

Solutions of Mock CAT – 14 2017

Scorecard (procreview.jsp? qsetId=dJfel0GICE4=&qsetName=Mock CAT – 14 2017)	Accuracy (AccSelectGraph.jsp? qsetId=dJfel0GICE4=&qsetName=Mock CAT – 14 2017)	Qs Analysis (QsAnalysis.jsp? qsetId=dJfel0GICE4=&qsetName=Mock CAT – 14 2017)	Video Attempt (VideoAnalysis.jsp? qsetId=dJfel0GICE4=&qsetName=Mc CAT – 14 2017)
VRC	DILR		QA

Sec 1

Directions for questions 1-3: Each of the following questions consists of a set of five sentences. These sentences need to be arranged in a coherent manner to create a meaningful paragraph. Type in the correct order of the sentences in the space provided below the question.

Q.1

1. "My work permit expires in September, so I have until September," the 30-year-old Daca recipient said.
2. Among Solis's most pressing concerns is the fact that she provided the federal government with extensive information about herself in order to receive DACA in the first place.
3. For Solis, that means preparing for a future without her well-paid job at an insurance company and her rent-controlled apartment in her hometown of Oakland.
4. "I need to work as much as I can right now and save as much money as I can."
5. Five years after Barack Obama's implementation of Deferred Action for Childhood Arrivals (DACA) allowed recipients to get driver's licenses, attend college, begin careers, purchase homes, and do all the other things that US citizens take for granted, Dreamers now face the reality that it could all be taken away.

Solution:

Correct Answer : 53142

Clearly sentence 5 opens the paragraph introducing the topic. It also has the full name of the programme given. Sentence 3 comes next ("that means", Solis is the dreamer). Sentences 3, 1, and 4 make a mandatory sequence ("the daca recipient, the quote in 4 follows 1). Sentence 2 expands the idea given in sentence 4. Hence it is the correct answer.

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Answer key/Solution

Directions for questions 1-3: Each of the following questions consists of a set of five sentences. These sentences need to be arranged in a coherent manner to create a meaningful paragraph. Type in the correct order of the sentences in the space provided below the question.

Q.2

1. He kicked out and hurt his foot and, in a rage, picked up a steel bucket filled with sand, swung it hard and when he let it go the glass shattered.
2. A surge of ecstasy washed through him, stilling any pain or disquiet he might have felt at the blood pouring freely from a cut just below his left eye.
3. The glass double-doors of the building were locked and the brass handles secured with a triple loop of chain joined with a brass padlock.
4. All the lifts had out-of-order signs, so he took the stairs to the sixth floor where he worked.
5. The reception was dark and empty, and he walked through over crunchy marble to the atrium where a stand of trees had grown explosively, bursting the canopy, violet and orange blooms singing out of the lush foliage.

Solution:

Correct Answer : 31254

Sentence 3 opens the paragraph and sentences 1 and 2 follow it as per the narrative sequence. This paragraph has a narrative theme. Sentence 3 gives a generic description of the scene. Sentence 1 follows (the glass). Sentence 2 shows the effect of the action in the previous sentence (stilling any pain – it's a result of the swinging). Sentences 5 and 4 come next as they describe the action after he leaves the room.

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Answer key/Solution

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Q.3

1. Weber had connected his theory of the scattering of gravity waves, designed to show the increased sensitivity of his gravity wave antenna, to the scattering of neutrinos.
2. In the course of this defence Weber made a very unorthodox and startling suggestion regarding the scattering of neutrinos.
3. Weber's claim was soon rejected by virtually all of the physics community, although Weber himself continued to defend his work.
4. An interesting case of this involves Joseph Weber, who pioneered the development of an experimental apparatus designed to detect gravity waves, and

who later claimed to have observed those waves.

5. How does the physics community deal with the subsequent work of a scientist whose earlier work has been regarded as incorrect?

Solution:

Correct Answer : 41352

Clearly sentence 4 opens the paragraph introducing the topic and the full name of the scientist under discussion. 41 is a mandatory pair as 1 expands the theory mentioned in 4. 135 make a mandatory sequence. 2 expands the idea given in 5. Hence it is the correct answer.

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Answer key/Solution

Directions for questions 4-6: The passage given below is followed by a set of three questions. Choose the most appropriate answer to each question.

In the Odyssey, Homer describes the island of the 'insolent and lawless' Cyclopes – wild men living outside the *polis* and political life:

"Neither assemblies for council have they, nor appointed laws, but they dwell on the peaks of mountains in hollow caves, and each one is lawgiver to his children and his wives, and they have no regard for one another."

They live individualistically; their laws govern only their own families. With their limited vision, they have little sense of a public sphere. But what makes the Cyclopes so lawless and monstrous, according to Homer, is not simply their lack of an eye, but their lack of an assembly or *agora*. The *agora* was at the heart of the *polis*. It was an open square situated towards the centre of the city, and for many historians provides the hallmark of the Greek city-state: as the classicist Paul Cartledge at the University of Cambridge says, it was 'one of the most basic distinguishing markers of ancient Greek culture and civilisation'. In later years, the agora gained market stalls and temples, council buildings and law courts, becoming, in the words of the historian John Ma at Columbia University, 'the public space *par excellence*, owned and controlled by the community'.

At the heart of these conceptions is the idea of the agora as a place of 'bringing together', a 'meeting place'. The archaeologist Malcolm Bell III at the University of Virginia calls it 'a multivalent gathering place, not just a political centre'. The classicist John Camp at Randolph-Macon College in Virginia describes it as the city-state's 'heart and soul'. And into this empty space historians and political theorists have poured their own egalitarian ideals. It was 'democratic space', a 'communal space', a 'melting pot'. Such depictions are uncontroversial, and capture much of the flavour of the agora in the later classical era (480-323 BCE) where public and private, politics and profit mingled. But whether they explain the beginnings of the agora in the first place seems less clear. For one might ask: why might a young community feel the need to create a space in which to meet? Certainly people need a place to meet around a water hole, on a street corner; many African villages conduct their meetings under the shade of a tree. But that people need a space for meeting seems less obvious – and wasn't there plenty of space around anyway? For what is important about the agora is that it is not simply a space, but rather a defined space, a bounded absence. An upright stone marking the edge of the agora from Epidaurus on the Peloponnese is inscribed: 'boundary of the agora But what might this boundary mean?

Q.4

Which of the following can be inferred to most likely be a reason to mark a boundary at the edge of an or *agora*?

- ☐ 1 Showing that outside the or *agora* (like the island of the Cyclopes) individual laws may rule, but inside it, the laws of the *polis* apply
- ☐ 2 Demarcating a boundary between what lies outside the or *agora*, and what inside - allowing restrictions on what cannot be built there.
- ☐ 3 Reserving space for up-coming structures related to the *polis* such as market stalls and temples, council buildings and law courts - important in a young community
- ☐ 4 Creating a clear demarcation in the minds of the citizens of the Greek city between where the *agora* starts, and the city ends

Solution:

Correct Answer : 2

The last paragraph raises this question, but only hints at an answer in, "For what is important about the agora is that it is not simply a space, but rather a *defined space*, a *bounded absence*." This definition of space will allow the bounded absence of structures that do not meet the rules of an agora. This makes Option 2 correct. The first paragraph says of the Cyclopes, "wild men living outside the *polis*". There is no information in the passage to tell us that individual laws apply in a polis. Hence, option 1 is incorrect. Option C mentions "important in a young community", which does not have support in the passage since it only mentions these buildings in the context of "in later years" (second paragraph, last line). The second paragraph mentions, "The *agora* was at the heart of the *polis*. It was an open square situated towards the centre of the city. . . ", while Option D says "the city ends", making it incorrect.

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Answer key/Solution

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civilisation'. In later years, the agora gained market stalls and temples, council buildings and law courts, becoming, in the words of the historian John Ma at Columbia University, 'the public space *par excellence*, owned and controlled by the community'.

At the heart of these conceptions is the idea of the agora as a place of 'bringing together', a 'meeting place'. The archaeologist Malcolm Bell III at the University of Virginia calls it 'a multivalent gathering place, not just a political centre'. The classicist John Camp at Randolph-Macon College in Virginia describes it as the city-state's 'heart and soul'. And into this empty space historians and political theorists have poured their own egalitarian ideals. It was 'democratic space', a 'communal space', a 'melting pot'. Such depictions are uncontroversial, and capture much of the flavour of the agora in the later classical era (480-323 BCE) where public and private, politics and profit mingled. But whether they explain the beginnings of the agora in the first place seems less clear. For one might ask: why might a young community feel the need to create a space in which to meet? Certainly people need a place to meet around a water hole, on a street corner; many African villages conduct their meetings under the shade of a tree. But that people need a space for meeting seems less obvious – and wasn't there plenty of space around anyway? For what is important about the agora is that it is not simply a space, but rather a defined space, a bounded absence. An upright stone marking the edge of the agora from Epidaurus on the Peloponnese is inscribed: 'boundary of the agora. But what might this boundary mean?

Q.5
Which of the following pairs best represents a difference between what we *likely know is true*, and what we *think is true* about the agora?

- 1 ☐ It was a democratic space, a communal space, a melting pot; these facets of the agora explain its beginnings
- 2 ☐ The Cyclopes lacked one; it was one of the most basic distinguishing markers of ancient Greek culture and civilisation
- 3 ☐ It was one of the most basic distinguishing markers of ancient Greek culture and
- 4 ☐ civilisation; it was the public space *par excellence*, owned and controlled by the community

Solution:

Correct Answer : 3

It is difficult to solve this question based on first principles. Rather, we look to solve this based on a difference in the conviction levels of what is presented in the options, or for outright inaccuracies. Option 1 is incorrect since the second part of the option contradicts the passage, which says in the last paragraph while referring to the first part of the option, "*Such depictions are uncontroversial. . . But whether they explain the beginnings of the agora in the first place seems less clear.*" The two sets of connotations in Option 4 are at the same level - both refer to historian's perception of the agora, making it incorrect. With regard to "it was one of the most basic distinguishing markers of ancient Greek culture and civilisation", the passage says " [the agora] for many historians provides the hallmark of the Greek city-state" showing that there is agreement among many historians on this point. The prior kind of statement - based on physical evidence - and the fact that it has "most basic markers" - indicating that there are more advanced markers, has a higher degree of certainty, compared to statements like "it was the public space *par excellence*, owned and controlled by the community" which talk about the behaviour and perception of people in history long ago. This makes Option 3 correct. The same reasoning that makes option 3 correct also makes option 2 incorrect since the first part of Option 3 is used in the second part of option 2.

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Q.6
Which of the following gives the most likely relationship between the *agora* and the *polis*?

- 1 ☐ In ancient Greek city-states: the *agora* was its hallmark; the *polis* surrounded, encapsulated and supported the *agora*.
- 2 ☐ In ancient Greek culture: the *agora* represented the heart or the centre; the *polis* represented the soul or the political philosophy.

3 ☐ In ancient Greece: the *agora* with markets, temples, and courts was where public life flourished; the polis was where political life flourished

4 ☐ In ancient Greek cities: the *agora* was its heart and soul; the citizens of the *polis* assembled in the *agora*.

Solution:

Correct Answer : 4

Option 4 is correct from the second paragraph, "But what makes the Cyclopes so lawless and monstrous, according to Homer, is not simply their lack of an eye, but their lack of an assembly or *agora*. The *agora* was at the heart of the *polis*."

Option A goes beyond the scope of the passage when it says the *polis* "supported" the *agora*, making it incorrect. Option 2 goes beyond the scope of the passage when it says the *polis* represented the "soul or political philosophy", making it incorrect. Option 3 is incorrect since paragraph two mentions, "*In later years*, the agora gained market stalls and temples, council buildings and law courts . . ." while the option is general in nature.

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Answer key/Solution

Directions for questions 7 and 8: Each of the following questions consists of a paragraph followed by four summaries. Choose the option that best capture the essence of the paragraph. Type in the option number in the space provided below the question.

Q.7

About this time I began to suspect I was never named; people called me Mary because it was convenient, or because they had heard others call me Mary, I was in the beginning named after someone else who was named Mary but I was neither this person nor the one they called Mary after her, I was nameless, and in this state I perpetually wandered among fruit and flowers and foliage, among vines and overhanging rock and untamed animals, none of whom I could name, none of whom knew my name, nor, if they did, could they speak it. I read once that the Amazon was called the Green Hell, and if that is a name, I take it, if only as a substitute for my unknown name, which not even my parents knew when they named me Mary, after a woman who scrubbed her kitchen floor on her hands and knees, once a week, with a stiff brush. She was kind to me and I loved her, and since her death I have dreamt of her many times, either searching for her or speaking to her, but never once in my dreams have I called her Mary, which, I suspect, is not her name, or if it once was, is no longer.

1. Mary, the narrator, finds some solace in being freed of her name.
2. Mary's name has led her to suffer from an identity disorder.
3. Naming can influence the change of one's identity and, in turn, change one's destiny.
4. One's name and one's alter ego always clash.

Solution:

Correct Answer : 1

This is the correct summary of the paragraph. The other options don't match the tone of the paragraph.

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Answer key/Solution

Directions for questions 7 and 8: Each of the following questions consists of a paragraph followed by four summaries. Choose the option that best capture the essence of the paragraph. Type in the option number in the space provided below the question.

Q.8

The quest for increased personal productivity – for making the best possible use of your limited time – is a dominant motif of our age. Two books on the topic by the New York Times journalist Charles Duhigg have spent more than 60 weeks on the US bestseller lists between them, and the improbable titular promise of another book, *The Four Hour Work Week*, has seduced a reported 1.35m readers worldwide. There are blogs offering tips on productive dating and on the potential result of productive dating, productive parenting; signs have been spotted in American hotels wishing visitors a "productive stay". The archetypal Silicon Valley start-up, in the last few years, has been one that promises to free up time and mental capacity by eliminating some irritating "friction" of daily life – shopping or laundry, or even eating, in the case of the sludgy, beige meal replacement Soylent – almost always for the purpose of doing more work.

1. The quest for productive stay is inherently fruitless and doesn't add any value.
2. There is a quest among people to do more work and increase productivity which has resulted in some books being written on the topic.
3. There is a disdain among people for some friction of daily life which can be eliminated by some productive tips.
4. People today don't want to be bothered with menial labour and want to use all their time working in a productive manner.

Solution:

Correct Answer : 2

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Answer key/Solution

Directions for questions 9-14: The passage given below is followed by a set of six questions. Choose the most appropriate answer to each question.

If you tilt your head just so when you're watching *The Dark Tower*, you can almost see the movie it was trying to be, a mystical saga spanning numerous worlds and genres. Stephen King spent almost 35 years writing stories about Roland the Gunslinger, Jake Chambers, and the Man in Black, as well as dozens of other characters, and although plans to develop the seven-book (and then some) cycle as a multi-film series never came to pass, the movie wants to convey that sense of scale. There are whispers of a war that has been raging since the beginning of time, against a threat that is larger than the universe itself, of worlds that have been and worlds yet to be. And then there is the sight of Jake Chambers (Tom Taylor), a teenage boy from New York City, being

attacked by the floor of a decrepit house, which as it envelops him starts to look suspiciously like it's been fashioned out of a cardboard box. In an era less focused on the construction of cinematic universes, *The Dark Tower* might have been a faintly cheesy cult classic, one where the low-grade special effects and "Scene Missing" lacunae were part of its charm. But the movie doesn't have the conviction that might allow you to look past its manifold shortcomings and there's nothing charming about it. There's so much potential in what remains of King's stories that for a good while, that's enough. Jake, a troubled teenager whose disturbing dreams turn out to be manifestations of his nascent psychic powers—called "the shine," one of many ways in which the story functions as an overarching framework for all of King's novels—and those powers lead him to a portal to Mid-World, one among countless other inhabited planets strewn across the universe, and possibly separated in time as well as space. It's there he meets Roland (Idris Elba), a kind of gun-toting warrior knight who is also a descendent of King Arthur, and learns about the Man in Black (Matthew McConaughey), an all-powerful sorcerer whose aim is to destroy the Dark Tower that keeps the universe in balance. Incorporating ancient myths and futuristic technology, magical spells and marksmanship, it mixes elements from so many kinds of stories that the mixing itself comes to be the point. It's all the same tale, whether it's played out with six-shooters or sky-rending blasts of light. Although it may be merely a clever ruse to keep fans of King's books from complaining about this or that omission, the film's makers announced last year that *The Dark Tower* is actually a sequel to King's books rather than an adaptation of them, since the novels suggest that some version of the battle between Roland and the Man in Black is always going on and always will be. Perhaps that's why the movie feels like it's always running in circles.

Although *The Dark Tower* has hints of the science fiction, fantasy, and western genres, to name only a few, Arcel doesn't have a particular feel for any of them. The cinematography is flat and colorless, and it makes the sets look cheap and flimsy. At a trim 95 minutes, the movie is always in a hurry to get somewhere, but we never linger long enough to get a real sense of place, even though some of its locations, like the mountaintop command base that the Man in Black—whose real name, incidentally, is Walter—and his minions inhabit, or the rustic village where Roland and Jake take shelter, are intriguing enough to be worth poking around awhile. The story is a journey at heart, but the movie keeps rushing to the next destination. Even if you haven't been following the behind-the-scenes reports of *The Dark Tower's* own tumultuous journey to the screen, it's easy to spot the hallmarks of a troubled production—Taylor appears to have gone through puberty in between principal photography and reshoots, so that his voice drops an octave from one scene to the next, and sometimes one shot to the next. But the movie would have been better as a shaggy, off-the-rails mess than the gutted husk as which it's ended up.

Q.9

The statement that best captures the author's attitude towards the movie in the passage is:

- ☐ 1 Watching it from the correct angle and perspective is important to understanding the different genres the movie spans
- ☐ 2 In spite of its numerous shortcomings, it has its good parts due to the potential of King's scriptwriting shining through
- ☐ 3 Had the current era focused less on construction of cinematic universes, it would have been a charming movie because of its "low-grade special effects and "Scene Missing" lacunae
- ☐ 4 The movie's numerous shortcomings override the potential that King's writing brings to the table

Solution:

Correct Answer : 4

Option 4 is the essence of the passage, making it correct. Option 1 is incorrect because while the passage starts, "If you tilt your head just so when you're watching *The Dark Tower*, you can almost see the movie it was trying to be, a mystical saga spanning numerous worlds and genres.", it does not say so in the context of the question being asked. Option 2 is incorrect since it mentions *scriptwriting* instead of writing, which the passage mentions. Option 3 is incorrect since it converts a possibility into a certainty, "In an era less focused on the construction of cinematic universes, *The Dark Tower* might have been a faintly cheesy cult classic, one where the low-grade special effects and "Scene Missing" lacunae were part of its charm."

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Q.10

The author mentions Jake Chambers (Tom Taylor) in the passage in order to:

- 1 ☐ point out that while the movie has two different names for the same person, they are actually one and the same
- 2 ☐ contrast how the movie showcases Jake as compared to Roland and the Man in Black by talking about one first and the other later
- 3 ☐ set up a palpable sense of anticipation in the lead-up to the discussion of the protagonist in the movie
- 4 ☐ contrast the intended grand vision during the movie's ideation with its not-so-grand implementation

Solution:

Correct Answer : 4

The first paragraph introduces the intended grand vision, "*If you tilt your head just so when you're watching *The Dark Tower*, you can almost see the movie it was trying to be, a mystical saga spanning numerous worlds and genres.*" However, this grand vision is not achieved, as can be seen at the end of the first paragraph, ". . . which as it envelops him starts to look suspiciously *like it's been fashioned out of a cardboard box.*" This makes option 4 correct. Tom Taylor refers to the real name (or stage name) of the character in the movie. Option 1 specifically mentions "the movie has two different names for the same person", making it incorrect. Options 2 and 3 do not have support in the passage, since it does not contrast these characters.

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Answer key/Solution

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Although *The Dark Tower* has hints of the science fiction, fantasy, and western genres, to name only a few, Arcel doesn't have a particular feel for any of them. The cinematography is flat and colorless, and it makes the sets look cheap and flimsy. At a trim 95 minutes, the movie is always in a hurry to get somewhere, but we never linger long enough to get a real sense of place, even though some of its locations, like the mountaintop command base that the Man in Black—whose real name, incidentally, is Walter—and his minions inhabit, or the rustic village where Roland and Jake take shelter, are intriguing enough to be worth poking around awhile. The story is a journey at heart, but the movie keeps rushing to the next destination. Even if you haven't been following the behind-the-scenes reports of *The Dark Tower's* own tumultuous journey to the screen, it's easy to spot the hallmarks of a troubled production—Taylor appears to have gone through puberty in between principal photography and reshoots, so that his voice drops an octave from one scene to the next, and sometimes one shot to the next. But the movie would have been better as a shaggy, off-the-rails mess than the gutted husk as which it's ended up

Q.11

Which options accurately represents the emotions, and characterizations ascribed to *The Dark Tower* (and/or its contents)?

- 1 ☐ The journey of *The Dark Tower* as a movie, like the journey in the movie, is rushed – which is to the detriment of both
- 2 ☐ It is in a hurry to get somewhere, in spite of its 95 minutes, which makes the interesting locales in the movie not worth their while
- 3 ☐ While trying to communicate the journey inherent in King's books, the movie's own journey has been troubled
- 4 ☐ The myriad genres and worlds that it spans likely lead it to get a sensation akin to that of sub-clinical but manifested multiple personality disorder

Solution:

Correct Answer : 3

Option 3 is correct from the last paragraph, "The story is a journey at heart, but the movie keeps rushing to the next

Bookmark

Answer key/Solution

destination. Even if you haven't been following the behind-the-scenes reports of *The Dark Tower's* own tumultuous journey to the screen" which tells us both that the story is a journey, and the movie's journey has been troubled. Option 1 is incorrect since it says that the journey in the movie is rushed, while the last paragraph says, "... but the *movie* keeps rushing to the next destination". The last paragraph states, "At a *trim* 95 minutes, the movie is always in a hurry to get somewhere . . .", which is inverted in option 2 ("inspite of its 95 minutes"), making it incorrect. Since the question asks what has been ascribed (making it factual, rather than inferential), option 4 (which makes an inference) is incorrect.

Feedback

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Q.12

Which of the following options best captures the essence of *The Dark Tower* as discussed in the passage?

- 1 ☐ On manifold fronts, the movie fails to capitalize on the potential provided by King's 35-year-story.
- 2 ☐ The potential present in King's story is lost in translation due to the flat cinematography, the hurriedness and the troubled production
- 3 ☐ *The Dark Tower* falls flat on its face in the midst of trying to run a marathon
- 4 ☐ The viewers tilt is an important aspect in deciding the takeaway for the viewer from *The Dark Tower*

Solution:

Correct Answer : 3

The essence regarding the movie as discussed in the passage is that it does not live up to the potential and grand scale of King's stories and books. This is presented in options 1, 2 and 3. However, options 1 and 2 are incorrect due to the use of "35-year-old" story and "King's story" respectively, which change the meaning given in the passage that King spent 35 years writing these *stories*. Option 3 uses a similar, sarcastic metaphor to discuss the shortcomings of the movie as the passage itself does, making it correct. While the passage does discuss the viewer's tilt in the first paragraph, it does not discuss what option 4 states.

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Answer key/Solution

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Q.13

Which of the following options can most likely be inferred regarding the characters in *The Dark Tower*?

