



## Flexi Mock CAT - 06 (2020)

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VARC

DILR

QA

## Sec 1

**Direction for questions (1-4):** Read the given passage and answer the questions that follow.

The apocalypse needs to end. Anyone who writes about apocalypse today is bound to acknowledge that humans have worried and theorised about it for as long as they have worried and theorised about anything; at some point, the writer is guaranteed to employ the word “eschatological” as a nod to the fact that apocalypse is an essential principle of major and minor religions. Yet for a foundational concept it’s quite hard to pin down. Just as “reality” is elusive in a once-fragmented world that has (very creatively) reassembled itself online, the apocalypse can apply to whatever you want it to: the Greek root means to uncover or reveal, hence the Book of Revelation, hence the hard truths we learn about humanity’s consequential inaction in every apocalypse story. Marxist revolution can be an apocalypse; relationship experts speak about the “Four Horsemen” of divorce. Apocalypse is a shifting abstraction, a deceptively neat encapsulation of cascading associations and ideas. The End is endlessly debatable, everywhere and nowhere, relative, adaptable, accommodating to many levels of interpretation. As the funny refrain in Bong Joon-ho’s apocalyptic film *Parasite* goes, it’s “so metaphorical”.

This is not how many people see it. Along with evangelical Christians, doomsday preppers, and bored Silicon Valley billionaires scheming to colonise Mars or flee to New Zealand, the popular imagination has a pretty intuitive grasp of the apocalypse: it refers to the end of the world, or at least human civilisation. The destruction of everything, or enough of everything that it is impossible to rebuild anything good. According to a YouGov poll conducted in February of this year, 29% of Americans believe an “apocalyptic disaster” will occur at some point during their lifetime; given Greta Thunberg’s popularity, it’s fair to say that many more believe one will take place within their children’s lifetimes...

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Here lies the conflict at the centre of Mark O’Connell’s new book, *Notes from an Apocalypse: A Personal Journey to the End of the World and Back*. The indefinite article, “an” apocalypse, provides a clue to his inclinations. He has a PhD in English literature and notes that “throughout my 20s and into my 30s, the writers who seemed to me to possess the truest vision of the world ... were those who rejected most thoroughly the idea that life might be on aggregate a good thing”. Yet we encounter him hovering uneasily in the space between theory and reality, existing in the break of WB Yeats’s line, “The best lack all conviction, while the worst / Are full of passionate intensity”. The merely intellectual approach, untested by actually pressing circumstances, has lately been failing him. On-the-nose signs of impending doom are all around, bombarding him with images of contemporary discord, and they’re really freaking him out.

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#### Q.1 [11594329]

Which of the following statements is a valid conclusion to draw from the author’s statement “As the funny refrain in Bong Joon-ho’s apocalyptic film *Parasite* goes, it’s so metaphorical”?

- 1 ☐ A humorous comment that implies that an apocalypse is not devoid of a figurative sense.
- 2 ☐ An apocalypse is no more or no less than a funny comment in the film *Parasite*.
-

3 ☐ Apocalypse is a collection of irregular, deceptive and leading thoughts and ideas.

4 ☐ An apocalypse can be construed in myriad ways and means.

**Solution:**

**Correct Answer : 4**

 Answer key/Solution

Choices 1 and 2 try to draw some literal inferences from the given statement, while it is an illustration for the sentences that precede it. So, they are incorrect choices. Choice 3 is very close. Yet, it needs to be ruled out because of the adjective "leading". Hence, choice 4 is the correct answer.

Bookmark

FeedBack

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## Q.2 [11594329]

“Even lovers of hermeneutics will hedge their bets.” Which of the following best captures the sense of this statement?

- 
- 1 ☐ People who have a penchant for varied interpretations also shun a difficult choice.
- 
- 2 ☐ Critics whose job is to comment and criticize also bank strongly on their best bets.
-

3 ☐ Ideas explained in a variety of ways by interpreters might also become unsupportive.

4 ☐ People who like to elucidate various ideas will be sanguine about the outcomes.

**Solution:**

**Correct Answer : 1**

 Answer key/Solution

**“Hedge one’s bets” is an idiom that means ‘avoid committing oneself when faced with a difficult choice’. Only choice 1 gives the correct sense.**

Bookmark

FeedBack

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### Q.3 [11594329]

All of the statements, if true, could be seen as supporting the arguments in the passage, EXCEPT

- 
- 1 ☐ There is nothing that the concept of apocalypse cannot be applied to.
- 
- 2 ☐ The author begins the passage with an anticlimactic statement.
-

3 ☐ The passage begins with no paradoxical avowal.

4 ☐ In his book, Mark O'Connell is trapped in the space between veracity and premise.

**Solution:**

**Correct Answer : 2**

 Answer key/Solution

**Choice 1 can be found in the first paragraph. Choice 3 is true; there is no paradox in the beginning of the passage. Choice 4 comes from paragraph four. There is no anticlimax when the passage begins. Hence, choice 2 is the exception.**

Bookmark

FeedBack

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#### **Q.4 [11594329]**

All of the following about apocalypse can be inferred from the first paragraph, EXCEPT that

- 
- 1 ☐ the author brings into discussion a myriad of thoughts vis-à-vis apocalypse.
- 
- 2 ☐ apocalypse is a volatile thought that subtly incorporates numerous ideas.
-



3 ☐ the end might seem shapeless, but, though metaphorical, it is the end.

4 ☐ concern is the cause for speculation about apocalypse.

**Solution:****Correct Answer : 3**

**Choices 1, 2 and 4 can be inferred from the first paragraph. While a reading of the first paragraph gives choice 1, sentence two gives choice 4 and sentence five gives choice 2.**

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

**Direction for questions (5-8):** Read the given passage and answer the questions that follow.

To Jonathan Bate, Wordsworth matters principally as a prophet of nature. This may sound like what Basil Fawcett used to call a statement of the bleeding obvious. But in fact, since the Second World War scholars have more often thought about him in other terms: politically, or as a writer about psychological development, or as a central member of the 'visionary company' of English Romantics, the watchword for whom was not 'Nature' so much as 'Imagination'. The return of nature to Wordsworthian commentary is a corollary of the environmentalist spirit of the age. The process was largely initiated by Bate himself in a book called *Romantic Ecology* (1991). This new book resumes the theme, providing a colourfully written celebration ... of Wordsworth's 'radical alternative religion of nature'. It does not pretend to offer any discoveries or to follow its subject from cradle to grave: Bate is very firm that Wordsworth went off the boil quite soon after he succumbed to respectability, suffering 'the longest, dullest decline in literary history', which is quite a claim. As a result, there aren't many pages on the ageing bard of Rydal.

The book rather aims to fill a gap that Bate identifies in his opening pages: he wishes it to be something that one could give to 'students – and indeed to anybody who raises an eyebrow when the poet's name is mentioned and the only word that comes to mind is "daffodils" – a not overlong and not overspecialised book that would make them excited about Wordsworth'. What is exciting is Wordsworth's 'alternative vision for the future in which love of nature and love of humankind are enmeshed in a sacred web'. This sort of writing has a consciously old-fashioned quality, I think, not at all unattractive but rather like the sort of thing members of the Wordsworth Society used to say to one another in the later part of the 19th century, a time when the poet's credentials as a sage and physician to mankind were at their zenith. 'His best poems uphold and leave in quiet the spirit of the reader,' says Bate.

