It talks about punitive damages to be levied. Hence, the assumption cannot be about the worth of 'development'. The assumption has more to do with the 'cost' one must pay for causing pollution. We are not bringing development into the argument at all. So, Choice A is not the answer.
Option B: The principle doesn't mention undoing the damage. The principle merely suggests the price is borne by the culprit. So, Choice B is not the answer.
Option C: This principle connects pollution with cost. So, the assumption is that there is a cost for managing the damage caused by pollution, which is indeed tangible and can be calculated. Hence, Choice C is the answer.
Option D: The principle doesn't bring in 'greenhouse gas emissions' into the argument. It applies for all agents of pollutions. Hence, Choice D is not the answer.

Choice (C)

undefined

Q25. DIRECTIONS *for questions 25 and 26:* Each of the following questions consists of a highlighted sentence followed by the context from where the sentence may have been drawn. The context given provides exactly three successive paragraphs, which may or may not have any other paragraph preceeding or succeeding them. The paragraphs have a total of four blanks numbered as (2), (3), (4) and (5). Choose the number of the blank where the highlighted sentence can best be reinserted and key in that number in the input box provided below the context.

Further:

If you think that the highlighted sentence does not belong in the given context altogether, then key in the number **0** as your answer in the input box.

If you think that the highlighted sentence precedes the first of the three paras reproduced below, then key in the number **1** as your answer in the input box.

If you think that the highlighted sentence succeeds the last of the three paras reproduced below, then key in the number **6** as your answer in the input box.

In this grand sense, transience has always been a part of life.

Much of our theorizing about social and psychological change presents a valid picture of man in relatively static societies – but a distorted and incomplete picture of the truly contemporary man. It misses a critical difference between the men of the past or present and the men of the future. _____(2)_____ This difference is summed up in the word "transience."

The concept of transience provides a long-missing link between sociological theories of change and the psychology of individual human beings. _____(3)_____ Integrating both, it permits us to analyze the problems of high-speed change in a new way. And, as we shall see, it gives us a method – crude but powerful – to measure inferentially the rate of situation flow.

Transience is the new "temporariness" in everyday life. It results in a mood, a feeling of impermanence. Philosophers and theologians, of course, have always been aware that man is ephemeral. _____(4)_____ But today the feeling of impermanence is more acute and intimate. Thus Edward Albee's character, Jerry, in The Zoo Story, characterizes himself as a "permanent transient." And critic Harold Clurman, commenting on Albee, writes: "None of us occupy abodes of safety – true homes. We are all the same 'people in all the rooming houses everywhere,' desperately and savagely trying to effect soul-satisfying connections with our neighbors." _____(5)_____ We are, in fact, all citizens of the Age of Transience.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**7**
Avg. time spent on this question by all students	**170**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**162**
% of students who attempted this question	**28.75**
% of students who got the question right of those who attempted	**26.07**

Video Solution

Text Solution

On a cursory reading of the paragraph, one can understand that the paragraphs talk about 'transience'.
The highlighted sentence is a poor example of an upstream statement. The paragraph best begins with the general sentence: Much of our theorizing about social and psychological change ..... The highlighted sentence can only be placed after a reference to 'transience'. The introduction of the term 'transience' happens only at the end of the first reproduced para.
The highlighted sentence does not belong to blank (2). The sentence preceding blank (2) has the keywords "misses a critical difference". The sentence succeeding blank (2) has the starter: This difference is summed up ..... Hence the highlighted sentence would disrupt the thoughtflow if placed in blank (2). The sentence preceding blank (2) and the one succeeding blank (2) have to run continuously. So (2) is not the answer.
The highlighted sentence cannot be a part of blank (3) as it does not fit the context. There is no reference to or justification of the idea that transience has always been a part of life (in the second para). "Integrating both" in the sentence succeeding blank (3) points to "long-missing link between sociological theories of change and the psychology of individual human beings" in the sentence preceding blank (3). Hence (3) is also not the answer.
The third reproduced para begins with the sentence: Transience is the new "temporariness" in everyday life. The sentence preceding blank 4 contains the idea: Philosophers and theologians, of course, have always been aware that man is ephemeral. So the highlighted sentence, if placed in blank 4, would complete the idea till that point. Also "transience has always been a part of life" in the highlighted sentence would contrast and stress the point that "But today the feeling of impermanence is more acute and intimate" in the sentence following blank (4). So the highlighted sentence best gels with the idea in the first five sentences of the third para and the correct answer is (4).
The highlighted sentence cannot be a part of blank (5). It has to be placed earlier in the thoughtflow. "all the same 'people in all the rooming houses everywhere,'" in the sentence preceding blank (5) runs parallel to "we are all citizens of the age of transience" in the sentence succeeding blank (5).
It would be difficult to say whether the highlighted sentence would be placed downstream of the given text as it would need a specific context. Since the appropriate context has already been provided in the third para of the text, (6) is not the answer.
Ans: (4)

undefined

Q26. DIRECTIONS *for questions 25 and 26:* Each of the following questions consists of a highlighted sentence followed by the context from where the sentence may have been drawn. The context given provides exactly three successive paragraphs, which may or may not have any other paragraph preceeding or succeeding them. The paragraphs have a total of four blanks numbered as (2), (3), (4) and (5). Choose the number of the blank where the highlighted sentence can best be reinserted and key in that number in the input box provided below the context.

Further:

If you think that the highlighted sentence does not belong in the given context altogether, then key in the number **0** as your answer in the input box.

If you think that the highlighted sentence precedes the first of the three paras reproduced below, then key in the number **1** as your answer in the input box.

If you think that the highlighted sentence succeeds the last of the three paras reproduced below, then key in the number **6** as your answer in the input box.

It could also be a mistake.

We rely on the weight of experience to make judgments and decisions. We interpret the past – what we've seen and what we've been told – to chart a course for the future, secure in the wisdom of our insights. _____(2)_____ After all, didn't our ability to make sense of what we've been through get us where we are now? It's reasonable that we go back to the same well to make new decisions.

_____(3)_____ Experience seems like a reliable guide, yet sometimes it fools us instead of making us wiser. The problem is that we view the past through numerous filters that distort our perceptions. As a result, our interpretations of experience are biased, and the judgments and decisions we base on those interpretations can be misguided. Even so, we persist in believing that we have gleaned the correct insights from our own experience and from the accounts of other people. _____(4)_____

If our goal is to improve decision making, we can use our knowledge of those filters to understand just what our experience has to teach us. _____(5)_____ We need to focus on the biases that result from three types of filters: the business environment, which favours the observations of outcomes over the processes that lead to them; our circle of advisers, who may be censoring the information they share with us; and our own limited reasoning abilities.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**13**
Avg. time spent on this question by all students	**99**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**96**
% of students who attempted this question	**28.86**
% of students who got the question right of those who attempted	**35.94**

Video Solution

Text Solution

On a cursory reading of the sentences, it can be observed that the first paragraph talks about the benefits of experience in making decisions while the second paragraph highlights the negative aspects of experience.
On a careful reading of the paragraph, it can be inferred that the highlighted sentence does not belong to blank (2). The sentence is completely out of place in blank (2), as it interrupts the flow of thought. "We interpret the past – what we've seen and what we've been told – to chart a course for the future, secure in the wisdom of our insights" in the sentence before blank (2) needs to continue with the idea succeeding blank (2) (After all, didn't our ability to make sense of what we've been through get us where we are now?) Even the last sentence of the first para is positive in tone. There is nothing to suggest any negative point like a 'mistake' in the first para. So (2) is not the answer.
The highlighted sentence can be a part of blank (3). The sentences after blank (3) are negative in tone: yet sometimes it fools us instead of making us wiser. The problem is that we view the past through numerous filters that distort our perceptions. ..... "It" in the highlighted sentence refers to "experience". After dwelling on the positive benefits of experience in the first para, the second para goes on to expand on how going back to the same well of experience can be a mistake. So (3) is the answer.
The highlighted sentence cannot be a part of blank (4). The second para has already gone ahead to discuss: interpretations of experience are biased, and the judgments and decisions we base on those interpretations can be misguided. Even so, we persist in believing that we have gleaned the correct insights from our own experience and from the accounts of other people. Hence the highlighted sentence would be redundant if placed in blank (4).
The highlighted sentence cannot be a part of blank (5). If the highlighted sentence is placed in blank (5), then there will be a complete distortion of thoughtflow. The pronoun 'it' in the highlighted sentence has no correct reference in the sentence preceding blank (5): If our goal is to improve decision making, we can use our knowledge of those filters to understand just what our experience has to teach us. Hence (5) is not the answer.
The highlighted sentence would be redundant if placed before or after the given passage. So (1) and (6) do not apply as answers. Ans: (3)

undefined

Q27. DIRECTIONS *for questions 27 and 28:* The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. Earlier, he had been told of an unusual number of British officers gathered on Boston's Long Wharf, talking in low tones.

2. On the afternoon of April 18, 1775, a young boy who worked at a livery stable in Boston overheard one British army officer say to another something about “hell to pay tomorrow.”

3. As the afternoon wore on, Revere and his close friend Joseph Warren became convinced that the British were about to make the rumoured move to the town of Lexington, northwest of Boston, to arrest the colonial leaders John Hancock and Samuel Adams, and then to the town of Concord to seize the store of guns that some of the local colonial militia had stored there.

4. The stable boy ran with the news to Boston's North End, to the home of a silversmith named Paul Revere, who listened gravely – this was not the first rumour to come his way that day.

5. British crewmen had been spotted scurrying about in the boats tethered beneath the HMS Somerset and the HMS Boyne in Boston Harbor and several other sailors were seen on shore that morning, running what appeared to be last-minute errands.

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	**182**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**179**
% of students who attempted this question	**38.92**
% of students who got the question right of those who attempted	**45.69**

Video Solution

Text Solution

On a careful reading of the sentences, it can be observed that sentence 2 is a general sentence that begins the paragraph. It mentions the date and the location and introduces the context to us: overheard a person saying. Sentence 2 is followed by sentence 4. “a young boy who worked at a livery stable in Boston overheard” in sentence 2 links with “The stable boy ran with the news to Boston's North End” in sentence 4. Also “this was not the first rumour” in sentence 4 points to “overheard one British army officer say to another something about “hell to pay tomorrow”” in sentence 2. Sentence 4 is followed by sentence 1. “Earlier, he had been told …. British officers …. talking in low tones” in sentence 1 links with “Paul Revere, who listened gravely – this was not the first rumour to come his way that day” in sentence 4 and also points to “one British army officer say to another something about “hell to pay tomorrow”” in sentence 2. So, 241. Sentence 1 is sequentially followed by sentence 5. “British officers gathered on Boston's Long Wharf, talking in low tones” in sentence 1 links with “British crewmen had been spotted scurrying ….. several other sailors were seen on shore that morning, running what appeared to be last-minute errands” in sentence 5. Sentence 3 concludes the para. “convinced that the British were about to make the rumoured move …” in sentence 3 follows the sequence of events given in sentences 4, 1 and 5. So, 24153. Ans: (24153)

undefined

Q28. DIRECTIONS *for questions 27 and 28:* The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer, in the input box given below the question.

1. In 2001, the chief operating officer mentioned RIM's surging stock price in the wake of a call with analysts and was saddled with the task of delivering more than 800 doughnuts to the next weekly meeting of employees.

2. Back in 1997, just after the firm's IPO, the founders made a rule that any manager who talked about the share price at work had to buy a doughnut for every person in the company.

3. RIM, maker of the ubiquitous Blackberry, is one company that takes great pains to signal its distance from the shareholder value principle.

4. That incident apparently seared the doughnut rule into the neurons of managers at RIM, which hasn't recorded an infraction since then.

5. Early infractions were not terribly painful for the culprit, but as the company grew, that changed.

Your Answer:32514 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**201**
Avg. time spent on this question by all students	**154**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**147**
% of students who attempted this question	**39.89**
% of students who got the question right of those who attempted	**35.65**

Video Solution

Text Solution

On a careful reading of the sentences, it can be observed that sentence 3 is a general sentence that begins the paragraph. It introduces the company RIM to us and also highlights the context: signal the distance from the shareholder value principle. Sentences 3 and 2 form a mandatory pair. "takes great pains to signal its distance from the shareholder value principle" in sentence 3 links with "rule that any manager who talked about the share price at work had to buy a doughnut for every person" in sentence 2. So sentence 2 follows sentence 3. Sentence 2 is followed by sentence 5. In sentence 5, 'infractions' means "breach or violation or infringement of a law or agreement". So "*infractions* ..... culprit" in sentence 5 links with "a *rule* that any manager who talked about the share price at work had to buy a doughnut for every person" in sentence 2. Sentence 5 is followed by sentence 1. "the chief operating officer mentioned RIM's surging stock price in the wake of a call with analysts and was saddled with the task of delivering more than 800 doughnuts" in sentence 1 links with "infractions becoming terribly painful for the culprit" as implied in sentence 5. So, 3251. Sentence 4 follows sentence 1. "That incident apparently seared the doughnut rule" in sentence 4 links with "saddled with the task of delivering more than 800 doughnuts to the next weekly meeting of employees" in sentence 4. Hence 32514.

Ans: (32514)

undefined

Q29. DIRECTIONS *for question 29 and 30:* Five sentences related to a topic are given in each of the questions below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. That is bad news for Otsuka and Bristol-Myers Squibb, the two labs that formulated Abilify and got it approved by authorities in the 1990s.

2. A single pill of Abilify, a drug used to treat manic depression, costs $30 or so in America.

3. Thrifty pharmaceutical companies, many of them in India, can provide it for less than $1 a pop since the drug's patent expired in 2015.

4. Or you could try gAbilify (the g stands for “generic”), better known to chemists as Aripiprazole.

5. India became the world's biggest exporter of generics almost by accident.

Your Answer:5 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**29**
Avg. time spent on this question by all students	**116**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**108**
% of students who attempted this question	**55.7**
% of students who got the question right of those who attempted	**36.87**

Video Solution

Text Solution

On a careful reading of the sentences, it can be observed that sentence 2 is a general sentence that begins the paragraph. It introduces the topic of discussion: the cost of a single pill of Abilify. It also tells us what Abilify is. Sentences 2 and 4 form a mandatory pair. “A single pill of Abilify” links with “ Or you could try gAbilify” in sentence 4. So sentence 4 follows sentence 2. Sentence 4 is followed by sentence 3. The pronoun “it” in sentence 3 refers to “Aripiprazole” or “gAbilify” in sentence 4. Sentence 3 is followed by sentence 1. “That is bad news for Otsuka and Bristol-Myers Squibb” in sentence 1 links with “can provide it for less than $1 a pop since the drug's patent expired in 2015” in sentence 3. So, 2431. Sentence 5 is the odd sentence out. It is a very general (historical) sentence which talks about “generic drugs” and does not refer specifically to Abilify. It will need further elaboration and substantiation. It also needs a precedent as it starts a new line of thought. Sentence 5 can be a part of another para.

Ans: (5)

undefined

Q30. DIRECTIONS *for question 29 and 30:* Five sentences related to a topic are given in each of the questions below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. Like the disaster victim whose face registers total disbelief, The Denier, too, cannot accept the evidence of his senses and he concludes that things really are the same, that all evidences of change are merely superficial.

2. The Specialist like the physician or financier doesn't block out all novel ideas or information; instead, he energetically attempts to keep pace with change but only in a specific narrow sector of life related to his profession, remaining rigidly closed to any suggestion for social, political, or economic innovation.

3. When we combine the effects of decisional stress with sensory and cognitive overload, we produce several common forms of individual maladaptation and one such widespread response to high-speed change is outright denial.

4. He finds comfort in such cliches as "young people were always rebellious" or "there's nothing new on the face of the earth," or "the more things change, the more they stay the same."

5. The Denier's strategy is to "block out" unwelcome reality and when the demand for decisions reaches crescendo, he flatly refuses to take in new information.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**109**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**113**
% of students who attempted this question	**36.63**
% of students who got the question right of those who attempted	**44.93**

Video Solution

Text Solution

On a careful reading of the sentences, it can be observed that sentence 3 is a general sentence that begins the paragraph. It introduces the topic of discussion: outright denial. The effects of decisional stress combined with sensory and cognitive overload results in individual maladaptation and a response to high-speed change is outright denial. It can be inferred that sentences 5 and 1 highlight what a denier does. {A Denier is a person who denies something, who refuses to admit the truth of a concept or proposition or a real situation that is supported by the majority of scientific or historical or any other available evidence.}
Sentence 3 is followed by sentence 5. “outright denial” in sentence 3 is followed by ““block out" unwelcome reality, he flatly refuses to take in new information” in sentence 5. “When we combine the effects of decisional stress” in sentence 3 links with “demand for decisions reaches crescendo” in sentence 5. Sentence 5 is followed by sentence 1. “cannot accept the evidence of his senses” in sentence 1 points to “unwelcome reality” in sentence 5. “flatly refuses to take in new information” in sentence 5 links with “he concludes that things really are the same, that all evidences of change are merely superficial” in sentence 1. Sentences 1 and 4 form a mandatory pair. “comfort in such cliches as "the more things change, the more they stay the same."” in sentence 4 links with “concludes that things really are the same, that all evidences of change are merely superficial” in sentence 1. So, 3514. Sentence 2 is the odd sentence out. It does not mention what the Denier does. It introduces a new term “the specialist” and this new line of thought can be a part of a new para.

Ans: (2)

undefined

Q31. DIRECTIONS *for questions 31 and 32:* In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in

increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. In a quaint old theatre in Falmouth, Cornwall, a tall gentleman in a top hat stands facing the stage, as a conductor.

2. Behind him is an audience of about 100, parents and teachers mostly.

3. Spread over on stage are seven square tables, each bearing a buzzer, each flying a national placard and each occupied by four children, in school uniform, intent, nervous, waiting to pounce.

4. This is the final of the Kids' Literature Quiz, the “University Challenge” of children's books.

5. It is both a world championship as well as a well-kept secret.

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	**126**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**112**
% of students who attempted this question	**32.15**
% of students who got the question right of those who attempted	**3.06**

Video Solution

Text Solution

In part (1), “as a conductor” needs to be replaced with “like a conductor” or ‘as a conductor would’.
In part (2), the adverb 'mostly' is misplaced. Part (2) would be correct if it read: ..... of about 100, mostly parents and teachers.
Part (3) needs the phrasal verb “spread out” and not “spread over”. “spread out” means scattered or distributed over a large area.
Part (4) is error-free.
In part (5), we need the correlative conjunction “both .... and”. “Both ..... as well as” is incorrect. The part should read: It is both a world championship and a well-kept secret.

Ans: (4)

undefined

Q32. DIRECTIONS *for questions 31 and 32:* In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. The true wonders of the Jules Verne's book “Twenty Thousand Leagues Under the Sea” are natural. Many a scene have stayed with me: the Nautilus reaching the South Pole,

2. where it is caught and nearly crushed in a white tomb of ice; Nemo and Aronnax making their night assent of an Atlantic volcano,

3. passing through seaweed jungles from which shine the eyes of “giant lobsters” and “titanic crabs”, until they reach the crater as it plumes bright lava into the black water.

4. Most amazing – and least plausible – is when the Nautilus noses its way through the tunnel that Verne imagines joining Red Sea and Mediterranean Sea, miles below the shimmering Sinai.

5. Rereading Verne’s book, I’m reminded of how drastic it fails as a novel (scant plot, absurd ending), and how magnificent it succeeds as a magic-carpet ride.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**109**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**115**
% of students who attempted this question	**22.45**
% of students who got the question right of those who attempted	**3.75**

Video Solution

Text Solution

In part (1), there is an error of subject-verb agreement. The singular verb 'has' needs to be used for the singular subject 'many a scene'. So the part should read: Many a scene has stayed with me:
In part (2), 'assent' needs to be replaced with 'ascent' (climbing upwards).
Part (3) is error-free.
In part (4), “Red Sea” and “Mediterranean Sea” need to be preceded by the definite article 'the'.
In part (5), we need to use the adverbs “drastically” and “magnificently”. The use of the adjectives “drastic” and “magnificent” is incorrect. “Drastically” modifies the verb 'fails'. “Magnificently” modifies the verb 'succeeds'. Ans: (3)

undefined

undefined

undefined

Q32. DIRECTIONS *for questions 31 and 32:* In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. The true wonders of the Jules Verne's book “Twenty Thousand Leagues Under the Sea” are natural. Many a scene have stayed with me: the Nautilus reaching the South Pole,

2. where it is caught and nearly crushed in a white tomb of ice; Nemo and Aronnax making their night assent of an Atlantic volcano,

3. passing through seaweed jungles from which shine the eyes of “giant lobsters” and “titanic crabs”, until they reach the crater as it plumes bright lava into the black water.

4. Most amazing – and least plausible – is when the Nautilus noses its way through the tunnel that Verne imagines joining Red Sea and Mediterranean Sea, miles below the shimmering Sinai.

5. Rereading Verne’s book, I’m reminded of how drastic it fails as a novel (scant plot, absurd ending), and how magnificent it succeeds as a magic-carpet ride.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**109**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**115**
% of students who attempted this question	**22.45**
% of students who got the question right of those who attempted	**3.75**

Video Solution

Text Solution

In part (1), there is an error of subject-verb agreement. The singular verb 'has' needs to be used for the singular subject 'many a scene'. So the part should read: Many a scene has stayed with me:
In part (2), 'assent' needs to be replaced with 'ascent' (climbing upwards).
Part (3) is error-free.
In part (4), “Red Sea” and “Mediterranean Sea” need to be preceded by the definite article 'the'.
In part (5), we need to use the adverbs “drastically” and “magnificently”. The use of the adjectives “drastic” and “magnificent” is incorrect. “Drastically” modifies the verb 'fails'. “Magnificently” modifies the verb 'succeeds'. Ans: (3)

Q32. DIRECTIONS *for questions 31 and 32:* In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. The true wonders of the Jules Verne's book “Twenty Thousand Leagues Under the Sea” are natural. Many a scene have stayed with me: the Nautilus reaching the South Pole,

2. where it is caught and nearly crushed in a white tomb of ice; Nemo and Aronnax making their night assent of an Atlantic volcano,

3. passing through seaweed jungles from which shine the eyes of “giant lobsters” and “titanic crabs”, until they reach the crater as it plumes bright lava into the black water.