- 1 ☐ Roland the Gunslinger, Jake Chambers and the Man in Black form a triumvirate battling for control of the Dark Tower
- 2 ☐ Since they are part of a sequel, their actions, motivations, and characterisations are substantially different from those in the books
- 3 ☐ Roland likely had support in his fight against the Man in Black for control of *The Dark Tower*
- 4 ☐ Just like Walter, and Roland, Jake Chambers also had an epithet describing him in the books and the movies

Solution:

Correct Answer : 3

"... since the novels suggest that *some version of the battle between Roland and the Man in Black* is always going on and always will be" in the second paragraph tells us that Roland and the Man in Black are on opposite sides of a battle. There is evidence to show that Jake supports Roland in the third paragraph, "... where Roland and Jake take shelter. ...". This makes option 3 correct. Option 1 is incorrect due to the use of "triumvirate", which means "group or set of three". Option 2 is incorrect due to the use of "substantially different" – the best that the passage provides is in the second paragraph, "Although it may be merely a clever ruse to keep fans of King's books from complaining about this or that omission" Option 4 is far-fetched – there is no support for it in the passage. Further, an epithet is added on to a name (such as Roland *the Gunslinger*), which is not the case with the *Man in Black* – entirely different from Walter.

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Q.14

The primary tone of the passage is:

- 1 ☐ sarcastic
- 2 ☐ analytical
- 3 ☐ opinionated
- 4 ☐ balanced

Solution:

Correct Answer : 1

The author has an opinion, making "balanced" incorrect, while the passage does not come across as biased, which is what would make opinionated correct. While it analyses the movie, it does so in a sarcastic manner. This makes options 2, 3 and 4 incorrect. The passage praises some of the finer aspects of the movie, but definitely criticizes it in a sarcastic tone as can be seen from the ends of the first paragraph, "... which as it envelops him starts to look suspiciously like it's been fashioned out of a cardboard box.", the second paragraph, "Perhaps that's why the movie feels like it's always running in circles." and the third paragraph, "But the movie would have been better as a shaggy, off-the-rails mess than the gutted husk as which it's ended up." This makes option 1 correct.

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Answer key/Solution

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Direction for questions 15-17: Read the following paragraphs and answer the questions that follow.

Q.15

I would like to respond to the Home Minister's request at the start of our debate that instead of merely criticising the Government and describing the climate of mounting intolerance in the country, that we should offer some practical suggestions as to what the Government can do to resolve this crisis. My principal suggestion is that it is time for the Government to take its own slogans seriously and put India First. India's great strength, and the source of much of its soft power and the respect in which it is held in the world, is our precious legacy of civilizational pluralism, coupled with our robust democracy. The Indian adventure is that of human beings of different ethnicities and religions, languages and beliefs, working together under the same roof, dreaming the same dreams.

Which of the following, if true, most strongly weakens the above argument?

1. The government has tried to put India first without much success in the recent years.
2. Indians can never be united as there is an inherent friction among the different groups.
3. Fostering faith, tolerance, and unity among its citizens are desirable goals for any government.
4. The recent increase in crimes has put a dent on the image of India.

Solution:

Correct Answer : 1

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Answer key/Solution

Direction for questions 15-17: Read the following paragraphs and answer the questions that follow.

Q.16

Many organizations are helping people in poor countries to gain access to credit. Most of these credit loans are repaid, and they have created many industries, such as farms, that help create a sustainable provision for people and also develop nations economically. If these people do not have access to credit, they cannot start up industries that combat poverty.

Which of the following, if true, validates the above argument?

1. Start up industries don't depend solely on credit and there are many other ways of improving the economy of poor nations.
2. Economic development is the surest way of uplifting an economically backward nation in an all round manner.
3. Kenya, a poor nation, has been helped by gaining access to more foreign direct investment and the number of mass death due to starvation has gone down.
4. The tradition of giving credit is an ancient practice in many African countries.

Solution:

Correct Answer : 2

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Answer key/Solution

Direction for questions 15-17: Read the following paragraphs and answer the questions that follow.

Q.17

If you trek, you must be an adventurer. There is a lot of adventure outside this world. Hence, if you want to live a meaningful life, you must trek.

Which of the following is an argument similar to the one given above?

1. One becomes enlightened when one enters the world of books. This world contains a plethora of reading material. So if you read, you have lived a life which is worth it.
2. There is a lot of food available in this party. Eating excessive food makes one sick. He is eating a lot right now. He is going to be sick.
3. In order to be successful, one must be physically fit. Arnav is not physically fit. Hence, Arnav can never be successful.
4. One's sacrosanct duty in this world is to care for one's old parents. Not following this duty violates a sacred code. Hence, if one has violated a sacred code, one must have neglected one's old parents.

Solution:

Correct Answer : 1

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Answer key/Solution

Directions for questions 18-20: The passage given below is followed by a set of three questions. Choose the most appropriate answer to each question.

Over the next five years, Filoche and Mayboroda brought in additional collaborators and improved the landscape function's predictive power - they described a new version of the landscape function — which, in simple terms, is the reciprocal of the original one — that exactly predicts where electrons will localize and at what energy level. "The power of the landscape function is letting you govern the waves, letting you design the system in which you can actually control the localization, [rather than letting] it be given by the gods," said Mayboroda. And that, as it turns out, is exactly what you need to build a better LED.

LEDs are often hailed as the future of lighting. They're much better at efficiently converting energy into light than conventional bulbs. But LEDs are still a bit like a found resource: We've got this thing, we know it's useful, but we don't completely understand how to make it better. "You lack control in this situation. You don't know why you've performed well, and you don't know what to do to go even further," Filoche said. What we do know is that LEDs work through localization. LEDs contain thin layers of semiconducting materials bounded by electrodes. Those electrodes apply a voltage that sets the electron in motion. The electrons move by hopping from one atom to another, assuming new positions in the "potential" energy map as they do so. As the electrons move, they leave behind positively charged "holes" that interact with electrons in important ways. As for the electrons themselves, when they move from positions of higher energy to positions of lower energy, under the right circumstances they emit the difference as a photon of light. Concentrate enough of these photons and you can banish the dark.

Of course, electrons don't always go where you want them to. Modern LEDs are made from wafers of a semiconducting alloy, gallium nitride, which surround even thinner layers of a related alloy, indium gallium nitride. These thin interior layers are evocatively called a "quantum well" — when electrons fall in, they localize at lower energy levels. If they localize in the presence of a hole, the energy difference is emitted as a photon of light; if they localize without a hole, the energy difference is emitted as a photon of heat and the whole effort is for naught. So that's the setup: You want electrons to localize in quantum wells in the presence of holes to emit light. For a number of reasons, gallium nitride is a good material in which to make this happen, but it also has drawbacks — due to the way it's manufactured, you end up with a material that's very irregular at the atomic level.

Q.18

After reading the passage and understanding it, it can be inferred that the function mentioned in the passage is most likely to be:

- 1 ☐ the measurement of the suitability of indium gallium nitride to create a functional "quantum well" - without having too many impurities in it.
- 2 ☐ a measurement of localization, letting you govern the waves, and design the system rather than letting it be given by the gods.
- 3 ☐ a mathematical function that provides an output that can help build a better LED through more suitable localization in "quantum wells".
- 4 ☐ a scientific function that predicts the power of the landscape, helps control localization and is likely to result in a better LED.

Solution:

Correct Answer : 3

Option 3 is correct from the first paragraph, "Filoche and Mayboroda brought in additional collaborators and improved the landscape function's predictive power. . .that exactly predicts where electrons will localize and at what energy level . . . And that, as it turns out, is exactly what you need to build a better LED." and the last paragraph which talks about how for LEDs to function efficiently, localization should work the way that we want it to. Option 1 picks up something mentioned in the last paragraph, but not in the context of the question being asked, making it incorrect. The first paragraph says, "The power of the landscape function is letting you govern the waves, letting you design the system in which you can actually control the localization, [rather than letting] it be given by the gods," said Mayboroda." where the "it" refers to the localization, rather than the design of the system - which is what option 2 says. This makes it incorrect. Option 4 incorrectly says, "predicts the power of the landscape", which does not have support in the passage, making it incorrect.

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Answer key/Solution

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Q.19

Which of the following is likely true, based on the passage's description of the functioning of an LED?

- 1 ☐ A more-expensive combination of materials that controls localization better would result in lower absolute heat, and higher absolute light.
- 2 ☐ A less-expensive combination of materials that controls localization worse would result in higher absolute heat, and lower absolute light.
- 3 ☐ A less-expensive combination of materials will control localization worse, resulting in higher relative heat, and lower relative light.
- 4 ☐ A more-expensive combination of materials that controls localization better would result in lower relative heat, and higher relative light.

Solution:

Correct Answer : 4

The last paragraph mentions, "If they localize in the presence of a hole, the energy difference is emitted as a photon of light; if they localize without a hole, the energy difference is emitted as a photon of heat and the whole effort is for naught." This tells us that the focus of an LED (not surprisingly) is to have a higher proportion of light to heat. We cannot predict absolute amounts of heat and light, without knowing the energy levels at which it operates. For example, an LED that is twice as efficient, but produces three times the light, would still produce more heat (than the base version). This makes options 1 and 2 incorrect. Option 3 introduces a cause-effect relationship in "less-expensive combination of materials will control localization worse . . .", which has no support in the passage, making it incorrect.

Option 4 is correct since it correctly infers that better localization would result in a predictable (and correct) reduction in relative heat, and increase in relative light.

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Over the next five years, Filoche and Mayboroda brought in additional collaborators and improved the landscape function's predictive power - they described a new version of the landscape function — which, in simple terms, is the reciprocal of the original one — that exactly predicts where electrons will localize and at what energy level. "The power of the landscape function is letting you govern the waves, letting you design the system in which you can actually control the localization, [rather than letting] it be given by the gods," said Mayboroda. And that, as it turns out, is exactly what you need to build a better LED.

LEDs are often hailed as the future of lighting. They're much better at efficiently converting energy into light than conventional bulbs. But LEDs are still a bit like a found resource: We've got this thing, we know it's useful, but we don't completely understand how to make it better. "You lack control in this situation. You don't know why you've performed well, and you don't know what to do to go even further," Filoche said. What we do know is that LEDs work through localization. LEDs contain thin layers of semiconducting materials bounded by electrodes. Those electrodes apply a voltage that sets the electron in motion. The electrons move by hopping from one atom to another, assuming new positions in the "potential" energy map as they do so. As the electrons move, they leave behind positively charged "holes" that interact with electrons in important ways. As for the electrons themselves, when they move from positions of higher energy to positions of lower energy, under the right circumstances they emit the difference as a photon of light. Concentrate enough of these photons and you can banish the dark.

Of course, electrons don't always go where you want them to. Modern LEDs are made from wafers of a semiconducting alloy, gallium nitride, which surround even thinner layers of a related alloy, indium gallium nitride. These thin interior layers are evocatively called a "quantum well" — when electrons fall in, they localize at lower energy levels. If they localize in the presence of a hole, the energy difference is emitted as a photon of light; if they localize without a hole, the energy difference is emitted as a photon of heat and the whole effort is for naught. So that's the setup: You want electrons to localize in quantum wells in the presence of holes to emit light. For a number of reasons, gallium nitride is a good material in which to make this happen, but it also has drawbacks — due to the way it's manufactured, you end up with a material that's very irregular at the atomic level.

Q.20

The main point of writing this passage is to:

- 1 ☐ show how LEDs are the future of lighting - they are the ones best placed to banish the dark.

2 ☐ discuss the differences between modern LEDs and future LEDs, in terms of the control that we have over localization.

3 ☐ point out how improving the predictive power of science can help improve products based on principles associated with that prediction

4 ☐ discuss how Filoche and Mayboroda helped improve prediction of localization, single-handedly, resulting in significant potential improvements to LEDs:

Solution:

Correct Answer : 3

The focus of this passage is on the landscape function, and how it improves the predictive power with respect to localisation, which in turn has the potential to improve LEDs. This is best captured in option 3. Option 1 focuses on a small aspect of the passage, making it incorrect. In addition, it is factually incorrect since the passage says that LEDs are "hailed" as the future of lighting. Option 3 is incorrect since it talks about "future" LEDs, which are not discussed in the passage. Option 4 has "single-handedly, which contradicts the first sentence of the passage, making it incorrect.

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Answer key/Solution

Directions for question 21: The following question consists of a paragraph followed by four summaries. Choose the option that best captures the essence of the paragraph. Type in the option number in the space provided below the question.

Q.21

Stories are powerful because our minds are hardwired to relate to them. More than prompt an emotional response, story structure actually serves an important brain function—it is an "organizing principle for human action." Stories are about characters, who bring life and meaning to the story. By seeing through the eyes and experience of a character, a reader identifies with the subject, which sparks his empathy. Thus a reader readily absorbs a story's message. But that's not all. Studies also show that story structure improves a reader's ability to remember, motivates a reader to learn and helps sustain his interest in the story's subject. If stories can do all that for the reader, can they do the same for the writer?

1. Stories help writers by making them understand the characters better. It makes the process of writing more fruitful.
2. Stories help the readers by providing some necessary training for improving certain brain functions.
3. Stories help the readers and writers by striking an emotional chord with both the groups in the manner of sparking their empathy and brain functions.
4. By sparking one's empathy, stories make a powerful tool to condition the readers' brain to absorb the story's message.

Solution:

Correct Answer : 2

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Answer key/Solution

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If you have ever entered into a debate with a climate change denier, you know that no amount of "facts" or "information" will resolve the dispute. That's because the debate in the end has nothing to do with facts, but rather with the narratives we use to frame our relationship to the natural world. This is why it is unfortunate that environmentalism seems to have been reduced to a movement largely concerned with translating scientific understanding into sound policy. While science is undoubtedly a central source of our understanding of the environment, it is a shame that we have ignored the role that the humanities — particularly theology, philosophy, and the arts — have played in cultivating an ethos of care for the planet. For what is really at stake here is not only the environment, but also the quality of our human community. This state of affairs is especially unfortunate since American environmentalism itself, as Mark Stoll makes clear, owes as much to religious and artistic thought as it does to the development of scientific understanding. In other words, environmentalism in its 19th- and early 20th-century iterations was astonishingly open about its values even while it maintained fidelity to the discoveries of science. Indeed, Stoll provides a history of how theology, the arts, and the sciences stimulated each other to deeper understandings of our relationship to nature. It is clear that such figures as Thomas Cole, Ralph Waldo Emerson, George Perkins Marsh, John Muir, and Henry David Thoreau drew the moral force of their arguments from the lessons they learned from theology, and were drawn to an ecological understanding of the world precisely because of — not despite — their metaphysical views and artistic impulses.

Stoll discovers, for example, that environmentalism's major proponents during this period were in the vast majority indebted to Calvinist theology, either as Presbyterians or Congregationalists, a fact that gave environmentalism its persuasive tone, indeed its "moral and political center." The takeaway from Stoll's indispensable and game-changing study is quite simple but profoundly important: "a religious perspective gives the history and development of environmentalism a trajectory, unity, and power." Which begs the questions: Where is that "moral and political center" today? What might still give the environmental cause the kind of urgency and attention it deserves? And what might the role of religion be when, in the mouths of such "theologians" as Sarah Palin or James Inhofe, we hear religious justification for denying the very possibility of climate change? Why is it that environmental concern today is lower among the religiously active than among the religiously unaffiliated? Doesn't it seem, then, that religion is the problem rather than the Solution?

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from the experience of the plantations, on the other. A disturbing implication of Stoll's study is that the communitarian ethos is largely absent from elements in Christianity today, further deepening the divide between secular progressives and Christian conservatives.

Q.22

The primary issue with environmentalism that the author discusses in the passage is that:

- 1 ☐ the religion-environmentalism nexus in its later iteration is detrimental - more of a hindrance than a panacea
- 2 ☐ science has been given precedence over the humanities, whose incorporation would have led to a synergistic influence
- 3 ☐ theologians denying environmental change leads to lower environmental concern among the religiously active as compared to the religiously unaffiliated
- 4 ☐ apart from Calvinists, Presbyterians and Congregationalists, other religious denominations did not contribute to environmentalism

Solution:

Correct Answer : 2

That the role of the humanities has been side-lined is mentioned in the first paragraph, "... it is a shame that we have ignored the role that the humanities — particularly theology, philosophy, and the arts — have played in cultivating an ethos of care for the planet. ... Indeed, Stoll provides a history of how *theology, the arts* [examples of humanities], and the sciences *stimulated each other to deeper understandings of our relationship to nature*. [synergy]". It is further substantiated in the last paragraph, "In his history, it becomes clear that the past achievements of environmentalism in America ... owe a great deal ... as well as to a confluence between religion, science, and the arts." This makes option 2 correct. The remaining options all focus on the role of religion, but these are distractors. Religion has been presented as one of the humanities, not the major issue. Option 1 is incorrect due to the use of "panacea". Option 3 introduces a cause-effect relationship between its two parts, which is not present in the passage (end of paragraph two), making it incorrect. Further, it uses the simple present tense, making an "eternal truth" out of it (or stating it as generally true).

Option 4 has Presbyterians and Congregationalists as different denominations whereas they are part of Calvinists. Further, the second part of the option does not have support in the passage.

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Answer key/Solution

Directions for questions 22-27: The passage given below is followed by a set of six questions. Choose the most appropriate answer to each question.

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Stoll discovers, for example, that environmentalism's major proponents during this period were in the vast majority indebted to Calvinist theology, either as Presbyterians or Congregationalists, a fact that gave environmentalism its persuasive tone, indeed its "moral and political center." The takeaway from Stoll's indispensable and game-changing study is quite simple but profoundly important: "a religious perspective gives the history and development of environmentalism a trajectory, unity, and power." Which begs the questions: Where is that "moral and political center" today? What might still give the environmental cause the kind of urgency and attention it deserves? And what might the role of religion be when, in the mouths of such "theologians" as Sarah Palin or James Inhofe, we hear religious justification for denying the very possibility of climate change? Why is it that environmental concern today is lower among the religiously active than among the religiously unaffiliated? Doesn't it seem, then, that religion is the problem rather than the Solution?

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Q.23

The truth of the matter with respect to climate change deniers is that:

- 1 ☐ they just need enough "facts" and "information" presented using the right subjects in order to convince them
- 2 ☐ paradoxically, the narratives they use to frame their relationships to the natural world are analogous to the ones used by environmentalists

3 ☐ as with environmentalists, the narratives they use to frame their relationships to the natural worlds determines outcomes

4 ☐ climate change deniers, apart from narratives, likely have good debating and argumentative skills

Solution:

Correct Answer : 3

The first paragraph says, "...debate with a climate change denier ... but rather with the narratives we use to frame our relationship to the natural world." This makes the second part of option 3 correct. The paragraph continues, "... environmentalism seems to have been reduced ... science is undoubtedly a central source of our understanding of the environment, it is a shame that we have ignored the role that the humanities — particularly theology, philosophy, and the arts — have played in cultivating an ethos of care for the planet." showing that for environmentalists as well, narratives determine outcomes. However, the narratives that climate change deniers use are different from the ones that environmentalists have. This makes option 2 incorrect. Option 1 contradicts the passage, which states that no amount of facts or information will resolve the dispute. Option 4 goes beyond the scope of the passage.

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Q.24

The religious perspective, as discussed in the passage with reference to environmentalism:

1 ☐ is simple but profound – it gave the latter's history and development a trajectory, unity, and power

2 ☐ helped created a non-denominational context (as opposed to a denominational one) of moral priorities

3 ☐ created a divide between secular progressives and Christian Conservatives due to the disturbing implications of Stoll's study

4 ☐ has resulted in lower environmental concern among the among the religiously active than among the religiously unaffiliated

Solution:

Correct Answer : 2

Option 2 is correct from the last paragraph, "Indeed, what fueled the environmentalist fire was often a theology that transmigrated from a strictly sectarian context to the social and civic sphere, and facilitated a more *ecumenical* [non-denominational] language of moral urgency; saving the earth was a matter of our own salvation, degradation was a sin" Option 1 is incorrect since it changes the tense from the statement in paragraph two, "The takeaway from Stoll's indispensable and game-changing study is quite simple but profoundly important: "a religious perspective *gives* [implying conditionality] the history and development of environmentalism a trajectory, unity, and power." to (*gave* – suggesting past historical fact). Option 3 inverts the cause-effect relationship in the last sentence of the passage (Stoll's study implying a deepening divide), making it incorrect. Option 4 is incorrect since it converts a question asked at the end of paragraph two into a statement of fact.

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Q.25

Which of the following is not a technique that is present in the passage?

- ☐ 1 The use of conditional statements in order to discuss conditions contrary to fact.
- ☐ 2 The use of questions in order to discuss possibilities without stating an opinion regarding those possibilities
- ☐ 3 The substantiation and buttressing of facts through the presenting of third-party opinions and research.
- ☐ 4 The use of an analytical tone — comprising the use of facts, and opinions based on analysis of those facts

Solution:

Correct Answer : 1

Option 1 is correct since, though the paragraph does use conditional statements at the beginning of the first paragraph, it does not discuss conditions contrary to fact. Option 2 is incorrect since the paragraph uses rhetorical questions at the end of paragraph two. Option 3 is incorrect since the paragraph uses references to Stoll throughout and specifically at the end of the last paragraph. Option 4 is incorrect since the entire passage is written in an analytical tone.

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Q.26

Which of the following is not among the themes in the passage?

- ☐ 1 That religion today, absent its past focus on community, increases the division between those who are secular, and those who are theologically conservative.
- ☐ 2 That the synergy between religion and environmentalism may not be so equivocal in future as it was in the past
- ☐ 3 That with some people, it is not facts, but the beliefs that they possess, that determine their view of the world
- ☐ 4 That it is possible to incorporate religious views and viewpoints while still being true to science

Solution:

Correct Answer : 2

Option 2 is correct due to the use of equivocal - which means having two different meanings - which is not the way it is presented in the passage. The other options represent themes that are discussed in the passage, making them incorrect. Option 1 is incorrect from the last sentence of the passage, "A disturbing implication of Stoll's study is that the communitarian ethos is largely absent from elements in Christianity today, further deepening the divide between secular progressives and Christian conservatives." Option 3 is incorrect from the first paragraph, "That's because the debate in the end has nothing to do with facts, but rather with the narratives we use to frame our relationship to the natural world." Option 4 is incorrect from the first paragraph, "In other words, environmentalism in its 19th- and early 20th-century iterations was astonishingly open about its values even while it maintained fidelity to the discoveries of science."

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Stoll discovers, for example, that environmentalism's major proponents during this period were in the vast majority indebted to Calvinist theology, either as Presbyterians or Congregationalists, a fact that gave environmentalism its persuasive tone, indeed its "moral and political center." The takeaway from Stoll's indispensable and game-changing study is quite simple but profoundly important: "a religious perspective gives the history and development of environmentalism a trajectory, unity, and power." Which begs the questions: Where is that "moral and political center" today? What might still give the environmental cause the kind of urgency and attention it deserves? And what might the role of religion be when, in the mouths of such "theologians" as Sarah Palin or James Inhofe, we hear religious justification for denying the very possibility of climate change? Why is it that environmental concern today is lower among the religiously active than among the religiously unaffiliated? Doesn't it seem, then, that religion is the problem rather than the Solution?