Wordsworth's contribution to environmental thinking was no doubt profound, and Bate's reverence is heartfelt, but you do get glimpses of different aspects to his genius. 'Nature would always offer Wordsworth a sense of wholeness and what he called ... a "pleasant exercise of hope and joy";' writes Bate, echoing Matthew Arnold's veneration of Wordsworth as a poet of 'joy'. But then, when Arnold sought to exemplify Wordsworth's greatness in a single line, he spontaneously chose one of the saddest lines in English poetry, the description of the heartbroken shepherd Michael returning daily to the sheepfold that he had been building with his son, now irretrievably lost to him: 'And never lifted up a single stone'. Bate observes on several occasions that Wordsworth's poetry is often filled with elegiac feeling, and in his depiction of childhood experience he is moved no less by emotions of abandonment, isolation and loss. I am not sure how Wordsworth's tragic writing sits alongside the divine comedy of his nature religion. Perhaps, as William Empson once observed, to love nature even when she is at her most terrible lends you a kind of strength, but there's no doubt that Wordsworth could imagine nature being very terrible indeed...

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**Q.5 [11594329]**

Of the following arguments, which one is LEAST likely to be used by the author?

- 
- 1 ☐ The author feels that Wordsworth's poetry is seldom filled with plaintive thoughts.
- 
- 2 ☐ Bate's observations assert that Wordsworth's poetry is recurrently full of sad feelings.
- 
- 3 ☐ Bate's thought is in conjunction with Arnold's observation of Wordsworth's expression of sense of Nature.
- 
- 4 ☐ The author agrees with Empson and Wordsworth's envisaging of nature being dreadful.
-



**Solution:**

**Correct Answer : 1**

**Your Answer : 3**

**Choices 2, 3 and 4 are simple interpretations of what is given in the last paragraph. Choice 1 is a distortion; Bate's observation is presented as that of the author's. Hence, choice 1 is the correct answer.**

Answer key/Solution

Bookmark

FeedBack

**Direction for questions (5-8):** Read the given passage and answer the questions that follow.

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**Q.6 [11594329]**

Which of the following can be termed as a thematic presentation of the passage by the author?

- 1 ☐ Radical Wordsworth: the poet who changed the world.
  - 2 ☐ Wordsworth and Nature: inseparable.
  - 3 ☐ Wordsworth's poetry and its concurrence with currency.
  - 4 ☐ Wordsworth's poetry: present environmental aspects.
-



**Solution:**

**Correct Answer : 1**

**Your Answer : 2**

 Answer key/Solution

**Choice 2 is besides the point. It is not currently relevant to the idea of Wordsworth's poetry that is presented in the passage. So, choice 3 is irrelevant. Similarly, current environmental aspects are not the points of discussion in the passage. So, choice 4 is also incorrect. The title and the contents of the book discussed in the first two paragraphs qualify choice 1.**

Bookmark

FeedBack

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**Q.7 [11594329]**

By "Wordsworth went off the boil ..." the author refers to the fact that:


- 1 ☐ Wordsworth had risen to the greatest of glory in his pursuit of poetry on nature.
  - 2 ☐ Wordsworth's poetic life had seen the decline of a great period in literary history.
  - 3 ☐ Wordsworth's glorious poetic life faded and hence Bate's book finds no further elaboration on it.
  - 4 ☐ Bate's book presents information only to the extent of the limited respect that Wordsworth gained.
-



**Solution:**

**Correct Answer : 3**

**Your Answer : 2**

 **Answer key/Solution**

**Paragraph one talks about Bate's observation of Wordsworth's rise and decline.**

**The given expression in the question refers to the same. Only choice 3 presents this idea clearly. Choices 1 and 2 present only partial information. Choice 4 ignores the idea of why there aren't many pages about an aging Wordsworth in Bate's book.**

Bookmark

FeedBack

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To Jonathan Bate, Wordsworth matters principally as a prophet of nature. This may sound like what Basil Fawcett used to call a statement of the bleeding obvious. But in fact, since the Second World War scholars have more often thought about him in other terms: politically, or as a writer about psychological development, or as a central member of the 'visionary company' of English Romantics, the watchword for whom was not 'Nature' so much as 'Imagination'. The return of nature to Wordsworthian commentary is a corollary of the environmentalist spirit of the age. The process was largely initiated by Bate himself in a book called *Romantic Ecology* (1991). This new book resumes the theme, providing a colourfully written celebration ... of Wordsworth's 'radical alternative religion of nature'. It does not pretend to offer any discoveries or to follow its subject from cradle to grave: Bate is very firm that Wordsworth went off the boil quite soon after he succumbed to respectability, suffering 'the longest, dullest decline in literary history', which is quite a claim. As a result, there aren't many pages on the ageing bard of Rydal.

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Wordsworth's contribution to environmental thinking was no doubt profound, and Bate's reverence is heartfelt, but you do get glimpses of different aspects to his genius. 'Nature would always offer Wordsworth a sense of wholeness and what he called ... a "pleasant exercise of hope and joy";' writes Bate, echoing Matthew Arnold's veneration of Wordsworth as a poet of 'joy'. But then, when Arnold sought to exemplify Wordsworth's greatness in a single line, he spontaneously chose one of the saddest lines in English poetry, the description of the heartbroken shepherd Michael returning daily to the sheepfold that he had been building with his son, now irretrievably lost to him: 'And never lifted up a single stone'. Bate observes on several occasions that Wordsworth's poetry is often filled with elegiac feeling, and in his depiction of childhood experience he is moved no less by emotions of abandonment, isolation and loss. I am not sure how Wordsworth's tragic writing sits alongside the divine comedy of his nature religion. Perhaps, as William Empson once observed, to love nature even when she is at her most terrible lends you a kind of strength, but there's no doubt that Wordsworth could imagine nature being very terrible indeed...

#### Q.8 [11594329]

In the author's view, Jonathan claiming that Wordsworth's writing presented an alternative vision for the future is akin to:

- 1 ☐ Wordsworth reaching the zenith of his career because of his love of nature and humanity.
- 2 ☐ the views expressed by the members of the Wordsworth Society in the later part of the 19th century.
- 3 ☐ mentioning that Wordsworth's love for nature and humankind is seldom hallowed.
- 4 ☐ capturing the consecrated thought of Wordsworth's love for nature and mankind into one.





**Solution:**

**Correct Answer : 2**

**Your Answer : 4**

 Answer key/Solution

The question refers to the second sentence in paragraph two. Choice 1 gives an incorrect cause and effect relationship. The word 'seldom' rules out choice 3. Choice 4 is a distortion. Choice 2 captures the idea closely.

Bookmark

FeedBack

**Direction for questions (9-12):** Read the given passage and answer the questions that follow.

Your nose is the best biosensor on the face of the Earth. This claim must sound counterintuitive since the sense of smell has acquired a rather poor reputation over the past centuries. Philosophers and scientists alike have only rarely singled it out for close study. The Enlightenment philosopher Étienne Bonnot de Condillac remarked dryly in 1754 that: 'Of all the senses, it is the one which appears to contribute least to the cognitions of the human mind.' Charles Darwin was not alone among scientists in considering smell a primitive system with reduced sophistication in humans. But are these ideas grounded in fact, or merely based on anti-olfactory prejudices passed on from generation to generation?