4. Most amazing – and least plausible – is when the Nautilus noses its way through the tunnel that Verne imagines joining Red Sea and Mediterranean Sea, miles below the shimmering Sinai.

5. Rereading Verne’s book, I’m reminded of how drastic it fails as a novel (scant plot, absurd ending), and how magnificent it succeeds as a magic-carpet ride.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**109**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**115**
% of students who attempted this question	**22.45**
% of students who got the question right of those who attempted	**3.75**

Video Solution

Text Solution

In part (1), there is an error of subject-verb agreement. The singular verb 'has' needs to be used for the singular subject 'many a scene'. So the part should read: Many a scene has stayed with me:
In part (2), 'assent' needs to be replaced with 'ascent' (climbing upwards).
Part (3) is error-free.
In part (4), “Red Sea” and “Mediterranean Sea” need to be preceded by the definite article 'the'.
In part (5), we need to use the adverbs “drastically” and “magnificently”. The use of the adjectives “drastic” and “magnificent” is incorrect. “Drastically” modifies the verb 'fails'. “Magnificently” modifies the verb 'succeeds'. Ans: (3)

Q32. DIRECTIONS *for questions 31 and 32:* In each of the following questions, there are sentences or fragments of sentences that form a paragraph. Identify the sentence(s) or fragments of sentence(s) that is/ are **correct** in terms of grammar and usage, including spelling, punctuation and logical consistency. Enter the number corresponding to the sentence(s) or fragments of sentence(s) in the input box provided below the question. [Note: Enter your answer in increasing order only. For example, if you think that the fragments (2) and (4) are **correct**, then enter 24 (but not 42) in the input box.]

1. The true wonders of the Jules Verne's book “Twenty Thousand Leagues Under the Sea” are natural. Many a scene have stayed with me: the Nautilus reaching the South Pole,

2. where it is caught and nearly crushed in a white tomb of ice; Nemo and Aronnax making their night assent of an Atlantic volcano,

3. passing through seaweed jungles from which shine the eyes of “giant lobsters” and “titanic crabs”, until they reach the crater as it plumes bright lava into the black water.

4. Most amazing – and least plausible – is when the Nautilus noses its way through the tunnel that Verne imagines joining Red Sea and Mediterranean Sea, miles below the shimmering Sinai.

5. Rereading Verne's book, I'm reminded of how drastic it fails as a novel (scant plot, absurd ending), and how magnificent it succeeds as a magic-carpet ride.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**109**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**115**
% of students who attempted this question	**22.45**
% of students who got the question right of those who attempted	**3.75**

Video Solution

Text Solution

In part (1), there is an error of subject-verb agreement. The singular verb 'has' needs to be used for the singular subject 'many a scene'. So the part should read: Many a scene has stayed with me:
In part (2), 'assent' needs to be replaced with 'ascent' (climbing upwards).
Part (3) is error-free.
In part (4), "Red Sea" and "Mediterranean Sea" need to be preceded by the definite article 'the'.
In part (5), we need to use the adverbs "drastically" and "magnificently". The use of the adjectives "drastic" and "magnificent" is incorrect. "Drastically" modifies the verb 'fails'. "Magnificently" modifies the verb 'succeeds'. Ans: (3)

undefined

Q33. DIRECTIONS *for questions 33 and 34:* The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. The sentence labelled 6 is highlighted and is in its correct place. Decide on the proper order for the first five sentences and key in the sequence offive numbers as your answer, in the input box given below the question.

1. Asked why he and his compatriots rebuffed the evangelisers, Jack Ma, boss of Alibaba, an e-commerce giant, insists it is not because they were stingy.

2. Many wealthy industrialists stayed away, and none of those who attended signed their "Giving Pledge".

3. They got the cold shoulder.

4. When Warren Buffett and Bill Gates held a banquet for Chinese billionaires in 2010, they hoped to win them over to philanthropy.

5. This meanness was not due to penury: China boasts more dollar billionaires today than does America.

6. **At a conference on private-sector philanthropy hosted by his firm this month in Hangzhou, he explained that China's charitable sector was then still in its infancy.**

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	**163**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**150**
% of students who attempted this question	**35.76**
% of students who got the question right of those who attempted	**39.11**

Video Solution

Text Solution

The last sentence of the paragraph (sentence 6 which is in its correct place) has the keywords "private-sector philanthropy" and "China's charitable sector".
On a careful reading of the sentences, it can be observed that sentence 4 is a general sentence that begins the paragraph. It has some proper nouns – Warren Buffett, Bill Gates and Chinese billionaires – and mentions the topic of discussion: win them over to philanthropy. The pronoun "they" in sentence 4 refers to "Warren Buffett and Bill Gates" and the pronoun "them" in sentence 4 refers to "Chinese billionaires". Sentence 4 is followed by sentence 3. The pronoun "they" in sentence 3 refers to "Warren Buffett and Bill Gates". Warren Buffett and Bill Gates got the cold shoulder from the Chinese billionaires. "Cold shoulder" is a phrase used to express dismissal or the act of disregarding someone. Sentence 3 and sentence 2 forms a mandatory pair. "got the cold shoulder" in sentence 3 links with "Many wealthy industrialists stayed away, those who attended did not sign their "Giving Pledge"" in sentence 2. Sentence 5 clarifies the point made in sentence 2 and so follows it. "This meanness was not due to penury" in sentence 5 links with "wealthy industrialists stayed away, and none of those who attended signed their "Giving Pledge"" in sentence 2. Also "China boasts more dollar billionaires today than does America" in sentence 5 links with "many wealthy industrialists" in sentence 2. Sentences 5 and 1 form another mandatory pair. "insists it is not because they were stingy" in sentence 1 links with " This meanness was not due to penury" in sentence 5. So sentence 1 follows sentence 5. "the evangelisers" in sentence 1 points to "Warren Buffett and Bill Gates" in sentence 4. "Jack Ma, boss of Alibaba, an e-commerce giant, insists it is not because they were stingy" in sentence 1 then links with "China's charitable sector was then still in its infancy" in the conclusion sentence numbered 6. Ans: (43251)

undefined

Q34. DIRECTIONS *for questions 33 and 34:* The sentences given in each of the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. The sentence labelled 6 is highlighted and is in its correct place. Decide on the proper order for the first five sentences and key in the sequence offive numbers as your answer, in the input box given below the question.

1. In making their determinations, evaluators study that which they are judging in a sequence, one student, athlete or paper after another, and apply standardised criteria.

2. Similarly, athletes are assessed on their physical prowess before being awarded medals.

3. This approach is supposed to afford equal treatment to all.

4. And academic papers, like those reported in this section, must run the gauntlet of peer review before being published.

5. Students are widely judged on their abilities before being allowed to enter top universities.

6. **But research just published in Psychological Science by Kieran O'Connor and Amar Cheema of the University of Virginia suggests that it is actually biased in favour of those who are judged late in the process.**

Your Answer:51423 Your answer is incorrect

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**114**
Avg. time spent on this question by all students	**186**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**174**
% of students who attempted this question	**32.65**
% of students who got the question right of those who attempted	**17.87**

Video Solution

Text Solution

Notice the presence of the contrast conjunction 'but' in the last sentence of the paragraph (i.e. sentence 6 which is in its correct place).
Sentences 5, 2 and 4 provide situations where students or athletes or academic papers are evaluated. Sentence 1 introduces a specific manner in which this evaluation is usually done ('one… after another') Hence, sentences 5, 2 and 4 provide general situations and sentence 1 expands on the evaluation process used in these situations.
Hence, it can be observed that sentence 5 is a general sentence that begins the paragraph. It talks about students being judged on their abilities before being selected into top universities. We get to understand that the entire para is about various classes of people and items being evaluated and judged against certain parameters or criteria before a vital consequence. In sentence 1, we get to know a particular order: one student, athlete or paper. …. Sentence 5 is followed by sentence 2. "Students" in sentence 5 is followed by "Similarly, athletes" in sentence 2. Also "are widely judged on their abilities before being allowed to enter top universities" in sentence 5 links with "are assessed on their physical prowess before being awarded medals" in sentence 2. Sentence 2 is followed by sentence 4. "Similarly, athletes" in sentence 2 is followed by "And academic papers" in sentence 4. Also "are assessed on their physical prowess before being awarded medals" in sentence 2 runs parallel to "must run the gauntlet of peer review before being published" in sentence 4. Sentence 1 (evaluators study …... one student, athlete, paper …. apply standardized criteria) summarizes the contents of sentences 5, 2 and 4 and hence follows sentence 4. Sentence 1 is followed by sentence 3. "This approach" in sentence 3 points to "evaluators study …... one student, athlete, paper …. apply standardized criteria" in sentence 1. Sentence 6 which is the conclusion sentence of the para, contrasts the point made in sentence 3. Hence sentence 3 must immediately precede sentence 6. "But research suggests that it is actually biased in favour of those who are judged late in the process" in sentence 6 contrasts "afford equal treatment to all" in sentence 3. So, 52413.

Ans: (52413)

undefined

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

Swarup, a freelance consultant, worked on five different projects, Project A through Project E, during a month. For each project, the amount that he was paid was calculated by multiplying the per hour rate of that project and the number of hours that he worked on that project. The per hour rates (in USD) of the five projects were 20, 25, 30, 35 and 40, in no particular order. The table below provides the number of hours that he worked on each project.

Project	Number of hours
Project A	36
Project B	28
Project C	43
Project D	34
Project E	24

It is also known that

i. the amount that he was paid for Project B, whose per hour rate is USD 35, was more than that he was paid for exactly two other projects.

ii. the amount that he was paid for Project C was not the highest.

iii. the amount that he was paid for Project E was not the lowest.

iv. the amount that he was paid for no two projects was the same.

v. the highest amount that he was paid for any project was not more than double the lowest amount that he was paid for any project.

Q1. DIRECTIONS *for question 1:* Select the correct alternative from the given choices.

For how many projects was Swarup paid more than that for Project D?

a) **4** **Your answer is correct**

b) **3**

c) **1**

d) **0**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**489**
Avg. time spent on this question by all students	**791**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**819**
% of students who attempted this question	**45.04**
% of students who got the question right of those who attempted	**70.08**

Video Solution

Text Solution

Text Solution

Given that Project B was the third highest paid project.
The per hour rate of Project B was 35. Hence, the amount paid for Project B was 980.
From (iii), Project E was not the least paid. Hence, the per hour rate of Project E cannot be 20.
If the rate of Project E was 25, the amount paid for this project will be 25 × 24 = 600
The minimum rate that can be paid for any of the other project will be if the rate of Project D was USD 20.
In this case, the amount for Project D = 20 × 34 = 680.
Hence, even if the per hour rate of Project E was 25, this will still be the least paid project.
Hence, the price of Project E cannot be 25.
The price of Project E can only be 30 or 40 and the amount for this project can be 720 or 960.
In either case, the amount for Project E will be less than that for Project B.
Since Project B is the third highest paid project and, from (iii), Project E cannot be the least paid project, Project E must be the fourth highest paid project.
The project whose per hour rate is 20 cannot be E or B. If it was D, the amount will be 680; if it was A, the amount will be 720; if it was C, the amount will be 860. In any case, the project whose rate is 20 will be the least paid project.
The project whose per hour rate is 25 cannot be E or B. Further, the amount for this project must be greater than that for B (as B is the third highest project and below B, are E and the project whose per hour rate is 20).
The only possibility for the project whose per hour rate is 25 and which satisfies the above condition is Project C. (if it were Project D or A, the amount will be 850 or 900, both of which are lesser than the amount for B).
Hence, the per hour rate of Project C is 25 and the amount is 1075.
Hence, one of A and D must be the project whose per hour rate is 20 and the other must be the one whose amount is the highest.
Let A be the project whose per hour rate is 20. The amount paid for A will be 720.
From (iii) and (iv), the amount paid for Project E must be 960 and the rate must be 40.
Hence, the rate of project D must be 30. However, the amount for Project D must be 30 × 34 = 1020. This implies that C will become the highest paid project which violates condition (ii). Hence, this case is not possible.
Hence, D must be the project whose per hour rate is 20 and the amount will be 680.
The rate of E can be 30 or 40.
The rate of A can also be 30 or 40. The amount for A will be 1080 or 1440. In any of the two cases, this will be the highest paid project. However, the least paid amount is 680. Hence, the highest paid amount cannot be more than 1360. Hence, the rate of A must be 30 and the amount must be 1080.
The rate of E must be 40 and the amount must be 960.
The following table provides the number of hours, the per hour rate and the total amount paid for each project:

Project	Number of hours	Per hour rate	Amount
Project A	36	30	1080
Project B	28	35	980
Project C	43	25	1075
Project D	34	20	680
Project E	24	40	960

For all the four projects, he was paid more than that for Project D. Choice (A)

undefined

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

Swarup, a freelance consultant, worked on five different projects, Project A through Project E, during a month. For each project, the amount that he was paid was calculated by multiplying the per hour rate of that project and the number of hours that he worked on that project. The per hour rates (in USD) of the five projects were 20, 25, 30, 35 and 40, in no particular order. The table below provides the number of hours that he worked on each project.

Project	Number of hours
Project A	36
Project B	28
Project C	43
Project D	34
Project E	24

It is also known that

i. the amount that he was paid for Project B, whose per hour rate is USD 35, was more than that he was paid for exactly two other projects.

ii. the amount that he was paid for Project C was not the highest.

iii. the amount that he was paid for Project E was not the lowest.

iv. the amount that he was paid for no two projects was the same.

v. the highest amount that he was paid for any project was not more than double the lowest amount that he was paid for any project.

Q2. DIRECTIONS *for questions 2 to 4:* Type in your answer in the input box provided below the question.

What is the total amount (in USD) paid to Swarup for all the five projects?

Your Answer:4775 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**48**
Avg. time spent on this question by all students	**90**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**83**
% of students who attempted this question	**42.09**
% of students who got the question right of those who attempted	**46.15**

Video Solution

Text Solution

Given that Project B was the third highest paid project.
The per hour rate of Project B was 35. Hence, the amount paid for Project B was 980.
From (iii), Project E was not the least paid. Hence, the per hour rate of Project E cannot be 20.
If the rate of Project E was 25, the amount paid for this project will be 25 × 24 = 600
The minimum rate that can be paid for any of the other project will be if the rate of Project D was USD 20.
In this case, the amount for Project D = 20 × 34 = 680.
Hence, even if the per hour rate of Project E was 25, this will still be the least paid project.
Hence, the price of Project E cannot be 25.
The price of Project E can only be 30 or 40 and the amount for this project can be 720 or 960.
In either case, the amount for Project E will be less than that for Project B.
Since Project B is the third highest paid project and, from (iii), Project E cannot be the least paid project, Project E must be the fourth highest paid project.
The project whose per hour rate is 20 cannot be E or B. If it was D, the amount will be 680; if it was A, the amount will be 720; if it was C, the amount will be 860. In any case, the project whose rate is 20 will be the least paid project.
The project whose per hour rate is 25 cannot be E or B. Further, the amount for this project must be greater than that for B (as B is the third highest project and below B, are E and the project whose per hour rate is 20).
The only possibility for the project whose per hour rate is 25 and which satisfies the above condition is Project C. (if it were Project D or A, the amount will be 850 or 900, both of which are lesser than the amount for B).
Hence, the per hour rate of Project C is 25 and the amount is 1075.
Hence, one of A and D must be the project whose per hour rate is 20 and the other must be the one whose amount is the highest.
Let A be the project whose per hour rate is 20. The amount paid for A will be 720.
From (iii) and (iv), the amount paid for Project E must be 960 and the rate must be 40.
Hence, the rate of project D must be 30. However, the amount for Project D must be 30 × 34 = 1020. This implies that C will become the highest paid project which violates condition (ii). Hence, this case is not possible.
Hence, D must be the project whose per hour rate is 20 and the amount will be 680.
The rate of E can be 30 or 40.
The rate of A can also be 30 or 40. The amount for A will be 1080 or 1440. In any of the two cases, this will be the highest paid project. However, the least paid amount is 680. Hence, the highest paid amount cannot be more than 1360. Hence, the rate of A must be 30 and the amount must be 1080.
The rate of E must be 40 and the amount must be 960.
The following table provides the number of hours, the per hour rate and the total amount paid for each project:

Project	Number of hours	Per hour rate	Amount
Project A	36	30	1080
Project B	28	35	980
Project C	43	25	1075
Project D	34	20	680
Project E	24	40	960

Total amount paid to Swarup = 4775 Ans: (4775)

undefined

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

Swarup, a freelance consultant, worked on five different projects, Project A through Project E, during a month. For each project, the amount that he was paid was calculated by multiplying the per hour rate of that project and the number of hours that he worked on that project. The per hour rates (in USD) of the five projects were 20, 25, 30, 35 and 40, in no particular order. The table below provides the number of hours that he worked on each project.

Project	Number of hours
Project A	36
Project B	28
Project C	43
Project D	34
Project E	24

It is also known that

i. the amount that he was paid for Project B, whose per hour rate is USD 35, was more than that he was paid for exactly two other projects.

ii. the amount that he was paid for Project C was not the highest.

iii. the amount that he was paid for Project E was not the lowest.

iv. the amount that he was paid for no two projects was the same.

v. the highest amount that he was paid for any project was not more than double the lowest amount that he was paid for any project.

Q3. DIRECTIONS *for questions 2 to 4:* Type in your answer in the input box provided below the question.

What is the number of hours that Swarup worked on the project with the third highest per hour rate?

Your Answer:36 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**77**
Avg. time spent on this question by all students	**52**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**50**
% of students who attempted this question	**44.32**
% of students who got the question right of those who attempted	**48.11**

Video Solution

Text Solution

Given that Project B was the third highest paid project.
The per hour rate of Project B was 35. Hence, the amount paid for Project B was 980.
From (iii), Project E was not the least paid. Hence, the per hour rate of Project E cannot be 20.
If the rate of Project E was 25, the amount paid for this project will be 25 × 24 = 600
The minimum rate that can be paid for any of the other project will be if the rate of Project D was USD 20.
In this case, the amount for Project D = 20 × 34 = 680.
Hence, even if the per hour rate of Project E was 25, this will still be the least paid project.
Hence, the price of Project E cannot be 25.
The price of Project E can only be 30 or 40 and the amount for this project can be 720 or 960.
In either case, the amount for Project E will be less than that for Project B.
Since Project B is the third highest paid project and, from (iii), Project E cannot be the least paid project, Project E must be the fourth highest paid project.
The project whose per hour rate is 20 cannot be E or B. If it was D, the amount will be 680; if it was A, the amount will be 720; if it was C, the amount will be 860. In any case, the project whose rate is 20 will be the least paid project.
The project whose per hour rate is 25 cannot be E or B. Further, the amount for this project must be greater than that for B (as B is the third highest project and below B, are E and the project whose per hour rate is 20).
The only possibility for the project whose per hour rate is 25 and which satisfies the above condition is Project C. (if it were Project D or A, the amount will be 850 or 900, both of which are lesser than the amount for B).
Hence, the per hour rate of Project C is 25 and the amount is 1075.
Hence, one of A and D must be the project whose per hour rate is 20 and the other must be the one whose amount is the highest.
Let A be the project whose per hour rate is 20. The amount paid for A will be 720.
From (iii) and (iv), the amount paid for Project E must be 960 and the rate must be 40.
Hence, the rate of project D must be 30. However, the amount for Project D must be 30 × 34 = 1020. This implies that C will become the highest paid project which violates condition (ii). Hence, this case is not possible.
Hence, D must be the project whose per hour rate is 20 and the amount will be 680.
The rate of E can be 30 or 40.
The rate of A can also be 30 or 40. The amount for A will be 1080 or 1440. In any of the two cases, this will be the highest paid project. However, the least paid amount is 680. Hence, the highest paid amount cannot be more than 1360. Hence, the rate of A must be 30 and the amount must be 1080.
The rate of E must be 40 and the amount must be 960.
The following table provides the number of hours, the per hour rate and the total amount paid for each project:

Project	Number of hours	Per hour rate	Amount
Project A	36	30	1080
Project B	28	35	980
Project C	43	25	1075
Project D	34	20	680
Project E	24	40	960

The project for which the per hour rate is the third highest is Project A. He worked on Project A for 36 hours. Ans: (36)

undefined

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

Swarup, a freelance consultant, worked on five different projects, Project A through Project E, during a month. For each project, the amount that he was paid was calculated by multiplying the per hour rate of that project and the number of hours that he worked on that project. The per hour rates (in USD) of the five projects were 20, 25, 30, 35 and 40, in no particular order. The table below provides the number of hours that he worked on each project.

Project	Number of hours
Project A	36
Project B	28
Project C	43
Project D	34
Project E	24

It is also known that

i. the amount that he was paid for Project B, whose per hour rate is USD 35, was more than that he was paid for exactly two other projects.

ii. the amount that he was paid for Project C was not the highest.

iii. the amount that he was paid for Project E was not the lowest.

iv. the amount that he was paid for no two projects was the same.

v. the highest amount that he was paid for any project was not more than double the lowest amount that he was paid for any project.