Stoll's study provides a helpful guide to address such questions. In his history, it becomes clear that the past achievements of environmentalism in America — for instance, the conservation movement that resulted in the protection of national parks and wilderness areas, as well as major environmental legislation — owe a great deal to the religious rhetoric of early environmentalism, as well as to a confluence between religion, science, and the arts. We see

this, for example, in John Muir's passionate and poetic jeremiads on behalf of American wilderness. Indeed, what fueled the environmentalist fire was often a theology that transmigrated from a strictly sectarian context to the social and civic sphere, and facilitated a more ecumenical language of moral urgency saving the earth was a matter of our own salvation, degradation was a sin. Stoll insists that the writings of Calvin were particularly influential since he conceived of Reform more as a communitarian and social matter than merely a question of individual salvation. Not all Christians saw it that way, of course. Stoll points to an earlier version of today's "culture wars" played out between the more communitarian and pro-environmental ethos of Northern theology which drew from the experience of the New England towns, on the one hand, and the more libertarian and individualistic ethos of Southern theology drawn from the experience of the plantations, on the other. A disturbing implication of Stoll's study is that the communitarian ethos is largely absent from elements in Christianity today, further deepening the divide between secular progressives and Christian conservatives.

Q.27

To foster environmentalism among students, the author of the passage would most likely agree that the curriculum in a school should focus on:

- 1 ☐ science and humanities (philosophy, the arts, sociology, gender studies), but not religion, since religion is a problem rather than the solution
- 2 ☐ science, and humanities such as the arts, economics, anthropology, philosophy, and religion, since environmentalism's major proponents were indebted to Calvinist theology
- 3 ☐ all humanities, without delving too deeply into science, letting the focus be on translating scientific understanding into robust policy
- 4 ☐ a syncretic, synergistic development of science and the humanities, helping create a willingness to consider new values while being true to science

Solution:

Correct Answer : 4

The author thinks that humanities have a role to play in environmentalism, as mentioned in the first paragraph, "... it is a shame that we have ignored the role that the humanities — particularly theology, philosophy, and the arts — have played in cultivating an ethos of care for the planet Indeed, Stoll provides a history of how *theology, the arts, and the sciences stimulated each other to deeper understandings of our relationship to nature*. [synergy]". It is further substantiated in the last paragraph, "In his history, it becomes clear that the past achievements of environmentalism in America . . . owe a great deal . . . as well as to a confluence between religion, science, and the arts." This makes option 4 correct - which focuses on synergy between science and the humanities. Option 1 converts a question asked by the passage into a statement, making it incorrect. Option 2 generalises the passage, not mentioning "proponents of this period", making it incorrect. Option 3 picks a comment from the first paragraph out of context, making it incorrect.

Directions for question 28: The following question consists of a paragraph followed by four summaries. Choose the option that best captures the essence of the paragraph. Type in the option number in the space provided below the question.

Q.28

Over the past few years I've had an uncomfortable sense that someone, or something, has been tinkering with my brain, remapping the neural circuitry, reprogramming the memory. My mind isn't going—so far as I can tell—but it's changing. I'm not thinking the way I used to think. I can feel it most strongly when I'm reading. Immersing myself in a book or a lengthy article used to be easy. My mind would get caught up in the narrative or the turns of the argument, and I'd spend hours strolling through long stretches of prose. That's rarely the case anymore. Now my concentration often starts to drift after two or three pages. I get fidgety, lose the thread, begin looking for something else to do. I feel as if I'm always dragging my wayward brain back to the text. The deep reading that used to come naturally has become a struggle.

1. The author is afraid of some unknown power tinkering with his brain and taking his mind away.
2. The internet is making all of us dumber by interfering with our ability to concentrate and read.
3. The author is narrating the story of how he has lost his ability to be immersed in a book easily.
4. The author is ageing and is unable to cope with the loss of his concentration while reading.

Solution:

Correct Answer : 3

Directions for questions 29-34: The passage given below is followed by a set of six questions. Choose the most appropriate answer to each question.

The fallout following the horrific 2015 murders of nine churchgoers in Charleston, South Carolina's Emanuel A.M.E. Church proved to be a critical turning point in my thinking. After photographs of the shooter, Dylann Roof, posing with Confederate battle flags were published, calls rang out to remove both the banners and rebel monuments from public spaces. For me, the lowering of the Confederate battle flag in Columbia and elsewhere needed little justification as it'd been embraced as a symbol of "massive resistance" during the civil-rights movement. But I still held firm to my view of the monuments.

That summer, I travelled for the first time to Prague, in the former Soviet-bloc country of Czechoslovakia. I noticed almost immediately the concrete foundations and empty pedestals where monuments to communist leaders once stood. Some statues had been relocated to museums, while others were destroyed; skate boarders and sunbathers had since claimed their spot. The experience forced me to reconsider my position on the markers back home. I imagined stepping back in time to convince the residents of Prague that the monuments helped them face their past, or gave teachers an important tool with which to engage their students. This proved to be a futile exercise. Regardless of their destination, the monuments were exactly where they needed to be as determined by the community members themselves. Even empty pedestals offer important lessons that demand to be told. After all, the people of Prague were not trying to erase their history or turn away from the lessons it might offer. They had lived this past and it would remain with them. The removal of monuments to Stalin and Lenin lifted the weight of the memory of oppression, allowing the Czech people to begin to imagine a new direction for

their nation. They understood “that history can’t be a sword to justify injustice or a shield against progress,” as Barack Obama explained in his eulogy for the Charleston victims.

In the time since that visit, I have listened much more closely to the concerns of those who live in the shadows of Confederate statues, who see their removal as the next step in achieving a more equitable society. Nowhere have these voices been more passionate and forceful than in New Orleans, where workers this spring took down four Confederate and Reconstruction monuments. Local activists argued convincingly that they don’t need reminders of the history of racial injustice, because it is present all around them. The city’s mayor, Mitch Landrieu, has spoken about the need to acknowledge the damage these figures continue to do:

Can you look into that young girl’s eyes and convince her that Robert E. Lee is there to encourage her? Do you think she will feel inspired and hopeful by that story? Do these monuments help her see a future with limitless potential? Have you ever thought that if her potential is limited, yours and mine are, too?

I cannot. The removal of Confederate monuments across the country will not prevent me from doing my job as a history educator and public historian. Even empty pedestals offer important lessons that demand to be told—in fact, the statues’ removal from positions of alleged moral authority is arguably the most important chapter in their long and controversial history. And neither can some of my former students, who were among the counter-protesters in Charlottesville.

While watching the violence play out on television, it occurred to me that some demonstrators were completing a process of personal reckoning that may have begun in the classroom. They understood this history. They understood it so well that they were willing to risk danger for the benefit of their community today and tomorrow. The national debate over the monuments’ future is not unlike what happened in Prague and other cities at the end of the Cold War. And I hope they meet the same fate. Confederate monuments were erected and dedicated by white southerners as an expression of their collective values—chief among them a commitment to white supremacy that secessionists were willing to die for. Many descendants of those southerners have decided, as the freedmen and their descendants already had, that the Lost Cause does not represent them—not as members of their respective communities, and not as Americans.

Q.29

While talking about Confederate monuments, the author does not:

1 ☐ get into a thought experiment in order to better understand the perspectives of different people.

2 ☐ appeal to a stand taken by a respected authority in order to emphasise a point of view.

3 ☐ demonstrate the reasons for an important turning point in his viewpoint.

4 ☐ use a double negative in order to emphasise the positive.

Solution:

Correct Answer : 3

Option 3 is correct since the passage discusses the critical turning point with reference to battle flags not monuments as can be seen from the first paragraph, “For me, the lowering of the Confederate battle flag in Columbia and elsewhere needed little justification, as it’d been embraced as a symbol of “massive resistance” during the civil-rights movement. But I still held firm to my view of the monuments.” Option 1 is incorrect since the author undertakes a thought experiment in paragraph two, “ I imagined stepping back in time to convince the residents of Prague that the monuments helped them face their past, or gave teachers an important tool with which to engage their students.” Option 2 is incorrect since the author refers to a respected authority in paragraph three, “The city’s mayor, Mitch Landrieu, has spoken about the need to acknowledge the damage these figures continue to do: . . .” Option 4 is incorrect since the author uses a double negative in the last paragraph, “The national debate over the monuments’ future is not unlike what happened in Prague and other cities at the end of the Cold War.”

Bookmark

Answer key/Solution

FeedBack

Directions for questions 29-34: The passage given below is followed by a set of six questions. Choose the most appropriate answer to each question.

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I cannot. The removal of Confederate monuments across the country will not prevent me from doing my job as a history educator and public historian. Even empty pedestals offer important lessons that demand to be told—in fact, the statues' removal from positions of alleged moral authority is arguably the most important chapter in their long and controversial history. And neither can some of my former students, who were among the counter-protesters in Charlottesville.

While watching the violence play out on television, it occurred to me that some demonstrators were completing a process of personal reckoning that may have begun in the classroom. They understood this history. They understood it so well that they were willing to risk danger for the benefit of their community today and tomorrow. The national debate over the monuments' future is not unlike what happened in Prague and other cities at the end of the Cold War. And I hope they meet the same fate. Confederate monuments were erected and dedicated by white southerners as an expression of their collective values—chief among them a commitment to white supremacy that secessionists were willing to die for. Many descendants of those southerners have decided, as the freedmen and their descendants already had, that the Lost Cause does not represent them—not as members of their respective communities, and not as Americans.

Q.30

After a careful reading of the passage, it is clear that one of the main purposes of the author in writing it is to make the point that:

- ☐ 1 the descendants of southerners, and the descendants of freedmen are correct - as opposed to the original southerners
- ☐ 2 in order to determine correctness among multiple points of view, it is important to put yourself in the other person's shoes
- ☐ 3 reasoning and thought process play an important part in decision-making for the author - he would like to do the right thing for the right reason
- ☐ 4 the example of Dylann Roof, the thought experiment in Prague, the statement by Mitch Landrieu and the counter-protestors - all justify the removed monuments

Solution:

Correct Answer : 3

The entire passage is about the process of reasoning that led the author to change his opinion, which he has carefully examined.

Overall, it shows that the author is careful in terms of decision-making. Also, the question asks for "one of the main purposes", not "the main purpose". This makes option 3 correct.

Option 1 generalises what the passage states in the last paragraph, "Many descendants of those southerners have decided, as the freedmen and their descendants already had, that the Lost Cause does not represent them—not as members of their respective communities, and not as Americans." to all descendants, making it incorrect. Option 2 is abstract, generalising something done by the author (in the second paragraph), and hence is not a main purpose of the passage, making it incorrect.

Option 4 mentions "removed monuments" - which contradicts the last paragraph, "The national debate over the monuments' future is not unlike what happened in Prague and other cities at the end of the Cold War. *And I hope they meet the same fate.*" If you interpret the monuments to refer to the ones in Prague, then the first part of the option is not relevant to them. This makes option 4 incorrect.

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Answer key/Solution

Directions for questions 29-34: The passage given below is followed by a set of six questions. Choose the most appropriate answer to each question.

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In the time since that visit, I have listened much more closely to the concerns of those who live in the shadows of Confederate statues, who see their removal as the next step in achieving a more equitable society. Nowhere have these voices been more passionate and forceful than in New Orleans, where workers this spring took down four Confederate and Reconstruction monuments. Local activists argued convincingly that they don't need reminders of the history of racial injustice, because it is present all around them. The city's mayor, Mitch Landrieu, has spoken about the need to acknowledge the damage these figures continue to do:

Can you look into that young girl's eyes and convince her that Robert E. Lee is there to encourage her? Do you think she will feel inspired and hopeful by that story? Do these monuments help her see a future with limitless potential? Have you ever thought that if her potential is limited, yours and mine are, too?

I cannot. The removal of Confederate monuments across the country will not prevent me from doing my job as a history educator and public historian. Empty pedestals offer important lessons that demand to be told—in fact, the statues' removal from positions of alleged moral authority is arguably the most important chapter in their long and controversial history. And neither can some of my former students, who were among the counter-protesters in Charlottesville.

While watching the violence play out on television, it occurred to me that some demonstrators were completing a process of personal reckoning that may have begun in the classroom. They understood this history. They understood it so well that they were willing to risk danger for the benefit of their community today and tomorrow. The national debate over the monuments' future is not unlike what happened in Prague and other cities at the end of the Cold War. And I hope they meet the same fate. Confederate monuments were erected and dedicated by white southerners as an expression of their collective values—chief among them a commitment to white supremacy that secessionists were willing to die for. Many descendants of those southerners have decided, as the freedmen and their descendants already had, that the Lost Cause does not represent them—not as members of their respective communities, and not as Americans.

Q.31

The viewpoint of the author with respect to:

- 1 ☐ confederate monuments takes a 180-degree turn across the course of the passage
- 2 ☐ confederate monuments takes a 360-degree turn across the course of the passage
- 3 ☐ the confederate battle flag takes a 180-degree turn across the course of the passage
- 4 ☐ monuments in Prague takes a 180-degree turn across the course of the passage

Solution:

Correct Answer : 1

The first paragraph mentions, "But I still held firm to my view of the monuments." And the last paragraph says, "The national debate over the monuments' future is not unlike what happened in Prague and other cities at the end of the Cold War. And I hope they meet the same fate." indicating that the author had a complete change of opinion (180-degree turn) about the monuments. This makes option 1 correct. Option 2 is incorrect since a 360-degree turn would require switching opinions twice.

The first paragraph states, "For me, the lowering of the Confederate battle flag in Columbia and elsewhere needed little justification, as it'd been embraced as a symbol of "massive resistance" during the civil-rights movement.", making option C incorrect since it does not involve a 180-degree change of opinion. Option 4 is incorrect since the author does not have an opinion before visiting Prague with respect to the monuments there. Further, the thought experiment that he undertakes is within a single paragraph, and not across the course of the passage.

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Answer key/Solution

FeedBack

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I cannot. The removal of Confederate monuments across the country will not prevent me from doing my job as a history educator and public historian. Even empty pedestals offer important lessons that demand to be told—in fact, the statues' removal from positions of alleged moral authority is arguably the most important chapter in their long and controversial history. And neither can some of my former students, who were among the counter-protesters in Charlottesville.

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Q.32

A discerning reader observes that the author says in the passage that he cannot:

- 1 ☐ think that a young girl will feel inspired and hopeful by the story of Robert E. Lee
- 2 ☐ cannot be prevented from doing his job as a history educator and public historian by the removal of Confederate monuments – where ever they are
- 3 ☐ help a young girl see a future with limitless potential or limit her potential at the cost of limiting everyone's.
- 4 ☐ look into a young girl's eyes and convince her that Robert E. Lee is there to encourage her

Solution:

Correct Answer : 4

The statement from Mayor Mitch Landrieu after paragraph three mentions, "Can you look into that young girl's eyes and convince her that Robert E. Lee is there to encourage her? Do you think she will feel inspired and hopeful by that story? Do these monuments help her see a future with limitless potential? Have you ever thought that if her potential is limited, yours and mine are, too?" This is followed by the author's response, "I cannot." The "cannot" here refers to the first "can" at the beginning of the statement, making option 4 correct. The other options are incorrect, since they do not address the question asked.

Bookmark

Answer key/Solution

FeedBack

Directions for questions 29-34: The passage given below is followed by a set of six questions. Choose the most appropriate answer to each question.

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Q.33

It can be inferred that the important lessons that are demanded to be told, offered by empty pedestals, are with respect to:

- 1 ☐ the exact location of the statues and monuments that occupied those pedestals as determined by the community members
- 2 ☐ how the absence of a statue or a monument, is impactful as much as its presence is.
- 3 ☐ how the the monuments' removal from positions of alleged moral authority is the most important chapter in their history
- 4 ☐ the ultimate destinations taken by the statues and monuments that occupied those pedestals

Solution:

Correct Answer : 2

The author makes the same statement twice regarding empty pedestals - first in the second paragraph, and then in the last paragraph, "*The removal of Confederate monuments across the country will not prevent me from doing my job as a history educator and public historian.* Even empty pedestals offer important lessons that demand to be told—in fact, the statues' removal from positions of alleged moral authority is arguably the most important chapter in their long and controversial history." The point being made by the author is that even empty pedestals can be used to communicate history and historical points. This makes option 2 correct. Options 1, 3 and 4 while possibly mentioned in the passage near the statement mentioned in the question, are not made in the context of the question asked, making them incorrect.

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Answer key/Solution

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In the time since that visit, I have listened much more closely to the concerns of those who live in the shadows of Confederate statues, who see their removal as the next step in achieving a more equitable society. Nowhere have these voices been more passionate and forceful than in New Orleans, where workers this spring took down four Confederate and Reconstruction monuments. Local activists argued convincingly that they don't need reminders of the history of racial injustice, because it is present all around them. The city's mayor, Mitch Landrieu, has spoken about the need to acknowledge the damage these figures continue to do:

Can you look into that young girl's eyes and convince her that Robert E. Lee is there to encourage her? Do you think she will feel inspired and hopeful by that story? Do these monuments help her see a future with limitless potential? Have you ever thought that if her potential is limited, yours and mine are, too?

I cannot. The removal of Confederate monuments across the country will not prevent me from doing my job as a history educator and public historian. Even empty pedestals offer important lessons that demand to be told—in fact, the statues' removal from positions of alleged moral authority is arguably the most important chapter in their long and controversial history. And neither can some of my former students, who were among the counter-protesters in Charlottesville.

While watching the violence play out on television, it occurred to me that some demonstrators were completing a process of personal reckoning that may have begun in the classroom. They understood this history. They understood it so well that they were willing to risk danger for the benefit of their community today and tomorrow. The national debate over the monuments' future is not unlike what happened in Prague and other cities at the end of the Cold War. And I hope they meet the same fate. Confederate monuments were erected and dedicated by white southerners as an expression of their collective values—chief among them a commitment to white supremacy that secessionists were willing to die for. Many descendants of those southerners have decided, as the freedmen and their descendants already had, that the Lost Cause does not represent them—not as members of their respective communities, and not as Americans.

Q.34

With reference to the empty pedestals in Prague, and the potentially empty pedestals in the author's country:

- 1 ☐ some empty pedestals had statues, and some had monuments, but this was not dependent on whether the pedestal was in Prague or in the author's

country

2 ☐ statues and monuments refer to the same entities viewed from two different perspectives

3 ☐ the difference between statues and monuments is not discussed in the passage, even though it exists

4 ☐ whether empty pedestals had (or have) statues or monuments was (or is) dependent on whether the pedestal is Prague or in the author's country

Solution:

Correct Answer : 2

The passage interchangeably refers to monuments and statues - however the perspective of looking at them is different - since one looks at it as a statue of a personality, while as a monument it reminds people of history. This makes option 2 correct. Options 1, 3 and 4 do not have support in the passage.

Bookmark

Answer key/Solution

Sec 2

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Eight players - A, B, C, D, E, F, G and H- participated in a chess tournament. Each of the eight players played with every other player exactly once. One point is awarded for a win and 0 point for a loss. In case of draw, half a point are awarded to each of the two player. At the end of the tournament, the player with the highest number of points is ranked first and he will be the winner of the tournament. The player with the second highest number of points is ranked second, the player with the third highest number of points is ranked third and so on. If two players end up with the same number of points, the one with more number of wins is ranked better between the two. If two players have the same number of points as well as the number of wins, both of them will be ranked the same. The following is a partially filled table of points scored by the players at the end of the tournament. The point scored by a player is shown in the respective rows. For example in the tournament between A and C, A scored 1 point.

Player	A	B	C	D	E	F	G	H
A	X	0.5	1		1		1	0
B		X		1	0		1	1
C		0	X	0.5	1		0.5	1
D	0.5			X	0.5	1		
E					X			
F	1	0.5	1		0.5	X		
G				0.5	0	1	X	1
H				0.5	1	0.5		X

Q.35

The player who was ranked third at the end of the tournament is

1 ☐ A

2 ☐ B

3 ☐ H

4 ☐ F



Solution:

Correct Answer : 4

Your Answer : 4

The table after filling the data is given below:

Player	A	B	C	D	E	F	G	H	Total Point Scored	W	D	L	Rank
A	X	0.5	1	0.5	1	0	1	0	4	3	2	2	2
B	0.5	X	1	1	0	0.5	1	1	5	4	2	1	1
C	0	0	X	0.5	1	0	0.5	1	3	2	2	3	5
D	0.5	0	0.5	X	0.5	1	0.5	0.5	3.5	1	5	1	4
E	0	1	0	0.5	X	0.5	1	0	3	2	2	3	5
F	1	0.5	1	0	0.5	X	0	0.5	3.5	2	3	2	3
G	0	0	0.5	0.5	0	1	X	1	3	2	2	3	5
H	1	0	0	0.5	1	0.5	0	X	3	2	2	3	5

F is the required player.

Bookmark

Answer key/Solution

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Eight players - A, B, C, D, E, F, G and H- participated in a chess tournament. Each of the eight players played with every other player exactly once. One point is awarded for a win and 0 point for a loss. In case of draw, half a point are awarded to each of the two player. At the end of the tournament, the player with the highest number of points is ranked first and he will be the winner of the tournament. The player with the second highest number of points is ranked second, the player with the third highest number of points is ranked third and so on. If two players end up with the same number of points, the one with more number of wins is ranked better between the two. If two players have the same number of points as well as the number of wins, both of them will be ranked the same. The following is a partially filled table of points scored by the players at the end of the tournament. The point scored by a player is shown in the respective rows. For example in the tournament between A and C, A scored 1 point.

Player	A	B	C	D	E	F	G	H
A	X	0.5	1		1		1	0
B		X		1	0		1	1
C		0	X	0.5	1		0.5	1
D	0.5			X	0.5	1		
E					X			
F	1	0.5	1		0.5	X		
G				0.5	0	1	X	1
H				0.5	1	0.5		X

Q.36

Which of the following players had the maximum number of draws?

1 ☐ A

2 ☐ H

3 ☐ F

4 ☐ D



Solution:

Correct Answer : 4

Your Answer : 4

The table after filling the data is given below:

Player	A	B	C	D	E	F	G	H	Total Point Scored	W	D	L	Rank
A	X	0.5	1	0.5	1	0	1	0	4	3	2	2	2
B	0.5	X	1	1	0	0.5	1	1	5	4	2	1	1
C	0	0	X	0.5	1	0	0.5	1	3	2	2	3	5
D	0.5	0	0.5	X	0.5	1	0.5	0.5	3.5	1	5	1	4
E	0	1	0	0.5	X	0.5	1	0	3	2	2	3	5
F	1	0.5	1	0	0.5	X	0	0.5	3.5	2	3	2	3
G	0	0	0.5	0.5	0	1	X	1	3	2	2	3	5
H	1	0	0	0.5	1	0.5	0	X	3	2	2	3	5

D had the maximum number of draws.

FeedBack

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Answer key/Solution

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Eight players - A, B, C, D, E, F, G and H- participated in a chess tournament. Each of the eight players played with every other player exactly once. One point is awarded for a win and 0 point for a loss. In case of draw, half a point are awarded to each of the two player. At the end of the tournament, the player with the highest number of points is ranked first and he will be the winner of the tournament. The player with the second highest number of points is ranked second, the player with the third highest number of points is ranked third and so on. If two players end up with the same number of points, the one with more number of wins is ranked better between the two. If two players have the same number of points as well as the number of wins, both of them will be ranked the same. The following is a partially filled table of points scored by the players at the end of the tournament. The point scored by a player is shown in the respective rows. For example in the tournament between A and C, A scored 1 point.