Recent scientific advances have debunked several myths about smell. First, human olfactory physiology is not in evolutionary decline. In 2017, a review in *Science* finally set the record straight by analyzing contemporary research in olfaction. Although smaller in proportion to overall body mass, the olfactory bulb (the first cortical structure of the olfactory pathway) in humans has just as many neurons as in rodents. Further, the bulb is one of the most densely populated neuronal areas of the brain. It thus depends on how you measure size and define proportions.

Second, the sense of smell continues to be important to human cognition and to culture. Cross-cultural studies about language use have shown that other societies, such as the Jahai and Maniq in Southeast Asia, have extensive odour vocabularies and rites. Likewise, in the Western hemisphere, the fragrance industry has been successively expanding. In the United States alone, scented products generate more than \$25 billion annually (ranging from perfumes to detergents, all kinds of creams and body products, up to scented trash bags).

Increasingly, loss of the sense of smell is being treated as a serious harm in clinical settings. Besides, the sense of smell is key to flavour perception. Indeed, most of what you perceive as the taste of food and drink is actually smell, being caused by volatile chemicals travelling from the cavity of your mouth through the open space of the pharynx up to your nasal epithelium. And there's no way around it: the spice trade, with its growth following the Silk Road, has shaped the modern global socioeconomic landscape as much as – if not more than – philosophical discussion on reason and morality. It is surely now time to rethink our assumptions about the sense of smell, and its psychological and philosophical implications.

Instead of being 'the odd one out', smell is not only better than we think, it also allows us to revisit the relation between the world and our senses.

How good is your sense of smell, really? The human nose has been measured to detect minuscule amounts of molecules in complex chemical mixtures. Humans can sense the presence of particular odorants (smelly molecules) in dilutions of less than one part in several billion parts of air. Take the case of corked wine, which is primarily caused by the compound 2, 4, 6-trichloroanisole, in short: TCA. Although sensitivity to this compound varies between individuals, the threshold for its detection lies in the 10 to single-digit parts per trillion. To put this into perspective, as little as one ounce of TCA could contaminate 7.5 billion gallons of wine, which was the entire world's wine production in 2018. Your sense of smell is not bad but strikingly accurate. So why haven't we noticed?

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**Q.9 [11594329]**

Which of the following CANNOT be used by the author to support his arguments?

- 1 ☐ Small changes in the chemical composition of the environment are what the olfactory system evolved to evaluate, objectively – and pretty reliably so.

- 2 ☐ The sense of smell provides reliable access to reality because its biological and physiological mechanisms allow its perceptual responses to be highly variable and adaptive.
- 3 ☐ Olfaction and vision fundamentally differ in how the physical stimulus is coded and how its perceptual representations are computed by these sensory systems.
- 4 ☐ Smell appears fickle due to a lack of sufficient understanding of its causal mechanisms.

**Solution:****Correct Answer : 3****Your Answer : 4**[🔍 Answer key/Solution](#)

**Option 1 can be used to support the argument made in the last para that the sense of smell is pretty accurate. Option 2 can be used to support the argument made in the fourth para about the relationship of sense of smell with perception. Option 4 can also be used to support the argument that olfactory sensations are indeed sophisticated. Only option 3 is out of context. Hence, 3 is the correct answer choice.**

[Bookmark](#)[FeedBack](#)

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**Q.10 [11594329]**

Which of the following statements, if true, could be seen as not contradicting the arguments in the passage?

- 1 ☐ Many scientists used to believe that olfactory senses are not highly developed in case of humans.
-

2 ☐ Rodents have a slightly better sense of smell as compared to humans.

3 ☐ No two human senses impact the reception and interpretation of stimuli.

4 ☐ A lot of researchers have focused on the olfactory senses of the human beings while doing their research work.

**Solution:**

**Correct Answer : 1**

 Answer key/Solution

**1 is the correct answer choice as it can be inferred from the first paragraph. "The olfactory bulb (the first cortical structure of the olfactory pathway) in humans has just as many neurons as in rodents." This makes option 2 contradictory to the information given in the passage. Option 3 is also contradictory as per the fourth para (on perception). Option 4 is contradictory to the information contained in the first paragraph.**

Bookmark

FeedBack

**Direction for questions (9-12):** Read the given passage and answer the questions that follow.

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**Q.11 [11594329]**

Why has the author given the example of Charles Darwin in the first paragraph?

- 1 ☐ To illustrate the insignificance of researches based on olfactory senses.

2 ☐ To show that the most significant scientist of all time also disregarded the sense of smell.

3 ☐ To show that even renowned scientists like Charles Darwin had some misconceptions about the sense of smell.

4 ☐ To disprove that olfactory sense and organs are not sophisticated in humans.

✕

**Solution:**

**Correct Answer : 3**

**Your Answer : 2**

[🔍 Answer key/Solution](#)

The author has mentioned various beliefs of early philosophers and scientists and at the end of the first para, he has raised a question whether these beliefs are factual or merely based on prejudice. The author has discussed in the passage how evolved and well-developed the sense of smell is in human beings. Hence, the best option out of the given is 3. Option 1 is wrong as this example is not related to the number and extent of researches done on olfactory senses. Option 2 is a close option; however, we can't call Darwin the most significant scientist of all time. The author hasn't disproved the fact mentioned in 4 by using Darwin's example. Hence, option 4 is also wrong.

Bookmark

FeedBack

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### Q.12 [11594329]

Which of the following would add more depth to the author's statement, "Smell is not only better than we think, it also allows us to revisit the relation between the world and our senses."?

- 1 ☐ Nose is a fine-tuned instrument monitoring the fluctuating chemical concentrations in your surroundings.



2 ☐ Typically, identical odours presented with different verbal labels are experienced as different in quality.

3 ☐ The olfactory stimulus is fundamentally promiscuous – in the sense that the same volatiles can emanate from several kinds of objects and are part of many different complex odour mixtures.

4 ☐ A single genetic mutation near the olfactory receptor gene OR6A2 is responsible for the aversion that some people have towards cilantro (coriander).

**Solution:**

**Correct Answer : 1**

 Answer key/Solution

**Only option 1 shows how we are able to make sense of some things around us using olfaction. Options 2, 3 and 4 are talking about different things which are unrelated to the given statement. Option 2 expresses the relation of olfaction to verbal cues. Option 3 talks about different things perceived as being the same. Option 4 talks of some gene responsible for a particular kind of aversion, which is not related to the relationship between the world and senses. It is about our reaction or response, not perception.**

Bookmark

FeedBack

**Direction for questions (13-16):** Read the given passage and answer the questions that follow.

In the past month the biggest business handout in history has begun. The goal of helping firms survive temporary lockdowns is sensible, but it is hard not to feel uneasy. At least \$8trn of state loans and goodies have been promised to private firms in America and Europe, roughly equivalent to all their profits over the past two years. Over half a million European firms have applied for payroll subsidies. Some of these handouts will involve grubby choices: Boeing, embroiled in the 737 max crashes, might get billions of taxpayer dollars. Broad rescue schemes could also leave a legacy of indebted, ossified firms that impede the eventual recovery. Speed is essential, but governments also need a clearer framework to organize the jumble of schemes, protect taxpayers and preserve the economy's dynamism.