Q4. DIRECTIONS *for questions 2 to 4:* Type in your answer in the input box provided below the question.

What is the total number of hours that Swarup worked on all the projects for which he was paid more than USD 900?

Your Answer:130 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**69**
Avg. time spent on this question by all students	**61**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**63**
% of students who attempted this question	**41.87**
% of students who got the question right of those who attempted	**41.63**

Video Solution

Text Solution

Given that Project B was the third highest paid project.
The per hour rate of Project B was 35. Hence, the amount paid for Project B was 980.
From (iii), Project E was not the least paid. Hence, the per hour rate of Project E cannot be 20.
If the rate of Project E was 25, the amount paid for this project will be 25 × 24 = 600
The minimum rate that can be paid for any of the other project will be if the rate of Project D was USD 20.
In this case, the amount for Project D = 20 × 34 = 680.
Hence, even if the per hour rate of Project E was 25, this will still be the least paid project.
Hence, the price of Project E cannot be 25.
The price of Project E can only be 30 or 40 and the amount for this project can be 720 or 960.
In either case, the amount for Project E will be less than that for Project B.
Since Project B is the third highest paid project and, from (iii), Project E cannot be the least paid project, Project E must be the fourth highest paid project.
The project whose per hour rate is 20 cannot be E or B. If it was D, the amount will be 680; if it was A, the amount will be 720; if it was C, the amount will be 860. In any case, the project whose rate is 20 will be the least paid project.
The project whose per hour rate is 25 cannot be E or B. Further, the amount for this project must be greater than that for B (as B is the third highest project and below B, are E and the project whose per hour rate is 20).
The only possibility for the project whose per hour rate is 25 and which satisfies the above condition is Project C. (if it were Project D or A, the amount will be 850 or 900, both of which are lesser than the amount for B).
Hence, the per hour rate of Project C is 25 and the amount is 1075.
Hence, one of A and D must be the project whose per hour rate is 20 and the other must be the one whose amount is the highest.
Let A be the project whose per hour rate is 20. The amount paid for A will be 720.
From (iii) and (iv), the amount paid for Project E must be 960 and the rate must be 40.
Hence, the rate of project D must be 30. However, the amount for Project D must be 30 × 34 = 1020. This implies that C will become the highest paid project which violates condition (ii). Hence, this case is not possible.
Hence, D must be the project whose per hour rate is 20 and the amount will be 680.
The rate of E can be 30 or 40.
The rate of A can also be 30 or 40. The amount for A will be 1080 or 1440. In any of the two cases, this will be the highest paid project. However, the least paid amount is 680. Hence, the highest paid amount cannot be more than 1360. Hence, the rate of A must be 30 and the amount must be 1080.
The rate of E must be 40 and the amount must be 960.
The following table provides the number of hours, the per hour rate and the total amount paid for each project:

Project	Number of hours	Per hour rate	Amount
Project A	36	30	1080
Project B	28	35	980
Project C	43	25	1075
Project D	34	20	680
Project E	24	40	960

Total number of hours that he worked on all projects for which he was paid more than USD 900
= 36 + 28 + 43 + 24 = 131 Ans: (131)

undefined

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

A large cube of side four units is formed using 64 unit cubes, each of which is painted red on all its faces. After forming the large cube, all the faces of the large cube are painted blue. The large cube is then disassembled into unit cubes. One cube of side two units is formed using these unit cubes such that the maximum possible visible area of this cube is blue. With the remaining unit cubes, a cube of side three units is formed such that the maximum possible visible area of this cube is blue. The remaining unit cubes are referred to as unutilized cubes.

Q5. DIRECTIONS *for questions 5 to 8:* Type in your answer in the input box provided below the question.

In the cube of side three units, what is the maximum possible number of unit cubes which have at least two faces painted blue?

Your Answer:12 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**317**
Avg. time spent on this question by all students	**335**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**375**
% of students who attempted this question	**15.5**
% of students who got the question right of those who attempted	**32.92**

Video Solution

Text Solution

Given that there are 64 unit cubes painted red on all faces.
After the cube of side 4 units is formed, this larger cube is painted blue on all its faces. Hence, there will be 8 unit cubes (at the corners) which are painted Blue in three faces. There will be 24 cubes painted Blue on two faces. There will be 24 cubes painted Blue on one face. There will be 8 unit cubes painted Red on all its faces.

With the 8 unit cubes painted Blue on three faces, the cube of side 2 units can be formed such that the entire visible area of this cube is Blue.

Hence, there will be 24 cubes painted Blue on two faces, 24 cubes painted Blue on one face and 8 cubes painted Red on all faces.

For the entire visible area of the cube of side 3 units to be Blue, we need 8 cubes with Blue on at least three faces (at corners); 12 cubes painted Blue on at least 2 faces (on the edges); 6 cubes painted Blue on at least one face (at the centre of each face); and 1 cube at the centre which may or may not be painted Blue. However, there are no more cubes painted Blue on three faces. Hence, to maximize the area painted Blue, these 8 cubes will have to be substituted by cubes painted Blue on 2 faces.

To make the cube of side 3 units, we need 20 cubes painted Blue on 2 faces. However, we can use all the remaining 24 cubes painted Blue on two faces. Hence, the maximum number of cubes painted Blue on at least two faces is 24.

Ans: (24)

undefined

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

A large cube of side four units is formed using 64 unit cubes, each of which is painted red on all its faces. After forming the large cube, all the faces of the large cube are painted blue. The large cube is then disassembled into unit cubes. One cube of side two units is formed using these unit cubes such that the maximum possible visible area of this cube is blue. With the remaining unit cubes, a cube of side three units is formed such that the maximum possible visible area of this cube is blue. The remaining unit cubes are referred to as unutilized cubes.

Q6. DIRECTIONS *for questions 5 to 8:* Type in your answer in the input box provided below the question.

What is the minimum number of unutilized cubes which have exactly one face painted blue?

Your Answer:9 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**65**
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	**146**

Time spent / Accuracy Analysis

% of students who attempted this question	**13.95**
% of students who got the question right of those who attempted	**11.12**

Video Solution

Text Solution

Given that there are 64 unit cubes painted red on all faces.
After the cube of side 4 units is formed, this larger cube is painted blue on all its faces. Hence, there will be 8 unit cubes (at the corners) which are painted Blue in three faces. There will be 24 cubes painted Blue on two faces. There will be 24 cubes painted Blue on one face. There will be 8 unit cubes painted Red on all its faces.

With the 8 unit cubes painted Blue on three faces, the cube of side 2 units can be formed such that the entire visible area of this cube is Blue.

Hence, there will be 24 cubes painted Blue on two faces, 24 cubes painted Blue on one face and 8 cubes painted Red on all faces.

For the entire visible area of the cube of side 3 units to be Blue, we need 8 cubes with Blue on at least three faces (at corners); 12 cubes painted Blue on at least 2 faces (on the edges); 6 cubes painted Blue on at least one face (at the centre of each face); and 1 cube at the centre which may or may not be painted Blue. However, there are no more cubes painted Blue on three faces. Hence, to maximize the area painted Blue, these 8 cubes will have to be substituted by cubes painted Blue on 2 faces.

To minimize the number of unutilized cubes painted Blue on one face, we have to use maximum number of cubes painted blue on one face in the cube of side 3 units.
In the cube of side 3 units, we need 6 cubes painted Blue on one face. Further, the unit cube at the centre can also be painted Blue on one face.
Hence, a total of 7 cubes painted Blue on one side can be used.
Minimum number of unutilized cubes painted Blue on one face = 24 – 7 = 17

Ans: (17)

undefined

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

A large cube of side four units is formed using 64 unit cubes, each of which is painted red on all its faces. After forming the large cube, all the faces of the large cube are painted blue. The large cube is then disassembled into unit cubes. One cube of side two units is formed using these unit cubes such that the maximum possible visible area of this cube is blue. With the remaining unit cubes, a cube of side three units is formed such that the maximum possible visible area of this cube is blue. The remaining unit cubes are referred to as unutilized cubes.

Q7. DIRECTIONS *for questions 5 to 8:* Type in your answer in the input box provided below the question.

In the cube of side three units, what is the maximum number of unit cubes which are painted red on all its faces?

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	**56**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**58**
% of students who attempted this question	**12.94**
% of students who got the question right of those who attempted	**49.8**

Video Solution

Text Solution

Given that there are 64 unit cubes painted red on all faces.
After the cube of side 4 units is formed, this larger cube is painted blue on all its faces. Hence, there will be 8 unit cubes (at the corners) which are painted Blue in three faces. There will be 24 cubes painted Blue on two faces. There will be 24 cubes painted Blue on one face. There will be 8 unit cubes painted Red on all its faces.

With the 8 unit cubes painted Blue on three faces, the cube of side 2 units can be formed such that the entire visible area of this cube is Blue.

Hence, there will be 24 cubes painted Blue on two faces, 24 cubes painted Blue on one face and 8 cubes painted Red on all faces.

For the entire visible area of the cube of side 3 units to be Blue, we need 8 cubes with Blue on at least three faces (at corners); 12 cubes painted Blue on at least 2 faces (on the edges); 6 cubes painted Blue on at least one face (at the centre of each face); and 1 cube at the centre which may or may not be painted Blue. However, there are no more cubes painted Blue on three faces. Hence, to maximize the area painted Blue, these 8 cubes will have to be substituted by cubes painted Blue on 2 faces.

Only the unit cube at the centre of the larger cube can be painted Red on all its faces.
Hence, the answer is one. Ans: (1)

undefined

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

A large cube of side four units is formed using 64 unit cubes, each of which is painted red on all its faces. After forming the large cube, all the faces of the large cube are painted blue. The large cube is then disassembled into unit cubes. One cube of side two units is formed using these unit cubes such that the maximum possible visible area of this cube is blue. With the remaining unit cubes, a cube of side three units is formed such that the maximum possible visible area of this cube is blue. The remaining unit cubes are referred to as unutilized cubes.

Q8. DIRECTIONS *for questions 5 to 8:* Type in your answer in the input box provided below the question.

If another cube of side two units is formed using some of the unutilized cubes, what is the maximum number of faces of this cube that are completely blue?

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	**77**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**124**
% of students who attempted this question	**10.87**
% of students who got the question right of those who attempted	**16.1**

Video Solution

Text Solution

Given that there are 64 unit cubes painted red on all faces.
After the cube of side 4 units is formed, this larger cube is painted blue on all its faces. Hence, there will be 8 unit cubes (at the corners) which are painted Blue in three faces. There will be 24 cubes painted Blue on two faces. There will be 24 cubes painted Blue on one face. There will be 8 unit cubes painted Red on all its faces.

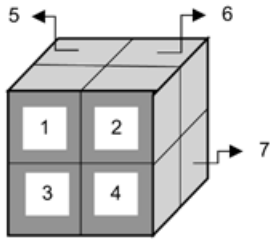
With the 8 unit cubes painted Blue on three faces, the cube of side 2 units can be formed such that the entire visible area of this cube is Blue.

Hence, there will be 24 cubes painted Blue on two faces, 24 cubes painted Blue on one face and 8 cubes painted Red on all faces.

For the entire visible area of the cube of side 3 units to be Blue, we need 8 cubes with Blue on at least three faces (at corners); 12 cubes painted Blue on at least 2 faces (on the edges); 6 cubes painted Blue on at least one face (at the centre of each face); and 1 cube at the centre which may or may not be painted Blue. However, there are no more cubes painted Blue on three faces. Hence, to maximize the area painted Blue, these 8 cubes will have to be substituted by cubes painted Blue on 2 faces.

Since there are no unit cubes painted Blue on all its faces, all the faces of this cube cannot be Blue.
The maximum number of unutilized unit cubes painted Blue on two faces left = 24 – 20 = 4
Number of unutilized unit cubes painted Blue on one face remaining = 24 – 6 = 18

Let the following diagram represent the 8 cubes used for reating the larger cube:



The cubes labelled 1, 2, 3 and 4 can be the unit cubes painted Blue on two faces. The second face painted Blue for cube 1 and cube 2 can be facing the top, while the second face painted Blue for cube 3 and cube 4 can be facing the bottom.
Cubes 5, 6, 7 and 8 can be cubes that are painted Blue on one face placed in such a way that the top face and bottom face of the cube are also completely Blue.
Hence, there can be a maximum of three faces of the cube of side 2 units that are completely Blue. Ans: (3)

undefined

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

In a conference hall, there are exactly six switches – Switch 1 through Switch 6 – and two lights – Light A and Light B – with each light connected to exactly three distinct switches. Changing the state (from ON to OFF or from OFF to ON) of any one of the three switches connected to a light exactly once will change the state of that light (from ON to OFF or from OFF to ON). When all the six switches are in the OFF position, the two lights are both OFF.

If only switches 1, 3 and 5 are ON, only light A is ON; if only switches 2, 5 and 6 are ON, only light B is ON; if only switches 1, 3 and 6 are ON, only light B is OFF.

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

Which of the following switches is connected to Light B?

○ a) **Switch 1**

b) **Switch 4**

c) **Switch 5**

d) **Switch 6**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**261**
Avg. time spent on this question by all students	**359**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**418**
% of students who attempted this question	**36.88**
% of students who got the question right of those who attempted	**38.71**

Video Solution

Text Solution

Given that if 1, 3 and 5 are ON, only light A is ON. This implies that, of the switches 1, 3 and 5, either one switch or three switches can operate light A.
Consider that light A can be operated by all three of 1, 3 and 5. Hence, 2, 4 and 6 can operate light B. From the second condition, if 2, 5 and 6 are ON, only light B is ON. Since 2 and 6 belong to light B, light B must be OFF in this case. Hence, this case is not possible.
From the second condition, all of 2, 5 and 6 can operate light B or only one of the three can operate light B. If all of the three switches operate light B, 1, 3 and 4 operate light A. But this will violate the first condition (two lights are ON and hence, light A will be OFF).
Hence, only one switch among 1, 3 and 5 must operate light A and only one switch among 2, 5 and 6 can operate light B.
If switch 1 operates light A, 3 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 1: ***Light A can be operated by 1, 2 and 6; light B can be operated by 3, 4 and 5.***
If switch 3 operates light A, 1 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 2: ***Light A can be operated by 2, 3 and 6; light B can be operated by 1, 4 and 5***.
If switch 5 operates light A, 1 and 3 must operate light B. In this case, either of 2 or 6 can operate light B.
Hence, two cases are possible:

Case 3: ***Light A can be operated by 4, 5 and 6; light B can be operated by 1, 2 and 3.***

Case 4: ***Light A can be operated by 2, 4, 5; light B can be operated by 1, 3 and 6.***

Also, if switches 1, 3 and 6 are ON, only light B is OFF. This is not possible in first case as light A will be OFF and light B will be ON.

This will not be possible in the second case because light A will be OFF and light B will be ON.

This is possible in the third case because light A will be ON and light B will be OFF.
This is not possible in the fourth case because Light A will be OFF and light B will be ON.
Hence, only case 3 is possible. Light A can be operated by switches 4, 5 and 6. Light B can be operated by switches 1, 2 and 3.

Switch 1 can be used to operate light B. Choice (A)

undefined

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

In a conference hall, there are exactly six switches – Switch 1 through Switch 6 – and two lights – Light A and Light B – with each light connected to exactly three distinct switches. Changing the state (from ON to OFF or from OFF to ON) of any one

of the three switches connected to a light exactly once will change the state of that light (from ON to OFF or from OFF to ON). When all the six switches are in the OFF position, the two lights are both OFF.

If only switches 1, 3 and 5 are ON, only light A is ON; if only switches 2, 5 and 6 are ON, only light B is ON; if only switches 1, 3 and 6 are ON, only light B is OFF.

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

Five of the six switches were ON, while the sixth was OFF. If only light B was ON, which of the following can be the switch that is OFF?

- a) **Switch 1**
- b) **Switch 2**
- c) **Switch 3**
- d) **Switch 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	**104**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**85**
% of students who attempted this question	**27.78**
% of students who got the question right of those who attempted	**61.36**

Video Solution

Text Solution

Given that if 1, 3 and 5 are ON, only light A is ON. This implies that, of the switches 1, 3 and 5, either one switch or three switches can operate light A.
Consider that light A can be operated by all three of 1, 3 and 5. Hence, 2, 4 and 6 can operate light B. From the second condition, if 2, 5 and 6 are ON, only light B is ON. Since 2 and 6 belong to light B, light B must be OFF in this case. Hence, this case is not possible.
From the second condition, all of 2, 5 and 6 can operate light B or only one of the three can operate light B. If all of the three switches operate light B, 1, 3 and 4 operate light A. But this will violate the first condition (two lights are ON and hence, light A will be OFF).
Hence, only one switch among 1, 3 and 5 must operate light A and only one switch among 2, 5 and 6 can operate light B.
If switch 1 operates light A, 3 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 1: ***Light A can be operated by 1, 2 and 6; light B can be operated by 3, 4 and 5.***
If switch 3 operates light A, 1 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 2: ***Light A can be operated by 2, 3 and 6; light B can be operated by 1, 4 and 5.***
If switch 5 operates light A, 1 and 3 must operate light B. In this case, either of 2 or 6 can operate light B.
Hence, two cases are possible:

Case 3: ***Light A can be operated by 4, 5 and 6; light B can be operated by 1, 2 and 3.***

Case 4: ***Light A can be operated by 2, 4, 5; light B can be operated by 1, 3 and 6.***

Also, if switches 1, 3 and 6 are ON, only light B is OFF. This is not possible in first case as light A will be OFF and light B will be ON.

This will not be possible in the second case because light A will be OFF and light B will be ON.

This is possible in the third case because light A will be ON and light B will be OFF.
This is not possible in the fourth case because Light A will be OFF and light B will be ON.
Hence, only case 3 is possible. Light A can be operated by switches 4, 5 and 6. Light B can be operated by switches 1, 2 and 3.

Five switches were ON and one switch was OFF. Light B was ON. For light B to be ON, all three switches operating light B must be ON. Hence, switches 1, 2 and 3 will be ON. One of the switches operating light A must be OFF. Hence, one of 4, 5 and 6 must be OFF. From the given options, switch 4 can be OFF. Choice (D)

undefined

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

In a conference hall, there are exactly six switches – Switch 1 through Switch 6 – and two lights – Light A and Light B – with each light connected to exactly three distinct switches. Changing the state (from ON to OFF or from OFF to ON) of any one of the three switches connected to a light exactly once will change the state of that light (from ON to OFF or from OFF to ON). When all the six switches are in the OFF position, the two lights are both OFF.

If only switches 1, 3 and 5 are ON, only light A is ON; if only switches 2, 5 and 6 are ON, only light B is ON; if only switches 1, 3 and 6 are ON, only light B is OFF.

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

Ram, a five-year-old kid, entered the conference hall and, on entering the hall, he saw that light A was **ON**, while light B was **OFF**.

He pressed (i.e., changed the state of) switch 1 once, switch 2 twice, switch 3 thrice and switch 4, four times and so on. Which of the following is true after Ram pressed all the switches in this manner?

- a) **Light A is ON and light B is OFF.**
- b) **Light A is ON and light B is ON.**
- c) **Light A is OFF and light B is OFF.**

d) **Light A is OFF and light B is ON.**

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	**141**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**141**
% of students who attempted this question	**20.74**
% of students who got the question right of those who attempted	**66.03**

Video Solution

Text Solution

Given that if 1, 3 and 5 are ON, only light A is ON. This implies that, of the switches 1, 3 and 5, either one switch or three switches can operate light A.
Consider that light A can be operated by all three of 1, 3 and 5. Hence, 2, 4 and 6 can operate light B. From the second condition, if 2, 5 and 6 are ON, only light B is ON. Since 2 and 6 belong to light B, light B must be OFF in this case. Hence, this case is not possible.
From the second condition, all of 2, 5 and 6 can operate light B or only one of the three can operate light B. If all of the three switches operate light B, 1, 3 and 4 operate light A. But this will violate the first condition (two lights are ON and hence, light A will be OFF).
Hence, only one switch among 1, 3 and 5 must operate light A and only one switch among 2, 5 and 6 can operate light B.
If switch 1 operates light A, 3 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 1: ***Light A can be operated by 1, 2 and 6; light B can be operated by 3, 4 and 5.***
If switch 3 operates light A, 1 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 2: ***Light A can be operated by 2, 3 and 6; light B can be operated by 1, 4 and 5***.
If switch 5 operates light A, 1 and 3 must operate light B. In this case, either of 2 or 6 can operate light B.
Hence, two cases are possible:

Case 3: ***Light A can be operated by 4, 5 and 6; light B can be operated by 1, 2 and 3.***

Case 4: ***Light A can be operated by 2, 4, 5; light B can be operated by 1, 3 and 6.***

Also, if switches 1, 3 and 6 are ON, only light B is OFF. This is not possible in first case as light A will be OFF and light B will be ON.

This will not be possible in the second case because light A will be OFF and light B will be ON.

This is possible in the third case because light A will be ON and light B will be OFF.
This is not possible in the fourth case because Light A will be OFF and light B will be ON.
Hence, only case 3 is possible. Light A can be operated by switches 4, 5 and 6. Light B can be operated by switches 1, 2 and 3.