Player	A	B	C	D	E	F	G	H
A	X	0.5	1		1		1	0
B		X		1	0		1	1
C		0	X	0.5	1		0.5	1
D	0.5			X	0.5	1		
E					X			
F	1	0.5	1		0.5	X		
G				0.5	0	1	X	1
H				0.5	1	0.5		X

Q.37

How many of them got the same rank at the end of the tournament?

1 ☐ 42 ☐ 33 ☐ 24 ☐ 1

Solution:

Correct Answer : 1

Your Answer : 1

The table after filling the data is given below:

Player	A	B	C	D	E	F	G	H	Total Point Scored	W	D	L	Rank
A	X	0.5	1	0.5	1	0	1	0	4	3	2	2	2
B	0.5	X	1	1	0	0.5	1	1	5	4	2	1	1
C	0	0	X	0.5	1	0	0.5	1	3	2	2	3	5
D	0.5	0	0.5	X	0.5	1	0.5	0.5	3.5	1	5	1	4
E	0	1	0	0.5	X	0.5	1	0	3	2	2	3	5
F	1	0.5	1	0	0.5	X	0	0.5	3.5	2	3	2	3
G	0	0	0.5	0.5	0	1	X	1	3	2	2	3	5
H	1	0	0	0.5	1	0.5	0	X	3	2	2	3	5

C, E, G and H are the four players who got the same rank.

Directions for questions 35 to 38: Answer the questions on the basis of the information given below.

Eight players - A, B, C, D, E, F, G and H- participated in a chess tournament. Each of the eight players played with every other player exactly once. One point is awarded for a win and 0 point for a loss. In case of draw, half a point are awarded to each of the two player. At the end of the tournament, the player with the highest number of points is ranked first and he will be the winner of the tournament. The player with the second highest number of points is ranked second, the player with the third highest number of points is ranked third and so on. If two players end up with the same number of points, the one with more number of wins is ranked better between the two. If two players have the same number of points as well as the number of wins, both of them will be ranked the same. The following is a partially filled table of points scored by the players at the end of the tournament. The point scored by a player is shown in the respective rows. For example in the tournament between A and C, A scored 1 point.

Player	A	B	C	D	E	F	G	H
A	X	0.5	1		1		1	0
B		X		1	0		1	1
C		0	X	0.5	1		0.5	1
D	0.5			X	0.5	1		
E					X			
F	1	0.5	1		0.5	X		
G				0.5	0	1	X	1
H				0.5	1	0.5		X

Q.38

The player who was ranked first at the end of the tournament is

1 ☐ H2 ☐ A3 ☐ B4 ☐ F

Solution:

Correct Answer : 3

Your Answer : 3

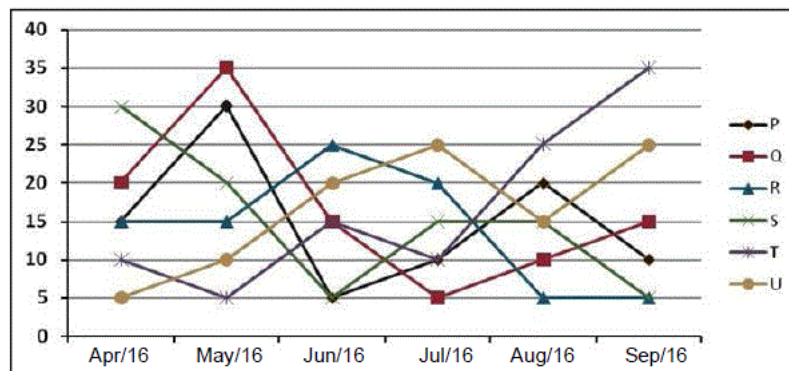
The table after filling the data is given below:

Player	A	B	C	D	E	F	G	H	Total Point Scored	W	D	L	Rank
A	X	0.5	1	0.5	1	0	1	0	4	3	2	2	2
B	0.5	X	1	1	0	0.5	1	1	5	4	2	1	1
C	0	0	X	0.5	1	0	0.5	1	3	2	2	3	5
D	0.5	0	0.5	X	0.5	1	0.5	0.5	3.5	1	5	1	4
E	0	1	0	0.5	X	0.5	1	0	3	2	2	3	5
F	1	0.5	1	0	0.5	X	0	0.5	3.5	2	3	2	3
G	0	0	0.5	0.5	0	1	X	1	3	2	2	3	5
H	1	0	0	0.5	1	0.5	0	X	3	2	2	3	5

B go the first rank in the tournament.

Directions for questions 39 to 41: Answer the questions on the basis of the information given below.

A company namely ABC Limited manufactures 100 units each of the six products – P, Q, R, S, T and U – in March every year, and sells them over the next six months. Certain number of units may remain unsold even after six months. The line graph given below depicts the number of units of each product that is sold in each of the six months from April 2016 to September 2016.



Until the product gets sold, the company has to store them in its warehouse. There is a cost associated with storing them in the warehouse and this cost is called the inventory carrying cost. The inventory carrying cost is calculated per unit of every product, on a monthly basis. The table given below gives the cost of manufacturing, the selling price, the inventory carrying cost of every product. Inventory carrying cost ceases to be applicable from the month in which a product is sold. For example, the inventory carrying cost on product P that were sold in May, 2016 was Rs. 10 per unit and on those that were sold in June, 2016 was Rs.20 per unit and so on.

Net profit = (Selling price) – (Manufacturing cost + Inventory carrying cost)

	P	Q	R	S	T	U
Selling Price (Rs./unit)	120	90	140	110	150	80
Manufacturing Cost (Rs./unit)	45	35	55	40	60	30
Inventory Carrying Cost (Rs./unit per month)	10	5	15	10	15	5

Q.39

What is the total net profit earned on those units of product Q that are sold till July 2016?

1 ☐ Rs.3725

2 ☐ Rs.3750

3 ☐ Rs.3850

4 ☐ Rs.4125



Solution:

Correct Answer : 1

Your Answer : 1

Since the inventory carrying cost of product Q is Rs.5/unit per month, for every month that number of unit of Q is not sold, the net profit decreases by Rs.5 (as we need to bear an additional cost for carrying the inventory that month). Also, Net Profit = Selling Price – (Manufacturing cost + inventory carrying cost). The following table gives the calculation of total net profit of Q:

Month	Units Sold	Selling Price per unit (Rs.)	Manufacture Cost per unit (Rs.)	Inventory Carrying cost per unit (Rs.)	Net Profit per unit (Rs.)	Total Net Profit (Rs.)
Apr-16	20	90	35	0	55	1100
May-16	35	90	35	5	50	1750
Jun-16	15	90	35	10	45	675
Jul-16	5	90	35	15	40	200
Total						3725

As we can see from the above table, for the units sold till Jul-16, product Q has a total net profit of Rs.3725.

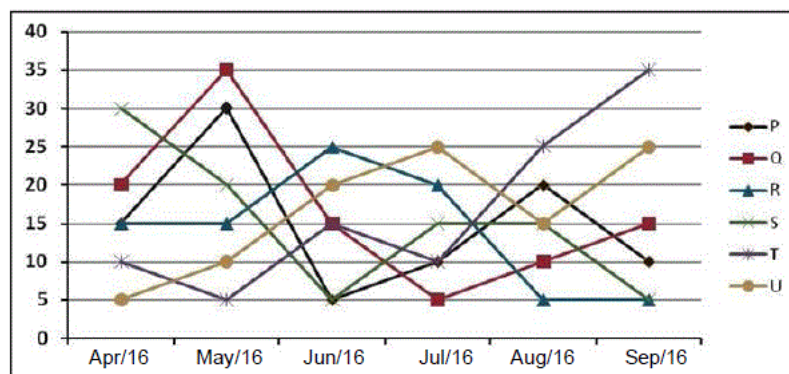
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Answer key/Solution

Directions for questions 39 to 41: Answer the questions on the basis of the information given below.

A company namely ABC Limited manufactures 100 units each of the six products – P, Q, R, S, T and U – in March every year, and sells them over the next six months. Certain number of units may remain unsold even after six months. The line graph given below depicts the number of units of each product that is sold in each of the six months from April 2016 to September 2016.



Until the product gets sold, the company has to store them in its warehouse. There is a cost associated with storing them in the warehouse and this cost is called the inventory carrying cost. The inventory carrying cost is calculated per unit of every product, on a monthly basis. The table given below gives the cost of manufacturing, the selling price, the inventory carrying cost of every product. Inventory carrying cost ceases to be applicable from the month in which a product is sold. For example, the inventory carrying cost on product P that were sold in May, 2016 was Rs. 10 per unit and on those that were sold in June, 2016 was Rs.20 per unit and so on.

Net profit = (Selling price) – (Manufacturing cost + Inventory carrying cost)

	P	Q	R	S	T	U
Selling Price (Rs./unit)	120	90	140	110	150	80
Manufacturing Cost (Rs./unit)	45	35	55	40	60	30
Inventory Carrying Cost (Rs./unit per month)	10	5	15	10	15	5

Q.40

A vendor agrees to buy all units of Product T that are remaining in Aug-16 provided the company gives him a discount on the selling price. How much discount (in Rs. per unit of product) should the company give the vendor so that by selling all the remaining units of T in Aug-16, have made the same Total Net Profit on Product T as would have made as per current scenario given in the table?

1 ☐ Rs.7.50

2 ☐ Rs.7.75

3 ☐ Rs.8.25

4 ☐ Rs.8.75

Solution:

Correct Answer : 4

Since the vendor has approached the company only in Aug-16, there would be no difference in the total net profit on the units sold till Jul-16. In other words, we need to only compare the total net profits on the units sold after Jul-16 (i.e. in Aug-16 and Sep-16).

Now, Total units of Product T sold till Jul-16 = 10 + 5 + 15 + 10 = 40 units.

Thus, total units of Product T remains unsold in Aug-16 = (100 – 40) = 60 units.

Discounted Scenario

Every unit of Product T sold in Aug-16 would attract an Inventory Carrying Cost for 4 months (viz. Apr-16, May-16, Jun-16 and Jul-16). Therefore, a total inventory carrying cost = 4 × 15 = Rs.60/unit

Hence, the net profit would be (150 – 60 – 60) = Rs.30/unit. Let the discount to be given be Rs. x/unit.

Hence, the total net profit earned after the discount = Rs.(30 – x)/unit.

Since the company intends to sell all the remaining 60 units in Aug-16 through this discount, the total net profit earned on these 60 units will be Rs.60(30 – x).

Current Scenario:

In the current scenario (without the discount), the company is selling 25 units of Product T in Aug-16 and 35 units in Sep-16.

The net profit earned on every unit of T sold in Aug-16 = 150 – 60 – 60 = Rs.30/unit and the net profit earned on every unit of T sold in Sep-16 = 150 – 60 – 75 = Rs.15/unit.

So, the total net profit on the units of Product T sold in these 2 months = (25 × 30) + (35 × 15) = Rs.1275.

As, the objective was to earn the same total net profit in both cases,

60(30 – x) = 1275

Solving this we get, x = Rs.8.75 (which is the discount that the company should have given in order to make the same total net profit).

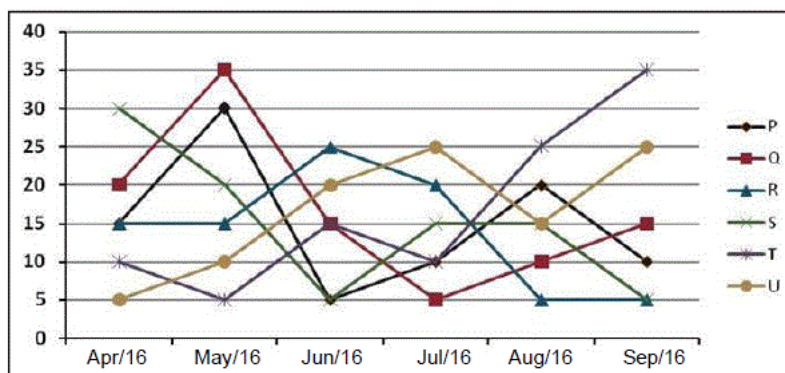
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Answer key/Solution

Directions for questions 39 to 41: Answer the questions on the basis of the information given below.

A company namely ABC Limited manufactures 100 units each of the six products – P, Q, R, S, T and U – in March every year, and sells them over the next six months. Certain number of units may remain unsold even after six months. The line graph given below depicts the number of units of each product that is sold in each of the six months from April 2016 to September 2016.



Until the product gets sold, the company has to store them in its warehouse. There is a cost associated with storing them in the warehouse and this cost is called the inventory carrying cost. The inventory carrying cost is calculated per unit of every product, on a monthly basis. The table given below gives the cost of manufacturing, the selling price, the inventory carrying cost of every product. Inventory carrying cost ceases to be applicable from the month in which a product is sold. For example, the inventory carrying cost on product P that were sold in May, 2016 was Rs. 10 per unit and on those that were sold in June, 2016 was Rs.20 per unit and so on.

Net profit = (Selling price) – (Manufacturing cost + Inventory carrying cost)

	P	Q	R	S	T	U
Selling Price (Rs./unit)	120	90	140	110	150	80
Manufacturing Cost (Rs./unit)	45	35	55	40	60	30
Inventory Carrying Cost (Rs./unit per month)	10	5	15	10	15	5

Q.41

What is the net profit earned per unit by selling P in the second quarter of 2016 (i.e. from April-2016 to June-2016)?

1 ☐ Rs.63

2 ☐ Rs.65

3 ☐ Rs.67

4 ☐ Rs.69



Solution:

Correct Answer : 3

Your Answer : 3

The following table gives the calculation of total net profit of P for the second quarter of 2016.

Month	Units Sold	Net Profit per unit (Rs.)	Total Net Profit (Rs.)
12-Apr	15	75(i.e., 120-45-0)	1125
12-May	30	65(i.e., 120-45-10)	1950
12-Jun	5	55(i.e., 120-45-20)	275
Total	50		3350

As we can see, product P has a total net profit of Rs.3350 from 50 units sold in the second quarter of 2016 (i.e. from Apr-16 to Jun-16).

Hence, total net profit per unit of P sold = $(3350 \div 50)$ = Rs.67.

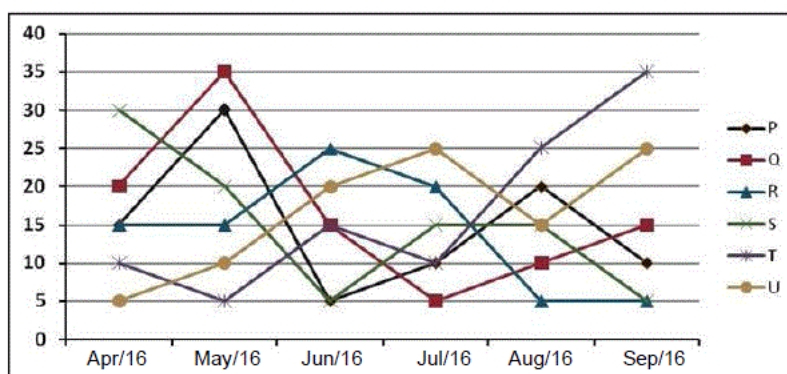
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Answer key/Solution

Directions for questions 39 to 41: Answer the questions on the basis of the information given below.

A company namely ABC Limited manufactures 100 units each of the six products – P, Q, R, S, T and U – in March every year, and sells them over the next six months. Certain number of units may remain unsold even after six months. The line graph given below depicts the number of units of each product that is sold in each of the six months from April 2016 to September 2016.



Until the product gets sold, the company has to store them in its warehouse. There is a cost associated with storing them in the warehouse and this cost is called the inventory carrying cost. The inventory carrying cost is calculated per unit of every product, on a monthly basis. The table given below gives the

cost of manufacturing, the selling price, the inventory carrying cost of every product. Inventory carrying cost ceases to be applicable from the month in which a product is sold. For example, the inventory carrying cost on product P that were sold in May, 2016 was Rs. 10 per unit and on those that were sold in June, 2016 was Rs.20 per unit and so on.

Net profit = (Selling price) – (Manufacturing cost + Inventory carrying cost)

	P	Q	R	S	T	U
Selling Price (Rs./unit)	120	90	140	110	150	80
Manufacturing Cost (Rs./unit)	45	35	55	40	60	30
Inventory Carrying Cost (Rs./unit per month)	10	5	15	10	15	5

Q.42

What is the approximate average of net profit earned on the products that are sold in the month April 2016?

1 ☐ Rs.55

2 ☐ Rs.63

3 ☐ Rs.71

4 ☐ Rs.67



Solution:

Correct Answer : 3

Your Answer : 3

Prod	Units Sold	Manufacturing Cost/Unit	SP/Unit	Net Profit /Unit	Total Net Profit
P	15	45	120	75	1125
Q	20	35	90	55	1100
R	15	55	140	85	1275
S	30	40	110	70	2100
T	10	60	150	90	900
U	5	30	80	50	250
Total	95				6750

∴ Average net profit = 6750/95 = 71.

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Answer key/Solution

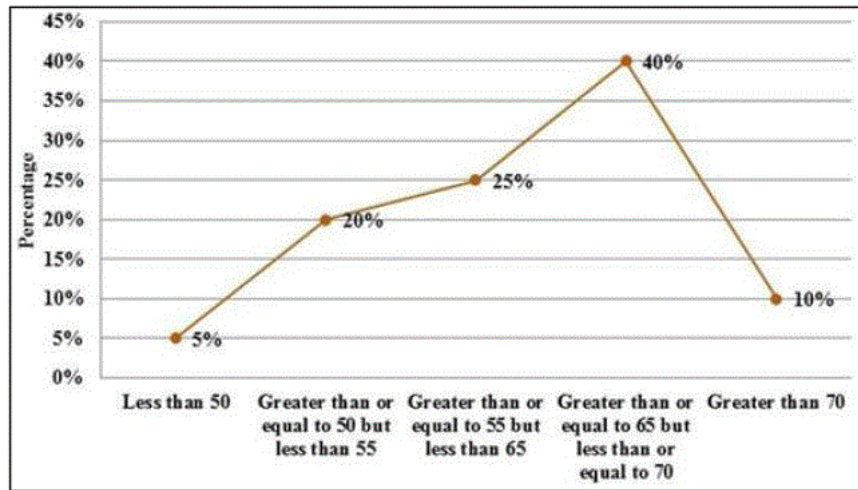
Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

The students in a dance academy are divided into six different groups namely Salsa, Tango, Ballroom, Hip Hop, Rumba and Jazz. The following table provides information about the number of boys and girls in the different dance groups.

Dance Groups	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80

The students are further divided into 5 different categories based upon their marks scored in the dance competition. The five categories are 'less than 50', 'greater than or equal to 50 but less than 55', 'greater than or equal to 55 but less than 65', 'greater than or equal to 65 but less than or equal to 70' and 'greater than 70'.

The following line graph provides information about the number of students in each of the above five categories as a percentage of the total number of students.



Q.43

At most how many boys scored not more than 70?



Solution:

Correct Answer : 435

Your Answer : 435

Bookmark

Answer key/Solution

Dance group	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80
Total	435	325

Therefore, Total students = 435 + 325 = 760

Less than 50	5% = 38
Greater than or equal to 50 but less than 55	20% = 152
Greater than or equal to 55 but less than 65	25% = 190
Greater than or equal to 65 but less than or equal to 70	40% = 304
Greater than 70	10% = 76

Number of students who scored more than 70 is 76.
 Now, assuming all these 76 students, who have scored more than 70, to be girls.
 Therefore, all 435 boys scored not more than 70 can be possible.

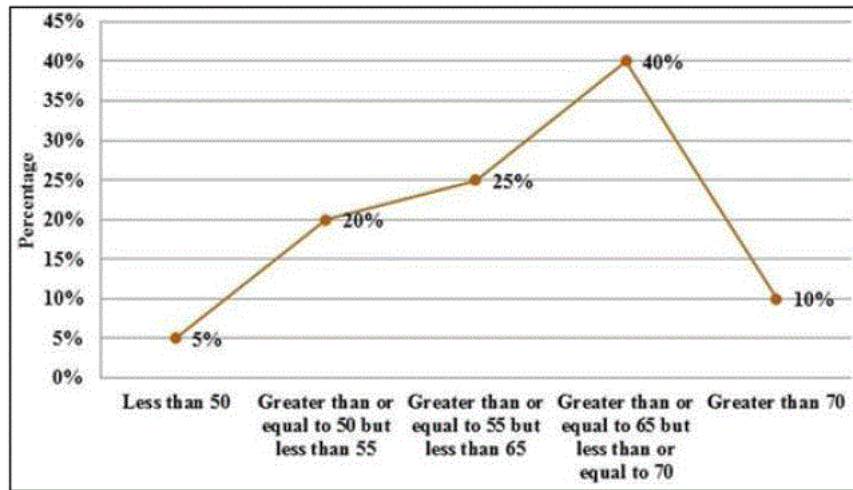
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Rumba	45	25
Jazz	60	80

The students are further divided into 5 different categories based upon their marks scored in the dance competition. The five categories are 'less than 50', 'greater than or equal to 50 but less than 55', 'greater than or equal to 55 but less than 65', 'greater than or equal to 65 but less than or equal to 70' and 'greater than 70'.

The following line graph provides information about the number of students in each of the above five categories as a percentage of the total number of students.



Q.44

If all the students from Ballroom dance group scored less than 55, then at most how many girls scored less than 55?

✕

Solution:

Correct Answer : 70

Your Answer : 20

[Bookmark](#)
[Answer key/Solution](#)

Dance group	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80
Total	435	325

Therefore, Total students = $435 + 325 = 760$

Less than 50	5% = 38
Greater than or equal to 50 but less than 55	20% = 152
Greater than or equal to 55 but less than 65	25% = 190
Greater than or equal to 65 but less than or equal to 70	40% = 304
Greater than 70	10% = 76

Number of students who scored less than 55 = $152 + 38 = 190$.

Total students in Ballroom group = 170.

Remaining 20 students can also be girls. Therefore, at most $20 + 50$ (i.e., Number of girls in Ballroom) = 70 girls have scored less than 55.

[FeedBack](#)

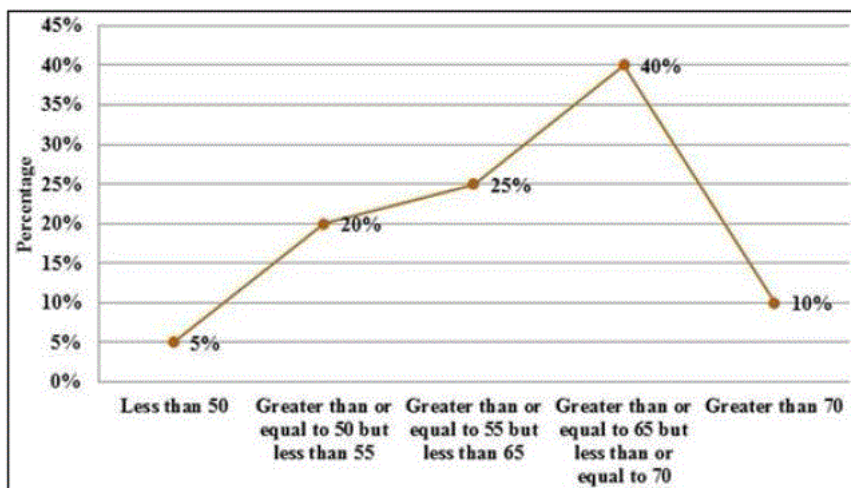
Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

The students in a dance academy are divided into six different groups namely Salsa, Tango, Ballroom, Hip Hop, Rumba and Jazz. The following table provides information about the number of boys and girls in the different dance groups.