That \$8trn is a big number, and includes state and central-bank loans, guarantees and temporary subsidies to keep paying inactive workers. The total running costs of all American and euro-zone non-financial firms are \$13.5trn a year, of which \$11.6trn is wages. But there is still no guarantee that this mountain of money can prevent chaos. The plethora of support schemes—there are at least ten in America, with different eligibility rules—will baffle some firms and exclude others. A quarter of listed Western firms are heavily indebted, and if those facing slumping demand gorge on state loans they may wreck their balance-sheets. For a few giants the potential losses are so big that they alone could impose a significant burden on the state. Volkswagen says it is burning through \$2.2bn of cash every week.

Ideally private investors would swoop in—Warren Buffett is sitting on \$125bn of spare funds and Blackstone's funds have \$151bn. But the duration of lockdowns is unclear, so they may be reluctant. As a result, alongside widely available cheap state loans, bespoke state bail-outs are starting. America's latest stimulus package earmarks at least \$50bn for the airlines and other firms vital for "national security" (Boeing and chums).

Such bespoke deals are easy to sign but often go sour. Uncle Sam lost over \$10bn on the General Motors rescue of 2009 and the Wall Street bank bail-outs left an especially bitter taste. Negotiations can be hijacked by politicians who want pork or sway over firms' strategies. If bailed-out firms end up indebted and burdened by long-term job guarantees, the economy can become ossified, sapping productivity. And it is unfair to ask well-run firms to compete with state-backed rivals.

What to do? Governments need to offer support for business in an integrated way. There should be blanket offers to all firms of cheap loans and help in paying the wages of inactive staff for three to six months with few strings attached. This is what the \$8trn of loans and guarantees mostly try to do, but there are gaps and doubts about how small firms will get cash. One answer is making sure banks have the resources to lend—even if this means suspending their dividends, as Britain did this week. The goal should be to freeze most of the economy temporarily, until the lockdowns ease.

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**Q.13 [11594329]**

What does the author mean when he says, "Uncle Sam lost over \$10bn on the General Motors rescue of 2009."?

- 1 ☐ The citizens of America are tired of watching their government formulate bail out plans for sick companies.
  - 2 ☐ The US Government lost more than 10 billion dollars on its bailout of General Motors.
  - 3 ☐ The Chairman of General Motors lost more than 10 billion dollars during the financial crisis of 2009.
-

4 ☐ The President of US had to bear losses of more than 10 billion dollars on his rescue plan of GM.

×

**Solution:**

**Correct Answer : 2**

**Your Answer : 1**

Uncle Sam refers to the US government. Hence, option 2 is the best answer choice. Option 4 is wrong as the President bearing losses doesn't come into picture. It is the taxpayers' money that is used by governments in bailouts. Option 3 is wrong as the sentence is not about the Chairman of GM. Option 1 is out of scope.

 Answer key/Solution

Bookmark

FeedBack

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**Q.14 [11594329]**

What is the main idea of the passage?

- 
- 1 ☐ To discuss the 8 trillion dollars stimulus package announced by the US government.
- 
- 2 ☐ To discuss some problems associated with implementation of the government's rescue plans worth \$8 bn and provide some suggestions.
- 
- 3 ☐ To criticize the government's strategies to deal with the current economic problem by quoting examples of previous mistakes.
-

4 ○ To appreciate the government's move to help the economy bounce back to normal and to warn it about some problems.



**Solution:**

**Correct Answer : 2**

**Your Answer : 2**

**Options 3 and 4 are wrong as they have used extreme words like "criticize" and "appreciate". Out of option 1 and 2, 2 is more detailed. Hence, it is the better answer choice.**

 Answer key/Solution

Bookmark

FeedBack

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**Q.15 [11594329]**

Which of the following CANNOT be inferred from the above passage?

- 1 ☐ More deliberation is required on allocation of funds to various sectors and companies.
  - 2 ☐ The US economy cannot be revived without framing a plan for revival of small businesses.
  - 3 ☐ Large companies, if given support by the government to compensate for the losses during lockdown, may drastically influence the finances of government.
-

4 ☐ Airlines are a major benefactor of the 8 trillion-dollar rescue package.



**Solution:**

**Correct Answer : 2**

**Your Answer : 2**

 Answer key/Solution

**Option 1 can be inferred from the overall theme of the passage. The author has pinpointed various points related to allocation and distribution of this package to various sectors and businesses. Option 3 can be inferred from the second para (the second last line). Option 4 can be inferred from the third para. Hence, option 2 is the correct answer choice. It is extreme compared to what the author has mentioned about small businesses in the passage.**

Bookmark

FeedBack

**Direction for questions (13-16):** Read the given passage and answer the questions that follow.

In the past month the biggest business handout in history has begun. The goal of helping firms survive temporary lockdowns is sensible, but it is hard not to feel uneasy. At least \$8trn of state loans and goodies have been promised to private firms in America and Europe, roughly equivalent to all their profits over the past two years. Over half a million European firms have applied for payroll subsidies. Some of these handouts will involve grubby choices: Boeing, embroiled in the 737 max crashes, might get billions of taxpayer dollars. Broad rescue schemes could also leave a legacy of indebted, ossified firms that impede the eventual recovery. Speed is essential, but governments also need a clearer framework to organize the jumble of schemes, protect taxpayers and preserve the economy's dynamism.

That \$8trn is a big number, and includes state and central-bank loans, guarantees and temporary subsidies to keep paying inactive workers. The total running costs of all American and euro-zone non-financial firms are \$13.5trn a year, of which \$11.6trn is wages. But there is still no guarantee that this mountain of money can prevent chaos. The plethora of support schemes—there are at least ten in America, with different eligibility rules—will baffle some firms and exclude others. A quarter of listed Western firms are heavily indebted, and if those facing slumping demand gorge on state loans they may wreck their balance-sheets. For a few giants the potential losses are so big that they alone could impose a significant burden on the state. Volkswagen says it is burning through \$2.2bn of cash every week.

Ideally private investors would swoop in—Warren Buffett is sitting on \$125bn of spare funds and Blackstone's funds have \$151bn. But the duration of lockdowns is unclear, so they may be reluctant. As a result, alongside widely available cheap state loans, bespoke state bail-outs are starting. America's latest stimulus package earmarks at least \$50bn for the airlines and other firms vital for "national security" (Boeing and chums).

Such bespoke deals are easy to sign but often go sour. Uncle Sam lost over \$10bn on the General Motors rescue of 2009 and the Wall Street bank bail-outs left an especially bitter taste. Negotiations can be hijacked by politicians who want pork or sway over firms' strategies. If bailed-out firms end up indebted and burdened by long-term job guarantees, the economy can become ossified, sapping productivity. And it is unfair to ask well-run firms to compete with state-backed rivals.

What to do? Governments need to offer support for business in an integrated way. There should be blanket offers to all firms of cheap loans and help in paying the wages of inactive staff for three to six months with few strings attached. This is what the \$8trn of loans and guarantees mostly try to do, but there are gaps and doubts about how small firms will get cash. One answer is making sure banks have the resources to lend—even if this means suspending their dividends, as Britain did this week. The goal should be to freeze most of the economy temporarily, until the lockdowns ease.

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**Q.16 [11594329]**

Which of the following is an assumption made by the author while suggesting an integrated plan that includes small businesses?

- 1 ☐ All firms have made commitments to their staff for at least three to six months.
  - 2 ☐ Small businesses will be able to complete formalities to take loans from banks.
  - 3 ☐ Same amount of money should be provided to all firms at cheap rates.
-



4 ☐ Not paying out dividends will be more detrimental to economy as compared to not having enough liquidity in the bank.