Pressing any switch an even number of times will not change the state of the light. Hence, there will be no effect of pressing switches 2, 4 and 6. Hence, the given situation is equivalent to pressing switches 1, 3 and 5 once.
Since light A was initially ON, pressing 5 once will turn light A OFF.
Since light B was initially OFF, pressing 1 and 3 will keep light B OFF.
Hence, both light A and light B will be OFF. Choice (C)

undefined

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

In a conference hall, there are exactly six switches – Switch 1 through Switch 6 – and two lights – Light A and Light B – with each light connected to exactly three distinct switches. Changing the state (from ON to OFF or from OFF to ON) of any one

of the three switches connected to a light exactly once will change the state of that light (from ON to OFF or from OFF to ON). When all the six switches are in the OFF position, the two lights are both OFF.

If only switches 1, 3 and 5 are ON, only light A is ON; if only switches 2, 5 and 6 are ON, only light B is ON; if only switches 1, 3 and 6 are ON, only light B is OFF.

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

Ram, a five-year-old kid, entered the conference hall and, on entering the hall, he saw that light A was **ON**, while light B was also **ON**.

He pressed (i.e., changed the state of) switch 1 once, switch 2 twice, switch 3 thrice and switch 4, four times and so on. After this, he found that exactly one of the switches was now ON. Which of the following switches were definitely ON when he entered the hall?

- a) **Switch 3 and switch 5**
- b) **Switch 3**
- c) **Switch 1 and switch 5**
- d) **Switch 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	**162**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**178**
% of students who attempted this question	**13.16**
% of students who got the question right of those who attempted	**42.36**

Video Solution

Text Solution

Given that if 1, 3 and 5 are ON, only light A is ON. This implies that, of the switches 1, 3 and 5, either one switch or three switches can operate light A.
Consider that light A can be operated by all three of 1, 3 and 5. Hence, 2, 4 and 6 can operate light B. From the second condition, if 2, 5 and 6 are ON, only light B is ON. Since 2 and 6 belong to light B, light B must be OFF in this case. Hence, this case is not possible.
From the second condition, all of 2, 5 and 6 can operate light B or only one of the three can operate light B. If all of the three switches operate light B, 1, 3 and 4 operate light A. But this will violate the first condition (two lights are ON and hence, light A will be OFF).
Hence, only one switch among 1, 3 and 5 must operate light A and only one switch among 2, 5 and 6 can operate light B.
If switch 1 operates light A, 3 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 1: ***Light A can be operated by 1, 2 and 6; light B can be operated by 3, 4 and 5.***
If switch 3 operates light A, 1 and 5 must operate light B. Since 5 operates light B, 2 and 6 must operate light A.

Case 2: ***Light A can be operated by 2, 3 and 6; light B can be operated by 1, 4 and 5***.
If switch 5 operates light A, 1 and 3 must operate light B. In this case, either of 2 or 6 can operate light B.
Hence, two cases are possible:

Case 3: ***Light A can be operated by 4, 5 and 6; light B can be operated by 1, 2 and 3.***

Case 4: ***Light A can be operated by 2, 4, 5; light B can be operated by 1, 3 and 6.***

Also, if switches 1, 3 and 6 are ON, only light B is OFF. This is not possible in first case as light A will be OFF and light B will be ON.

This will not be possible in the second case because light A will be OFF and light B will be ON.

This is possible in the third case because light A will be ON and light B will be OFF.
This is not possible in the fourth case because Light A will be OFF and light B will be ON.
Hence, only case 3 is possible. Light A can be operated by switches 4, 5 and 6. Light B can be operated by switches 1, 2 and 3.

From the given information, we can infer that Ram changed the state of switch 1, switch 3 and switch 5. Switches 2, 4, and 6 did not change state.
After this, only one of the switches was in ON position.
Let us consider only the switches that operate light A.
Initially, if light A is ON, consider that only 4 is ON. After he operated the switches, both 4 and 5 will still be ON. This is not possible as two switches are ON.
If light A is ON, let only 5 be ON. After he operated the switches, all of switches 4, 5 and 6 will be OFF. ***This case is possible.***
Let only 6 be ON. After he operated the switches, 5 and 6 will be ON. This is not possible as two switches are ON.
Let all of 4, 5 and 6 be ON. After he operated the switches, 4 and 6 will be ON. This is not possible as two switches are ON.
Hence, for light A to be ON, only one case is possible – only 5 was ON initially. After Ram pressed the switches, all of 4, 5 and 6 were OFF.
Consider the switches that operate light B.
If light B is initially ON, all the switches that operate light B can be ON. After Ram operated the switches, only switch 2 will be ON. This is one possible case.
Let 1 be ON. After he operated the switches, only switch 3 will be ON. Hence, this is also possible.
Let 2 be ON. After he operated the switches, switches 1 and 3 will be ON. Hence, this is not possible.
Let 3 be ON. After he operated the switches, only switch 1 will be ON. Hence, this is also possible.
For light B, all of 1, 2 and 3 can be ON; only switch 1 can be ON; only switch 3 can be ON.
Hence, initially only switch 5 will be definitely ON in any case. Choice (D)

undefined

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

Rathore, an army major, has a safe which contains important documents. The safe can be opened using a six-digit numeric passcode (each digit can be any number from 0 to 9). For security purpose, he changes the passcode every week in the following manner:

i. He adds the first and second digits of his current passcode, the second and third digits, the third and fourth digits, the fourth and fifth digits, the fifth and sixth digits.

ii. The first sum is the first digit of his new passcode, the second sum is the second digit and so on till the fifth sum, which is the fifth digit of his new passcode.

iii. If any of the sums is greater than or equal to 10, he uses only the units digit of the sum in his new passcode.

iv. The sixth digit of his new passcode is the same as the first digit of his current passcode.

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

If the passcode of the safe during a particular week was 786958, what would have been the passcode two weeks earlier?

Your Answer:354520 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**706**
Avg. time spent on this question by all students	**332**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**333**
% of students who attempted this question	**34.05**
% of students who got the question right of those who attempted	**65.04**

Video Solution

Text Solution

The passcode during a week = 786958
The first digit of the previous passcode must be 8.
The sum of the first and second digit must be 7 or 17.
Since the first digit is 8, the sum must be 17. Hence, the second digit is 9.
Similarly, the next digits will be 9, 7, 2, 3.
Hence, the previous passcode must be 899723.
The first digit of the passcode before this must be 3.
The second digit must be 5 (as the sum of first and second digits is 8).
The third digit must be 4 (as the sum of second and third digits is 9).
The next digits will be 5, 2, 0.
The passcode two week before the given week will be 354520. Ans: (354520)

undefined

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

Rathore, an army major, has a safe which contains important documents. The safe can be opened using a six-digit numeric passcode (each digit can be any number from 0 to 9). For security purpose, he changes the passcode every week in the following manner:

i. He adds the first and second digits of his current passcode, the second and third digits, the third and fourth digits, the fourth and fifth digits, the fifth and sixth digits.

ii. The first sum is the first digit of his new passcode, the second sum is the second digit and so on till the fifth sum, which is the fifth digit of his new passcode.

iii. If any of the sums is greater than or equal to 10, he uses only the units digit of the sum in his new passcode.

iv. The sixth digit of his new passcode is the same as the first digit of his current passcode.

Q14. DIRECTIONS *for questions 14 to 16:* Select the correct alternative from the given choices.

If the first five digits of the passcode during a particular week was 17718, which of the following could have been the passcode two weeks earlier?

- a) **564789**
- b) **741869**
- c) **324796** **Your answer is correct**
- d) **914756**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**177**
Avg. time spent on this question by all students	**198**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**199**
% of students who attempted this question	**27.6**
% of students who got the question right of those who attempted	**88.1**

Video Solution

Text Solution

We can calculate the passcode after two weeks for each of the given options:
Option A: Given passcode = 564789
Next passcode = 101575
Next passcode = 116221
Hence, this cannot be the passcode two weeks earlier.
Option B: Given passcode = 741869
Next passcode = 159457
Next passcode = 643921
Hence, this also cannot be the passcode two weeks earlier.
Option C: Given passcode = 324796
Next passcode = 561653
Next passcode = 177185
Hence, this is possible.
Option D: Given passcode = 914756
Next passcode = 051219
Next passcode = 563300
Hence, this also cannot be the passcode two weeks earlier.
Therefore, option C is the passcode two weeks earlier. Choice (C)

undefined

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

Rathore, an army major, has a safe which contains important documents. The safe can be opened using a six-digit numeric passcode (each digit can be any number from 0 to 9). For security purpose, he changes the passcode every week in the following manner:

i. He adds the first and second digits of his current passcode, the second and third digits, the third and fourth digits, the fourth and fifth digits, the fifth and sixth digits.

ii. The first sum is the first digit of his new passcode, the second sum is the second digit and so on till the fifth sum, which is the fifth digit of his new passcode.

iii. If any of the sums is greater than or equal to 10, he uses only the units digit of the sum in his new passcode.

iv. The sixth digit of his new passcode is the same as the first digit of his current passcode.

Q15. DIRECTIONS *for questions 14 to 16:* Select the correct alternative from the given choices.

During two consecutive weeks, Rathore realized that the passcode during the two weeks was the same. Which of the following can be the sum of the first three digits of the passcode?

- a) **0** **Your answer is correct**
- b) **1**
- c) **6**
- d) **9**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**229**
Avg. time spent on this question by all students	**114**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**121**
% of students who attempted this question	**19.7**
% of students who got the question right of those who attempted	**77.47**

Video Solution

Text Solution

Let abcdef be the password during a particular week.
Since the passcode did not change the next week, the first digit of his passcode the next week must also be a.
Since this must be a + b and b cannot be greater than 9, b must be 0.
Since second digit of the new passcode is b, b + c = b. Hence, c must also be 0.
Similarly, d, e and f must also be 0.
Further, the last digit of his new passcode must be a (from (iv)). But this must also be equal to f (as the passcode did not change). Hence, a must also be 0.
Therefore, the passcode of Rathore must be 000000.
Sum of the first three digits = 0 Choice (A)

undefined

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

DIRECTIONS *for questions 14 to 16:* Answer the questions on the basis of the information given below.

Rathore, an army major, has a safe which contains important documents. The safe can be opened using a six-digit numeric passcode (each digit can be any number from 0 to 9). For security purpose, he changes the passcode every week in the following manner:

i. He adds the first and second digits of his current passcode, the second and third digits, the third and fourth digits, the fourth and fifth digits, the fifth and sixth digits.

ii. The first sum is the first digit of his new passcode, the second sum is the second digit and so on till the fifth sum, which is the fifth digit of his new passcode.

iii. If any of the sums is greater than or equal to 10, he uses only the units digit of the sum in his new passcode.

iv. The sixth digit of his new passcode is the same as the first digit of his current passcode.

Q16. DIRECTIONS *for questions 14 to 16:* Select the correct alternative from the given choices.

If the last five digits of the passcode during a particular week was 55555, how many possibilities exist for the passcode that he sets the next week?

- a) **81**
- b) **100**
- c) **9**
- d) **10** **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**260**
Avg. time spent on this question by all students	**113**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**116**
% of students who attempted this question	**26.4**
% of students who got the question right of those who attempted	**68.01**

Video Solution

Text Solution

Given the last five digits of the passcode = 55555.
The first digit can be anything from 0 to 9.
The first digit of the new passcode can also be any digit from 0 to 9.
The second, third, fourth and fifth digits must be 0 (from the given digits).
The last digit can also be any digit from 0 to 9.
But for any first digit of the new password, the last digit can take only one value.
(if first digit is 0, the first digit of old passcode must be 5 and the last digit of the new passcode must be 5. If the first digit of new passcode is 1, the first digit of old passcode and last digit of new passcode must be 6 and so on.)
Hence, the new passcode can assume ten possibilities. Choice (D)

undefined

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

Anusha, a college student, studied the financials of twelve companies, A through L, for the year 2015. She plotted the twelve companies in a graph with the Revenue along the horizontal axis and the Profit along the vertical axis. She, then, used certain criteria to classify each company as either High Revenue or Low Revenue and as either High Profit or Low Profit. Using these criteria, she divided the graph in to four quadrants such that the top right quadrant has High Revenue-High Profit (HRHP) companies, the top left quadrant has Low Revenue-High Profit (LRHP) companies, the bottom right quadrant has High Revenue-Low Profit (HRLP) companies and the bottom left quadrant has Low Revenue-Low Profit (LRLP) companies.

The graph that she made is provided below.

In 2017, Anusha repeated the same exercise for the same twelve companies. She used the same criteria as she did in 2015 for classifying the companies and plotted a similar graph with the four quadrants. She found that

i. exactly 7 companies were in a different quadrant in 2017 as compared to 2015.

ii. only C, E, G, H, J and K had a higher profit in 2017 as compared to that in 2015.

iii. only A, C, G, H, K and L had a higher revenue in 2017 as compared to that in 2015.

Q17. DIRECTIONS *for questions 17 and 18:* Select the correct alternative from the given choices.

In which quadrant was F in the year 2017?

- a) **High Revenue Low Profit**
- b) **Low Revenue Low Profit**
- c) **High Revenue High Profit**
- d) **Low Revenue High Profit**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**19**
Avg. time spent on this question by all students	**426**
Difficulty Level	**M**

Time spent / Accuracy Analysis

Avg. time spent on this question by students who got this question right	**451**
% of students who attempted this question	**29.37**
% of students who got the question right of those who attempted	**64.33**

Video Solution

Text Solution

From (i), 7 companies shifted quadrants, while 5 companies did not.
From (ii), ,C, E, G, H, J and K had higher profits in 2017.
From (iii), A, C, G, H, K and L had higher revenues in 2017.
In 2015, C belonged to HRHP quadrant. In 2017, it had higher revenue and higher profit. Hence, this could not have moved to any other quadrant. Therefore, C belonged to HRHP in 2017 as well.

In 2015, E belonged to LRHP quadrant. In 2017, E had a higher profit but not higher revenue. Hence, E cannot move to either HRHP or HRLP or LRLP. Hence, E must have belonged to LRHP in 2017 as well.
Among the other companies mentioned in (ii), G, H, J and K all could have moved from one quadrant to another.
Similarly, A could have shifted quadrants. For L, the revenue increased but the profit did not increase. Since L was in HRLP quadrant, L will remain in HRLP quadrant in 2017.

The companies which do not appear in either (ii) or (iii) are B, D, F and I. For all these four companies, neither the revenue nor the profit increased.
For B and I, as they were in LRLP in 2015, they will be LRLP in 2017 as well.
We have identified five companies which could not have shifted quadrants – C, E, L, B and I.
Hence, the other 7 companies should have shifted quadrants.
A belonged to HRHP in 2015. Since its revenue increased but profit did not, it must have moved to HRLP.
D belonged to HRHP in 2015. Since neither revenue nor profit increased, it could have moved to LRHP/HRLP/LRLP.
F belonged to LRHP in 2015. Since neither revenue nor profit increased, it must have moved to LRLP.
G belonged to HRLP in 2015. Since both revenue and profit increased, it must have moved to HRHP.
H belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.
J belonged to HRLP. Since its profit increased but revenue did not, it could have moved to LRHP/HRHP.
K belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.

The following table provides the classification of each company in 2015 and 2017 (with the companies that did not change quadrants highlighted in Grey):

Company	2015	2017
A	HRHP	HRLP
B	LRLP	LRLP
C	HRHP	HRHP
D	HRHP	HRLP/LRHP/LRLP
E	LRHP	LRHP
F	LRHP	LRLP
G	HRLP	HRHP
H	LRLP	HRLP/LRHP/HRHP
I	LRLP	LRLP
J	HRLP	LRHP/HRHP/LRLP
K	LRLP	HRLP/LRHP/HRHP
L	HRLP	HRLP

F was in the Low Revenue Low Profit quadrant in the year 2017. Choice (B)

undefined

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

Anusha, a college student, studied the financials of twelve companies, A through L, for the year 2015. She plotted the twelve companies in a graph with the Revenue along the horizontal axis and the Profit along the vertical axis. She, then, used certain criteria to classify each company as either High Revenue or Low Revenue and as either High Profit or Low Profit.

Using these criteria, she divided the graph in to four quadrants such that the top right quadrant has High Revenue-High Profit (HRHP) companies, the top left quadrant has Low Revenue-High Profit (LRHP) companies, the bottom right quadrant has High Revenue-Low Profit (HRLP) companies and the bottom left quadrant has Low Revenue-Low Profit (LRLP) companies.

The graph that she made is provided below.

In 2017, Anusha repeated the same exercise for the same twelve companies. She used the same criteria as she did in 2015 for classifying the companies and plotted a similar graph with the four quadrants. She found that

i. exactly 7 companies were in a different quadrant in 2017 as compared to 2015.

ii. only C, E, G, H, J and K had a higher profit in 2017 as compared to that in 2015.

iii. only A, C, G, H, K and L had a higher revenue in 2017 as compared to that in 2015.

Q18. DIRECTIONS *for questions 17 and 18:* Select the correct alternative from the given choices.

For which of the following companies is its quadrant in 2017 the same as that in 2015?

a) **D**

b) **K**

c) **L**

d) **F**

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	**79**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**75**
% of students who attempted this question	**29.46**
% of students who got the question right of those who attempted	**75.29**

Video Solution

Text Solution

From (i), 7 companies shifted quadrants, while 5 companies did not.
From (ii), ,C, E, G, H, J and K had higher profits in 2017.
From (iii), A, C, G, H, K and L had higher revenues in 2017.
In 2015, C belonged to HRHP quadrant. In 2017, it had higher revenue and higher profit. Hence, this could not have moved to any other quadrant. Therefore, C belonged to HRHP in 2017 as well.

In 2015, E belonged to LRHP quadrant. In 2017, E had a higher profit but not higher revenue. Hence, E cannot move to either HRHP or HRLP or LRLP. Hence, E must have belonged to LRHP in 2017 as well.
Among the other companies mentioned in (ii), G, H, J and K all could have moved from one quadrant to another.
Similarly, A could have shifted quadrants. For L, the revenue increased but the profit did not increase. Since L was in HRLP quadrant, L will remain in HRLP quadrant in 2017.

The companies which do not appear in either (ii) or (iii) are B, D, F and I. For all these four companies, neither the revenue nor the profit increased.
For B and I, as they were in LRLP in 2015, they will be LRLP in 2017 as well.
We have identified five companies which could not have shifted quadrants – C, E, L, B and I.
Hence, the other 7 companies should have shifted quadrants.
A belonged to HRHP in 2015. Since its revenue increased but profit did not, it must have moved to HRLP.
D belonged to HRHP in 2015. Since neither revenue nor profit increased, it could have moved to LRHP/HRLP/LRLP.
F belonged to LRHP in 2015. Since neither revenue nor profit increased, it must have moved to LRLP.
G belonged to HRLP in 2015. Since both revenue and profit increased, it must have moved to HRHP.
H belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.
J belonged to HRLP. Since its profit increased but revenue did not, it could have moved to LRHP/HRHP.
K belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.

The following table provides the classification of each company in 2015 and 2017 (with the companies that did not change quadrants highlighted in Grey):

Company	2015	2017
A	HRHP	HRLP
B	LRLP	LRLP
C	HRHP	HRHP
D	HRHP	HRLP/LRHP/LRLP
E	LRHP	LRHP
F	LRHP	LRLP
G	HRLP	HRHP
H	LRLP	HRLP/LRHP/HRHP
I	LRLP	LRLP
J	HRLP	LRHP/HRHP/LRLP
K	LRLP	HRLP/LRHP/HRHP
L	HRLP	HRLP

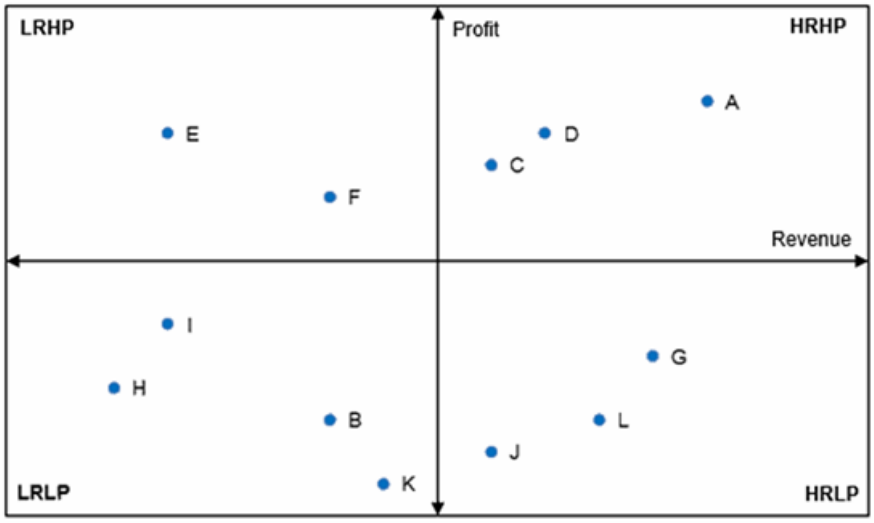
The quadrant of L is the same in 2015 and 2017. Choice (C)

undefined

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

Anusha, a college student, studied the financials of twelve companies, A through L, for the year 2015. She plotted the twelve companies in a graph with the Revenue along the horizontal axis and the Profit along the vertical axis. She, then, used certain criteria to classify each company as either High Revenue or Low Revenue and as either High Profit or Low Profit. Using these criteria, she divided the graph in to four quadrants such that the top right quadrant has High Revenue-High Profit (HRHP) companies, the top left quadrant has Low Revenue-High Profit (LRHP) companies, the bottom right quadrant has High Revenue-Low Profit (HRLP) companies and the bottom left quadrant has Low Revenue-Low Profit (LRLP) companies.

The graph that she made is provided below.