Dance Groups	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80

The students are further divided into 5 different categories based upon their marks scored in the dance competition. The five categories are 'less than 50', 'greater than or equal to 50 but less than 55', 'greater than or equal to 55 but less than 65', 'greater than or equal to 65 but less than or equal to 70' and 'greater than 70'.

The following line graph provides information about the number of students in each of the above five categories as a percentage of the total number of students.



Q.45

In how many groups the absolute difference between the number of boys and that of girls is at least 30% of the absolute difference between the total number of boys and that of girls in the dance academy.



Solution:

Correct Answer : 2

Your Answer : 2

Bookmark

Answer key/Solution

Dance group	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80
Total	435	325

Therefore, Total students = $435 + 325 = 760$

Less than 50	5% = 38
Greater than or equal to 50 but less than 55	20% = 152
Greater than or equal to 55 but less than 65	25% = 190
Greater than or equal to 65 but less than or equal to 70	40% = 304
Greater than 70	10% = 76

Difference between the total number of boys and girls in the dance academy = $435 - 325 = 110$. Therefore, 30% of $110 = 33$.

Now, Absolute difference between the number of boys and girls in group Salsa, Tango, Ballroom, Hip Hop, Rumba and Jazz is 20, 20, 70, 40, 20 and 20 respectively.

Therefore in two group, i.e. group Ballroom and group Hip Hop, the absolute difference between the number of boys and girls is at least 30% of the absolute difference between the total number of boys and girls in the dance academy.

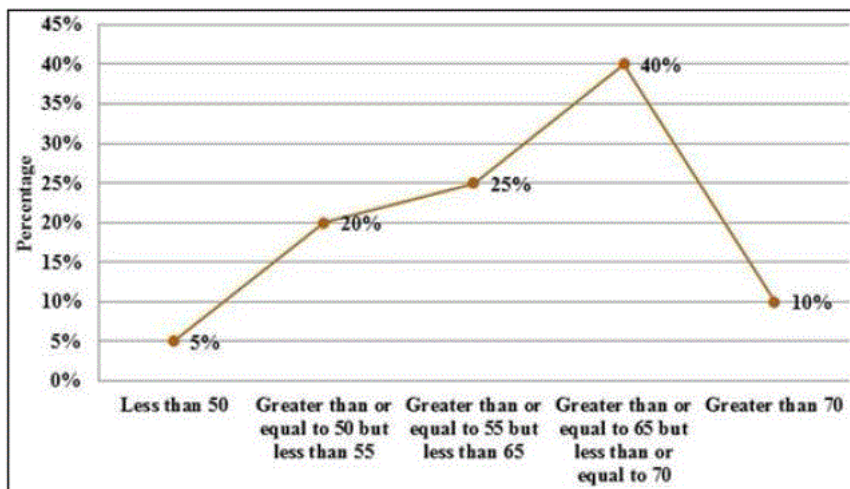
Directions for questions 43 to 46: Answer the questions on the basis of the information given below.

The students in a dance academy are divided into six different groups namely Salsa, Tango, Ballroom, Hip Hop, Rumba and Jazz. The following table provides information about the number of boys and girls in the different dance groups.

Dance Groups	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80

The students are further divided into 5 different categories based upon their marks scored in the dance competition. The five categories are 'less than 50', 'greater than or equal to 50 but less than 55', 'greater than or equal to 55 but less than 65', 'greater than or equal to 65 but less than or equal to 70' and 'greater than 70'.

The following line graph provides information about the number of students in each of the above five categories as a percentage of the total number of students.



Q.46

If all the girls from dance group Salsa, Tango, Ballroom and Hip Hop scored less than 65, then at most how many girls could score in the range of greater than or equal to 65 but less than or equal to 70?



Solution:

Correct Answer : 105

Your Answer : 105

Bookmark

Answer key/Solution

Dance group	Number of Boys	Number of Girls
Salsa	60	40
Tango	80	100
Ballroom	120	50
Hip Hop	70	30
Rumba	45	25
Jazz	60	80
Total	435	325

Therefore, Total students = 435 + 325 = 760

Less than 50	5% = 38
Greater than or equal to 50 but less than 55	20% = 152
Greater than or equal to 55 but less than 65	25% = 190
Greater than or equal to 65 but less than or equal to 70	40% = 304
Greater than 70	10% = 76

Number of girls from dance group Salsa, Tango, Ballroom and Hip Hop = 40 + 100 + 50 + 30 = 220

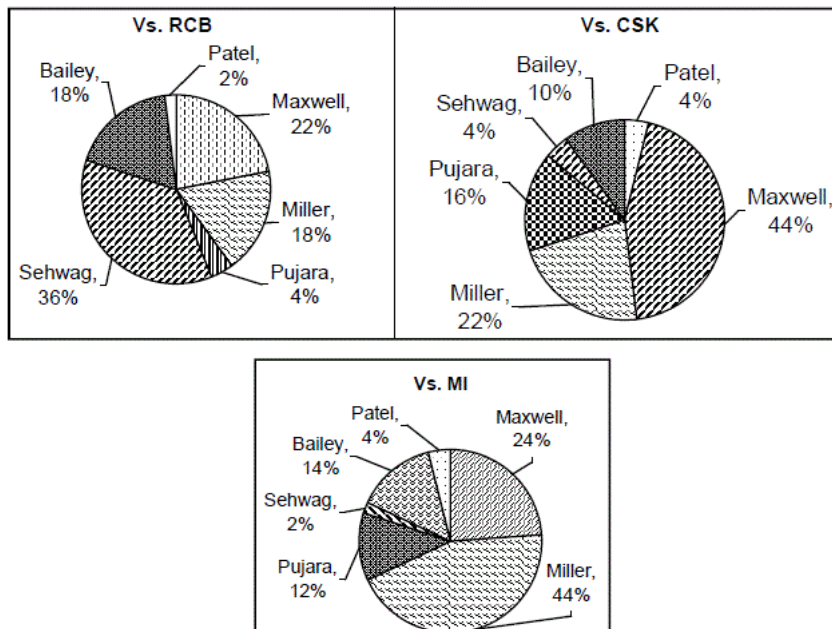
Also, Total no. of girls in dance academy = 325

Therefore, at most 325 - 220 = 105 girls can score in the range of greater than or equal to 65 but less than or equal to 70 (as there are total 304 students in that range of score).

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Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

The following three pie charts show the percentage of runs scored by six batsman- Maxwell, Miller, Pujara, Sehwag, Bailey and Patel of a T20 cricket team KCB in three matches, with one match each against of RCB, CSK and MI, in IPL 2017. In three T 20 matches the total number of runs scored by them are 500. Minimum score in any match was not less than 100 and maximum score in any match was not more than 250. The total runs scored by KCB against RC was not more than that against CSK, which, in turn, not more than against MI. Assume there was no run scored in the form of extras (i.e., no wides, no leg byes etc.).



Q.47

What could be the maximum number of sixes hit by Miller in all the three matches put together, if he hit at least one four in each match?

1 ☐ 232 ☐ 243 ☐ 224 ☐ 25**Solution:****Correct Answer : 1**

As percentage of Maxwell in the match against RCB is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against RCB has to be a multiple of 50.

As percentage of Miller in the match against CSK is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against CSK has to be a multiple of 50.

As percentage of Bailey in the match against MI is 14%, which

is $\frac{7}{50}$, hence, runs scored in the match against MI has to be a multiple of 50.

The scores in the 3 matches can be 100,150,250 or 100, 200, 200 or 150, 150, 200.

Percentage of runs scored by miller are 18%, 22% and 44% in the three matches respectively. So for maximum scores we will consider the runs scored in three matches as 100,150 and 250. So, Miller's scores are 18, 33 and 110 respectively.

In the match against RCB, if he had hit 1 four, then from the remaining 14 runs, he could have hit 2 sixes.

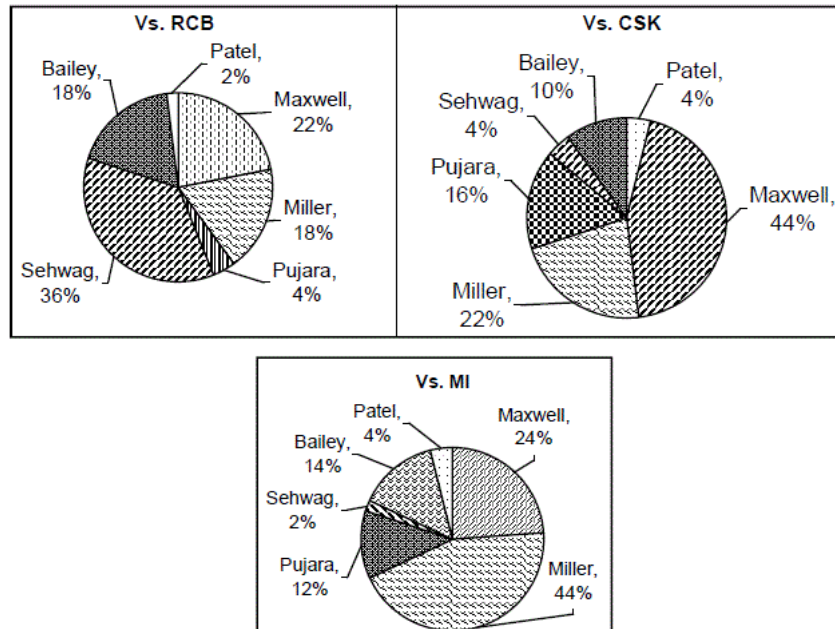
In the match against CSK, if he had hit 1 four, then from the remaining 29 runs, he could have hit 4 sixes.

In the match against MI, if he had hit 1 four, then from the remaining 106 runs, he could have hit 17 sixes

So, maximum 23 sixes can be hit by Miller.

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

The following three pie charts show the percentage of runs scored by six batsman– Maxwell, Miller, Pujara, Sehwaq, Bailey and Patel of a T20 cricket team KCB in three matches, with one match each against of RCB, CSK and MI, in IPL 2017. In three T 20 matches the total number of runs scored by them are 500. Minimum score in any match was not less than 100 and maximum score in any match was not more than 250. The total runs scored by KCB against RC was not more than that against CSK, which, in turn, not more than against MI. Assume there was no run scored in the form of extras (i.e., no wides, no leg byes etc.).

**Q.48****What could be the minimum number of balls faced by Bailey, if there were no overthrows?**

- 1 ☐ 13
- 2 ☐ 15
- 3 ☐ 12
- 4 ☐ Cannot be determined

Solution:**Correct Answer : 3****Bookmark****Answer key/Solution**

As percentage of Maxwell in the match against RCB is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against RCB has to be a multiple of 50.

As percentage of Miller in the match against CSK is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against CSK has to be a multiple of 50.

As percentage of Bailey in the match against MI is 14%, which is $\frac{7}{50}$, hence, runs scored in the match against MI has to be a multiple of 50.

The scores in the 3 matches can be 100,150,250 or 100, 200, 200 or 150, 150, 200.

Case I:

The scores in the 3 matches can be 150,150,200

So, Bailey scores are 27, 15 and 28 respectively.

In the match against RCB, he should have hit 4 sixes and run 3, facing exactly 5 balls.

In the match against CSK, he should have hit 2 sixes and run 3, facing exactly 3 balls.

In the match against MI, he should have hit 4 sixes and 1 four, facing exactly 5 balls.

∴ Total 13 balls.

Case II:

The scores in the 3 matches can be 100, 200, 200.

So, Bailey scores are 18, 20 and 28 respectively.

In the match against RCB, he should have hit 3 sixes, facing exactly 3 balls.

In the match against CSK, he should have hit 3 sixes and run 2, facing exactly 4 balls.

In the match against MI, he should have hit 4 sixes and 1 four, facing exactly 5 balls.

∴ Total 12 balls.

Case III:

The scores in the 3 matches can be 100, 150 & 250

Bailey Scores are 18, 15 and 35 respectively.

In the match against RCB, he should have hit 3 sixes, facing exactly 3 balls.

In the match against CSK, he should have hit 2 sixes and run 3, facing exactly 3 balls.

In the match against MI, he should have hit 5 sixes and run 3 and 2, facing exactly 7 balls.

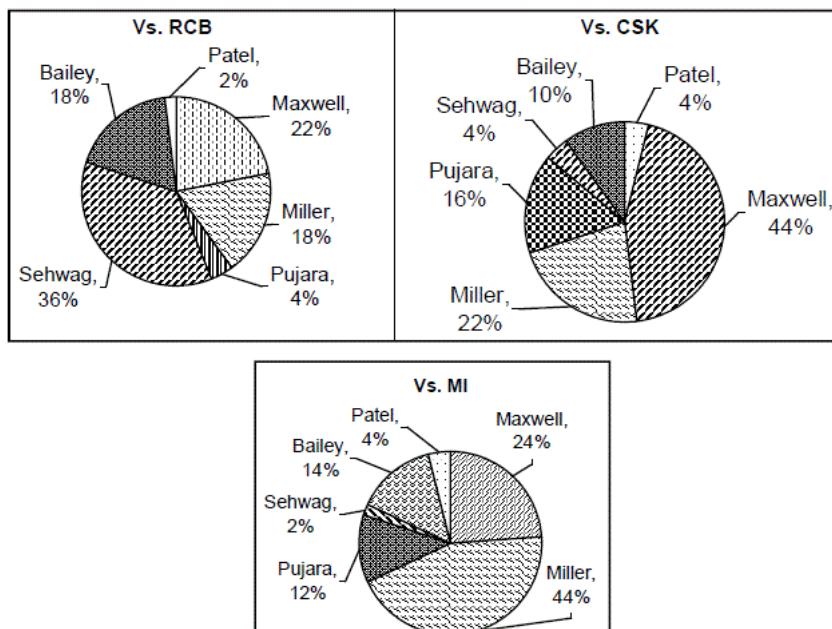
Total 13 balls.

So, while comparing all the cases, 12 could be the minimum number of balls faced by Bailey.

FeedBack

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

The following three pie charts show the percentage of runs scored by six batsman– Maxwell, Miller, Pujara, Sehwag, Bailey and Patel of a T20 cricket team KCB in three matches, with one match each against of RCB, CSK and MI, in IPL 2017. In three T 20 matches the total number of runs scored by them are 500. Minimum score in any match was not less than 100 and maximum score in any match was not more than 250. The total runs scored by KCB against RC was not more than that against CSK, which, in turn, not more than against MI. Assume there was no run scored in the form of extras (i.e., no wides, no leg byes etc.).



Q.49

If Sehwag scored the minimum runs possible, what is the difference in the runs scored by Maxwell and Miller?

1 ☐ 13

2 ☐ 22

3 ☐ 28

4 ☐ 30

Solution:**Correct Answer : 1**

As percentage of Maxwell in the match against RCB is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against RCB

has to be a multiple of 50.

As percentage of Miller in the match against CSK is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against CSK

has to be a multiple of 50.

As percentage of Bailey in the match against MI is 14%, which

is $\frac{7}{50}$, hence, runs scored in the match against MI has to be a

multiple of 50.

The scores in the 3 matches can be 100,150,250 or 100, 200, 200 or 150, 150, 200.

Case I: Scores are 100,150,250

Sehwag scored 36, 6 and 5. So, total 47 runs.

Case II: Scores are 100,200,200.

Sehwag scored 36, 4 and 8. So, total 48 runs.

Case III: Scores are 150,150,200.

Sehwag scored 54, 6, 4. So, total 64 runs.

Hence, for Sehwag's minimum score, Case I will be considered.

Maxwell scored 22%, 44% and 24% in the three matches. So, he scored 22, 66 and 60, making a total of 148 runs.

Miller scored 18%, 22% and 44% in the three matches. So, he scored 18, 33 and 110, making a total of 161 runs.

\therefore Required difference = $161 - 148 = 13$.

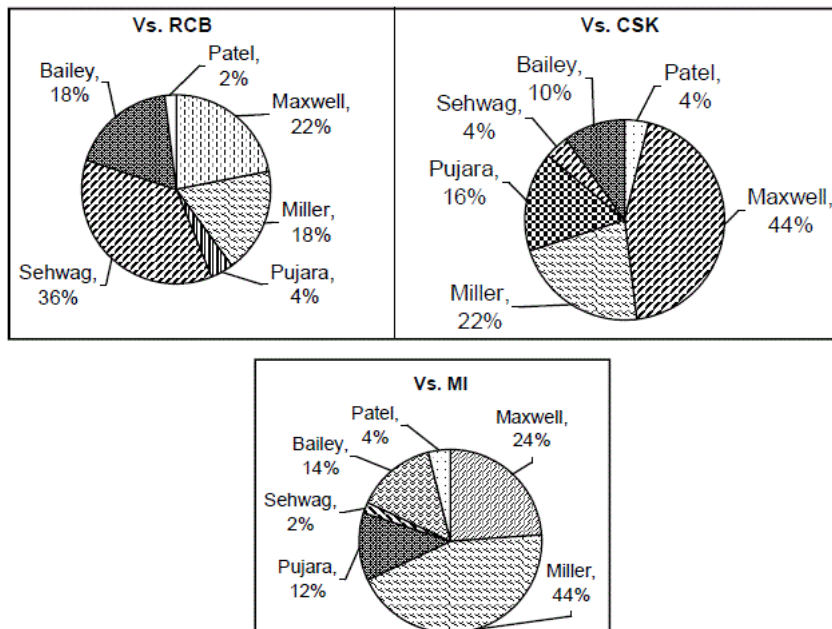
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Answer key/Solution

Directions for questions 47 to 50: Answer the questions on the basis of the information given below.

The following three pie charts show the percentage of runs scored by six batsman– Maxwell, Miller, Pujara, Sehwag, Bailey and Patel of a T20 cricket team KCB in three matches, with one match each against of RCB, CSK and MI, in IPL 2017. In three T 20 matches the total number of runs scored by them are 500. Minimum score in any match was not less than 100 and maximum score in any match was not more than 250. The total runs scored by KCB against RC was not more than that against CSK, which, in turn, not more than against MI. Assume there was no run scored in the form of extras (i.e., no wides, no leg byes etc.).



Q.50

Which of the following cannot be the number of runs that Pujara could have scored in all the three matches put together?

1 ○ 54

2 ○ 58

3 ○ 60

4 ○ 48

Solution:**Correct Answer : 4**

As percentage of Maxwell in the match against RCB is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against RCB has to be a multiple of 50.

As percentage of Miller in the match against CSK is 22%,

which is $\frac{11}{50}$, hence, runs scored in the match against CSK has to be a multiple of 50.

As percentage of Bailey in the match against MI is 14%, which

is $\frac{7}{50}$, hence, runs scored in the match against MI has to be a multiple of 50.

The scores in the 3 matches can be 100,150,250 or 100, 200, 200 or 150, 150, 200.

As seen in the previous solutions, the total scores could be 100, 150, 250 or 100, 200, 200 or 150, 150, 200, out of which Pujara's scores in percentage are 4%, 16% and 12% respectively.

Considering the first case, his runs could be $4 + 24 + 30 = 58$

Considering the second case, his runs could be $4 + 32 + 24 = 60$

Considering the third case, his runs could be $6 + 24 + 24 = 54$.

So, option (4) is correct.

Directions for question 51 to 54: Answer the questions on the basis of the information given below.

A group of twelve friends -A, B, C, D, E, F, G, H, I, J, K and L- went for a picnic. Among the twelve friends four are boys and the rest are girls. They had hire a twelve seater bus. The bus had four rows and three columns. The front row is 1st row and the row behind it is the 2nd row and so on, and according to driver's sitting position the left most side column is the 1st column and the right most side is the 3rd column. It is also known that:

(i) No two boys are sitting next to each other either left, right, front, behind or diagonally.

(ii) At least one boy is sitting in each row.

(iii) A is a boy and is sitting immediately behind E and in front of D.

(iv) L, B, F and C are sitting in the same column in 1st, 2nd, 3rd and 4th row respectively.

(v) J is a girl who is sitting in front of H and behind K.

Q.51

If K was a boy sitting in the 2nd row and 3rd column, then who could be sitting in the 1st row and the 1st column?

- 1 ☐ G
- 2 ☐ E
- 3 ☐ L
- 4 ☐ Cannot be determined

Solution:

Correct Answer : 1

Let the following as the seat number in the bus.

11	21	31
12	22	32
13	23	33
14	24	34

It is given that 32 is K who is a boy. Hence, 21, 22, 31, 33 and 23 cannot be a boy. Thus, 13 should be a boy. Thus, 12, 14 and 24 cannot be a boy. Thus, 34 and 11 should also be a boy.

Now, if K is at 32, then J should be at 33 and H at 34 (as per the given information). Thus, H is a boy. Also, A is a boy who is sitting between E and D. Thus A should be seated at 13.

Thus, seating arrangement should look like as follows:

	L	
E	B	K
A	F	J
D	C	H

Thus, 11 and 31 can be occupied by either G or I. Hence, option (1) is correct.

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Answer key/Solution

Directions for question 51 to 54: Answer the questions on the basis of the information given below.

A group of twelve friends -A, B, C, D, E, F, G, H, I, J, K and L- went for a picnic. Among the twelve friends four are boys and the rest are girls. They had hire a twelve seater bus. The bus had four rows and three columns. The front row is 1st row and the row behind it is the 2nd row and so on, and according to driver's sitting position the left most side column is the 1st column and the right most side is the 3rd column . It is also known that:

- (i) No two boys are sitting next to each other either left, right, front, behind or diagonally.
- (ii) At least one boy is sitting in each row.
- (iii) A is a boy and is sitting immediately behind E and in front of D.
- (iv) L, B, F and C are sitting in the same column in 1st, 2nd, 3rd and 4th row respectively.
- (v) J is a girl who is sitting in front of H and behind K.

Q.52

If H was sitting between F and D in the same row, then who among the following is definitely a boy?

- 1 ☐ E
- 2 ☐ G
- 3 ☐ I
- 4 ☐ F

Solution:

Correct Answer : 4

As H is sitting between F and D in same row the following seating is possible.

E	K	L
A (boy)	J	B
D	H	F
		C

Since A is a boy, E, K, J, H and D cannot be a boy. Thus, L and F should be boys (as each row has at least one boy sitting in it).

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Answer key/Solution

Directions for question 51 to 54: Answer the questions on the basis of the information given below.

A group of twelve friends -A, B, C, D, E, F, G, H, I, J, K and L- went for a picnic. Among the twelve friends four are boys and the rest are girls. They had hire a twelve seater bus. The bus had four rows and three columns. The front row is 1st row and the row behind it is the 2nd row and so on, and according to driver's sitting position the left most side column is the 1st column and the right most side is the 3rd column . It is also known that:

- (i) No two boys are sitting next to each other either left, right, front, behind or diagonally.
- (ii) At least one boy is sitting in each row.
- (iii) A is a boy and is sitting immediately behind E and in front of D.
- (iv) L, B, F and C are sitting in the same column in 1st, 2nd, 3rd and 4th row respectively.
- (v) J is a girl who is sitting in front of H and behind K.

Q.53

If F was sitting in the 2nd column, then find the total number of ways in which 12 friends could be seated?