**Solution:**

**Correct Answer : 2**

**Your Answer : 4**

 Answer key/Solution

The author wants the government to help companies pay their inactive staff. It doesn't mean all firms have made such commitments to their employees. Hence, option 1 is wrong. Option 2 is a valid assumption. Without it, it will be of no use to make funds available in banks. Blanket offer doesn't mean the same amount to each and every firm. Hence Option 3 is wrong. Option 4 is also wrong. It should be vice-versa. Not having enough liquidity in the bank will be more detrimental to economy as compared to not paying out dividends.

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#### Q.17 [11594329]

**Directions for question (17):** The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. A good condition of nutrition is shown by the rotundity of the body, the pliability and softness of the skin, and the tone of the hair.
2. Under the general condition of the animal it is necessary to observe the condition or state of nutrition, the conformation, so far as it may indicate the constitution, and the temperament.
3. If the subcutaneous fat has disappeared and the muscles are wasted, allowing the bony prominences to stand out; if the skin is tight and inelastic and the coat dry and harsh, we have evidence of a low state of nutrition.
4. By observing the condition of nutrition one may be able to determine to a certain extent the effect that the disease has already had upon the animal and to estimate the amount of strength that remains and that will be available for the repair of the diseased tissues.



**Solution:****Correct Answer : 2413****Your Answer : 4231**[Answer key/Solution](#)

**Sentence 1 and sentence 3 are related in ideas. The former talks about the symptoms of a good condition while the second talks about the symptoms of a low state of nutrition. It can be either 13 or 31. Observing the nuances and flow of the language, we can say that 13 is better than 31. Sentence 4 picks up on the idea introduced by sentence 2. Sentence 2 says that it is necessary to observe the condition and sentence 4 tells the benefit of doing that. Hence, 24 is a mandatory pair. After reading all the sentences and arranging them in a sequence, 2413 appears to be the best sequence.**

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**Q.18 [11594329]**

**Directions for question (18):** The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. An epidemic of the second century BC, as described, seems to have been one of true plague, while the pandemic which began in Egypt in the sixth century AD, thence extending to Constantinople, Europe and the British Isles, was certainly the disease known in modern times as the plague.
2. In the eleventh and twelfth centuries the returning Crusaders spread the plague widely through Europe, which country it ravished from the eleventh to the fourteenth centuries, reaching its climax of intensity in the "Black Death" of Europe of the Middle Ages.
3. This pandemic, beginning as the plague of Justinian, was probably followed by the continuous presence of the disease in Europe, marked by many local outbreaks and periods of quiescence and extending down through the centuries to the period of the Crusades.
4. The disease thereafter continued to devastate Europe, the great population centres, Paris and London, suffering especially from its visitations and its more or less constant presence.

✕

**Solution:****Correct Answer : 1324****Your Answer : 1234**[Answer key/Solution](#)

**Sentence 3 uses "this pandemic beginning as plague" which is introduced in sentence 1. Hence, 13 is a mandatory pair. The keyword "crusaders" can be used to link sentence 2 with sentence 3. 4 is a concluding sentence which can be used after 1,2 and 3 as it uses "continued to devastate Europe". Hence, the correct sequence is 1324.**

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**Directions for question (19):** The passage given below is followed by four summaries. Choose the option that best captures the author's position.

**Q.19 [11594329]**

Everyone seems to agree that parenting is as difficult as it is important. Still, the fact that we don't mention parenting when someone asks about our work experience seems to indicate that we think of childrearing as unlike other forms of work, as if the Venn diagram of the skills they require is just two circles with no overlap. But this dichotomy dissolves under any serious scrutiny. Paid childcare positions, such as a nanny or nursery worker, count as work experience. Unpaid internships and volunteer positions count as work experience. I can see no reason that the unpaid childcare role of a parent shouldn't count for something, too. This has never been more obvious than right now, as the coronavirus has forced parents to shoulder caregiving duties previously outsourced to daycares and schools in addition to their other jobs.

- 1 ☐ The dichotomy of parenting not being counted in work experience despite being a difficult task has been resolved by including paid childcare roles as well as unpaid or voluntary works in work experience.
- 2 ☐ The difficulty associated with raising a child, especially in the times of Coronavirus scare, makes it logical to count childcare and parenting as work experience.
- 3 ☐ Though childcare is considered an important as well as a difficult work, it is not counted as work experience and that is unfair to parents.
- 4 ☐ If paid childcare position or unpaid internship can count as work experience, then unpaid child rearing, which contains the element of childcare as well as voluntary work, should also be counted as work experience.

**Solution:****Correct Answer : 4**

The primary focus of the author is not on the difficulty level; hence option 2 can be eliminated. The author has not even talked about fairness; hence option 3 is also wrong. 1 distorts the information in the passage. 4 is detailed and captures the essence of the idea. Hence, 4 is the right answer.

[🔍 Answer key/Solution](#)[Bookmark](#)[FeedBack](#)**Q.20 [11594329]**

**Directions for question (20):** Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. After the Agricultural Revolution, human societies grew even larger and more complex, while the imagined constructs sustaining the social order also became more elaborate.
2. Today, most scholars of culture have concluded that the opposite is true.
3. They thereby created artificial instincts that enabled millions of strangers to cooperate effectively.
4. Myths and fictions accustomed people, nearly from the moment of birth, to think in certain ways, to behave in accordance with certain standards, to want certain things, and to observe certain rules.
5. This network of artificial instincts is called "culture".



**Solution:****Correct Answer : 2****Your Answer : 1**[Answer key/Solution](#)

Sentences 1, 3, 4 and 5 form a logically coherent paragraph. Sentence 2 uses the word culture that is also present in sentence 5. However, we have no other sentence for which “the opposite is true” can be used. The correct sequence is 1435. Sentence 4 extends the concept of imagined constructs by using terms like myths and fictions. Sentence 3 talks about their logical result. Sentence 5 clearly follows 4 as they are about artificial instincts. 2 is the odd one out.

[Bookmark](#)[FeedBack](#)**Q.21 [11594329]**

**Directions for question (21):** The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. Most of his works are in the form of collections of apothegms, and sometimes the subject changes on every second page.
2. This fact constitutes one of the counts in the orthodox indictment of him: it is cited as proof that his capacity for consecutive thought was limited, and that he was thus deficient mentally, and perhaps a downright moron.
3. It presents a connected argument with very few interludes, and has a beginning, a middle and an end.
4. Of all Nietzsche's books, "The Antichrist" comes nearest to conventionality in form.

[×](#)**Solution:****Correct Answer : 4312****Your Answer : 4132**[Answer key/Solution](#)

"It" in sentence 3 is referring to "The Antichrist" mentioned in sentence 4.

Sentence 3 and sentence 1 are contrasting the structure of the book The Antichrist with that of other books written by Nietzsche. Sentence 2 talks about the fact presented in sentence 1. Hence, 4312 is the best possible sequence.

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**Q.22 [11594329]**

**Directions for question (22):** Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. We shall give the name 'sensation' to the experience of being immediately aware of these things.
2. The colour is that of which we are immediately aware, and the awareness itself is the sensation.
3. Thus, whenever we see a colour, we have a sensation of the colour, but the colour itself is a sense-datum, not a sensation.
4. Thus we have to consider the relation of sense-data to physical objects.
5. Let us give the name of 'sense-data' to the things that are immediately known in sensation: such things as colours, sounds, smells, hardnesses, roughnesses, and so on.