In 2017, Anusha repeated the same exercise for the same twelve companies. She used the same criteria as she did in 2015 for classifying the companies and plotted a similar graph with the four quadrants. She found that

i. exactly 7 companies were in a different quadrant in 2017 as compared to 2015.

ii. only C, E, G, H, J and K had a higher profit in 2017 as compared to that in 2015.

iii. only A, C, G, H, K and L had a higher revenue in 2017 as compared to that in 2015.

Q19. DIRECTIONS *for question 19:* Type in your answer in the input box provided below the question.

It is known that, for exactly four pairs of companies, the quadrant to which the two companies in the pair belonged was the same in 2015 and 2017. Further, in 2017, H was in the same quadrant as A.

How many companies would have been in High Revenue High Profit quadrant in 2017?

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**127**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**154**
% of students who attempted this question	**19.13**
% of students who got the question right of those who attempted	**18.62**

Video Solution

Text Solution

From (i), 7 companies shifted quadrants, while 5 companies did not.
From (ii), ,C, E, G, H, J and K had higher profits in 2017.
From (iii), A, C, G, H, K and L had higher revenues in 2017.
In 2015, C belonged to HRHP quadrant. In 2017, it had higher revenue and higher profit. Hence, this could not have moved to any other quadrant. Therefore, C belonged to HRHP in 2017 as well.

In 2015, E belonged to LRHP quadrant. In 2017, E had a higher profit but not higher revenue. Hence, E cannot move to either HRHP or HRLP or LRLP. Hence, E must have belonged to LRHP in 2017 as well.
Among the other companies mentioned in (ii), G, H, J and K all could have moved from one quadrant to another.
Similarly, A could have shifted quadrants. For L, the revenue increased but the profit did not increase. Since L was in HRLP quadrant, L will remain in HRLP quadrant in 2017.

The companies which do not appear in either (ii) or (iii) are B, D, F and I. For all these four companies, neither the revenue nor the profit increased.
For B and I, as they were in LRLP in 2015, they will be LRLP in 2017 as well.
We have identified five companies which could not have shifted quadrants – C, E, L, B and I.
Hence, the other 7 companies should have shifted quadrants.
A belonged to HRHP in 2015. Since its revenue increased but profit did not, it must have moved to HRLP.
D belonged to HRHP in 2015. Since neither revenue nor profit increased, it could have moved to LRHP/HRLP/LRLP.
F belonged to LRHP in 2015. Since neither revenue nor profit increased, it must have moved to LRLP.
G belonged to HRLP in 2015. Since both revenue and profit increased, it must have moved to HRHP.
H belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.
J belonged to HRLP. Since its profit increased but revenue did not, it could have moved to LRHP/HRHP.
K belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.

The following table provides the classification of each company in 2015 and 2017 (with the companies that did not change quadrants highlighted in Grey):

Company	2015	2017
A	HRHP	HRLP
B	LRLP	LRLP
C	HRHP	HRHP
D	HRHP	HRLP/LRHP/LRLP
E	LRHP	LRHP
F	LRHP	LRLP
G	HRLP	HRHP
H	LRLP	HRLP/LRHP/HRHP
I	LRLP	LRLP
J	HRLP	LRHP/HRHP/LRLP
K	LRLP	HRLP/LRHP/HRHP
L	HRLP	HRLP

In 2015, in HRHP quadrant, A, C and D belonged to the same quadrant. Of these A and D shifted quadrants. Observing the table above, we can see that there is one possible pair (A, D).
In 2015, in LRHP quadrant, E and F belonged to the same quadrant. However, in 2017, it is not possible that they belong to the same quadrant.
In 2015, in LRLP quadrant, B, I, K, H belong to the same quadrant. In this quadrant, there are two possible pairs: (B, I) and (H, K).
In 2017, in HRLP quadrant, there is only one possible pair (G, J).
Hence, there are only four possible pairs in total and all these four pairs belong to the same quadrant in 2017 as well.
D belongs to HRLP; J belongs to HRHP. Since H and A belong to the same quadrant, H and K both belong to HRLP.
The number of companies in HRHP will be three – G, J and C. Ans: (3)

undefined

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

Anusha, a college student, studied the financials of twelve companies, A through L, for the year 2015. She plotted the twelve companies in a graph with the Revenue along the horizontal axis and the Profit along the vertical axis. She, then, used certain criteria to classify each company as either High Revenue or Low Revenue and as either High Profit or Low Profit. Using these criteria, she divided the graph in to four quadrants such that the top right quadrant has High Revenue-High Profit (HRHP) companies, the top left quadrant has Low Revenue-High Profit (LRHP) companies, the bottom right quadrant has High Revenue-Low Profit (HRLP) companies and the bottom left quadrant has Low Revenue-Low Profit (LRLP) companies.

The graph that she made is provided below.

In 2017, Anusha repeated the same exercise for the same twelve companies. She used the same criteria as she did in 2015 for classifying the companies and plotted a similar graph with the four quadrants. She found that

i. exactly 7 companies were in a different quadrant in 2017 as compared to 2015.

ii. only C, E, G, H, J and K had a higher profit in 2017 as compared to that in 2015.

iii. only A, C, G, H, K and L had a higher revenue in 2017 as compared to that in 2015.

Q20. DIRECTIONS *for question 20:* Select the correct alternative from the given choices.

It is known that, for exactly four pairs of companies, the quadrant to which the two companies in each pair belonged was the same in 2015 and 2017. Further, in 2017, H was in the same quadrant as A.

Which of the following pairs of companies belong to the same quadrant in 2017?

- a) **(K, L)**
- b) **(D, F)**
- c) **(C, F)**
- d) **None of the above**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**69**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**67**
% of students who attempted this question	**15.37**
% of students who got the question right of those who attempted	**26.65**

Video Solution

Text Solution

From (i), 7 companies shifted quadrants, while 5 companies did not.
From (ii), ,C, E, G, H, J and K had higher profits in 2017.
From (iii), A, C, G, H, K and L had higher revenues in 2017.
In 2015, C belonged to HRHP quadrant. In 2017, it had higher revenue and higher profit. Hence, this could not have moved to any other quadrant. Therefore, C belonged to HRHP in 2017 as well.

In 2015, E belonged to LRHP quadrant. In 2017, E had a higher profit but not higher revenue. Hence, E cannot move to either HRHP or HRLP or LRLP. Hence, E must have belonged to LRHP in 2017 as well.
Among the other companies mentioned in (ii), G, H, J and K all could have moved from one quadrant to another.
Similarly, A could have shifted quadrants. For L, the revenue increased but the profit did not increase. Since L was in HRLP quadrant, L will remain in HRLP quadrant in 2017.

The companies which do not appear in either (ii) or (iii) are B, D, F and I. For all these four companies, neither the revenue nor the profit increased.
For B and I, as they were in LRLP in 2015, they will be LRLP in 2017 as well.
We have identified five companies which could not have shifted quadrants – C, E, L, B and I.
Hence, the other 7 companies should have shifted quadrants.
A belonged to HRHP in 2015. Since its revenue increased but profit did not, it must have moved to HRLP.
D belonged to HRHP in 2015. Since neither revenue nor profit increased, it could have moved to LRHP/HRLP/LRLP.
F belonged to LRHP in 2015. Since neither revenue nor profit increased, it must have moved to LRLP.
G belonged to HRLP in 2015. Since both revenue and profit increased, it must have moved to HRHP.
H belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.
J belonged to HRLP. Since its profit increased but revenue did not, it could have moved to LRHP/HRHP.
K belonged to LRLP. Since both revenue and profit increased, it could have moved to HRLP/LRHP/HRHP.

The following table provides the classification of each company in 2015 and 2017 (with the companies that did not change quadrants highlighted in Grey):

Company	2015	2017
A	HRHP	HRLP
B	LRLP	LRLP
C	HRHP	HRHP
D	HRHP	HRLP/LRHP/LRLP
E	LRHP	LRHP
F	LRHP	LRLP
G	HRLP	HRHP
H	LRLP	HRLP/LRHP/HRHP
I	LRLP	LRLP
J	HRLP	LRHP/HRHP/LRLP
K	LRLP	HRLP/LRHP/HRHP
L	HRLP	HRLP

From the above solution, K and L belong to the same quadrant. Choice (A)

undefined

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

Five persons, A through E, belong to an island where all the inhabitants are alternators, i.e., they tell the truth and a lie alternately, in any order. The five persons were ranked from 1 to 5 in the decreasing order of their heights. A numerically lower rank is considered better than a numerically higher rank.

The five persons made the following statements in the same order as given below:

A: I am ranked better than B.
C is ranked third.

B: D is ranked third.
E is ranked worse than D.

C: I am ranked better than D.
A is ranked worse than E.

D: I am ranked fifth.
E is ranked third.

E: I am ranked better than A.
A is ranked fifth.

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

Who is ranked fifth?

a) **A**

b) **E**

c) **D**

d) **B**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**27**
Avg. time spent on this question by all students	**499**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**513**
% of students who attempted this question	**35.74**
% of students who got the question right of those who attempted	**81**

Video Solution

Text Solution

Since each person made two statements, one of them must be truth and the other must be a lie. But we do not know the order in which the truth and a lie was made by each person.
Assume that A made true statement first and a lie next.
From the first statement of A, A is ranked better than B. Hence, A cannot be fifth and B cannot be first.
From the second statement of A, C cannot be third.
The second statement of E says A is ranked last. This is not possible as A cannot be ranked fifth.
Hence, the second statement of E is false. The first statement must be true. Hence, E is ranked better than A. We can say that E cannot be fifth or fourth (since A cannot be fifth).
The second statement of C is also the same statement. Hence, this must be true.
The first statement of C must be false. Hence, C is not ranked better than D. From this, D cannot be last and C cannot be first.
The first statement of D must be false (as D cannot be last). Hence, the second statement must be true. Therefore, **E must be ranked third**.
Since A is ranked worse than E and A is not ranked fifth, **A must be ranked fourth**.
From A's first statement, **B must be ranked fifth**.
Since C cannot be first, **D must be first** and **C must be second**. Checking the statements of B, we find that B's first statement is false and second statement is true.
Hence, this is one possible case.
Assume that A made a lie first and then a true statement.
From A's second statement, C is ranked third.
B's first statement is false as D cannot be third. Hence, B's second statement must be true and E is ranked worse than D. Hence, D cannot be fifth and E cannot be first.
D's first statement is false as D cannot be fifth. D's second statement is also false as E cannot be third (since C is third).
Since both the statements of D are false, this case is not possible.
Only one case is possible and this is presented below along with the order in which they made true and false statements (TF or FT).

Person	Rank	Order
A	4	TF
B	5	FT
C	2	FT
D	1	FT
E	3	TF

B is ranked fifth. Choice (D)

undefined

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

Five persons, A through E, belong to an island where all the inhabitants are alternators, i.e., they tell the truth and a lie alternately, in any order. The five persons were ranked from 1 to 5 in the decreasing order of their heights. A numerically lower rank is considered better than a numerically higher rank.

The five persons made the following statements in the same order as given below:

A: I am ranked better than B.
C is ranked third.

B: D is ranked third.
E is ranked worse than D.

C: I am ranked better than D.
A is ranked worse than E.

D: I am ranked fifth.
E is ranked third.

E: I am ranked better than A.
A is ranked fifth.

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

How many of the five persons told a truth first followed by a lie?

- a) **0**
- b) **3**
- c) **2**
- 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	**49**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**46**
% of students who attempted this question	**33.15**
% of students who got the question right of those who attempted	**82.84**

Video Solution

Text Solution

Since each person made two statements, one of them must be truth and the other must be a lie. But we do not know the order in which the truth and a lie was made by each person.
Assume that A made true statement first and a lie next.
From the first statement of A, A is ranked better than B. Hence, A cannot be fifth and B cannot be first.
From the second statement of A, C cannot be third.
The second statement of E says A is ranked last. This is not possible as A cannot be ranked fifth.
Hence, the second statement of E is false. The first statement must be true. Hence, E is ranked better than A. We can say that E cannot be fifth or fourth (since A cannot be fifth).
The second statement of C is also the same statement. Hence, this must be true.
The first statement of C must be false. Hence, C is not ranked better than D. From this, D cannot be last and C cannot be first.
The first statement of D must be false (as D cannot be last). Hence, the second statement must be true. Therefore, **E must be ranked third**.
Since A is ranked worse than E and A is not ranked fifth, **A must be ranked fourth**.
From A's first statement, **B must be ranked fifth**.
Since C cannot be first, **D must be first** and **C must be second**. Checking the statements of B, we find that B's first statement is false and second statement is true.
Hence, this is one possible case.
Assume that A made a lie first and then a true statement.
From A's second statement, C is ranked third.
B's first statement is false as D cannot be third. Hence, B's second statement must be true and E is ranked worse than D. Hence, D cannot be fifth and E cannot be first.
D's first statement is false as D cannot be fifth. D's second statement is also false as E cannot be third (since C is third).
Since both the statements of D are false, this case is not possible.
Only one case is possible and this is presented below along with the order in which they made true and false statements (TF or FT).

Person	Rank	Order
A	4	TF
B	5	FT
C	2	FT
D	1	FT
E	3	TF

Two persons, A and E, first told a truth followed by a lie. Choice (C)

undefined

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

Five persons, A through E, belong to an island where all the inhabitants are alternators, i.e., they tell the truth and a lie alternately, in any order. The five persons were ranked from 1 to 5 in the decreasing order of their heights. A numerically lower rank is considered better than a numerically higher rank.

The five persons made the following statements in the same order as given below:

A: I am ranked better than B.
C is ranked third.

B: D is ranked third.
E is ranked worse than D.

C: I am ranked better than D.
A is ranked worse than E.

D: I am ranked fifth.
E is ranked third.

E: I am ranked better than A.
A is ranked fifth.

Q23. DIRECTIONS *for questions 21 to 24:* Select the correct alternative from the given choices.

If E made a third statement immediately after making the two statements mentioned above, which of the following statements can it be?

- a) **B is ranked better than A.**
- b) **C is ranked better than B.**
- c) **A is ranked third.**
- d) **I am ranked better than C.**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**50**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**46**
% of students who attempted this question	**30.35**
% of students who got the question right of those who attempted	**89.19**

Video Solution

Text Solution

Since each person made two statements, one of them must be truth and the other must be a lie. But we do not know the order in which the truth and a lie was made by each person.
Assume that A made true statement first and a lie next.
From the first statement of A, A is ranked better than B. Hence, A cannot be fifth and B cannot be first.
From the second statement of A, C cannot be third.
The second statement of E says A is ranked last. This is not possible as A cannot be ranked fifth.
Hence, the second statement of E is false. The first statement must be true. Hence, E is ranked better than A. We can say that E cannot be fifth or fourth (since A cannot be fifth).
The second statement of C is also the same statement. Hence, this must be true.
The first statement of C must be false. Hence, C is not ranked better than D. From this, D cannot be last and C cannot be first.
The first statement of D must be false (as D cannot be last). Hence, the second statement must be true. Therefore, **E must be ranked third**.
Since A is ranked worse than E and A is not ranked fifth, **A must be ranked fourth**.
From A's first statement, **B must be ranked fifth**.
Since C cannot be first, **D must be first** and **C must be second**. Checking the statements of B, we find that B's first statement is false and second statement is true.
Hence, this is one possible case.
Assume that A made a lie first and then a true statement.
From A's second statement, C is ranked third.
B's first statement is false as D cannot be third. Hence, B's second statement must be true and E is ranked worse than D. Hence, D cannot be fifth and E cannot be first.
D's first statement is false as D cannot be fifth. D's second statement is also false as E cannot be third (since C is third).
Since both the statements of D are false, this case is not possible.
Only one case is possible and this is presented below along with the order in which they made true and false statements (TF or FT).

Person	Rank	Order
A	4	TF
B	5	FT
C	2	FT
D	1	FT
E	3	TF

Since E's first statement was a truth and the second was a lie, the third statement must be the truth. Among the given statements, the statement given in option B is true.

Choice (B)

undefined

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

Five persons, A through E, belong to an island where all the inhabitants are alternators, i.e., they tell the truth and a lie alternately, in any order. The five persons were ranked from 1 to 5 in the decreasing order of their heights. A numerically lower rank is considered better than a numerically higher rank.

The five persons made the following statements in the same order as given below:

A: I am ranked better than B.
C is ranked third.

B: D is ranked third.
E is ranked worse than D.

C: I am ranked better than D.
A is ranked worse than E.

D: I am ranked fifth.
E is ranked third.

E: I am ranked better than A.
A is ranked fifth.

Q24. DIRECTIONS *for questions 21 to 24:* Select the correct alternative from the given choices.

Each of the five persons made a third statement declaring their rank, immediately after making the two statements mentioned above, in the same order as mentioned above (i.e., A followed by B, followed by C… till E). Which of the following can be ranks that they declared, in that order?

- a) **54433**
- b) **12345**
- c) **41233**
- d) **43353**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**102**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**100**
% of students who attempted this question	**25.35**
% of students who got the question right of those who attempted	**81.88**

Video Solution

Text Solution

Since each person made two statements, one of them must be truth and the other must be a lie. But we do not know the order in which the truth and a lie was made by each person.
Assume that A made true statement first and a lie next.
From the first statement of A, A is ranked better than B. Hence, A cannot be fifth and B cannot be first.
From the second statement of A, C cannot be third.
The second statement of E says A is ranked last. This is not possible as A cannot be ranked fifth.
Hence, the second statement of E is false. The first statement must be true. Hence, E is ranked better than A. We can say that E cannot be fifth or fourth (since A cannot be fifth).
The second statement of C is also the same statement. Hence, this must be true.
The first statement of C must be false. Hence, C is not ranked better than D. From this, D cannot be last and C cannot be first.
The first statement of D must be false (as D cannot be last). Hence, the second statement must be true. Therefore, **E must be ranked third**.
Since A is ranked worse than E and A is not ranked fifth, **A must be ranked fourth**.
From A's first statement, **B must be ranked fifth**.
Since C cannot be first, **D must be first** and **C must be second**. Checking the statements of B, we find that B's first statement is false and second statement is true.
Hence, this is one possible case.
Assume that A made a lie first and then a true statement.
From A's second statement, C is ranked third.
B's first statement is false as D cannot be third. Hence, B's second statement must be true and E is ranked worse than D. Hence, D cannot be fifth and E cannot be first.
D's first statement is false as D cannot be fifth. D's second statement is also false as E cannot be third (since C is third).
Since both the statements of D are false, this case is not possible.
Only one case is possible and this is presented below along with the order in which they made true and false statements (TF or FT).

Person	Rank	Order
A	4	TF
B	5	FT
C	2	FT
D	1	FT
E	3	TF

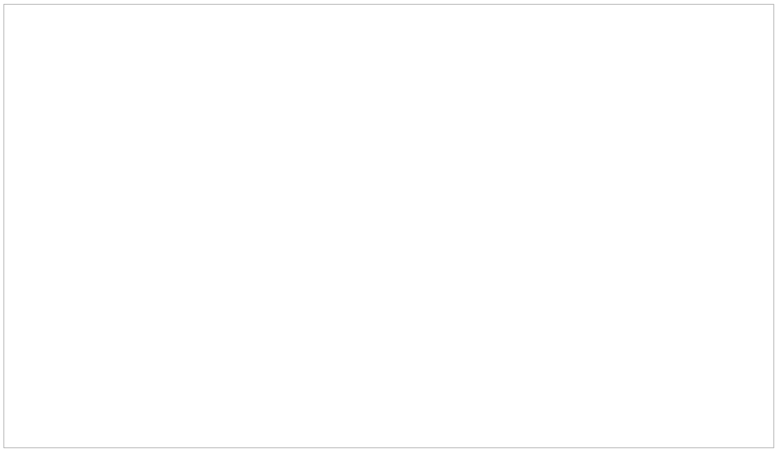
From the second statements that each person made, we can say that A and E must speak truth, while all the others must lie.
Hence, A must declare his rank as 4, E must declare his rank as 3. B must not declare his rank as 5, C must not declare his rank as 2 and D must not declare his rank as 1.
From the given options, only option D satisfies. Choice (D)

undefined

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

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

Four persons, A through D, participated in a running race, which comprised exactly four laps, Lap 1 through Lap 4. The stacked bar chart below provides, for each person, the time taken to complete each lap as a percentage of the total time taken to finish the race by that person. The positions of the four persons at the end of each lap are determined on the basis of the order in which the four persons finish that lap.



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

If it is known that A was in the first position at the end of Lap 3 but did not win the race, who could have won the race?

- a) **D**
- b) **B or C**
- c) **D or C**
- d) **B**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**18**
Avg. time spent on this question by all students	**249**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**245**
% of students who attempted this question	**28.11**
% of students who got the question right of those who attempted	**54.49**

Video Solution

Text Solution

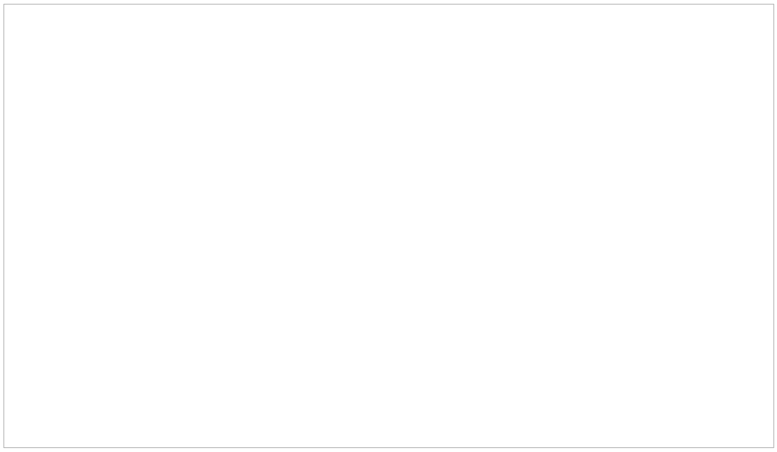
Let a, b, c and d represent the total times taken by A, B, C and D respectively to finish the race.