1 ☐ 3

2 ☐ 12

3 ☐ 14

4 ☐ 8

Solution:

Correct Answer : 4

11	21	31
12	22	32
13	23	33
14	24	34

A can be seated in 4 ways i.e. at 12, 13, 32 and 33.

Now, once E, A and D are seated then KJH can be seated in 1 way for each position of A.

Also, remaining two friends G and I can be seated in 2 ways.

Thus, total $4 \times 1 \times 2$ i.e. 8 ways are possible.

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Answer key/Solution

Directions for question 51 to 54: Answer the questions on the basis of the information given below.

A group of twelve friends -A, B, C, D, E, F, G, H, I, J, K and L- went for a picnic. Among the twelve friends four are boys and the rest are girls. They had hire a twelve seater bus. The bus had four rows and three columns. The front row is 1st row and the row behind it is the 2nd row and so on, and according to driver's sitting position the left most side column is the 1st column and the right most side is the 3rd column . It is also known that:

- (i) No two boys are sitting next to each other either left, right, front, behind or diagonally.
- (ii) At least one boy is sitting in each row.
- (iii) A is a boy and is sitting immediately behind E and in front of D.
- (iv) L, B, F and C are sitting in the same column in 1st, 2nd, 3rd and 4th row respectively.
- (v) J is a girl who is sitting in front of H and behind K.

Q.54

If C was sitting in the 2nd column and H is in the 3rd row, then who among the following could be seated in the 1st row?

1 ☐ G

2 ☐ I

3 ☐ E

4 ☐ Cannot be determined

Solution:

Correct Answer : 3

Bookmark

Answer key/Solution

Based on the given information, C will be seated at 24 position and H can be at either 13 or at 33.

Case I:

K (boy)	L	E
J	B	A(boy)
H (boy)	F	D
G/I	C	I/G

Case II:

E	L	K (boy)
A (boy)	B	J
D	F	H (boy)
G/I (boy)	C	I/G

In both the cases, 1st row is filled by K, L & E. Hence, option (3) is correct.

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Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

Seven items – S1, S2, S3, S4, S5, S6 and S7 – are to be auctioned by bidding. Each of the seven items has a Reserve Price (RP) and Winning Bid Price (WBP). The RPs for the seven items are Rs 500, Rs 500, Rs. 1000, Rs. 1000, Rs. 1500, Rs. 2500 and Rs. 3000, not necessarily in the same order. The WBPs are also multiples of 500. Three bidders Akash, Bhaskar and Chandra bid for these seven items. Each one ended up buying a different number of items at the end of the auction. The following information is also known about the bidding at the auction:

- Each of the three bidders got at least one item, and one item, which had the least RP, was unsold at the end of the auction.
- S2 and S7 had the same RP and these two items bought by two different persons.
- The WBP of S2 was three times that of S7 and RP of S6 was three times RP of S3.
- Akash bought both S3 and S7 at their respective RPs, and Chandra bought S6 at its WBP, which is Rs. 2500.
- The sum of WBP for Chandra was Rs. 5500, and Bhaskar bought S4, which had the highest RP.
- Only two items had the WBP equal to the RP of those respective items and these two items were bought by the same person.
- For each of the bidders, the sum of WBPs of the items bought by him was the same as that of the each of the other two bidders.

Q.55

Which of the following persons bought three items in the auction?

- ☐ Akash
- ☐ Bhaskar
- ☐ Chandra
- ☐ Cannot be determined



Solution:

Correct Answer : 1

Your Answer : 1

Bookmark

Answer key/Solution

As per the information given in the question following can be concluded.

- Using (i), it can be concluded that one item with RP Rs. 500 was unsold at the end. So, number of items bought by the three person was 1, 2 and 3 in any order.
- Using (i) & (ii), it can be said that S2 and S7 had RP of Rs. 1000 each, as both of these items were bought by different persons and one item of RP Rs. 500 was unsold.
- Using (iii), RP of S6 can be Rs. 1500 (i.e. 3×500) or Rs. 3000 (i.e., 3×1000) only. But the RP of S3 could not be Rs. 1000 and thus RP of S3 was Rs. 500 and RP of S6 was Rs. 1500.
- Using (iv), WBPs of S3 and S7 were Rs. 500 and Rs. 1000 respectively and both bought by Akash. Also, WBP of S6 was Rs. 2500.
- Using (v), RP of S4 is Rs. 3000.
- Using (vii), As the sum of WBPs of the items bought by each person is Rs. 5500, it can be concluded that Akash must have bought 3 items, Chandra 2 items and Bhaskar 1 item (which implies that WBP of S4 is Rs. 5500).
- Using (iii), WBP of S2 is Rs. 3000.

Following table can be formed as per the above information.

	S1	S2	S3	S4	S5	S6	S7
RP	500/2500	1000	500	3000	2500/500	1500	1000
WBP		3000	500	5500		2500	1000
Bought By		Chandra	Akash	Bhaskar		Chandra	Akash

One item of Akash having RP as Rs.2500 and WBP as Rs.4000 could be from S1 or S5.

FeedBack

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

Seven items – S1, S2, S3, S4, S5, S6 and S7 – are to be auctioned by bidding. Each of the seven items has a Reserve Price (RP) and Winning Bid Price (WBP). The RPs for the seven items are Rs 500, Rs 500, Rs. 1000, Rs. 1000, Rs. 1500, Rs. 2500 and Rs. 3000, not necessarily in the same order. The WBPs are also multiples of 500. Three bidders Akash, Bhaskar and Chandra bid for these seven items. Each one ended up buying a different number of items at the end of the auction. The following information is also known about the bidding at the auction:

- (i) Each of the three bidders got at least one item, and one item, which had the least RP, was unsold at the end of the auction.
- (ii) S2 and S7 had the same RP and these two items bought by two different persons.
- (iii) The WBP of S2 was three times that of S7 and RP of S6 was three times RP of S3.
- (iv) Akash bought both S3 and S7 at their respective RPs, and Chandra bought S6 at its WBP, which is Rs. 2500.
- (v) The sum of WBP for Chandra was Rs. 5500, and Bhaskar bought S4, which had the highest RP.
- (vi) Only two items had the WBP equal to the RP of those respective items and these two items were bought by the same person.
- (vii) For each of the bidders, the sum of WBPs of the items bought by him was the same as that of the each of the other two bidders.

Q.56

The highest value of the absolute difference between the WBP and the RP was

1 ☐ Rs 1000

2 ☐ Rs 1500

3 ☐ Rs 3000

4 ☐ Rs 2500



Solution:

Correct Answer : 4

Your Answer : 4

Bookmark

Answer key/Solution

As per the information given in the question following can be concluded.

- Using (i), it can be concluded that one item with RP Rs. 500 was unsold at the end. So, number of items bought by the three person was 1, 2 and 3 in any order.
- Using (i) & (ii), it can be said that S2 and S7 had RP of Rs. 1000 each, as both of these items were bought by different persons and one item of RP Rs. 500 was unsold.
- Using (iii), RP of S6 can be Rs. 1500 (i.e. 3×500) or Rs. 3000 (i.e., 3×1000) only. But the RP of S3 could not be Rs. 1000 and thus RP of S3 was Rs. 500 and RP of S6 was Rs. 1500.
- Using (iv), WBPs of S3 and S7 were Rs. 500 and Rs. 1000 respectively and both bought by Akash. Also, WBP of S6 was Rs. 2500.
- Using (v), RP of S4 is Rs. 3000.
- Using (vii), As the sum of WBPs of the items bought by each person is Rs. 5500, it can be concluded that Akash must have bought 3 items, Chandra 2 items and Bhaskar 1 item (which implies that WBP of S4 is Rs. 5500).
- Using (iii), WBP of S2 is Rs. 3000

Following table can be formed as per the above information.

	S1	S2	S3	S4	S5	S6	S7
RP	500/2500	1000	500	3000	2500/500	1500	1000
WBP		3000	500	5500		2500	1000
Bought By		Chandra	Akash	Bhaskar		Chandra	Akash

For Bhaskar

Difference = $5500 - 3000 = 2500$ is maximum.

[FeedBack](#)

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

Seven items – S1, S2, S3, S4, S5, S6 and S7 – are to be auctioned by bidding. Each of the seven items has a Reserve Price (RP) and Winning Bid Price (WBP). The RPs for the seven items are Rs 500, Rs 500, Rs. 1000, Rs. 1000, Rs. 1500, Rs. 2500 and Rs. 3000, not necessarily in the same order. The WBPs are also multiples of 500. Three bidders Akash, Bhaskar and Chandra bid for these seven items. Each one ended up buying a different number of items at the end of the auction. The following information is also known about the bidding at the auction:

- (i) Each of the three bidders got at least one item, and one item, which had the least RP, was unsold at the end of the auction.
- (ii) S2 and S7 had the same RP and these two items bought by two different persons.
- (iii) The WBP of S2 was three times that of S7 and RP of S6 was three times RP of S3.
- (iv) Akash bought both S3 and S7 at their respective RPs, and Chandra bought S6 at its WBP, which is Rs. 2500.
- (v) The sum of WBP for Chandra was Rs. 5500, and Bhaskar bought S4, which had the highest RP.
- (vi) Only two items had the WBP equal to the RP of those respective items and these two items were bought by the same person.
- (vii) For each of the bidders, the sum of WBPs of the items bought by him was the same as that of the each of the other two bidders.

Q.57

Which item was unsold at the end of the auction?

1 ☐ S1

2 ☐ S53 ☐ Either (1) or (2)4 ☐ None of these**Solution:****Correct Answer : 3****Your Answer : 3**

Bookmark

Answer key/Solution

As per the information given in the question following can be concluded.

- Using (i), it can be concluded that one item with RP Rs. 500 was unsold at the end. So, number of items bought by the three person was 1, 2 and 3 in any order.
- Using (i) & (ii), it can be said that S2 and S7 had RP of Rs. 1000 each, as both of these items were bought by different persons and one item of RP Rs. 500 was unsold.
- Using (iii), RP of S6 can be Rs. 1500 (i.e. 3×500) or Rs. 3000 (i.e., 3×1000) only. But the RP of S3 could not be Rs. 1000 and thus RP of S3 was Rs. 500 and RP of S6 was Rs. 1500.
- Using (iv), WBPs of S3 and S7 were Rs. 500 and Rs. 1000 respectively and both bought by Akash. Also, WBP of S6 was Rs. 2500.
- Using (v), RP of S4 is Rs. 3000.
- Using (vii), As the sum of WBPs of the items bought by each person is Rs. 5500, it can be concluded that Akash must have bought 3 items, Chandra 2 items and Bhaskar 1 item (which implies that WBP of S4 is Rs. 5500).
- Using (iii), WBP of S2 is Rs. 3000

Following table can be formed as per the above information.

	S1	S2	S3	S4	S5	S6	S7
RP	500/2500	1000	500	3000	2500/500	1500	1000
WBP		3000	500	5500		2500	1000
Bought By		Chandra	Akash	Bhaskar		Chandra	Akash

Either S1 or S5 was unsold.

Directions for questions 55 to 58: Answer the questions on the basis of the information given below.

Seven items – S1, S2, S3, S4, S5, S6 and S7 – are to be auctioned by bidding. Each of the seven items has a Reserve Price (RP) and Winning Bid Price (WBP). The RPs for the seven items are Rs 500, Rs 500, Rs. 1000, Rs. 1000, Rs. 1500, Rs. 2500 and Rs. 3000, not necessarily in the same order. The WBPs are also multiples of 500. Three bidders Akash, Bhaskar and Chandra bid for these seven items. Each one ended up buying a different number of items at the end of the auction. The following information is also known about the bidding at the auction:

- Each of the three bidders got at least one item, and one item, which had the least RP, was unsold at the end of the auction.
- S2 and S7 had the same RP and these two items bought by two different persons.
- The WBP of S2 was three times that of S7 and RP of S6 was three times RP of S3.
- Akash bought both S3 and S7 at their respective RPs, and Chandra bought S6 at its WBP, which is Rs. 2500.
- The sum of WBP for Chandra was Rs. 5500, and Bhaskar bought S4, which had the highest RP.
- Only two items had the WBP equal to the RP of those respective items and these two items were bought by the same person.
- For each of the bidders, the sum of WBPs of the items bought by him was the same as that of the each of the other two bidders.

Q.58

Among the three bidders, who has paid the least difference between the WBP and the RP, when all the items that were auctioned and sold are taken into account?

1 ☐ Akash2 ☐ Bhaskar3 ☐ Chandra4 ☐ Cannot be determined**Solution:****Correct Answer : 1****Your Answer : 1**

Bookmark

Answer key/Solution

As per the information given in the question following can be concluded.

- Using (i), it can be concluded that one item with RP Rs. 500 was unsold at the end. So, number of items bought by the three person was 1, 2 and 3 in any order.
- Using (i) & (ii), it can be said that S2 and S7 had RP of Rs. 1000 each, as both of these items were bought by different persons and one item of RP Rs. 500 was unsold.
- Using (iii), RP of S6 can be Rs. 1500 (i.e. 3×500) or Rs. 3000 (i.e., 3×1000) only. But the RP of S3 could not be Rs. 1000 and thus RP of S3 was Rs. 500 and RP of S6 was Rs. 1500.
- Using (iv), WBPs of S3 and S7 were Rs. 500 and Rs. 1000 respectively and both bought by Akash. Also, WBP of S6 was Rs. 2500.
- Using (v), RP of S4 is Rs. 3000.
- Using (vi), As the sum of WBPs of the items bought by each person is Rs. 5500, it can be concluded that Akash must have bought 3 items, Chandra 2 items and Bhaskar 1 item (which implies that WBP of S4 is Rs. 5500).
- Using (iii), WBP of S2 is Rs. 3000

Following table can be formed as per the above information.

	S1	S2	S3	S4	S5	S6	S7
RP	500/2500	1000	500	3000	2500/500	1500	1000
WBP		3000	500	5500		2500	1000
Bought By		Chandra	Akash	Bhaskar		Chandra	Akash

Akash: Net RP = 4000 & net WBP = 5500

\therefore difference = 1500.

For Bhaskar: Difference = 5500 – 3000 = 2500

For Chandra : Difference = 5500 – 2500 = 3000

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A quiz contest was organized among five students - Abhishek, Bina, Caren, Dipen and Esha. The following information was given about the attempts and marks obtained by these five students.

There were only two types of questions. First type carried 3 marks for a correct answer and –1 for a wrong answer. The Second type carried 5 marks for a correct answer and –2 for a wrong answer.

There were 5 questions of the First type and 3 questions of the Second type. No marks were deducted for un-attempted questions.

All the five students got net scores that were multiples of 5. And No two students attempted the same number of questions and the minimum number of attempts was 3.

The lowest net score among the five students was 5. Bina and the person with the highest net score had a difference of 5 marks Abhishek scored 10 marks with exactly one wrong answer. Bina got all her attempts right and she attempted all the questions of only one type. Caren scored the lowest marks with exactly one mistake. No one attempted all eight questions and the highest score was not scored by the student who attempted 6 questions.

Q.59

What is the highest marks scored in the quiz?

1 ☐ 15

2 ☐ 20

3 ☐ 25

4 ☐ Cannot be determined

Solution:

Correct Answer : 2

 **Bookmark**

 **Answer key/Solution**

- Since it is mentioned that Caren scored the least with exactly one mistake, and also least score is 5, the only possibility is Caren attempted 2 questions of 3 marks each correctly and 1 question of 3 marks wrongly.
- Also it is given that minimum number of attempts is 3 and no one attempted all 8 questions. Hence, the possible attempts for the five persons are 3, 4, 5, 6, 7.
- Bina attempted only one type of questions. If we assume that she attempted all 5 marks questions, she should have attempted all 3 questions, but 3 attempts are already taken by Caren. Hence, Bina attempted only 3 marks questions. As Bina got all her attempts right, she got 15 marks ($= 3 \times 5$) with 5 attempts.
- Abhishek got 10 marks with only one question wrong. This can be achieved in two ways. The first way is attempting 4 questions of 3 marks correctly and one question of 2 marks wrongly. But this makes his number of attempts as 5, which is already taken by Bina. Hence, this way is not possible. The other way is: one question of 5 marks and 2 questions of 3 marks correctly and one question of 3 marks wrongly, making the total attempts of 4.
- It is also given that Bina got 5 marks less than maximum marks. Hence maximum marks $= 15 + 5 = 20$.
- It is also given that the person who scored highest marks did not attempt 6 questions. Hence the person with 7 attempts must have got 20 marks. This can be done only in one way: 4 questions of 3 marks and 2 questions of 5 marks correctly and 1 question of 3 marks wrongly.
- The only attempt left is 6. With this attempt, the score of 5, 10 or 15 are possible.
The derived conclusion can be tabulated as below:

	Attempts	Score
Caren	3	5
Bina	5	15
Abhishek	4	10
Dipen	6/7	
Esha	7/6	

We cannot determine how many questions Dipen or Esha attempted.

Highest score is 20.

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A quiz contest was organized among five students - Abhishek, Bina, Caren, Dipen and Esha. The following information was given about the attempts and marks obtained by these five students.

There were only two types of questions. First type carried 3 marks for a correct answer and -1 for a wrong answer. The Second type carried 5 marks for a correct answer and -2 for a wrong answer.

There were 5 questions of the First type and 3 questions of the Second type. No marks were deducted for un-attempted questions.

All the five students got net scores that were multiples of 5. And No two students attempted the same number of questions and the minimum number of attempts was 3.

The lowest net score among the five students was 5. Bina and the person with the highest net score had a difference of 5 marks Abhishek scored 10 marks with exactly one wrong answer. Bina got all her attempts right and she attempted all the questions of only one type. Caren scored the lowest marks with exactly one mistake. No one attempted all eight questions and the highest score was not scored by the student who attempted 6 questions.

Q.60

How many questions did Esha attempt?

- 1 ☐ 5
- 2 ☐ 6
- 3 ☐ 7
- 4 ☐ Cannot be determined

Solution:

Correct Answer : 4

Bookmark

Answer key/Solution

- Since it is mentioned that Caren scored the least with exactly one mistake, and also least score is 5, the only possibility is Caren attempted 2 questions of 3 marks each correctly and 1 question of 3 marks wrongly.
- Also it is given that minimum number of attempts is 3 and no one attempted all 8 questions. Hence, the possible attempts for the five persons are 3, 4, 5, 6, 7.
- Bina attempted only one type of questions. If we assume that she attempted all 5 marks questions, she should have attempted all 3 questions, but 3 attempts are already taken by Caren. Hence, Bina attempted only 3 marks questions. As Bina got all her attempts right, she got 15 marks ($= 3 \times 5$) with 5 attempts.
- Abhishek got 10 marks with only one question wrong. This can be achieved in two ways. The first way is attempting 4 questions of 3 marks correctly and one question of 2 marks wrongly. But this makes his number of attempts as 5, which is already taken by Bina. Hence, this way is not possible. The other way is: one question of 5 marks and 2 questions of 3 marks correctly and one question of 3 marks wrongly, making the total attempts of 4.
- It is also given that Bina got 5 marks less than maximum marks. Hence maximum marks $= 15 + 5 = 20$.
- It is also given that the person who scored highest marks did not attempt 6 questions. Hence the person with 7 attempts must have got 20 marks. This can be done only in one way: 4 questions of 3 marks and 2 questions of 5 marks correctly and 1 question of 3 marks wrongly.
- The only attempt left is 6. With this attempt, the score of 5, 10 or 15 are possible.
The derived conclusion can be tabulated as below:

	Attempts	Score
Caren	3	5
Bina	5	15
Abhishek	4	10
Dipen	6/7	
Esha	7/6	

We cannot determine how many questions Dipen or Esha attempted.

Esha could have attempted either 6 or 7 questions.

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A quiz contest was organized among five students - Abhishek, Bina, Caren, Dipen and Esha. The following information was given about the attempts and marks obtained by these five students.

There were only two types of questions. First type carried 3 marks for a correct answer and -1 for a wrong answer. The Second type carried 5 marks for a correct answer and -2 for a wrong answer.

There were 5 questions of the First type and 3 questions of the Second type. No marks were deducted for un-attempted questions.

All the five students got net scores that were multiples of 5. And No two students attempted the same number of questions and the minimum number of attempts was 3.

The lowest net score among the five students was 5. Bina and the person with the highest net score had a difference of 5 marks Abhishek scored 10 marks with exactly one wrong answer. Bina got all her attempts right and she attempted all the questions of only one type. Caren scored the lowest marks with exactly one mistake. No one attempted all eight questions and the highest score was not scored by the student who attempted 6 questions.

Q.61

If it is given that the person who had attempted the most number of questions was not Dipen, then who scored the highest marks in the quiz?

- 1 ☐ Dipen
- 2 ☐ Esha
- 3 ☐ Bina
- 4 ☐ Cannot be determined

Solution:

Correct Answer : 2

Bookmark

Answer key/Solution

- Since it is mentioned that Caren scored the least with exactly one mistake, and also least score is 5, the only possibility is Caren attempted 2 questions of 3 marks each correctly and 1 question of 3 marks wrongly.
- Also it is given that minimum number of attempts is 3 and no one attempted all 8 questions. Hence, the possible attempts for the five persons are 3, 4, 5, 6, 7.
- Bina attempted only one type of questions. If we assume that she attempted all 5 marks questions, she should have attempted all 3 questions, but 3 attempts are already taken by Caren. Hence, Bina attempted only 3 marks questions. As Bina got all her attempts right, she got 15 marks ($= 3 \times 5$) with 5 attempts.
- Abhishek got 10 marks with only one question wrong. This can be achieved in two ways. The first way is attempting 4 questions of 3 marks correctly and one question of 2 marks wrongly. But this makes his number of attempts as 5, which is already taken by Bina. Hence, this way is not possible. The other way is: one question of 5 marks and 2 questions of 3 marks correctly and one question of 3 marks wrongly, making the total attempts of 4.
- It is also given that Bina got 5 marks less than maximum marks. Hence maximum marks $= 15 + 5 = 20$.
- It is also given that the person who scored highest marks did not attempt 6 questions. Hence the person with 7 attempts must have got 20 marks. This can be done only in one way: 4 questions of 3 marks and 2 questions of 5 marks correctly and 1 question of 3 marks wrongly.
- The only attempt left is 6. With this attempt, the score of 5, 10 or 15 are possible.
The derived conclusion can be tabulated as below:

	Attempts	Score
Caren	3	5
Bina	5	15
Abhishek	4	10
Dipen	6/7	
Esha	7/6	

We cannot determine how many questions Dipen or Esha attempted.

If Dipen did not attempt 7, then Dipen must have attempted 6.

Hence, Isha should have attempted 7 questions and scored 20 marks.

FeedBack

Directions for questions 59 to 62: Answer the questions on the basis of the information given below.

A quiz contest was organized among five students - Abhishek, Bina, Caren, Dipen and Esha. The following information was given about the attempts and marks obtained by these five students.

There were only two types of questions. First type carried 3 marks for a correct answer and -1 for a wrong answer. The Second type carried 5 marks for a correct answer and -2 for a wrong answer.

There were 5 questions of the First type and 3 questions of the Second type. No marks were deducted for un-attempted questions.

All the five students got net scores that were multiples of 5. And No two students attempted the same number of questions and the minimum number of attempts was 3.