**Solution:**

**Correct Answer : 4**

 Answer key/Solution

**Three of the sentences (1, 4 and 5) talk about the presumptions of the author.**

**Sentences 2 and 3 apply two of these definitions on other things like colour.**

**However, sentence 4 talk about physical objects too which is unrelated to the rest of the sentences. The order of the sentences is 5132. 4 is the odd one out.**

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**Q.23 [11594329]**

**Directions for question (23):** The passage given below is followed by four summaries. Choose the option that best captures the author's position.

There is in the world at large an increasing inclination to stretch unduly the powers of society over the individual, both by the force of opinion and even by that of legislation: and as the tendency of all the changes taking place in the world is to strengthen society, and diminish the power of the individual, this encroachment is not one of the evils which tend spontaneously to disappear, but, on the contrary, to grow more and more formidable. The disposition of mankind, whether as rulers or as fellow-citizens to impose their own opinions and inclinations as a rule of conduct on others, is so energetically supported by some of the best and by some of the worst feelings incident to human nature, that it is hardly ever kept under restraint by anything but want of power; and as the power is not declining, but growing, unless a strong barrier of moral conviction can be raised against the mischief, we must expect, in the present circumstances of the world, to see it increase.

1 ☐ The tendency of society to encroach upon the individual's freedom is supported by all the changes occurring in the world; a kind of evil which is here to stay.

2 ☐ The power of society and its exertion of its influence over the individuals is enhanced by the natural tendencies of humans to impose their opinions on others and the trend of changes occurring in the world further strengthens it; hence, it is set to increase.

3 ☐ Mankind is guided by its natural instincts and these are too powerful to ever be kept under the control of mankind itself and they will continue to rise in power.

4 ○ Looking at the overall trend in the world, it can be said that the power of society to rule over and diminish the power of individuals is set to grow further.

**Solution:**

**Correct Answer : 2**

 Answer key/Solution

The author is not just talking about freedom; moreover, it is not particularly mentioned. Hence, option 1 is incorrect. The passage is not about the natural instincts of man, but about the power of society. Hence option 3 is also wrong. Option 4 only partially summarises the paragraph. It captures only the first half of the passage. Hence, option 2 is the best answer.

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#### Q.24 [11594329]

**Directions for question (24):** The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. Certainly, he would have been in it, in one capacity or another.
2. Few writers of recent times could so well describe the poetry of motion as manifested in the surge and flow of battle, or so well depict the isolated deed of heroism in its stark simplicity and terror.
3. It hardly profits us to conjecture what Stephen Crane might have written about the World War had he lived.
4. No man had a greater talent for war and personal adventure, nor a finer art in describing it.

**Solution:**

**Correct Answer : 3142**

 Answer key/Solution

Sentences 1, 2 and 4 can appear only after sentence 3 which contains the name of the person being talked about. Sentence 3 says "had he lived" and sentence 1 uses "he would have been". Hence 31 is a mandatory pair. Sentences 4 and 2 are written in simple past tense. By the tone, we can deduce that 4 has to come before 2. 4 talks about wars, a theme started in sentence 3. 2 further elaborates the details of such wars. Hence 3142 is the best sequence.

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**Q.25 [11594329]**

**Directions for question (25):** Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out.

1. Kamaswami held against him that he had not turned back right away, that he had wasted time and money.
2. At one time, he travelled to a village to buy a large harvest of rice there.
3. Nevertheless, Siddhartha stayed for several days in that village, treated the farmers for a drink, gave copper-coins to their children, joined in the celebration of a wedding, and returned extremely satisfied from his trip.
4. But when he got there, the rice had already been sold to another merchant.
5. He soon saw that Siddhartha knew little about rice and wool, shipping and trade, but that he acted in a fortunate manner, and that Siddhartha surpassed him, the merchant, in calmness and equanimity, and in the art of listening and deeply understanding previously unknown people.

**Solution:**

**Correct Answer : 5**

 Answer key/Solution

The pronouns here create a confusion. However, rather than blindly applying the rule of pronoun antecedents, we should check the story too. Another tricky thing in the question is usage of the name of Sidhartha and 'rice' in sentence 5. However, there is no proper antecedent for the pronoun "he" mentioned in sentence 5. Hence it is the odd one out. Sentence 2 and 4 make a mandatory pair. 'Nevertheless' can be used when written after sentence 4. Kamaswami 'held against him' because he did not return from the village when found that there was no rice. Hence, the correct sequence is 2431.

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**Q.26 [11594329]**

**Directions for question (26):** The passage given below is followed by four summaries. Choose the option that best captures the author's position.

In the late 1990s, Jaak Panksepp, the father of affective neuroscience, discovered that rats laugh. This fact had remained hidden because rats laugh in ultrasonic chirps that we can't hear. It was only when Brian Knutson, a member of Panksepp's lab, started to monitor their vocalisations during social play that he realised there was something that appeared unexpectedly similar to human laughter. Panksepp and his team began to systematically study this phenomenon by tickling the rats and measuring their response. They found that the rats' vocalisations more than doubled during tickling, and that rats bonded with the ticklers, approaching them more frequently for social play. The rats were enjoying themselves. But the discovery was met with opposition from the scientific community. The world wasn't ready for laughing rats.

- 1 ☐ The scientific community completely rejected the idea of laughing rats because they knew about the errors in the study done by Panksepp's lab.
- 2 ☐ The world is dogmatic, and it opposes any scientific discovery no matter whether it is related to rats or not.
- 3 ☐ The scientific community opposed the discovery of laughing rats because the world could not believe that rats could have a laughter similar to human laughter.

4 ○ The scientific community rejected the discovery of laughing rats because the world was not ready to believe that rats can laugh like humans.

**Solution:**

**Correct Answer : 3**

 Answer key/Solution

The passage describes that after the continuous monitoring of vocalisation in rats during social play, Panksepp's lab found that rats also laugh in a manner which seems unexpectedly similar to human laughter. But this discovery met with opposition from the scientific community and world at large.

Option 1 is wrong. The scientific community opposed the discovery of laughing rats but nowhere is it mentioned that they completely rejected it. So this option is extreme.

Option 2 is wrong because it is extreme in the sense that nowhere does the author say that the world is dogmatic.

Option 4 is wrong because it also uses the word rejected which makes this option extreme. Option 3 is correct.

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## Sec 2



**Directions for questions 27 to 30:** Answer the questions on the basis of the information given below.

In a quiz competition, a rapid-fire round had 4 student participants- Benita, Danish, Prasoon, and Ronny and three sections – Sports, Politics, and History. Each section has 15 questions. The marking for each section was as follows:

- If a student answered up to 5 questions correctly, s/he got 1 mark for each question.
- If s/he answered 6 to 10 questions correctly, s/he got 2 marks for each question.
- If s/he answered more than 10 questions correctly, s/he got 3 marks for each question.
- All questions in every section must be attempted.
- There is no negative marking for any incorrect answer. However, if a student answers 2 or less than 2 questions incorrectly, s/he gets 4 bonus marks.

The following table gives the partial information about the number of questions answered correctly by four students and their total score in the quiz.

	Sports	Politics	History	Total correct	Total Score
<b>Benita</b>	8				63
<b>Danish</b>			6	21	
<b>Prasoon</b>	7		9		
<b>Ronny</b>		7		18	
<b>Total</b>	34	36			

The following information is also available about the responses given by the students:

- Benita has the same number of correct responses in History as Danish has in Politics.
- No student correctly answered the same number of questions in any two sections.
- Every student managed to answer at least 2 questions correctly in each section.