Time taken by A to finish the third lap = 0.71a
Time taken by B to finish the third lap = 0.67b
Time taken by C to finish the third lap = 0.69c
Time taken by D to finish the third lap = 0.74 d
Given that $0.71a < 0.67a \Rightarrow a < 0.944b \Rightarrow a < b$
$0.71a < 0.69c \Rightarrow a < 0.972c \Rightarrow a < c$
$0.71a < 0.74d \Rightarrow a < 1.04d$
Since a is less than both b and c, a must have finished the race before each of B and C. The only person who could have finished the race before A is D.
Hence, D must have been the winner of the race. Choice (A)

undefined

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

Four persons, A through D, participated in a running race, which comprised exactly four laps, Lap 1 through Lap 4. The stacked bar chart below provides, for each person, the time taken to complete each lap as a percentage of the total time taken to finish the race by that person. The positions of the four persons at the end of each lap are determined on the basis of the order in which the four persons finish that lap.



Q26. DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.

Which of the following statements is sufficient to determine the winner of the race?

- a) **C was in the first position at the end of Lap 2.**
- b) **A was in the first position at the end of Lap 1.**
- c) **B was in the last position at the end of Lap 2.**
- d) **D was in the first position at the end of Lap 3.**

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	**91**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**86**
% of students who attempted this question	**19.3**
% of students who got the question right of those who attempted	**81.57**

Video Solution

Text Solution

Let a, b, c and d represent the total times taken by A, B, C and D respectively to finish the race.

The following table provides the cumulative times taken by each person for finishing each lap:

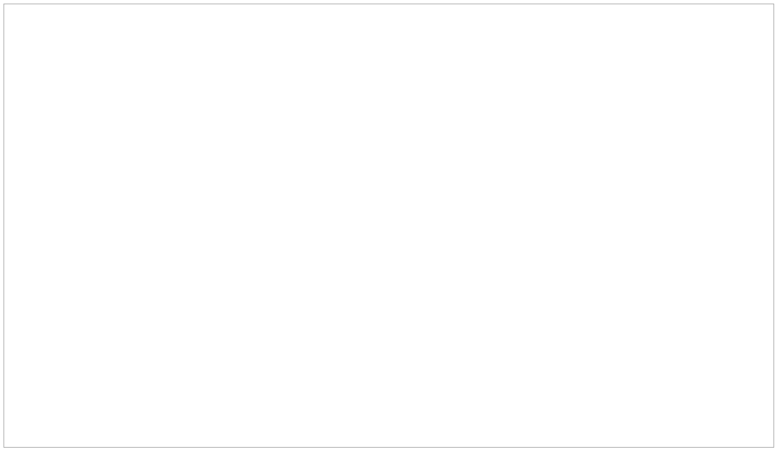
Person	Lap 1	Lap 2	Lap 3	Lap 4
A	0.25a	0.53a	0.71a	a
B	0.18b	0.5b	0.67b	b
C	0.3c	0.45c	0.69c	c
D	0.25d	0.38d	0.74d	d

Option A: If C was in first position at the end of Lap 2, $0.45c < 0.5b \Rightarrow c < 1.11b$. However, c need not be less than b. Hence, C or B could have won the race. (Comparing A and C similarly, A also could have won the race).
Option B: If A was in the first position at the end of Lap 1, $0.25a < 0.3c \Rightarrow a < 1.2c$. Hence, either of A or C could have won the race.
Option C: If B was in the last position at the end of Lap 2, we cannot determined who among A, C or D won the race.
Option D: If D was in the first position at the end of Lap 3, $0.74d < 0.71a \Rightarrow d < a$; $0.74d < 0.67b \Rightarrow d < b$; $0.74d < 0.69c \Rightarrow d < c$. Hence, D would have won the race.
Therefore, the statement given in option D is sufficient to determine the winner of the race. Choice (D)

undefined

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

Four persons, A through D, participated in a running race, which comprised exactly four laps, Lap 1 through Lap 4. The stacked bar chart below provides, for each person, the time taken to complete each lap as a percentage of the total time taken to finish the race by that person. The positions of the four persons at the end of each lap are determined on the basis of the order in which the four persons finish that lap.



Q27. DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.

It is also known that

i. at the end of Lap 1, D was in the first position; at the end of Lap 2, B was in the last position; at the end of Lap 3, B was in the third position.

ii. C was not the last person to finish the race.

Who was the second person to finish the race?

- a) **A**
- b) **C**
- c) **D**
- d) **Cannot be determined**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**168**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**178**
% of students who attempted this question	**9.75**
% of students who got the question right of those who attempted	**31.64**

Video Solution

Text Solution

Let a, b, c and d represent the total times taken by A, B, C and D respectively to finish the race.

At the end of Lap 1, D was in the first position.
Hence, (from the above table) $0.25d < 0.25a \Rightarrow d < a$. Hence, D finished before A.
$0.25d < 0.18b \Rightarrow \mathbf{d < 0.72b} \Rightarrow d < b$. Hence, D finished before B.
$0.25d < 0.3c \Rightarrow d < 1.2c$
At the end of Lap 2, B was in the last position.
$0.5b > 0.53a \Rightarrow \mathbf{a < 0.94b} \Rightarrow a < b$. Hence, A finished before B.
At the end of Lap 3, B was in the third position.
Since a is less than 0.94b, 0.71a must be less than $0.71 \times 0.94b = 0.6674b$.
$0.71a < 0.6674b \Rightarrow 0.71a < 0.67b$. Hence, A finished this lap before B.
Since d is less than 0.72b, 0.74d must be less than $0.74 \times 0.72b = 0.5328b$
$0.74d < 0.5328b \Rightarrow 0.74d < 0.72b$. Hence, D finished this lap before B.

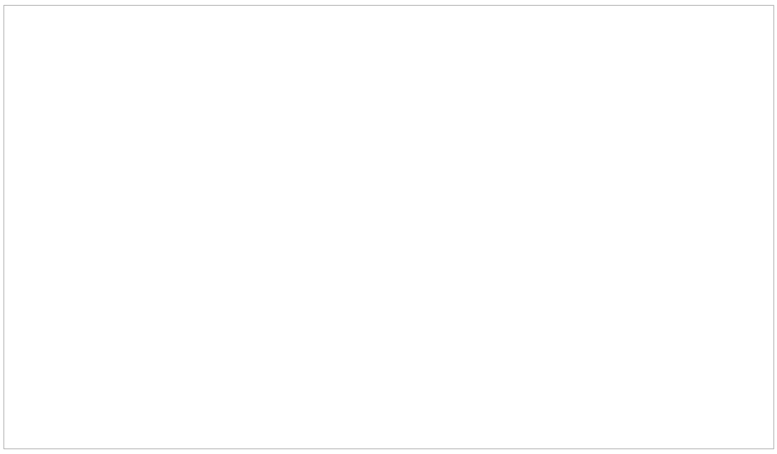
Since B was the third person to finish this lap, C must have finished after B.
Hence, $0.69c > 0.67b \Rightarrow c > 0.97b$.
Since b can be greater or less than c, we cannot determine their final positions from this.
Also, since C was the last person to finish this lap,
$0.71a < 0.69c \Rightarrow a < c$. Hence, A must have finished before C.

Hence, **D must have been the first person to finish the race and A must have been the second.**
A was the second person to finish the race. Choice (A)

undefined

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

Four persons, A through D, participated in a running race, which comprised exactly four laps, Lap 1 through Lap 4. The stacked bar chart below provides, for each person, the time taken to complete each lap as a percentage of the total time taken to finish the race by that person. The positions of the four persons at the end of each lap are determined on the basis of the order in which the four persons finish that lap.



Q28. DIRECTIONS *for questions 25 to 28:* Select the correct alternative from the given choices.

It is also known that

i. at the end of Lap 1, D was in the first position; at the end of Lap 2, B was in the last position; at the end of Lap 3, B was in the third position.

ii. C was not the last person to finish the race.

Who was the third person to finish the race?

a) **A**

b) **B**

c) **C**

d) **Cannot be determined**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**0**
Avg. time spent on this question by all students	**58**
Difficulty Level	**VD**
Avg. time spent on this question by students who got this question right	**58**
% of students who attempted this question	**7.84**
% of students who got the question right of those who attempted	**39.3**

Video Solution

Text Solution

Let a, b, c and d represent the total times taken by A, B, C and D respectively to finish the race.

From (ii), C was not last. Hence, **C must have finished third and B must have finished last.** Choice (C)

undefined

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

On a particular day, Hema visited a hardware store and purchased five different tools, Spanner, Screwdriver, Hammer, Scissors and Shovel. The price of each tool is different among Rs.40, Rs.210, Rs.150, Rs.270 and Rs.100. Further, each tool was manufactured by a different company among Stanley, Bosch, 3M, GM and CAT.

It is also known that

i. the Spanner, which costs more than the Hammer, was not manufactured by GM.

ii. the price of the Shovel is Rs.150 and the tool that costs Rs.100 was not manufactured by Stanley.

iii. the tool manufactured by GM costs Rs.120 more than the one manufactured by CAT.

iv. the Scissors was manufactured by 3M and it costs less than the Hammer.

Q29. DIRECTIONS *for question 29:* Type in your answer in the input box provided below the question.

What is the price (in Rs.) of the Spanner?

Your Answer:210 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**694**
Avg. time spent on this question by all students	**410**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**410**
% of students who attempted this question	**59.83**
% of students who got the question right of those who attempted	**91.47**

Video Solution

Text Solution

From (i), the Spanner costs more than the Hammer. Hence, the Spanner's price cannot be ₹40 and the Hammer's price cannot be ₹270.
From (ii), the price of the Shovel is ₹150.
From (iii), the tool manufacture by GM costs ₹120 more than the one manufactured by CAT. There is only one pair of values among the given prices which differ by 120, which are ₹150 and ₹170. Hence, the tool manufactured by CAT must be priced ₹150.
From (ii), the Shovel must be manufactured by CAT. Further, the price of the tool manufactured by GM must be ₹270.
Since the Hammer is not priced ₹270, the Hammer was not manufactured by GM.
From (iv), the Scissors was manufactured by 3M. Hence, the only tool that can be manufactured by GM is the Screwdriver.
Hence, the price of the Screwdriver is ₹270.
From (i) and (iii), the Spanner costs less than the Hammer, which, in turn, costs less than the Scissors. Hence, the price of the Spanner must be ₹210, the Hammer must be ₹100 and the Scissors must be ₹40.
From (ii), the Hammer was manufactured by Bosch and the Spanner was manufactured by Stanley.

The following table provides the distribution:

Tool	Price (in ₹)	Manufacturer
Spanner	210	Stanley
Screwdriver	270	GM
Hammer	100	Bosch
Scissors	40	3M
Shovel	150	CAT

The price of the Spanner is ₹210. Ans: (210)

undefined

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

On a particular day, Hema visited a hardware store and purchased five different tools, Spanner, Screwdriver, Hammer, Scissors and Shovel. The price of each tool is different among Rs.40, Rs.210, Rs.150, Rs.270 and Rs.100. Further, each tool was manufactured by a different company among Stanley, Bosch, 3M, GM and CAT.

It is also known that

i. the Spanner, which costs more than the Hammer, was not manufactured by GM.

ii. the price of the Shovel is Rs.150 and the tool that costs Rs.100 was not manufactured by Stanley.

iii. the tool manufactured by GM costs Rs.120 more than the one manufactured by CAT.

iv. the Scissors was manufactured by 3M and it costs less than the Hammer.

Q30. DIRECTIONS *for questions 30 and 31:* Select the correct alternative from the given choices.

Which company manufactured the Hammer?

- a) **GM**
- b) **CAT**
- c) **Bosch** Your answer is correct
- d) **Stanley**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**87**
Avg. time spent on this question by all students	**37**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**34**
% of students who attempted this question	**58.84**
% of students who got the question right of those who attempted	**91.28**

Video Solution

Text Solution

From (i), the Spanner costs more than the Hammer. Hence, the Spanner's price cannot be ₹40 and the Hammer's price cannot be ₹270.
From (ii), the price of the Shovel is ₹150.
From (iii), the tool manufacture by GM costs ₹120 more than the one manufactured by CAT. There is only one pair of values among the given prices which differ by 120, which are ₹150 and ₹170. Hence, the tool manufactured by CAT must be priced ₹150.
From (ii), the Shovel must be manufactured by CAT. Further, the price of the tool manufactured by GM must be ₹270.
Since the Hammer is not priced ₹270, the Hammer was not manufactured by GM.
From (iv), the Scissors was manufactured by 3M. Hence, the only tool that can be manufactured by GM is the Screwdriver.
Hence, the price of the Screwdriver is ₹270.
From (i) and (iii), the Spanner costs less than the Hammer, which, in turn, costs less than the Scissors. Hence, the price of the Spanner must be ₹210, the Hammer must be ₹100 and the Scissors must be ₹40.
From (ii), the Hammer was manufactured by Bosch and the Spanner was manufactured by Stanley.

The following table provides the distribution:

Tool	Price (in ₹)	Manufacturer
Spanner	210	Stanley
Screwdriver	270	GM
Hammer	100	Bosch
Scissors	40	3M
Shovel	150	CAT

Bosch manufactured the Hammer. Choice (C)

undefined

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

On a particular day, Hema visited a hardware store and purchased five different tools, Spanner, Screwdriver, Hammer, Scissors and Shovel. The price of each tool is different among Rs.40, Rs.210, Rs.150, Rs.270 and Rs.100. Further, each tool was manufactured by a different company among Stanley, Bosch, 3M, GM and CAT.

It is also known that

i. the Spanner, which costs more than the Hammer, was not manufactured by GM.

ii. the price of the Shovel is Rs.150 and the tool that costs Rs.100 was not manufactured by Stanley.

iii. the tool manufactured by GM costs Rs.120 more than the one manufactured by CAT.

iv. the Scissors was manufactured by 3M and it costs less than the Hammer.

Q31. DIRECTIONS *for questions 30 and 31:* Select the correct alternative from the given choices.

How many of the five tools have a higher price than the Scissors?

- a) **1**
- b) **2**
- c) **3**
- d) **4** **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**39**
Avg. time spent on this question by all students	**19**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**18**
% of students who attempted this question	**58.73**
% of students who got the question right of those who attempted	**95.45**

Video Solution

Text Solution

From (i), the Spanner costs more than the Hammer. Hence, the Spanner's price cannot be ₹40 and the Hammer's price cannot be ₹270.
From (ii), the price of the Shovel is ₹150.
From (iii), the tool manufacture by GM costs ₹120 more than the one manufactured by CAT. There is only one pair of values among the given prices which differ by 120, which are ₹150 and ₹170. Hence, the tool manufactured by CAT must be priced ₹150.
From (ii), the Shovel must be manufactured by CAT. Further, the price of the tool manufactured by GM must be ₹270.
Since the Hammer is not priced ₹270, the Hammer was not manufactured by GM.
From (iv), the Scissors was manufactured by 3M. Hence, the only tool that can be manufactured by GM is the Screwdriver.
Hence, the price of the Screwdriver is ₹270.
From (i) and (iii), the Spanner costs less than the Hammer, which, in turn, costs less than the Scissors. Hence, the price of the Spanner must be ₹210, the Hammer must be ₹100 and the Scissors must be ₹40.
From (ii), the Hammer was manufactured by Bosch and the Spanner was manufactured by Stanley.

The following table provides the distribution:

Tool	Price (in ₹)	Manufacturer
Spanner	210	Stanley
Screwdriver	270	GM
Hammer	100	Bosch
Scissors	40	3M
Shovel	150	CAT

Four tools have a higher price than the Scissors. Choice (D)

undefined

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

On a particular day, Hema visited a hardware store and purchased five different tools, Spanner, Screwdriver, Hammer, Scissors and Shovel. The price of each tool is different among Rs.40, Rs.210, Rs.150, Rs.270 and Rs.100. Further, each tool was manufactured by a different company among Stanley, Bosch, 3M, GM and CAT.

It is also known that

i. the Spanner, which costs more than the Hammer, was not manufactured by GM.

ii. the price of the Shovel is Rs.150 and the tool that costs Rs.100 was not manufactured by Stanley.

iii.
the tool manufactured by GM costs Rs.120 more than the one manufactured by CAT.

iv.
the Scissors was manufactured by 3M and it costs less than the Hammer.

Q32. DIRECTIONS *for question 32:* Type in your answer in the input box provided below the question.

What is the sum (in Rs.) of the prices of the Hammer and the Spanner?

Your Answer:310 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**13**
Avg. time spent on this question by all students	**58**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**49**
% of students who attempted this question	**58.44**
% of students who got the question right of those who attempted	**89.68**

Video Solution

Text Solution

From (i), the Spanner costs more than the Hammer. Hence, the Spanner's price cannot be ₹40 and the Hammer's price cannot be ₹270.
From (ii), the price of the Shovel is ₹150.
From (iii), the tool manufacture by GM costs ₹120 more than the one manufactured by CAT. There is only one pair of values among the given prices which differ by 120, which are ₹150 and ₹170. Hence, the tool manufactured by CAT must be priced ₹150.
From (ii), the Shovel must be manufactured by CAT. Further, the price of the tool manufactured by GM must be ₹270.
Since the Hammer is not priced ₹270, the Hammer was not manufactured by GM.
From (iv), the Scissors was manufactured by 3M. Hence, the only tool that can be manufactured by GM is the Screwdriver.
Hence, the price of the Screwdriver is ₹270.
From (i) and (iii), the Spanner costs less than the Hammer, which, in turn, costs less than the Scissors. Hence, the price of the Spanner must be ₹210, the Hammer must be ₹100 and the Scissors must be ₹40.
From (ii), the Hammer was manufactured by Bosch and the Spanner was manufactured by Stanley.

The following table provides the distribution:

Tool	Price (in ₹)	Manufacturer
Spanner	210	Stanley
Screwdriver	270	GM
Hammer	100	Bosch
Scissors	40	3M
Shovel	150	CAT

The sum of the prices of the Hammer and the Spanner = 310 Ans: (310)

undefined

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

In a class of 74 students, if the number of students who play cricket is twice the number of students who play hockey, which, in turn, is twice the number of students who play both the games, then the number of students who play only cricket is at most .

Your Answer:36 Your answer is incorrect

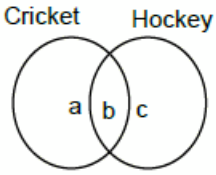
Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**212**
Avg. time spent on this question by all students	**200**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**178**
% of students who attempted this question	**42.9**
% of students who got the question right of those who attempted	**36.08**

Video Solution

Text Solution



Let a be the number of students who play only cricket, b be the number of students who play both the games and c be the number of students who play only Hockey.
$b + c = 2b \Rightarrow c = b$.
$a + b = 2 (b + c)$
$a + b = 4b$
$a = 3b$
Thus the number of students who play at least one game
$= 3b + b + b = 5b$.
The number of players who play only cricket is maximized when 5b is maximized $\Rightarrow 5b = 70 \Rightarrow b = 14$.
Number of players who play only Cricket = 3b = 42 Ans: (42)

undefined

Q2. DIRECTIONS *for question 2:* Select the correct alternative from the given choices.

The cost of production of an automobile, which is usually sold at 30% profit, increases by 20%. What should be the percentage increase in the selling price, in order to maintain the same profit after the increase in the cost of production?

a) $15\frac{5}{13}\%$

b) $17\frac{4}{11}\%$

c) **20%** Your answer is incorrect

d) $13\frac{3}{5}\%$

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**101**
Avg. time spent on this question by all students	**137**
Difficulty Level	**VE**
Avg. time spent on this question by students who got this question right	**142**
% of students who attempted this question	**56.06**
% of students who got the question right of those who attempted	**32.1**

Video Solution

Text Solution

Let the initial cost of production of the automobile be x.
⇒ The initial selling price of the automobile is 1.3x.
The cost of production of the automobile after the increase is 1.2x.
Since, the profit should remain same, the new selling price should be 1.2x + (1.3x – x) = 1.5x

$\therefore$ The required percentage $= \frac{1.5x - 1.3x}{1.3x} \times 100$

$= \frac{0.2}{1.3} \times 100 = \frac{200}{13} \approx 15\frac{5}{13}\%$ Choice (A)

undefined

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

If x and y are natural numbers, then find the number of ordered pairs (x, y) which satisfy the equation $3x - 7y = 20$ and the inequality $x + y \leq 30$.

Your Answer:3 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**162**
Avg. time spent on this question by all students	**180**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**170**
% of students who attempted this question	**41.53**
% of students who got the question right of those who attempted	**59.43**

Video Solution

Text Solution

If we divide $3x - 7y = 20$ by 3, we get

$x - 2y - \frac{y}{3} = 6 + \frac{2}{3}$

Since, $x - 2y$ and 6 are integers $-y$ when divided by 3 should leave a remainder of 2, i.e., y should of the form $3k + 1$.
$\therefore$ The values of (x, y) which satisfy $3x - 7y = 20$ are (9, 1), (16, 4), (23, 7), (30, 10)..... Of these only (9, 1), (16, 4) and (23, 7) satisfy $x + y \leq 30$.
$\therefore$ The no. of required ordered pairs is three. Ans: (3)

undefined

Q4. DIRECTIONS *for questions 4 and 5:* Select the correct alternative from the given choices.