The lowest net score among the five students was 5. Bina and the person with the highest net score had a difference of 5 marks Abhishek scored 10 marks with exactly one wrong answer. Bina got all her attempts right and she attempted all the questions of only one type. Caren scored the lowest marks with exactly one mistake. No one attempted all eight questions and the highest score was not scored by the student who attempted 6 questions.

Q.62

The sum of the marks scored by the five students put together cannot be more than

1 ☐ 50

2 ☐ 60

3 ☐ 65

4 ☐ 70

Solution:

Correct Answer : 3

 **Bookmark**

 **Answer key/Solution**

- Since it is mentioned that Caren scored the least with exactly one mistake, and also least score is 5, the only possibility is Caren attempted 2 questions of 3 marks each correctly and 1 question of 3 marks wrongly.
- Also it is given that minimum number of attempts is 3 and no one attempted all 8 questions. Hence, the possible attempts for the five persons are 3, 4, 5, 6, 7.
- Bina attempted only one type of questions. If we assume that she attempted all 5 marks questions, she should have attempted all 3 questions, but 3 attempts are already taken by Caren. Hence, Bina attempted only 3 marks questions. As Bina got all her attempts right, she got 15 marks ($= 3 \times 5$) with 5 attempts.
- Abhishek got 10 marks with only one question wrong. This can be achieved in two ways. The first way is attempting 4 questions of 3 marks correctly and one question of 2 marks wrongly. But this makes his number of attempts as 5, which is already taken by Bina. Hence, this way is not possible. The other way is: one question of 5 marks and 2 questions of 3 marks correctly and one question of 3 marks wrongly, making the total attempts of 4.
- It is also given that Bina got 5 marks less than maximum marks. Hence maximum marks $= 15 + 5 = 20$.
- It is also given that the person who scored highest marks did not attempt 6 questions. Hence the person with 7 attempts must have got 20 marks. This can be done only in one way: 4 questions of 3 marks and 2 questions of 5 marks correctly and 1 question of 3 marks wrongly.
- The only attempt left is 6. With this attempt, the score of 5, 10 or 15 are possible.
The derived conclusion can be tabulated as below:

	Attempts	Score
Caren	3	5
Bina	5	15
Abhishek	4	10
Dipen	6/7	
Esha	7/6	

We cannot determine how many questions Dipen or Esha attempted.

Total $= 10 + 15 + 5 + 20 + x = 50 + x$. Now x can take any value from 5, 10 and 15. Hence total ≤ 65 (always).

FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Gopal, who works in a software company in Hyderabad, lives in bachelor quarter. He has his dinner outside every night from Monday to Friday. He has his dinner at one of the four restaurants – Taj hotel, Oberoi hotel, Kakatiya Grandhotel or Fernhotel – on each day from Monday to Friday. It is also known that:

- He does not have dinner at any restaurant for more than two consecutive days. On Mondays, he eats only at either Kakatiya Grand or Fern.
- If he eats at Kakatiya Grand on a day, the next day, he will not eat at either Oberoi or Fern.
- If he eats at Oberoi on a day, the next day, he will eat only at Kakatiya Grand.
- If he eats at Fern on a day, the next day, he will not eat at either Taj or Kakatiya Grand.
- If he eats at Taj on a day, the next day, he will eat only at either Fern or Oberoi.

Q.63

In how many different ways can Gopal have his dinner from Monday to Friday?

Fill "1" if your answer is 11"

Fill "2" if your answer is 13"

Fill "3" if your answer is 12"

Fill "4" if your answer is 14"

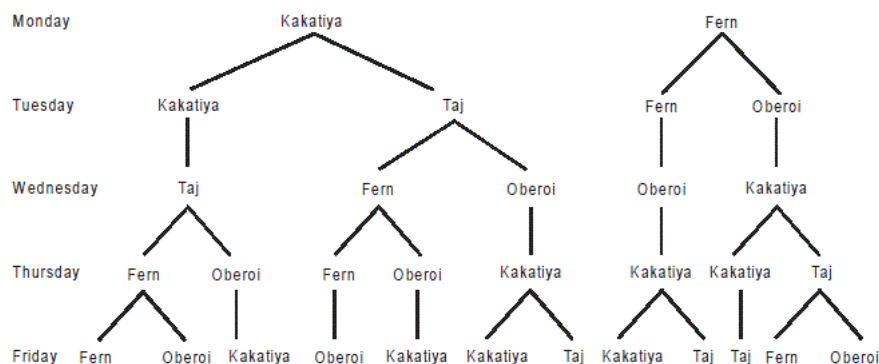
Solution:

Correct Answer : 3

Bookmark

Answer key/Solution

As per the given condition, all the possible cases for restaurants, where Gopal can have his dinner from Monday to Friday, are shown below:



From the above diagrams, we can conclude that Gopal can have his dinner in 12 different ways from Monday to Friday.

FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Gopal, who works in a software company in Hyderabad, lives in bachelor quarter. He has his dinner outside every night from Monday to Friday. He has his dinner at one of the four restaurants – Taj hotel, Oberoi hotel, Kakatiya Grandhotel or Fernhotel – on each day from Monday to Friday. It is also known that:

- (i) He does not have dinner at any restaurant for more than two consecutive days. On Mondays, he eats only at either Kakatiya Grand or Fern.
- (ii) If he eats at Kakatiya Grand on a day, the next day, he will not eat at either Oberoi or Fern.
- (iii) If he eats at Oberoi on a day, the next day, he will eat only at Kakatiya Grand.
- (iv) If he eats at Fern on a day, the next day, he will not eat at either Taj or Kakatiya Grand.
- (v) If he eats at Taj on a day, the next day, he will eat only at either Fern or Oberoi.

Q.64

If Gopal has dinner at Oberoi on a Friday, then which of the following restaurants would he definitely have not had dinner on the Tuesday of the Same Week?

Fill "1 if your answer is Taj"

Fill "2 if your answer is Oberoi"

Fill "3 if your answer is Kakatiya Grand"

Fill "4 if your answer is Fern"

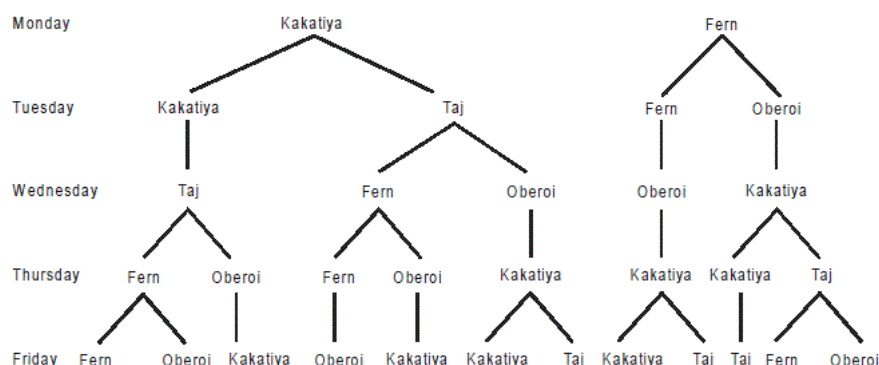
Solution:

Correct Answer : 4

Bookmark

Answer key/Solution

As per the given condition, all the possible cases for restaurants, where Gopal can have his dinner from Monday to Friday, are shown below:



If he has dinner at Oberoi on Friday, then he could not have dinner at Fern on Tuesday of the same week.

FeedBack

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Gopal, who works in a software company in Hyderabad, lives in bachelor quarter. He has his dinner outside every night from Monday to Friday. He has his dinner at one of the four restaurants – Taj hotel, Oberoi hotel, Kakatiya Grandhotel or Fernhotel – on each day from Monday to Friday. It is also known that:

- (i) He does not have dinner at any restaurant for more than two consecutive days. On Mondays, he eats only at either Kakatiya Grand or Fern.
- (ii) If he eats at Kakatiya Grand on a day, the next day, he will not eat at either Oberoi or Fern.
- (iii) If he eats at Oberoi on a day, the next day, he will eat only at Kakatiya Grand.

- (iv) If he eats at Fern on a day, the next day, he will not eat at either Taj or Kakatiya Grand.
 (v) If he eats at Taj on a day, the next day, he will eat only at either Fern or Oberoi.

Q.65

If Gopal has dinner on a Tuesday at Oberoi, then at which of the following restaurants will he definitely not have dinner on Friday of that week?

Fill "1 if your answer is Taj"

Fill "2 if your answer is Oberoi"

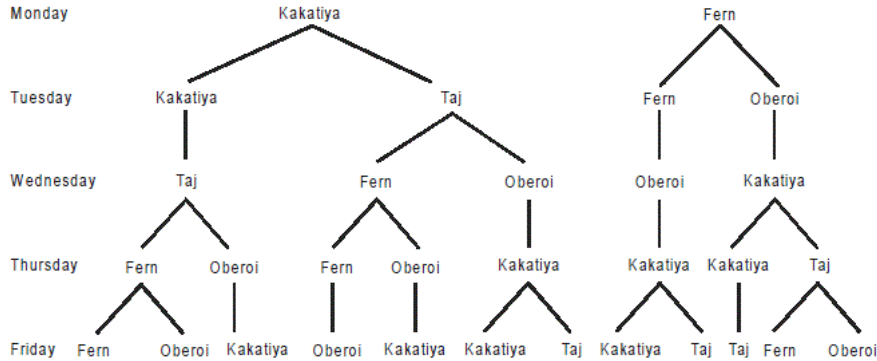
Fill "3 if your answer is Kakatiya Grand"

Fill "4 if your answer is Fern"

Solution:

Correct Answer : 3

As per the given condition, all the possible cases for restaurants, where Gopal can have his dinner from Monday to Friday, are shown below:



He will not have dinner at Kakatiya on Friday of that week.

FeedBack

Bookmark

Answer key/Solution

Directions for questions 63 to 66: Answer the questions on the basis of the information given below.

Gopal, who works in a software company in Hyderabad, lives in bachelor quarter. He has his dinner outside every night from Monday to Friday. He has his dinner at one of the four restaurants – Taj hotel, Oberoi hotel, Kakatiya Grandhotel or Fernhotel – on each day from Monday to Friday. It is also known that:

- (i) He does not have dinner at any restaurant for more than two consecutive days. On Mondays, he eats only at either Kakatiya Grand or Fern.
 (ii) If he eats at Kakatiya Grand on a day, the next day, he will not eat at either Oberoi or Fern.
 (iii) If he eats at Oberoi on a day, the next day, he will eat only at Kakatiya Grand.
 (iv) If he eats at Fern on a day, the next day, he will not eat at either Taj or Kakatiya Grand.
 (v) If he eats at Taj on a day, the next day, he will eat only at either Fern or Oberoi.

Q.66

If Gopal has dinner on a Wednesday at Fern, then at which of the following restaurants will he not have dinner either on Thursday or on Friday of that week?

Fill "1 if your answer is Taj"

Fill "2 if your answer is Oberoi"

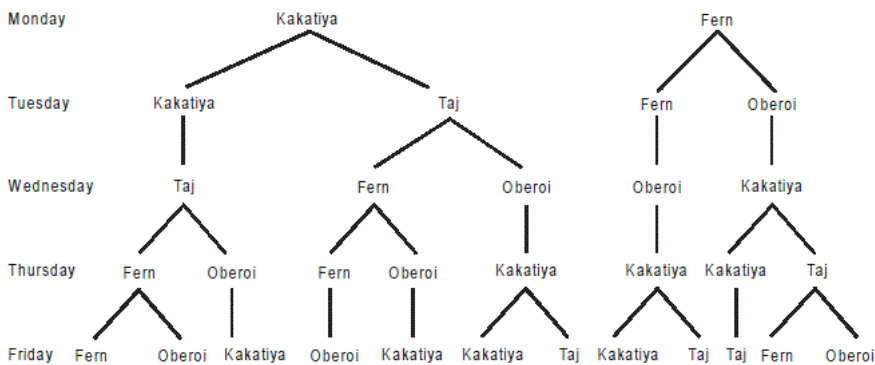
Fill "3 if your answer is Kakatiya Grand"

Fill "4 if your answer is Fern"

Solution:

Correct Answer : 1

As per the given condition, all the possible cases for restaurants, where Gopal can have his dinner from Monday to Friday, are shown below:



He will not have dinner at Taj on either Thursday or Friday of that week.

Bookmark

Answer key/Solution

FeedBack

Sec 3

Q.67

If $2^m + 3^n = k^2$, where $m = 0$ and k and n are natural number, find the value of $(k + n)$.

Solution:

Correct Answer : 3

If $m = 0$; $3^n = (k - 1)(k + 1)$
 $(k + 1) - (k - 1) = 2$

The difference between product factors of 3^n for all values of n , other than $n = 1$, will never be equal to 2. Therefore, $n = 1$ and $k = 2$.

Hence, $k + n = 3$.

FeedBack

Bookmark

Answer key/Solution

Q.68

Given that today is Saturday, what day of the week will it be 345^{111} days from today?

1 ☐ Wednesday

2 ☐ Saturday

3 ☐ Monday

4 ☐ Sunday

Solution:

Correct Answer : 4

As $7^3 = 343$, so when 345 is divided by 7, it gives remainder of 2.

$\Rightarrow 345^{111} \approx 2^{111}$

Now, $2^{111} = (8)^{37}$ when divided by 7 gives remainder of 1.

Hence, it is the 1st day from today i.e. Sunday.

FeedBack

Bookmark

Answer key/Solution

Q.69

Find the number of consecutive zeroes at the end of the number $(10! + 50! + 90! + 100!)(15! + 25! + 50!)$

1 ☐ $24(15! + 25! + 50!)$

2 ☐ $15! + 25! + 50!$

3 ☐ $2(15! + 25! + 50!)$

4 ☐ None of these

Solution:

Correct Answer : 3

$10!$ has 2 zeros at the end and $50!, 90!, 100!$ will have more number of zeros. But $(10! + 50! + 90! + 100!)$ will have only 2 zeros at the end as number of zeros for this expression is dependent on the number which has the least number of zeros in the end, for e.g., $10 + 100 + 1000 = 1110$.

Thus, total number of zeros will be number of zeros in the base multiplied to the power of that base.

FeedBack

Bookmark

Answer key/Solution

Q.70

Along a road lie an odd number of stones placed at intervals of 20 m. These stones have to be assembled around the middle stone. A person can carry only one stone at a time. A man carried out the job starting with the stone in the middle, carrying stones in succession, thereby covering a distance of 9.6 km. Then the number of stones is

1 ☐ 352 ☐ 153 ☐ 294 ☐ 31**Solution:****Correct Answer : 4**

In total, a person covers 9.6 km, which means he covers 4.8 km on one side and 4.8 km on other side. So, the distance he will be covering to carry each stone will be in AP,

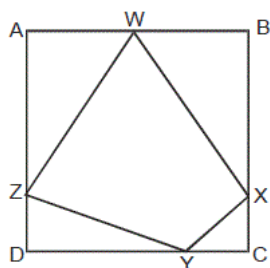
$$\Rightarrow \frac{x}{2} [2 \times 40 + (x-1)40] = 4800 \Rightarrow x = 15$$

\therefore 15 stones on one side of middle stone.

\therefore Total number of stones = $15 + 15 + 1 = 31$.

Q.71

In the figure given below, ABCD is a square. W, X, Y and Z are points on the sides AB, BC, CD and DA respectively such that $AW : WB = 1 : 1$, $BX : XC = 3 : 2$, $DY : YC = 4 : 1$ and $AZ : ZD = 3 : 1$. What is the ratio of the area of square ABCD to that of quadrilateral WXYZ?

1 ☐ 1600 : 8232 ☐ 800 : 4193 ☐ 400 : 2094 ☐ 200 : 104**Solution:****Correct Answer : 3**

Let the side of square ABCD be $20k$.

Thus, area of the square ABCD = $20k \times 20k = 400k^2$.

Area of WXYZ = [Area of ABCD - (Area of $\triangle AWZ$ +

Area of $\triangle WBX$ + Area of $\triangle XCY$ + Area of $\triangle ZDY$)]

= $400k^2 - (75k^2 + 60k^2 + 16k^2 + 40k^2) = 209k^2$.

\therefore The required ratio = $400 : 209$.

Q.72

The economy of Xiberia consists of exactly two industries – mining and manufacturing. It was expected that the economy would grow by 18% if the mining grew by 10% and manufacturing grew by 20%. If the manufacturing grew by 10%, and the economy by 18%, then by what percent did mining grow?

1 ☐ 25%2 ☐ 37.5%3 ☐ 50 %4 ☐ 67.5%

Solution:**Correct Answer : 3**

Let total economy of Xiberia be 100, out of which, a is from mining industry. Then

$$18 = a [10]\% + [100 - a] [20]\%$$

$$\Rightarrow 1800 = 10a + 2000 - 20a$$

$$\Rightarrow 10a = 200$$

$$\Rightarrow a = 20$$

If mining grew by x%, then

$$18 = 20[x]\% + 80[10]\%$$

$$\Rightarrow 10 = 20[x]\%$$

$$\Rightarrow x = 50\%.$$

[FeedBack](#)
[Bookmark](#)
[Answer key/Solution](#)
Q.73

If 'n' Arithmetic Means are inserted between two numbers 5 and 95 and sum of these 'n' Arithmetic means is 2200, what are the respective values of 'n' and the common difference of the Arithmetic Progression so formed?

1 ☐ 44 and 22 ☐ 44 and 13 ☐ 33 and 34 ☐ 44 and 4**Solution:****Correct Answer : 1**

If 'n' Arithmetic Means are introduced between two Numbers 'a' and 'b', the resultant sequence a, A_1 , A_2 , ..., A_n , b forms an AP, where A_1 , A_2 , ..., A_n are AMs.

So, $t_1 = a$, $t_2 = A_1$, $t_{(n+1)} = A_n$ & $t_{(n+2)} = b$

$$\text{Common difference } d = \frac{(b-a)}{(n+1)}$$

$$\text{Also, } \sum A_i = \frac{n(a+b)}{2}$$

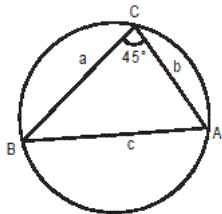
$$\Rightarrow 2200 = \frac{n(5+95)}{2} \Rightarrow n = 44$$

$$\text{and } d = \frac{(95-5)}{45} = 2.$$

[FeedBack](#)
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[Answer key/Solution](#)
Q.74

ABC is a triangle with AB = 8 cm and $\angle ACB = 45^\circ$. Find the circumradius of ΔABC .

1 ☐ $4\sqrt{2}$ cm2 ☐ $\sqrt{4}$ cm3 ☐ $8\sqrt{2}$ cm4 ☐ Cannot be determined**Solution:****Correct Answer : 1**
[Bookmark](#)
[Answer key/Solution](#)



Area $\Delta ABC = \frac{1}{2} [ab \sin C] = \frac{1}{4} [abc/R]$, where R is the circumradius for ΔABC .

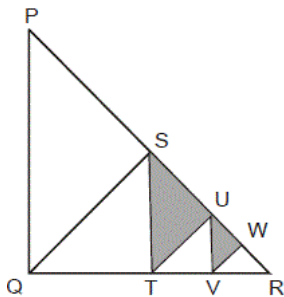
$$\Rightarrow R = \frac{c}{[2 \sin C]}$$

$$\Rightarrow R = \frac{8}{[2 \sin 45]} = 4\sqrt{2}.$$

FeedBack

Q.75

In right-angled triangle PQR, $PQ = QR$. The segments QS, TU and VW are perpendicular to PR, and the line ST and UV are perpendicular to QR, as shown below. What fraction of ΔPQR is shaded?



1 ☐ 3/16

2 ☐ 3/8

3 ☐ 5/16

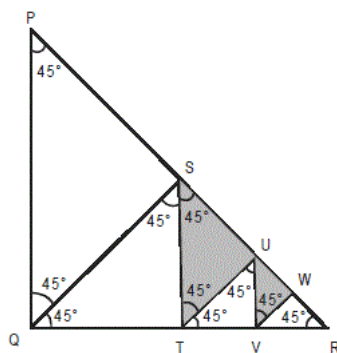
4 ☐ 5/32

Solution:

Correct Answer : 4

[Bookmark](#)

[Answer key/Solution](#)



As, $PQ = QR$ given $\angle P = \angle R = 45^\circ$

In ΔUVR , $\Delta VWR \cong \Delta VWU$

Let area $\Delta VWR = \text{area } \Delta VWU = x$

Similarly, $\Delta TUV \cong \Delta RUW$

$\therefore \text{area } \Delta VTU = \text{area } \Delta UVR = 2x$

Similarly, area $\Delta SUT = \text{area } \Delta TUR = 4x$,

area $\Delta SQT = \text{area } \Delta STR = 8x$,

area $\Delta SQP = \text{area } \Delta SQR = 16x$,

and area $\Delta RQP = 32x$

\therefore Required fraction

$$= \frac{\text{area } \Delta STU + \text{area } \Delta UVW}{\text{area } \Delta PQR} = \frac{4x + x}{32x} = \frac{5}{32}.$$

FeedBack

Q.76

The width of a room is half of its length and the height is 2 cm more than its width. If the area of the four walls of the room is 720 cm^2 , then what is the volume (in cm^3) of the room?

Solution:

Correct Answer : 2400

Let, $b = k$ then $l = 2k$
 and $h = (k + 2)$
 So, Area of 4 walls
 $= 2lh + 2bh = 720$
 $\Rightarrow (l + b) \times h = 360 \quad \dots(i)$
 i.e., $3k(k + 2) = 360$
 $\Rightarrow k^2 + 2k = 120$
 $\Rightarrow k^2 + 2k - 12 \times 10 = 0$
 $\Rightarrow k = 10, -12$
 i.e., $b = 10$ (\because b cannot be negative)
 Hence, $l = 20$ and $h = 12$
 \therefore Volume of the room = 2400 cm^3 .

 **Bookmark**

 **Answer key/Solution**

FeedBack

Q.77

The sum of the reciprocals of the factors of 120 is

1 ☐ 2

2 ☐ 4

3 ☐ 3

4 ☐ 5

Solution:

Correct Answer : 3

Factors of 120 are 1, 2, 4, 8, 3, 6, 12, 24, 5, 10, 20, 40, 15, 30, 60, 120.

Now, sum of their reciprocals

$$= 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{6} + \frac{1}{8} + \dots + \frac{1}{60} + \frac{1}{120}$$

$$\frac{120 + 60 + 40 + \dots + 3 + 2 + 1}{120} = \frac{360}{120} = 3.$$

As a general rule, sum of reciprocals of factors of

$$N = \frac{\text{Sum of factors of } N}{N}.$$

FeedBack

 **Bookmark**

 **Answer key/Solution**

Q.78

ABC printer prints wedding cards. A fixed number of cards is printed at a certain rate and all cards above the fixed number are printed at a lower rate.

Anish, Chetan and Bipin got their wedding cards printed at Rs. 9,000, Rs. 6,600 and Rs. 14,600 respectively. Bipin got printed 1700 cards and this was equ to the cards that Anish and Chetan together got printed. What is the absolute difference between the number of cards that Chetan and Anish got printed?