**Q.27 [11594329]**

Which participant would have stood first in the competition?

1 ☐ Benita

2 ☐ Danish

3 ☐ Prasoon

4 ☐ Ronny



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

Let's try to fill the table with the basic information given. The sports section has three pieces of information and seems like a good place to start. Let the number of questions answered correctly by Danish in Sports be  $x$ . Danish's number of correct responses in Politics will be  $(15 - x)$ , which will also be Benita's number of correct responses in History (given).

Ronny's number of correct responses in sports will be  $(19 - x)$  given sports totals 34 correct, and thus Ronny's number of correct responses in history is  $(x - 8)$  given his/her total of 18 correct.

Just adding across rows and columns will lead us to the following table.

	Sports	Politics	History	Total correct	Total Score
Benita	8		$15 - x$		63
Danish	$x$	$15 - x$	6	21	
Prasoon	7		9		
Ronny	$19 - x$	7	$x - 8$	18	
Total	34	36	22	92	

Given that each participant has got at least 2 questions correct for each section,  $x \geq 10$  (using Ronny's value for history) and  $x \leq 13$  (using Benita's value for history)

Since we are given the total score for Benita's, we will use that information to derive the final table.

Case 1:  $x = 10$

Benita:  $8 \times 2 + y + 5 \times 1 = 63 \Rightarrow 16 + y + 5 = 21 + y = 63$ .  $y = 42$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer.  $42/3 = 14$ , if that is the case, she must have scored bonus marks also, which if you calculate is not possible.

Case 2:  $x = 11$

Benita:  $8 \times 2 + y + 4 \times 1 = 63 \Rightarrow 20 + y = 63$ .  $y = 43$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer. This case is clearly possible if she must have scored bonus marks, that is,  $(43 - 4)/3 = 13$ . So, this case is possible.

Similarly,

Case 3:  $x = 12$  and Case 4:  $x = 13$ , will not be possible.

So, only case-2 is possible, that is  $x = 11$ . Now we can create the whole table.

	Sports	Politics	History	Total correct	Total Score
Benita	8	13	4	25	63
Danish	11	4	6	21	49
Prasoon	7	12	9	28	68
Ronny	8	7	3	18	33
Total	34	36	22	92	

Prasoon stood first in the competition.

Bookmark

FeedBack

**Directions for questions 27 to 30:** Answer the questions on the basis of the information given below.

In a quiz competition, a rapid-fire round had 4 student participants- Benita, Danish, Prasoon, and Ronny and three sections – Sports, Politics, and History. Each section has 15 questions. The marking for each section was as follows:

- If a student answered up to 5 questions correctly, s/he got 1 mark for each question.
- If s/he answered 6 to 10 questions correctly, s/he got 2 marks for each question.
- If s/he answered more than 10 questions correctly, s/he got 3 marks for each question.
- All questions in every section must be attempted.
- There is no negative marking for any incorrect answer. However, if a student answers 2 or less than 2 questions incorrectly, s/he gets 4 bonus marks.

The following table gives the partial information about the number of questions answered correctly by four students and their total score in the quiz.

	Sports	Politics	History	Total correct	Total Score
<b>Benita</b>	8				63
<b>Danish</b>			6	21	
<b>Prasoon</b>	7		9		
<b>Ronny</b>		7		18	
<b>Total</b>	34	36			

The following information is also available about the responses given by the students:

- Benita has the same number of correct responses in History as Danish has in Politics.
- No student correctly answered the same number of questions in any two sections.
- Every student managed to answer at least 2 questions correctly in each section.

#### Q.28 [11594329]

How many questions did Benita answer correctly in total?

1 ☐ 17

2 ☐ 21

3 ☐ 25

4 ☐ 30



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

Let's try to fill the table with the basic information given. The sports section has three pieces of information and seems like a good place to start. Let the number of questions answered correctly by Danish in Sports be  $x$ . Danish's number of correct responses in Politics will be  $(15 - x)$ , which will also be Benita's number of correct responses in History (given).

Ronny's number of correct responses in sports will be  $(19 - x)$  given sports totals 34 correct, and thus Ronny's number of correct responses in history is  $(x - 8)$  given his/her total of 18 correct.

Just adding across rows and columns will lead us to the following table.

	Sports	Politics	History	Total correct	Total Score
Benita	8		$15 - x$		63
Danish	$x$	$15 - x$	6	21	
Prasoon	7		9		
Ronny	$19 - x$	7	$x - 8$	18	
Total	34	36	22	92	

Given that each participant has got at least 2 questions correct for each section,  $x \geq 10$  (using Ronny's value for history) and  $x \leq 13$  (using Benita's value for history)

Since we are given the total score for Benita's, we will use that information to derive the final table.

Case 1:  $x = 10$

Benita:  $8 \times 2 + y + 5 \times 1 = 63 \Rightarrow 16 + y + 5 = 21 + y = 63$ .  $y = 42$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer.  $42/3 = 14$ , if that is the case, she must have scored bonus marks also, which if you calculate is not possible.

Case 2:  $x = 11$

Benita:  $8 \times 2 + y + 4 \times 1 = 63 \Rightarrow 20 + y = 63$ .  $y = 43$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer. This case is clearly possible if she must have scored bonus marks, that is,  $(43 - 4)/3 = 13$ . So, this case is possible.

Similarly,

Case 3:  $x = 12$  and Case 4:  $x = 13$ , will not be possible.

So, only case-2 is possible, that is  $x = 11$ . Now we can create the whole table.

	Sports	Politics	History	Total correct	Total Score
Benita	8	13	4	25	63
Danish	11	4	6	21	49
Prasoon	7	12	9	28	68
Ronny	8	7	3	18	33
Total	34	36	22	92	

Benita answered 25 questions correctly.

Bookmark

FeedBack

**Directions for questions 27 to 30:** Answer the questions on the basis of the information given below.

In a quiz competition, a rapid-fire round had 4 student participants- Benita, Danish, Prasoon, and Ronny and three sections – Sports, Politics, and History. Each section has 15 questions. The marking for each section was as follows:

- If a student answered up to 5 questions correctly, s/he got 1 mark for each question.
- If s/he answered 6 to 10 questions correctly, s/he got 2 marks for each question.
- If s/he answered more than 10 questions correctly, s/he got 3 marks for each question.
- All questions in every section must be attempted.
- There is no negative marking for any incorrect answer. However, if a student answers 2 or less than 2 questions incorrectly, s/he gets 4 bonus marks.

The following table gives the partial information about the number of questions answered correctly by four students and their total score in the quiz.

	Sports	Politics	History	Total correct	Total Score
<b>Benita</b>	8				63
<b>Danish</b>			6	21	
<b>Prasoon</b>	7		9		
<b>Ronny</b>		7		18	
<b>Total</b>	34	36			

The following information is also available about the responses given by the students:

- Benita has the same number of correct responses in History as Danish has in Politics.
- No student correctly answered the same number of questions in any two sections.
- Every student managed to answer at least 2 questions correctly in each section.

#### Q.29 [11594329]

How many questions did Prasoon answer incorrectly in the Politics section?