The 342nd term of the series 1, 2, 2, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, 5, …….. is

- a) **24.**
- b) **25.**
- c) **26.**
- d) **27.**

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	**176**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**170**
% of students who attempted this question	**37.72**
% of students who got the question right of those who attempted	**75.5**

Video Solution

Text Solution

In the series, consecutive numbers starting from 1 are given and each number occurs as many times as the value of the number, i.e., 1 occurs once, 2 occurs twice and so on.

If the series has n distinct numbers written, then there is a minimum of $\left(\frac{n(n-1)}{2}+1\right)$ terms present and a maximum of $\left(\frac{n(n+1)}{2}\right)$ terms present.

$$\frac{n(n-1)}{2}+1 \le 342 \le \frac{n(n+1)}{2}$$

Going back from the choices we can conclude that only n = 26 satisfies the above inequality. Choice (C)

undefined

Q5. DIRECTIONS *for questions 4 and 5:* Select the correct alternative from the given choices.

Two travellers were sitting around a fire, about to have their dinner. One of the travellers had seven sandwiches, while the other had five sandwiches. A third traveller, passing by, requested them to share their food with him in return for money. The three of them shared the sandwiches equally and the third traveller paid the other two a total of Rs.24. Find the difference in the amounts received by the first two travellers.

- a) **Rs.18**
- b) **Rs.12** **Your answer is correct**
- c) **Rs.8**
- d) **Rs.6**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**83**
Avg. time spent on this question by all students	**110**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**104**
% of students who attempted this question	**55.58**
% of students who got the question right of those who attempted	**88.77**

Video Solution

Text Solution

As the two travellers had a total of 12 sandwiches, each of the travellers must have had 4 sandwiches. The first and second travellers must have given the third traveller 3 sandwiches and 1 sandwich respectively. Hence the ratio of their shares must be 3 : 1. Hence the first and second travellers must have got ₹18 and ₹6 respectively. The first traveller must have got ₹12 more than the second. Choice (B)

undefined

Q6. DIRECTIONS *for questions 6 to 8:* Type in your answer in the input box provided below the question.

In a container containing a solution of milk and water, the ratio of milk and water is 3 : 2. Now, 10 litres of water is added to this solution and the ratio becomes 2 : 3. Find the final quantity (in litres) of the solution in the container.

Your Answer:15 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**206**
Avg. time spent on this question by all students	**133**
Difficulty Level	**VE**
Avg. time spent on this question by students who got this question right	**123**
% of students who attempted this question	**52.54**
% of students who got the question right of those who attempted	**73.6**

Video Solution

Text Solution

Let the volume of milk and water be 3k and 2k respectively.

Now $\frac{3k}{2k+10} = \frac{2}{3}$

$\Rightarrow 9k = 4k + 20$

$\Rightarrow k = 4$

$\therefore$ Final quantity $= 3k + 2k + 10$

$= 5k + 10$

$= 30$ Ans: (30)

undefined

Q7. DIRECTIONS *for questions 6 to 8:* Type in your answer in the input box provided below the question.

Mynzon, an e-commerce company, is giving a 20% cashback on purchases worth Rs.1000 or above made on its website, *www.mynzon.com* (i.e., when you purchase something worth Rs.3,000, you will be credited Rs.600 in your account). If Rajnath has Rs.10,000 with him, what is the maximum value of the products which he can purchase on *www.mynzon .com*?

Your Answer:12400 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**121**
Avg. time spent on this question by all students	**128**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**126**
% of students who attempted this question	**53.26**
% of students who got the question right of those who attempted	**0.18**

Video Solution

Text Solution

If Rajnath spends ₹10,000 he will get 20% of ₹10,000, i.e.; ₹2,000 as cashback. If he spends ₹2,000, he will get ₹400 as cashback and he can purchase products worth ₹400. But, there would not be any cashback on the last transaction.
∴ The price of all the goods which he purchased is ₹12,400 (₹10,000 + ₹2,000 + ₹400).
But to maximize his profit, his last transaction on which he would be getting a cashback should be for ₹1,000 (because it is the minimum value of the transaction which is eligible for refund)
To get ₹1,000 cashback, the earlier transaction should be for ₹5,000. But we cannot get ₹5,000 as the cashback, as the maximum cashback is ₹2,000 (when a purchase of ₹10,000 is done). Therefore, let x be the amount for which he purchased something ⇒
the cashback on that purchase would be $\frac{20}{100}x = 0.2x$.
⇒0.2x + (10,000 – x) = 5,000
⇒ 0.8x = 5,000
⇒ x = ₹6,250
∴ The maximum value of all the goods which he can purchase
= ₹6,250 + ₹5,000 + ₹1,000 + ₹200
= ₹12,450. Ans: (12450)

undefined

Q8. DIRECTIONS *for questions 6 to 8:* Type in your answer in the input box provided below the question.

For all non-negative integers *x* and *y*, if

$f(x, y) = f(x - 1, f(x, y - 1))$;

$f(0, y) = y + 1$;

$f(x + 1, 0) = f(x, 1)$,

find the value of $f(1, 2)$.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**6**
Avg. time spent on this question by all students	**162**

Time spent / Accuracy Analysis

Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**168**
% of students who attempted this question	**23.53**
% of students who got the question right of those who attempted	**61.6**

Video Solution

Text Solution

f(1, 2) = f(1 – 1, f(1, 2 – 1)) = f(0, f(1, 1))
Now, f(1, 1) = f(1 – 1, f(1, 1 – 1)) = f(0, f(1, 0))
f(1, 0) = f(0, 1) = 2(As f(x + 1, 0) = f(x, 1))
∴ f(1, 1) = f(0, f(1, 0)) = f(0, 2) = 2 + 1 = 3
∴ f(1, 2) = f(0, f(1, 1))
= f(0, 3) = 3 + 1 = 4 Ans: (4)

undefined

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

Let PQRSTU be a regular hexagon. Find the ratio of the area of triangle PRT and the area of the hexagon.

- a) $\frac{1}{2}$ **Your answer is correct**
- b) $\frac{1}{4}$
- c) $\frac{3}{10}$
- d) $\frac{2}{5}$

Time spent / Accuracy Analysis

Time taken by you to answer this question	**138**
Avg. time spent on this question by all students	**133**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**129**
% of students who attempted this question	**38.73**
% of students who got the question right of those who attempted	**79.84**

Video Solution

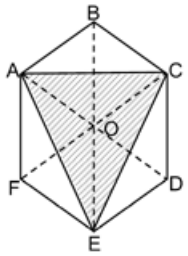
Text Solution

The area of a triangle formed by joining any three alternate vertices of a regular hexagon is always half of the area of the hexagon.

$\therefore$ Required ratio = $\frac{1}{2}$.

Alternative solution:

This result can easily be arrived at by imagining a regular hexagon to be comprised of six identical equilateral triangles, as below (all having O as their common vertex).



Now, consider the rhombus ABCO.

$\Delta ABO = \Delta BCO = \frac{1}{2}$ rhombus ABCO.

Also, from symmetry, $\Delta ABC = \Delta OAC$

$= \frac{1}{2}$ rhombus ABCO.

$\therefore$ Each of the unshaded (obtuse) triangles outside the shaded triangle is equal to one small equilateral triangle.

Hence, the sum of areas of unshaded region = area of shaded region = $\frac{1}{2}$ area of hexagon. Choice (A)

I. $\log(144)^{80} = 80 \log 144$
$= 80[\log 2^4 + \log 3^2]$
$= 80[4\log 2 + 2\log 3]$
$= 80[4(0.3010) + 2(0.4771)$
$= 80[1.204 + 0.9542]$
$= 80[2.1582]$
$= 172.656$
As characteristic of $\log(144)^{80}$ is 172, number of digits in $(144)^{80} = 172 + 1 = 173$
Ans: (173)

I. Let the no. of chocolates left with Rahul at the end of the evening be y.
$\Rightarrow$ The no. of chocolates with Rahul before giving some of them to Yogendra is $2(y + 2) = 2y + 4$.
$\Rightarrow$ The no. of chocolates received by Yogendra
$= 2y + 4 - y = y + 4$.

The no. of chocolates with Rahul before giving some of them to Goyal is $\frac{3}{2}(2y + 4 + 6)$
$= 3y + 15$.
$\Rightarrow$ The no. of chocolates received by Goyal
$= 3y + 15 - (2y + 4) = y + 11$.
$\Rightarrow$ The difference between the no. of chocolates received by Goyal and Yogendra is $(y + 11) - (y + 4) = 7$. Choice (C)

undefined

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

Find the number of digits in $(144)^{80}$, if log2 = 0.3010 and log3 = 0.4771.

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	**138**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**138**
% of students who attempted this question	**30.52**
% of students who got the question right of those who attempted	**42.41**

Video Solution

Text Solution

$\log(144)^{80} = 80 \log 144$
$= 80[\log 2^4 + \log 3^2]$
$= 80[4\log 2 + 2\log 3]$
$= 80[4(0.3010) + 2(0.4771)$
$= 80[1.204 + 0.9542]$
$= 80[2.1582]$
$= 172.656$
As characteristic of $\log(144)^{80}$ is 172, number of digits in $(144)^{80} = 172 + 1 = 173$
Ans: (173)

undefined

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

Rahul met three of his friends Bhavish, Goyal and Yogendra, on a Sunday evening. First, he met Bhavish, to whom he gave one-fifth of the chocolates he had and an additional 12 chocolates. He then met Goyal, to whom he gave one-third of the chocolates he then had and an additional six chocolates. He then met Yogendra and gave him half of the chocolates he then had and an additional two chocolates. What is the difference between the number of chocolates he gave to Goyal and Yogendra?

- a) **5**
- b) **6** **Your answer is incorrect**
- c) **7**
- d) **Cannot be determined**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**342**
Avg. time spent on this question by all students	**212**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**226**
% of students who attempted this question	**39.97**
% of students who got the question right of those who attempted	**37.94**

Video Solution

Text Solution

Let the no. of chocolates left with Rahul at the end of the evening be y.
⇒ The no. of chocolates with Rahul before giving some of them to Yogendra is 2(y + 2) = 2y + 4.
⇒ The no. of chocolates received by Yogendra
= 2y + 4 – y = y + 4.
The no. of chocolates with Rahul before giving some of them to Goyal is $\frac{3}{2}$ (2y + 4 + 6)
= 3y + 15.
⇒ The no. of chocolates received by Goyal
= 3y + 15 – (2y + 4) = y + 11.
⇒ The difference between the no. of chocolates received by Goyal and Yogendra is (y + 11) – (y + 4) = 7. Choice (C)

undefined

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

Mr.Santaram has five children – three daughters and two sons. Five years ago, the combined age of his daughters was thrice that of his sons and five years hence, the combined age of his daughters will be twice that of his sons. If the present age of Mr. Santaram's youngest child is at least six years, what is the present average age (in years) of his five children?

Your Answer:13 **Your answer is correct**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**300**
Avg. time spent on this question by all students	**216**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**211**
% of students who attempted this question	**27.62**
% of students who got the question right of those who attempted	**47.26**

Video Solution

Text Solution

Let the combined present ages of the daughters and sons of Mr. Santaram be D years and S years respectively. The combined ages of his daughters and sons five years ago was (D-15) years and (S-10) years respectively.
Given that,
D – 15 = 3(S – 10) ⇒ D = 3S – 15 .... (1)
Similarly
D + 15 = 2(S + 10) ⇒ D = 2S + 5 ..... (2)
From (1) and (2), we get, S = 20 and D = 45
∴ Average of present ages of his five children
= $\frac{45+20}{5}$ = 13 years. Ans: (13)

undefined

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

Let A = (n – 1) (n) (2n – 1) represent the (n – 1)th term of a series S_1, while B represents the n^{th} term of the same series and C = (B – A) represents the (n – 1)th term of another series S_2. Find the sum of the first 10 terms of S_2.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**22**
Avg. time spent on this question by all students	**210**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**246**
% of students who attempted this question	**9.69**
% of students who got the question right of those who attempted	**21.69**

Video Solution

Text Solution

The n^{th} term of S_1 = n(n + 1) (2n + 1) [by substituting n = n + 1 in (n – 1) (n) (2n – 1)]
Now, the sum of the first ten terms of S_2 = difference between the 11^{th} term and the 1^{st} term of S_1. Hence, required sum = (11) (12) (23) – (1) (2) (3) = 3036 – 6 = 3030.
Ans: (3030)

undefined

Q14. DIRECTIONS *for questions 14 and 15:* Select the correct alternative from the given choices.

There are three points − P, B and Q − on the ground, in a straight line, with a pole AB, at B, such that the pole AB is leaning away from P and towards Q. If B is 20 m away from both P and Q, and the angles of elevation of the top of the pole as observed from P and Q are 30° and 60° respectively, find the length of the pole.

- a) **20 m** **Your answer is correct**
- b) $10\sqrt{3}$ **m**
- c) **10 m**
- d) **Cannot be determined**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**293**
Avg. time spent on this question by all students	**204**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**210**
% of students who attempted this question	**28.8**
% of students who got the question right of those who attempted	**49.03**

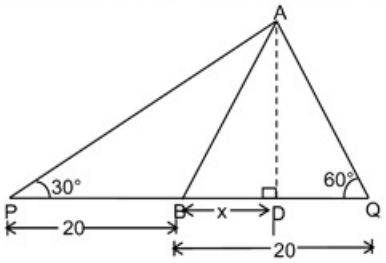
Video Solution

Text Solution

In ΔPAQ, since ∠P + ∠Q = 90°
∠A = 90°
⇒ The semicircle drawn with PQ as diameter will pass through A.
Also, B is the midpoint of PQ, since it is given that PB = BQ = 20 m.
∴ B is the centre of the semicircle.
⇒ BA = BP = BQ = 20 m. Choice (A)

Alternative Solution:

The situation can be represented as follows:



Let BD = x

In ΔPAD, $\tan 30° = \frac{AD}{PD}$

$\Rightarrow AD = \frac{1}{\sqrt{3}}(20 + x)$

In ΔDAQ, $\tan 60° = \frac{AD}{DQ}$

$\Rightarrow AD = \sqrt{3}\,(20 - x)$

$\therefore \frac{1}{\sqrt{3}}(20 + x) = \sqrt{3}\,(20 - x)$

$\Rightarrow 20 + x = 60 - 3x$

$\Rightarrow 4x = 40 \Rightarrow x = 10$

$\therefore AD = 10\sqrt{3}$

Now ΔABD is a right angled triangle

$\therefore AB^2 = BD^2 + AD^2 = (10)^2 + \left(10\sqrt{3}\right)^2 \Rightarrow AB = 20$ m

undefined

Q15. DIRECTIONS *for questions 14 and 15:* Select the correct alternative from the given choices.

If 6x + 4y + 2z = 54 and 3x + 3y + z = 38, find x : y : z, given that x, y and z are natural numbers.

- a) **2 : 8 : 3**
- b) **1 : 9 : 3**
- c) **1 : 11 : 2**
- d) **Cannot be determined** **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question **146**

Time spent / Accuracy Analysis

Avg. time spent on this question by all students	**129**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**123**
% of students who attempted this question	**51.78**
% of students who got the question right of those who attempted	**69.67**

Video Solution

Text Solution

$6x + 4y + 2z = 54 \rightarrow (1)$
$3x + 3y + z = 38 \rightarrow (2)$
(2) – [(1)/2], gives $y = 11$ and $3x + z = 5$
Since, x and z are natural numbers $x = 1$ and $z = 2$.
∴ The required ratio is 1 : 11 : 2.

Alternative Solution:

Since, x, y, z are natural numbers, one may also check using the options, i.e., 2 : 8 : 3 could be any of (2, 8, 3)..... upto (12, 48, 18), but none satisfies, and so on.
Only one possibility in option (C), i.e., (1, 11, 2) satisfies. Choice (C)

undefined

Q16.

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

If the standard deviation of the sequence $9x_i + 3$, where $i = 1$ to n, is 30, then the variance of the sequence $3x_i + 9$, where $i = 1$ to n, is

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	**79**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**95**
% of students who attempted this question	**7.46**
% of students who got the question right of those who attempted	**23.84**

Video Solution

Text Solution

The standard deviation of $x_1, x_2, \ldots\ldots x_n$ will be same as that of $x_1+a, x_2+a, \ldots\ldots x_n + a$ where a is a constant.
The standard deviation of $ax_1, ax_2, \ldots\ldots ax_n$ will be a times the standard deviation of $x_1, x_2, \ldots\ldots x_n$ where a is a constant.

⇒ The standard deviation of $3x_1 + 9, 3x_2 + 9, \ldots\ldots 3x_n + 9$ will be $\frac{1}{3}$ times that standard deviation of $9x_1 + 3, 9x_2 + 3, \ldots\ldots 9x_n + 3$.

∴ The standard deviation of $3x_1 + 9, 3x_2 + 9, \ldots\ldots 3x_n + 9$ is $\frac{1}{3}(30) = 10$.

∴ The variance of $3x_1 + 9, 3x_2 + 9, \ldots\ldots 3x_n + 9$ is $(10)^2 = 100$. Ans: (100)

undefined

Q17. DIRECTIONS *for question 17:* Select the correct alternative from the given choices.

In the figure given below, S1 is a square, S2 is a circle inscribed inside S1 and S3 is an equilateral triangle inscribed inside S2. What is the ratio of the area of S1 to that of S3?

a) $8:2\sqrt{2}$ **Your answer is incorrect**

b) $16:3\sqrt{3}$

c) $24:5\sqrt{3}$

d) $14:3\sqrt{3}$

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**288**
Avg. time spent on this question by all students	**171**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**171**
% of students who attempted this question	**28.62**
% of students who got the question right of those who attempted	**92.87**

Video Solution

Text Solution

Let the length of the side of the square be a.

$\Rightarrow$ The radius of the circle $= \frac{a}{2}$.

$\Rightarrow$ The side of the triangle $= \sqrt{3}\left(\frac{a}{2}\right)$.

$\therefore$ The required ratio $= a^2 : \frac{\sqrt{3}}{4}\left(\frac{\sqrt{3}a}{2}\right)^2$

$= 1 : \left(\frac{\sqrt{3}}{4}\right)\left(\frac{3}{4}\right) = 16 : 3\sqrt{3}$.

Choice (B)

undefined

Q18. DIRECTIONS *for questions 18 and 19:* Type in your answer in the input box provided below the question.

In a school committee comprising 12 members, there are exactly two students from each of the classes from class 7 to class 12. In how many ways can a sub-committee of four students be formed, such that no two students in the sub-committee belong to the same class?

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	**119**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**108**
% of students who attempted this question	**34.47**
% of students who got the question right of those who attempted	**19.82**

Video Solution

Text Solution

There are students from 7^{th}, 8^{th}, 9^{th}, 10^{th}, 11^{th} and 12^{th} classes, i.e., a total of 6 classes.
As no two members belong to the same class, we have to select 4 classes out of 6 classes which can be done in ${}^{6}C_{4} = 15$ ways.
From each of the four classes a member can be selected in two ways i.e., a total of $2^4 = 16$ ways
The required number of ways = $15 \times 16 = 240$ ways. Ans: (240)

undefined

Q18. DIRECTIONS *for questions 18 and 19:* Type in your answer in the input box provided below the question.

In a school committee comprising 12 members, there are exactly two students from each of the classes from class 7 to class 12. In how many ways can a sub-committee of four students be formed, such that no two students in the sub-committee belong to the same class?

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	**119**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**108**
% of students who attempted this question	**34.47**
% of students who got the question right of those who attempted	**19.82**

Video Solution

Text Solution

There are students from 7^{th}, 8^{th}, 9^{th}, 10^{th}, 11^{th} and 12^{th} classes, i.e., a total of 6 classes.
As no two members belong to the same class, we have to select 4 classes out of 6 classes which can be done in ${}^{6}C_{4} = 15$ ways.
From each of the four classes a member can be selected in two ways i.e., a total of $2^4 = 16$ ways
The required number of ways = $15 \times 16 = 240$ ways. Ans: (240)

undefined

Q19. DIRECTIONS *for questions 18 and 19:* Type in your answer in the input box provided below the question.

Find the number of integral solutions for the inequality $(|x - 1| - 4)(|x + 2| - 5) < 0$.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**55**
Avg. time spent on this question by all students	**158**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**180**
% of students who attempted this question	**21.65**
% of students who got the question right of those who attempted	**31.24**

Video Solution

Text Solution

Given $(|x-1|-4)(|x+2|-5) < 0$

we consider 3 cases:

case 1: $x > 1$; $(x - 5)(x - 3) < 0 \Rightarrow x \in (3, 5)$

case 2: $-2 < x < 1$; $(-x - 3)(x - 3) < 0 \Rightarrow (x - 3)(x + 3) > 0$
$\Rightarrow x > 3$ or $x < -3$, as this is not in accordance with $-2 < x < 1$, no solution in this case.

case 3: $x < -2$; $(-x - 3)(-x - 7) < 0 \Rightarrow (x + 3)(x + 7) < 0$
$\Rightarrow x \in (-7, -3)$
Hence, the integral solutions are $x = -6, -5, -4, 4$. Ans: (4)

undefined

Q20. DIRECTIONS *for question 20:* Select the correct alternative from the given choices.

If the length and breadth of a rectangle are increased by 4 units each, then the area of the rectangle increases by 100%. If the breadth is decreased by 6 units and the length is increased by 2 units, then the area decreases by 75%. Find the ratio of the length of the diagonal of the rectangle and the length of the rectangle.