Solution:

Correct Answer : 300

🔖 Bookmark

🔍 Answer key/Solution

Let 'x' be the fixed number of cards printed at rate 'm', and 'n' be the reduced rate. Assume that Anish got 'a' cards printed. Then Chetan got 'c' = (1700 - a) cards printed.

$$\therefore mx + (a - x)n = 9000 \quad \dots(i)$$

$$mx + (1700 - a - x)n = 6600 \quad \dots(ii)$$

$$mx + (1700 - x)n = 14600 \quad \dots(iii)$$

$$\text{From (ii) and (iii), } 14600 - an = 6600$$

$$\Rightarrow an = 8000 \quad \dots(iv)$$

Subtracting (ii) from (i) and substituting value of 'an'

$$\text{from (iv), } 16000 - 1700n = 2400$$

$$\therefore n = 8, a = 1000 \text{ and } c = 700$$

$$\therefore \text{Anish printed 300 cards more than Chetan.}$$

FeedBack

Q.79

Find the value of

$$1/2 + [1/3 + 2/3] + [1/4 + 2/4 + 3/4] + \dots + [1/100 + 2/100 + 3/100 + \dots + 99/100]$$

Solution:

Correct Answer : 2475

🔖 Bookmark

🔍 Answer key/Solution

$$\text{Given sum} = \frac{1}{2} + \left(\frac{2}{2}\right) + \left(\frac{3}{2}\right) + \dots + \left(\frac{99 \times 100}{2 \times 100}\right)$$

$$= \frac{99 \times 100}{2 \times 2}$$

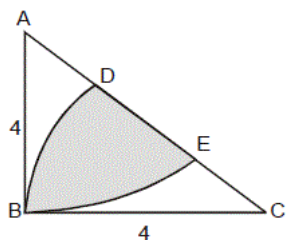
$$= \frac{1}{4} [99 \times 100]$$

$$\therefore \text{Required sum} = 2475.$$

FeedBack

Q.80

ABC is an isosceles right-angled triangle with AB = BC = 4 cm. A circular arc of radius 4 cm with centre C meets the hypotenuse at D, and a circular arc of radius 4 cm with centre A meets the hypotenuse at E as shown in the given figure. Find the area of the shaded region BDE.



1 ☐ $(2\pi - 4)$

2 ☐ $(4\pi - 8)$

3 ☐ $(4\pi - 2)$

4 ☐ $(2\pi - 8)$

Solution:

Correct Answer : 2

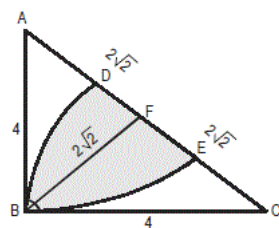
🔖 Bookmark

🔍 Answer key/Solution

If $AB = BC = 4$, $AC = 4\sqrt{2}$.

Let F be the midpoint of AC .

Then, $CF = AF = 2\sqrt{2} = BF$ (\therefore BF will be perpendicular to AC)



Area of $BDF = \text{Area of Sector } BCD - \Delta BCF$

$$\therefore \text{Area of } BDF = \left(\frac{45}{360} \right) \times \pi \times 4 \times 4 - \left(\frac{1}{2} \right)$$

$$\left[2\sqrt{2} \times 2\sqrt{2} \right]$$

$$= [2\pi - 4]$$

Similarly, Area of region $BEF = [2\pi - 4]$

\therefore Total area of shaded region, $BDE = (4\pi - 8)$

FeedBack

Q.81

A manufacturer sells a product to a wholeseller at 10% profit. Then the wholeseller sells it to the dealer and the dealer to the retailer at the margin of 25% each. The retailer marks up the price by 20% and then offers a 15% discount to the customer. Had the customer bought it from the manufacturer directly (the manufacture would still keep his 10% profit), what would have been approximate percentage reduction in price at which he bought the product from manufacturer compare to the price at which he bought the product from the retailer?

1 ☐ 37.25%

2 ☐ 25.72%

3 ☐ 33.45%

4 ☐ 21.56%

Solution:

Correct Answer : 1

Let CP for manufacturer be 100.
Now, according to question:

	C.P	S.P
Manufacturer	100	110
Wholesaler	110	137.5
Dealer	137.5	171.875
Retailer	171.875	175.3125
Customer	110	

Instead, if the customer went to the manufacturer, he would get it at Rs. 110.

\therefore His percentage benefit

$$= \frac{(175.3125 - 110)}{175.3125} \approx 37.25\%$$

FeedBack

Bookmark

Answer key/Solution

Q.82

Two riders on horseback with a gun and a bulletproof shield were moving towards each other at a constant speed of 25 kmph and 5 kmph respectively. When they were 300 km apart, they started firing bullets at each other with the speed of the fired bullets being 2000 kmph. When a bullet fired by rider 1 hit the shield of rider 2, rider 2 fired a bullet and vice versa and the process continued like this. Neglecting the time spent between the instant at which the bullet hits the shield and the rider fires the shot, find the total distance (in km) covered by all the bullets shot by both the riders.

Solution:

Correct Answer : 20000

Bookmark

Answer key/Solution

The time taken by the riders to meet each other

$$= \frac{300}{(25+5)} = 10 \text{ hrs. (As they are moving towards each other their speeds are added)}$$

Now, the distance covered by the bullets in that time
 $= 10 \times 2000 = 20,000 \text{ km.}$

FeedBack

Q.83

A trader sells one-third of his goods at 15% profit, sells half of the goods at 20% profit and sells the remaining at 30% profit. What is the overall percentage profit?

Solution:

Correct Answer : 20

Let the total products be 12k.

Hence, $\frac{1}{3}$ rd of product = 4k and $\frac{1}{2}$ of product = 6k

and Remaining product = 2k

Let Cost price be Rs. 100 per product.

Profit earned on one third of the product = 60k,

profit earned on one half of the product = 120k,

profit earned on remaining product = 60k

\therefore Total Profit earned = 240k

Total Cost Price = 1200k

$$\text{Hence, profit \%} = 100 \times \frac{240k}{1200k} = 20\%$$

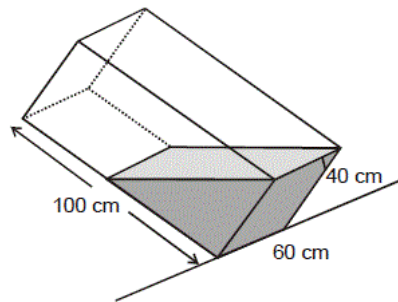
FeedBack

Bookmark

Answer key/Solution

Q.84

A fish tank is 100 cm long, 60 cm wide and 40 cm high. If it is tilted, as shown, resting on the 60 cm edge, then water reaches the midpoint of the face having dimensions 100 cm by 60 cm as shown in the figure given below. If it is then put down so that the base having dimensions 100cm by 60cm is horizontal now what is the depth (in cm) of the water in the final position?



1 ☐ 10

2 ☐ 12

3 ☐ 15

4 ☐ 8

Solution:

Correct Answer : 1

When the tank was tilted, the volume taken by water form a prism.

$$\therefore \text{Volume of water} = \frac{1}{2} [50 \times 40] \times 60$$

$$\Rightarrow \text{Volume of water} = 60000 \text{ cm}^3$$

Also, $100 \times 60 \times h = 60000 \text{ cm}^3$ (After putting it down on base)

$$\Rightarrow h = 10 \text{ cm}$$

FeedBack

Bookmark

Answer key/Solution

Q.85

Nathu and Muthu have their shops next to each other but they buy their goods from different wholesalers such that the cost of goods for Nathu is 20% higher than that for Muthu. However, Nathu sells his goods at a price that is 40% higher than the selling price of Muthu, who sells his goods at a price that is 1.5 times his cost price. What is the ratio of the profit percentages of Muthu and Nathu?

1 ☐ 1 : 32 ☐ 3 : 23 ☐ 2 : 34 ☐ 3 : 1**Solution:****Correct Answer : 3**

Let the cost price for Muthu be 100

∴ Cost price to Nathu would be 120 (because CP for Nathu is 20% higher than that of Muthu's)

Now, selling price for Muthu will be $1.5 \times \text{CP} = 150$

(because SP for Muthu is 1.5 times his CP)

Hence, Selling price for Nathu = $1.4 \times 150 = 210$

(As, SP for Nathu is 40% higher than of Muthu's SP)

So, profit percentage of Muthu = $\frac{50}{100} \times 100 = 50\%$ and profit percentage of Nathu = $\frac{(210-120)}{120} \times 100 = 75\%$ ∴ Ratio of profit percentage = $\frac{50}{75} = 2 : 3$ **Alternative Method:**

Ratio for CP of Nathu and Muthu is 6 : 5

Muthu sells at 7.5 and Nathu sells at 10.5.

Ratio of percentage profit is $\left(\frac{2.5}{5}\right) : \left(\frac{4.5}{6}\right)$ i.e. (2.5×6) ∴ $(5 \times 4.5) = 2 : 3$

FeedBack

Bookmark

Answer key/Solution

Q.86

In an examination, a candidate wrote 5 papers having equal maximum possible marks. The marks he secured in these are in the ratio 4 : 5 : 6 : 7 : 8. The average of his highest and lowest scores is 48%. Find the number of papers in which he scored not less than 60%?

1 ☐ 42 ☐ 33 ☐ 24 ☐ 1**Solution:****Correct Answer : 4**

Let the marks be 4x, 5x, 6x, 7x and 8x in the 5 papers.

Therefore, average of highest and lowest = 6x,

So, $6x = \frac{48}{100} \Rightarrow x = \frac{8}{100}$ ∴ Marks are $\frac{32}{100} \frac{40}{100} \frac{48}{100} \frac{56}{100} \frac{64}{100}$

∴ In only one subject he scored more than 60%.

FeedBack

Bookmark

Answer key/Solution

Q.87

Five horses, Red, White, Grey, Black and Spotted, participated in a race. As per the rules of the race, the persons betting on the winning horse get four

times the bet amount and those betting on the horse that came in second get thrice the bet amount. Moreover, the bet amount is returned to those betting on the horse that came in third, and the rest lose the bet amount. Raju bets Rs. 3000, Rs. 2000 and Rs. 1000 on Red, White and Black horses respectively and ends up with no profit and no loss. Which of the following cannot be true?

- 1 ☐ At least two horses finished before Spotted
- 2 ☐ Red finished last
- 3 ☐ There were three horses between Black and Spotted
- 4 ☐ There were three horses between White and Red

Solution:

Correct Answer : 4

Raju bets as following:

Horse	Amount
Red	Rs. 3000
White	Rs. 2000
Black	Rs. 1000

As Raju ends with no profit no loss, possibilities are:

I: He won 6000 on white and lose on black and red.

II: He won 4000 on black and get money back on white and lose on red.

Consider the following 4 cases:

Rank	Case I	Case II	Case III	Case IV
First			Spotted	Black
Second	White	White		Grey
Third				White
Fourth	Red	Black	Red	Red
Fifth	Black	Red	Black	

Option (1): Can be true as the spotted horse could have finished in first or in third rank.

Option (2): As evident in Case II above, this statement can be correct.

Option (3): As evident in Case III above, this statement can be correct.

Option (4) If there are 3 horses between White and Red, then only two cases arise:

Case (i): Red finishes first and White finishes last, which is not possible.

Case (ii): White finishes first and Red finishes last, also not possible (As the net balance with Raju is exactly Rs. 6000).

Statement in option (4) cannot be true.

Hence, option (4) is the correct choice.

FeedBack

Bookmark

Answer key/Solution

Q.88

A and B together can do a piece of work in 15 days. A alone can do the same work in 60 days. A and B work together on the work for 9 days at their original efficiency. After that B's efficiency reduces by 33.33% and A keeps working at his original efficiency. In how many days will they complete the remaining work?

- 1 ☐ 20/3
- 2 ☐ 8
- 3 ☐ 6
- 4 ☐ 7

Solution:

Correct Answer : 2

Bookmark

Answer key/Solution

Let the work be 60 units.

	A	A + B	B
Time required	60	15	20
Output per day	1	4	3

Work done by A and B together in 9 days = 36 units.

Remaining work = 60 – 36 = 24 units.

After that with B's changed efficiency, their output per day will be as

	A	B	A + B
Output per day	1	2	3

∴ Time required to complete the remaining work $\frac{24}{3}$

= 8 days.

The correct choice is (2).

FeedBack

Q.89

Harsh, Madhu and Anshu can complete a piece of work in 90, 60 and 45 days respectively. After working for x days together, Harsh left. After y more days Madhu left and Anshu completed the remaining work. Had Madhu not left they could have completed the work in (y + 4) days after Harsh had left. Had none of them left, then they would have completed the work in x + 7 days. Find the value of x + y.

1 ☐ 20

2 ☐ 18

3 ☐ 15

4 ☐ 13

Solution:

Correct Answer : 2

Let the total work be 180 units (i.e., LCM of 90, 60, 45).
Therefore, efficiencies of Harsh, Madhu and Anshu are 2 units/day, 3 units/day and 4 units/day respectively.
If none of them leave, the total work can get completed

in $\frac{180}{(2+3+4)} = 20$ days

According to the question, x + 7 = 20 days.

Therefore, x = 13.

So they worked together for 13 days in which they complete $13 \times (2 + 3 + 4) = 117$ units.

Remaining units = 180 – 117 = 63.

If Madhu doesn't leave, Anshu and Madhu can

complete the remaining work in $\frac{63}{(3+4)} = 9$ days.

According to the given question, y + 4 = 9, therefore y = 5 days.

Hence, x + y = 18.

FeedBack

Bookmark

Answer key/Solution

Q.90

Find the minimum value of $\frac{\log a b \times \log b c \times \log c a}{\log a \times \log b \times \log c}$.

(where a, b and c are real number greater than 1)

Solution:

Correct Answer : 8

Bookmark

Answer key/Solution

$$\frac{(\log a + \log b) \times (\log b + \log c) \times \log(c + a)}{\log a \times \log b \times \log c}$$

As a, b, c are real number greater than 1

So, $\frac{\log a}{\log b}$, $\frac{\log b}{\log c}$ and $\frac{\log c}{\log a}$ must be positive

Let $\log a = x$, $\log b = y$, $\log c = z$

$$\therefore \frac{(x+y)(y+z)(z+x)}{xyz}$$

$$= 2 + \left(\frac{x}{y} + \frac{y}{x}\right) + \left(\frac{x}{z} + \frac{z}{x}\right) + \left(\frac{y}{z} + \frac{z}{y}\right)$$

(Minimum value of $a + \frac{1}{a} = 2$ for a being a positive real

numebr.)

Hence, the minimum value of

$$2 + \left(\frac{x}{y} + \frac{y}{x}\right) + \left(\frac{x}{z} + \frac{z}{x}\right) + \left(\frac{y}{z} + \frac{z}{y}\right) = 8.$$

FeedBack

Q.91

A circle passes through a point $(2+\sqrt{2}, 0)$ and the lines $x = y$ and $x = -y$ are the tangents to the circle. Find the radius of the circle.

1 ☐ 1 unit

2 ☐ 2 units

3 ☐ $\sqrt{2}$ units

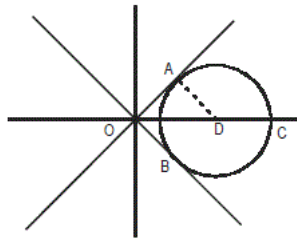
4 ☐ $(1+\sqrt{2})$ units

Solution:

Correct Answer : 3

Bookmark

Answer key/Solution



Let O be the origin, A be the point of contact of the line $x = y$ with the circle and B be the point of contact of the line $x = -y$ with the circle.

C be the point $(2 + \sqrt{2}, 0)$

$OA = OB = r$

Let D be the centre of the circle.

Then, $AD = r$

$$\Rightarrow OD = r\sqrt{2}$$

$$\Rightarrow OC = r\sqrt{2} + r = r(\sqrt{2} + 1)$$

$$\text{i.e., } r(1 + \sqrt{2}) = 2 + \sqrt{2}$$

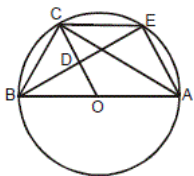
$$\Rightarrow r = \sqrt{2}$$

Hence, option (3) is the correct.

FeedBack

Q.92

In the figure given below, AB is diameter of the circle with centre O. If $\angle CAB = 25^\circ$ and BE, perpendicular to CO, is bisected by CO at D, then find $\angle ACE$.



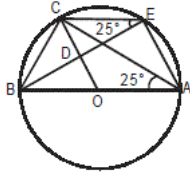
- 1 ☐ 15°
- 2 ☐ 20°
- 3 ☐ 40°
- 4 ☐ Cannot be determined

Solution:

Correct Answer : 3

The correct choice is (3)

Consider the following figure. We join CE and AE.



As $\angle CAB = 25^\circ$ (given)

$\angle CEB = 25^\circ$ (Angle in same segment)

Also, in $\triangle ABC$

$\angle C = 90^\circ$ (angle in same circle)

$\therefore \angle CBA = 65^\circ = \angle OCB$ (as $OC = OB = r$)

$\therefore \angle ACD = 90^\circ - 65^\circ = 25^\circ$

In $\triangle CED$, $\angle E + \angle D + \angle ECA + \angle ACD = 180$

$\Rightarrow 25^\circ + 90^\circ + 25^\circ + \angle ECA = 180^\circ$

$\Rightarrow \angle ECA = 180^\circ - 90^\circ - 50^\circ = 40^\circ$.

FeedBack

Bookmark

Answer key/Solution

Q.93

Let $S = \{1, 2, 3, \dots, 9\}$. Find the number of order triplets (a, b, c) formed from the set S such that at least one of a, b, c is 1.

- 1 ☐ 512
- 2 ☐ 256
- 3 ☐ 217
- 4 ☐ 177

Solution:

Correct Answer : 3

Number of ways of selecting triplets = $9 \times 9 \times 9$

Number of ways of selecting triplets without 1

= $8 \times 8 \times 8$

\therefore Number of ways satisfying the given condition

= $729 - 512 = 217$.

FeedBack

Bookmark

Answer key/Solution

Q.94

A function is defined by $f(x) = bx^2 + cx + d$. If $f(x + 1) - f(x) = 8x + 3$, then what is the value of {b, c}?

- 1 ☐ {2, 1}
- 2 ☐ {4, -1}
- 3 ☐ {-1, 4}
- 4 ☐ {-1, -1}

Solution:

Correct Answer : 2

Now, $f(x) = bx^2 + cx + d$.

$f(x + 1) - f(x) = b(x + 1)^2 + c(x + 1) + d - (bx^2 + cx + d)$

$f(x + 1) - f(x) = 2bx + b + c = 8x + 3$

Comparing the coefficients on both side,

$2b = 8$

$\Rightarrow b = 4, c = -1$

$\therefore \{b, c\} = \{4, -1\}$

Bookmark

Answer key/Solution

FeedBack

Q.95

If $\log_x 196 = a$ and $\log_x (3/2) = b$, find $\log_x 441$

1 ☐ $(a + 3b)^2$

2 ☐ $(a + 2b)^5$

3 ☐ $(a + 3b)$

4 ☐ $(a + 2b)$

Solution:

Correct Answer : 4

Solving through option, $a + 2b$

$$= \log_x 196 + 2 \log_x \left(\frac{3}{2} \right) = \log_x \left(196 \times \left(\frac{9}{4} \right) \right)$$

$$= \log_x (441)$$

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Answer key/Solution

Q.96

The probabilities that a student passes in Mathematics, Physics and Chemistry are m , p and c respectively. For these subjects, the student has a 75% chance of passing in at least one, a 50% chance of passing in at least two and 40% chance of passing in exactly two. Which of the following relations are true?

1 ☐ $p + m + c = \left(\frac{19}{20} \right)$

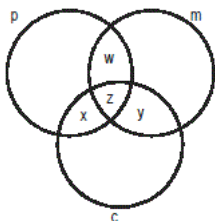
2 ☐ $p + m + c = \left(\frac{27}{20} \right)$

3 ☐ $pmc = \left(\frac{1}{10} \right)$

4 ☐ $pmc = \left(\frac{1}{4} \right)$

Solution:

Correct Answer : 2



$$p \cup m \cup c = 0.75,$$

$$w + x + y + z = 0.50,$$

$$\text{and } w + x + y = 0.40$$

$$\Rightarrow z = 0.10$$

Now

$$p \cup m \cup c = 0.75 = (p + m + c) - (w + x + y) - (2z)$$

$$\Rightarrow p + m + c = 0.75 + (0.40) + 2(0.10) = 1.35 = \frac{27}{20}.$$

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Q.97

Rs. 1000 are distributed among A, B and C. If Rs. 10, 20 and 30 are subtracted from A's, B's and C's share respectively, then the shares of A, B and C are in the ratio 13 : 15 : 19. Find C's original share (in Rs.).

1 ☐ 3702 ☐ 4103 ☐ 4504 ☐ 500

Solution:

Correct Answer : 2

Let ratio of original of A, B & C be A : B : C.

Then, $(A - 10) : (B - 20) : (C - 30)$ is 13 : 15 : 19 $\Rightarrow A + B + C - 60 = 1000 - 60 = 47k = 940$ Thus, C's original share is $(19/47 \text{ of } 940) + 30 = \text{Rs. } 410$.

Q.98

A box contains a total of 400 tickets that come in five colours : blue, green, red, yellow and violet. The ratio of tickets coloured blue, green and red is 1 : 2 : 4 respectively. The ratio of tickets coloured green, yellow and violet is 1: 3: 6 respectively. What is the smallest number of tickets that must be drawn to ensure that at least 50 tickets of one colour are selected?

Solution:

Correct Answer : 196

As per the given data,

B : R : G = 1 : 4 : 2 and

G : Y : V = 1 : 3 : 6

 $\therefore B : R : G : Y : V = 1 : 4 : 2 : 6 : 12$

As total number of tickets given are 400.

 $\Rightarrow k + 4k + 2k + 6k + 12k = 400$ $\Rightarrow 25k = 400$ $\Rightarrow k = 16$ $\therefore \text{Blue} = 16, \text{Red} = 64, \text{Green} = 32,$

Yellow = 96 and Violet = 192

Minimum number of tickets to be selected to ensure at

least 50 selection of 1 colour

 $= 16 + 32 + 49 + 49 + 49 + 1$

Total 196.

Q.99

What are the number of equations that can be formed of the form $px^2 + qx + 1 = 0$ having real roots, if p and q $\in \{1, 2, 3, 4, 5\}$?

1 ☐ 82 ☐ 103 ☐ 124 ☐ 13

Solution:

Correct Answer : 3

If roots are real when, $b^2 - 4ac \geq 0$ i.e., $(q^2 - 4p) \geq 0$ for our given equation,i.e., $4p \leq q^2$ (i)If $q = 1$, p can take no value satisfying (i)If $q = 2$, p can take one value satisfying (i)If $q = 3$, p can take two values satisfying (i)If $q = 4$, p can take four values satisfying (i)If $q = 5$, p can take all five values satisfying (i) \therefore Total 12 equations can be formed.

Q.100

In a board exam, the registration number of the candidates is of the form PXYZ PABCD, where each letter used in the registration number stands for a single digit whole number such that P can take any value from 2 to 9 and other letters can take any value from 0 to 9. The first four digits constitute the center code. What is the minimum number of center codes needed if there are 3.2 million candidates taking the examination?

1 ☐ 362 ☐ 403 ☐ 444 ☐ 45**Solution:****Correct Answer : 2**

The number of possible registration number (excluding the center code) is 8×10^6 (as P can take 8 values and A, B, C and D can take any of 10 values each).

$$\therefore \text{Number of center codes} = \frac{3.2 \times 10^6}{8 \times 10^4} = 40.$$

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