- a) $\sqrt{28} : 5$
- b) $\sqrt{29} : 5$
- c) $8 : 3\sqrt{3}$
- d) $\sqrt{34} : 5$

You did not answer this question Show Correct Answer

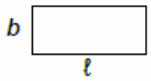
Time spent / Accuracy Analysis

Time taken by you to answer this question	**177**
Avg. time spent on this question by all students	**239**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**246**
% of students who attempted this question	**11.82**
% of students who got the question right of those who attempted	**75.62**

Video Solution

Text Solution

Let ℓ, b be the length and breadth of a rectangle.
So area is ℓb.



As per the conditions given in the question,
$(\ell + 4)(b + 4) = 2\ell b \rightarrow (1)$
$\ell b + 4\ell + 4b + 16 = 2\ell b$
$\Rightarrow \ell b = 4\ell + 4b + 16 \rightarrow (2)$
$(\ell + 2)(b - 6) = \ell b\left(1 - \frac{75}{100}\right) = \frac{\ell b}{4} \rightarrow (3)$
$4\ell b + 8b - 24\ell - 48 = \ell b$
$\Rightarrow 3\ell b + 8b - 24\ell = 48 \rightarrow (4)$
(1) in (4) gives $12\ell + 12b + 48 + 8b - 24\ell = 48$
$\Rightarrow 20b = 12\ell \Rightarrow b = \frac{3}{5}\ell$
Hence, diagonal $= \sqrt{\ell^2 + \frac{9}{25}\ell^2} = \frac{\sqrt{34}}{5}\ell$
Required ratio $= \sqrt{34} : 5$ Choice (D)

undefined

Q21. DIRECTIONS *for question 21:* Type in your answer in the input box provided below the question.

Jadeja was playing with a sheet of paper which was in the shape of a rectangle, of length 16 cm and breadth 12 cm. He placed the rectangular sheet of paper flat, on the surface of a table, and then folded the rectangle along its diagonal. Find the area (in sq.cm) of the region occupied by the newly formed figure.

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

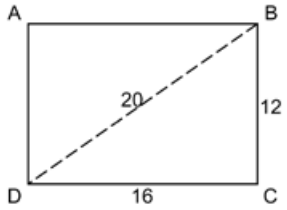
Time taken by you to answer this question	**349**
Avg. time spent on this question by all students	**105**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**257**
% of students who attempted this question	**30.69**
% of students who got the question right of those who attempted	**1.2**

Video Solution

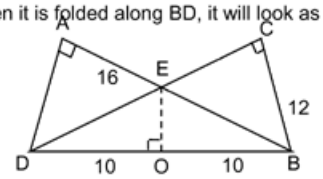
Text Solution

Let the rectangle be ABCD.

Diagonal BD = $\sqrt{16^2 + 12^2} = 20$.



When it is folded along BD, it will look as follows



The required area = (Sum of areas of two identical and overlapping triangles, ADB and BCD) minus (the area of the overlapping region, i.e., ΔDEB)

From symmetry, EO ⊥ DB and O is midpoint of DB, i.e., DO = OB = 10 cm.

Now, ΔDEO is similar to ΔDBC

$\Rightarrow \frac{EO}{DO} = \frac{BC}{DC} = \frac{12}{16}$

$\Rightarrow EO = 10 \times \frac{3}{4} = 7.5$ cm

$\Rightarrow$ Required area = $[12 \times 16] - \frac{1}{2} \times DB \times OE$

= 192 – 75 = 117 sq.cm.

Alternative Solution:

Let AE = EC = x. Therefore, EB = (16 – x).

Since ΔECB is right angled, we have $(16 - x^2) = x^2 + 12^2$.

Hence, we get x = 3.5 cm

Now, the required area is simply area of ΔDEB + ΔECB, i.e., half area of original rectangle plus area of ΔECB = $\left(\frac{16 \times 2}{2}\right) + \left(\frac{3.5 \times 12}{2}\right)$ = 96 + 21 = 117 sq.cm.

Ans: (117)

undefined

Q22. DIRECTIONS *for questions 22 to 27:* Select the correct alternative from the given choices.

A circle of radius 3 units is drawn with centre as (8, 7) and another circle is drawn taking the line segment joining (−12, 8) and (4, −4) as diameter. Find the number of common tangents that can be drawn to these two circles.

- a) **1**
- b) **2**
- c) **3**
- 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	**107**
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	**145**
% of students who attempted this question	**22**
% of students who got the question right of those who attempted	**23.28**

Video Solution

Text Solution

The length of the diameter = $\sqrt{(4+12)^2+(-4-8)^2}$
= 20 units
⇒ radius of the circle = 10 units
Centre of the circle = $\left(\frac{-12+4}{2}, \frac{8-4}{2}\right) = (-4, 2)$
The distance between the centres of the two circles
= $\sqrt{(8+4)^2+(7-2)^2}$ = 13 units
= sum of the radii of the two circles.
Hence the two circles touch each other externally, and the number of tangents that can be drawn is 3. Choice (C)

undefined

Q23. DIRECTIONS *for questions 22 to 27:* Select the correct alternative from the given choices.

In a locality, each family has at most two adults. No family has less than three children. Considering all the families in the locality, there are more adults than girls, more girls than boys and more boys than families. Find the minimum number of families in the locality.

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

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**30**
Avg. time spent on this question by all students	**145**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**148**
% of students who attempted this question	**19.77**
% of students who got the question right of those who attempted	**75.11**

Video Solution

Text Solution

Let the number of adults, boys, girls, and families be a, b, g and f respectively. Hence $a > g > b > f$.
Going by the choices, f must be at least 2. If $f = 2$, $a \leq 4$.
But to satisfy the above inequality, a must be at least 5.
$\therefore f \neq 2$.
If $f = 3$, to satisfy the inequality above, a must be at least 6.
As $a \leq 6$, it can be satisfied.
$\therefore$ Minimum value of f = 3. Choice (D)

undefined

Q24. DIRECTIONS *for questions 22 to 27:* Select the correct alternative from the given choices.

Had a trader bought an item at 10% less than usual, and sold it at 10% more than usual, his profit percentage would have been double the usual. What is his usual profit percentage?

- a) $12\frac{2}{7}\%$
- b) $28\frac{4}{7}\%$
- c) $23\frac{1}{3}\%$
- d) **Cannot be determined**

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**163**
Avg. time spent on this question by all students	**166**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**177**
% of students who attempted this question	**29.05**
% of students who got the question right of those who attempted	**58.16**

Video Solution

Text Solution

The original and new cost price (CP) and selling price (SP) are tabulated below.

	CP	SP
Original	100	100 + P (where P is profit percentage)
New	90	110 + 1.1 P

$$\frac{110+1.1P-90}{90}(100) = 2\left[\frac{100+P-100}{100}\right](100)$$

$$\frac{20+1.1P}{90} = \frac{2P}{100}$$

$200 + 11P = 18P$

$\Rightarrow P = \frac{200}{7} = 28\frac{4}{7}\%$ Choice (B)

undefined

Q25. DIRECTIONS *for questions 22 to 27:* Select the correct alternative from the given choices.

There are 100 questions in a question paper. Each correct attempt fetches one mark and each wrong attempt attracts a penalty of one-third of a mark. How many different integral scores are possible for a student who attempted exactly 80 questions in the paper?

- a) **27** **Your answer is correct**
- b) **28**
- c) **26**
- d) **25**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**31**
Avg. time spent on this question by all students	**138**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**140**
% of students who attempted this question	**18.56**
% of students who got the question right of those who attempted	**48.96**

Video Solution

Text Solution

Let the number of correct attempts be x.

$\therefore$ Total score = $x - \frac{1}{3}(80 - x) = x + \frac{x - 80}{3}$

$\frac{x - 80}{3}$ is a integer for x = 80, 77, 74, ..., 2

Let number of terms be n

$\therefore$ 2 + (n – 1)3 = 80 $\Rightarrow$ n = 27

Alternative solution:

For the net score to be an integer, the penalty for wrong answers must be an integer, i.e., the number of wrong answers must be a multiple of 3, but less than or equal to 80. The multiples of 3 that satisfy are 0, 3, 6, ... 78, i.e., a total of 27 possibilities.

Choice (A)

undefined

Q26. DIRECTIONS *for questions 22 to 27:* Select the correct alternative from the given choices.

Evaluate each of the four surds, p, q, r and s, and select the option that correctly arranges them in the descending order of their magnitude.

p = $\sqrt{12} + \sqrt{13}$

q = $\sqrt{10} + \sqrt{15}$

r = $\sqrt{8} + \sqrt{17}$

s = $\sqrt{6} + \sqrt{19}$

a) ***r s p q***

b) ***s r q p***

c) ***p q r s***

d) ***p r q s***

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**8**
Avg. time spent on this question by all students	**126**
Difficulty Level	**VE**
Avg. time spent on this question by students who got this question right	**125**
% of students who attempted this question	**35.73**
% of students who got the question right of those who attempted	**76.55**

Video Solution

Text Solution

$p = \sqrt{12}+\sqrt{13}$

$q=\sqrt{10}+\sqrt{15}$

$r=\sqrt{8}+\sqrt{17}$

and $s=\sqrt{6}+\sqrt{19}$

$\Rightarrow p^2=\left(\sqrt{12}+\sqrt{13}\right)^2=25+2\sqrt{12}\sqrt{13}=25+2\sqrt{156}$

$\Rightarrow q^2=\left(\sqrt{10}+\sqrt{15}\right)^2=25+2\sqrt{10}\sqrt{15}=25+2\sqrt{150}$

$\Rightarrow r^2=\left(\sqrt{8}+\sqrt{17}\right)^2=25+2\sqrt{8}\sqrt{17}=25+2\sqrt{136}$

$\Rightarrow s^2=\left(\sqrt{6}+\sqrt{19}\right)^2=25+2\sqrt{6}\sqrt{19}=25+2\sqrt{114}$

Clearly $p^2 > q^2 > r^2 > s^2 \Rightarrow p > q > r > s$ Choice (C)

Note: In such a question, where the sum of the two numbers under the square root symbol is the same in each case, (12 +13 = 10 + 15 = 8 + 17 = 6 +19 = 25) then the surds can be arranged in the descending / ascending order by simply arranging them in the ascending / descending order of the difference in the two numbers.

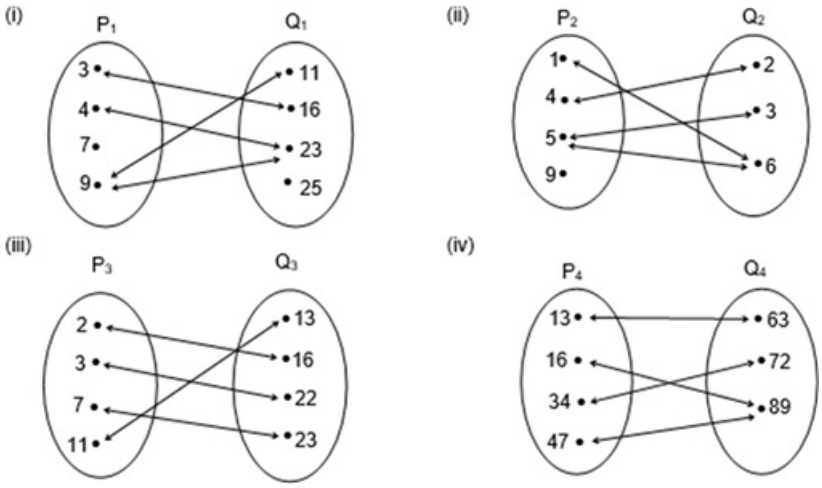
i.e., (13 – 12) < (15 – 10) < (17 – 8) < (19 – 6).

Hence $\left(\sqrt{12}+\sqrt{13}\right)>\left(\sqrt{10}+\sqrt{15}\right)>\left(\sqrt{8}+\sqrt{17}\right)>\left(\sqrt{6}+\sqrt{19}\right)$

undefined

Q27. DIRECTIONS *for questions 22 to 27:* Select the correct alternative from the given choices.

How many of the following represent a bijective function?



- 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	**87**
Avg. time spent on this question by all students	**68**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**71**
% of students who attempted this question	**25.94**
% of students who got the question right of those who attempted	**52.8**

Video Solution

Text Solution

A function which is both one to one and onto is called a bijective function.
A function F : A $\rightarrow$ B is said to be onto, if and only if for all y $\in$ B, there exists an x ε A, such that F(x) = y.
From the above definitions,
(i) is not an onto function.
(ii) is not a function itself since there exists an element in P_2 which has no element in Q_2 associated with it.
(iii) is both one to one and onto, hence a bijective function.
(iv) is not a one to one function.
$\therefore$ Only (iii) is a bijective function. Choice (B)

undefined

Q28. DIRECTIONS *for questions 28 and 29:* Type in your answer in the input box provided below the question.

In a Chemistry lab, there are three solutions, X, Y, Z, of an acid, of concentrations 30%, 40% and p% respectively. If 200 ml of X when mixed with V ml of Z, produces a solution of 60% concentration and 250 ml of Y when mixed with V ml of Z, produces a solution of 62% concentration, find the value of p.

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	**216**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**233**
% of students who attempted this question	**12.25**
% of students who got the question right of those who attempted	**56.71**

Video Solution

Text Solution

Given,
The amount of acid in the solution of 200ml of X and V ml of

$$Z = \frac{60}{100}(200 + V) = 120 + 0.6\,V$$

$$\Rightarrow 120 + 0.6\,V = \frac{30}{100}(200) + \frac{p}{100}(V)$$

$$\Rightarrow \frac{pV}{100} = 60 + 0.6V$$

Similarly for the solution of 250 ml of Y and V ml of Z, $\frac{pV}{100} = 55 + 0.62V$

$\Rightarrow 0.62V - 0.60V = 60 - 55$
$\Rightarrow V = 250$ ml.

Substituting V = 250 in $\frac{pV}{100} = 60 + 0.6V$, we get p = 84% Ans: (84)

undefined

Q29. DIRECTIONS *for questions 28 and 29:* Type in your answer in the input box provided below the question.

N is an eight-digit number and S(N) denotes the sum of its digits. If N + S(N) = 100000000, find the tens digit of N.

Your Answer:9 **Your answer is incorrect**

Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**23**
Avg. time spent on this question by all students	**113**
Difficulty Level	**D**
Avg. time spent on this question by students who got this question right	**173**
% of students who attempted this question	**11.41**
% of students who got the question right of those who attempted	**19.02**

Video Solution

Text Solution

If N was a sequence of eight 9's S(N) = 72
$\therefore$ S(N) $\leq$ 72 ——— (1)
N + S(N) = 100000000
(1) $\Rightarrow$ N $\geq$ 99999928
$\therefore$ The first 6 digits of N must be 9 each.
$\therefore$ Let N = 999999*xy*
S(N) = 54 + *x* + *y*
N + S(N) = 99999900 + 10*x* + *y* + 54 + *x* + *y*
= 100000000 i.e. 11*x* + 2*y* = 46 ——— (2)
11x must be even and less than 46 $\Rightarrow$ x $\leq$ 4
If x = 4 y = 1 whereas if x = 2 y = 12
but y must be a single digit number
$\therefore$ Only possible case is x = 4, y = 1 Ans: (4)

undefined

Q30. DIRECTIONS *for question 30:* Select the correct alternative from the given choices.

If $(2015)_6 = (542)_x$, then *x* =

- a) **8.**
- b) **9.** **Your answer is correct**
- c) **10.**
- d) **11.**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**12**
Avg. time spent on this question by all students	**132**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**132**
% of students who attempted this question	**25.35**
% of students who got the question right of those who attempted	**86.82**

Video Solution

Text Solution

$(2015)_6 = (542)_x$

$2\times6^3 + 1 \times 6+5 = 5x^2 + 4x + 2$

$5x^2 +4x +2 = 432 +11$

$5x^2 +4x -441 = 0$

$$x = \frac{-4 \pm \sqrt{16 + 8820}}{10}$$

$$x = \frac{4 \pm 94}{10}$$

$$= \frac{90}{10} \text{ (or) } \frac{-98}{10}$$

As x has to be positive x = 9.

Alternative Solution:

As the options are 8, 9, 10, 11 we can convert the number to decimal and then check.

$(2015)_6 = 2 \times 6^3 + 1 \times 6 + 5 = (443)_{10}$

As the given number is of form $(542)_x$

x is 8 or 9.

Checking first for 9, $= (542)_9 = 5 \times 81 + 4 \times 9 + 2 = 443$

$\therefore$ x = 9 Choice (B)

undefined

Q31. DIRECTIONS *for question 31:* Type in your answer in the input box provided below the question.

A 6 × 6 grid is cut from an 8 × 8 chessboard. In how many ways can we put two identical coins, one on a black square and one on a white square, on the grid, such that they are not placed in the same row or in the same column?

You did not answer this question Show Correct Answer

Time spent / Accuracy Analysis

Time taken by you to answer this question	**8**
Avg. time spent on this question by all students	**113**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**127**
% of students who attempted this question	**9.75**
% of students who got the question right of those who attempted	**15.16**

Video Solution

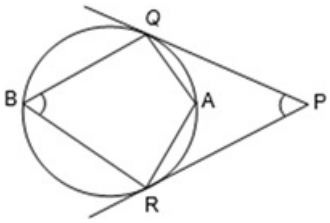
Text Solution

In a 6 × 6 grid of a chessboard, each row and each column contains 3 white and 3 black squares placed alternatively. There are a total of 18 black and 18 white squares. For every black square chosen to put one coin, we cannot choose any white square present in its row or column. There are 3 white squares in its row and 3 white squares in its column for every black square.
Hence for every black square chosen, we can choose (18 – 6) = 12 white squares.
∴Total number of possibilities where a black square and a white square can be chosen so that they do not fall in the same row or in the same column = 18 × 12 = 216
So there are 216 ways of placing the coins that are identical. Ans: (216)

undefined

Q32. DIRECTIONS *for questions 32 to 34:* Select the correct alternative from the given choices.

In the figure below, PQ and PR are tangents drawn to the circle. B is a point on the major arc QR. If ∠ QPR and ∠ QBR are $x°$ and $2x°$ respectively, what is the measure of ∠ QAR?



- a) **72°**
- b) **108°**
- c) **126°**
- d) **90°**

You did not answer this question Show Correct Answer

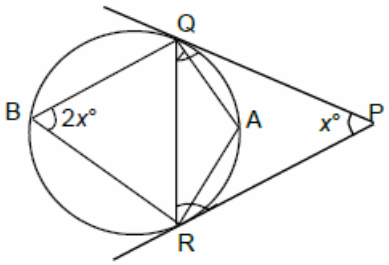
Time spent / Accuracy Analysis

Time taken by you to answer this question	**16**
Avg. time spent on this question by all students	**156**
Difficulty Level	**E**
Avg. time spent on this question by students who got this question right	**160**
% of students who attempted this question	**18.48**
% of students who got the question right of those who attempted	**56.8**

Video Solution

Text Solution

Since PQ and PR are the tangents drawn from P, they are equal in length.⇒ ∠PQR = ∠PRQ



∠QRP = ∠QBR (alternate segment theorem)
∠PRQ = ∠PQR = 2x°
In triangle PQR, ∠PQR + ∠QRP + ∠QPR = 180°
2x + 2x + x = 180° ⇒ x = 36°
Since QARB is a cyclic quadrilateral
∴∠QAR = 180° – 2x° = 180° – 72° = 108° Choice (B)

undefined

Q33. DIRECTIONS *for questions 32 to 34:* Select the correct alternative from the given choices.

A lift in a building can move upwards with a speed 1.8 m/s when it is empty, but the speed decreases when there are people in the lift. The decrease in the upward speed of the lift is directly proportional to the square root of the number of people it carries. If the speed of the lift becomes 0.9 m/s when it carries four people upwards, then what is the maximum number of people that the lift can carry upwards?

- a) **15** **Your answer is correct**
- b) **16**
- c) **8**
- d) **9**

Time spent / Accuracy Analysis

Time taken by you to answer this question	**23**
Avg. time spent on this question by all students	**125**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**118**
% of students who attempted this question	**21.2**
% of students who got the question right of those who attempted	**48.66**

Video Solution

Text Solution

Let the speed of the lift be s when it carries n people.

$\therefore 1.8 - s = K\sqrt{n}$

For n = 4, s = 0.9 $\Rightarrow$ k = 0.45

Now, for s = 0, n = 16

The maximum number of people, the lift can carry is 16 – 1 = 15. Choice (A)

undefined

Q34. DIRECTIONS *for questions 32 to 34:* Select the correct alternative from the given choices.

In a class of ten students, no two students got the same rank. If there are three girls in the class, what is the probability that the worst rank among the girls is five?

- a) $\frac{1}{40}$
- b) $\frac{1}{20}$
- c) $\frac{1}{10}$
- d) $\frac{1}{25}$

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	**142**
Difficulty Level	**M**
Avg. time spent on this question by students who got this question right	**140**
% of students who attempted this question	**9.25**
% of students who got the question right of those who attempted	**49.42**

Video Solution

Text Solution

The total number of ways in which the girls can get ranks = $^{10}C_3$

The number of ways in which the girls get worst rank as 5 = (The number of ways in which all girls are in top 5) – (The number of ways in which all girls are in top 4)

$= {}^5C_3 - {}^4C_3 = 10 - 4 = 6$

$\therefore$ Required probability = $\frac{6}{{}^{10}C_3} = \frac{1}{20}$

Alternative Solution:

Assume that one of the girls got rank 5. The other two girls got two out of the first four ranks, which is possible in $^4C_2 = 6$ ways.

Now we can arrange the three girls in these three selected ranks in 3! ways.

Total number of ways in which three ranks can be assigned to three girls from out of 10 ranks = $^{10}P_3$

$\therefore$ Required probability = $\frac{6 \times 3!}{{}^{10}P_3} = \frac{1}{20}$ Choice (B)