**Solution:**

**Correct Answer : 3**

**Your Answer : 3**

 Answer key/Solution

Let's try to fill the table with the basic information given. The sports section has three pieces of information and seems like a good place to start. Let the number of questions answered correctly by Danish in Sports be  $x$ . Danish's number of correct responses in Politics will be  $(15 - x)$ , which will also be Benita's number of correct responses in History (given). Ronny's number of correct responses in sports will be  $(19 - x)$  given sports totals 34 correct, and thus Ronny's number of correct responses in history is  $(x - 8)$  given his/her total of 18 correct. Just adding across rows and columns will lead us to the following table.

	Sports	Politics	History	Total correct	Total Score
Benita	8		$15 - x$		63
Danish	$x$	$15 - x$	6	21	
Prasoon	7		9		
Ronny	$19 - x$	7	$x - 8$	18	
Total	34	36	22	92	

Given that each participant has got at least 2 questions correct for each section,  $x \geq 10$  (using Ronny's value for history) and  $x \leq 13$  (using Benita's value for history)

Since we are given the total score for Benita's, we will use that information to derive the final table.

Case 1:  $x = 10$

Benita:  $8 \times 2 + y + 5 \times 1 = 63 \Rightarrow 16 + y + 5 = 21 + y = 63$ .  $y = 42$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer.  $42/3 = 14$ , if that is the case, she must have scored bonus marks also, which if you calculate is not possible.

Case 2:  $x = 11$

Benita:  $8 \times 2 + y + 4 \times 1 = 63 \Rightarrow 20 + y = 63$ .  $y = 43$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer. This case is clearly possible if she must have scored bonus marks, that is,  $(43 - 4)/3 = 13$ . So, this case is possible.

Similarly,

Case 3:  $x = 12$  and Case 4:  $x = 13$ , will not be possible.

So, only case-2 is possible, that is  $x = 11$ . Now we can create the whole table.

	Sports	Politics	History	Total correct	Total Score
Benita	8	13	4	25	63
Danish	11	4	6	21	49
Prasoon	7	12	9	28	68
Ronny	8	7	3	18	33
Total	34	36	22	92	

Prasoon answered 12 correctly and thus 3 incorrectly.

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**Directions for questions 27 to 30:** Answer the questions on the basis of the information given below.

In a quiz competition, a rapid-fire round had 4 student participants- Benita, Danish, Prasoon, and Ronny and three sections – Sports, Politics, and History. Each section has 15 questions. The marking for each section was as follows:

- If a student answered up to 5 questions correctly, s/he got 1 mark for each question.
- If s/he answered 6 to 10 questions correctly, s/he got 2 marks for each question.
- If s/he answered more than 10 questions correctly, s/he got 3 marks for each question.
- All questions in every section must be attempted.
- There is no negative marking for any incorrect answer. However, if a student answers 2 or less than 2 questions incorrectly, s/he gets 4 bonus marks.

The following table gives the partial information about the number of questions answered correctly by four students and their total score in the quiz.

	Sports	Politics	History	Total correct	Total Score
<b>Benita</b>	8				63
<b>Danish</b>			6	21	
<b>Prasoon</b>	7		9		
<b>Ronny</b>		7		18	
<b>Total</b>	34	36			

The following information is also available about the responses given by the students:

- Benita has the same number of correct responses in History as Danish has in Politics.
- No student correctly answered the same number of questions in any two sections.
- Every student managed to answer at least 2 questions correctly in each section.

### Q.30 [11594329]

What was the total sum of correct responses for the History section?

✕

**Solution:**

**Correct Answer : 22**

**Your Answer : 37**

[Answer key/Solution](#)



Let's try to fill the table with the basic information given. The sports section has three pieces of information and seems like a good place to start. Let the number of questions answered correctly by Danish in Sports be  $x$ . Danish's number of correct responses in Politics will be  $(15 - x)$ , which will also be Benita's number of correct responses in History (given). Ronny's number of correct responses in sports will be  $(19 - x)$  given sports totals 34 correct, and thus Ronny's number of correct responses in history is  $(x - 8)$  given his/her total of 18 correct. Just adding across rows and columns will lead us to the following table.

	Sports	Politics	History	Total correct	Total Score
Benita	8		$15 - x$		63
Danish	$x$	$15 - x$	6	21	
Prasoon	7		9		
Ronny	$19 - x$	7	$x - 8$	18	
Total	34	36	22	92	

Given that each participant has got at least 2 questions correct for each section,  $x \geq 10$  (using Ronny's value for history) and  $x \leq 13$  (using Benita's value for history)

Since we are given the total score for Benita's, we will use that information to derive the final table.

Case 1:  $x = 10$

Benita:  $8 \times 2 + y + 5 \times 1 = 63 \Rightarrow 16 + y + 5 = 21 + y = 63$ .  $y = 42$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer.  $42/3 = 14$ , if that is the case, she must have scored bonus marks also, which if you calculate is not possible.

Case 2:  $x = 11$

Benita:  $8 \times 2 + y + 4 \times 1 = 63 \Rightarrow 20 + y = 63$ .  $y = 43$ , which means Benita must have answered more than 10 questions correctly, that means she must have scored 3 marks for each correct answer. This case is clearly possible if she must have scored bonus marks, that is,  $(43 - 4)/3 = 13$ . So, this case is possible.

Similarly,

Case 3:  $x = 12$  and Case 4:  $x = 13$ , will not be possible.

So, only case-2 is possible, that is  $x = 11$ . Now we can create the whole table.

	Sports	Politics	History	Total correct	Total Score
Benita	8	13	4	25	63
Danish	11	4	6	21	49
Prasoon	7	12	9	28	68
Ronny	8	7	3	18	33
Total	34	36	22	92	

For history section total correct responses were 22.

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**Directions for questions 31 to 34:** Answer the questions on the basis of the information given below.

A relay race has four teams of two athletes each competing for the honours. One of the two members of a team runs the first leg and then passes the baton to the second member, who then runs the second leg to finish the race.

Each team gets two ranks- one after the first leg finishes and one on an overall basis, that is, when both legs finishes. Teams and therefore, athletes, do not get a separate rank for their performance in the second leg. Ties for a position/rank are possible and allowed. However in case of a tie, ranks are adjusted accordingly. So, if two teams finishes on 3rd position, no team will then finish 4th. Two teams with same position will be said to have a joint rank.

The following is known about the race:

- (i) Maria and her partner finished second overall whereas Gagan ran the second leg for one of the teams that finished joint 3rd overall.
- (ii) Simran did not partner Santa whereas Chitra did not partner Prakash.
- (iii) Heena, who finished the first leg in 1st position, was part of a team that finished 3rd overall whereas Santa, who ran the second leg, was part of a team that finished the race as either 1st or 2nd overall.
- (iv) Prakash ran and finished the first leg in 3rd position but his team managed the 1st position overall.
- (v) Karan, who ran and finished the first leg in 4th position, was the teammate of either Santa or Maria.

---

**Q.31 [11594329]**

Which of the following combination definitely formed one of the four teams?

---

1 ☐ Chitra and Heena

---

2 ☐ Heena and Gagan

---

3 ☐ Maria and Karan

---

4 ☐ Prakash and Simran

---

**Solution:****Correct Answer : 3**[Answer key/Solution](#)

Just adding the info to a table will result in the following table:

TEAM MEMBERS	ATHLETE FOR 1 <sup>ST</sup> LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
	Prakash	3 <sup>rd</sup>		1 <sup>st</sup>
Maria				2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
				3 <sup>rd</sup>
	Karan- 4 <sup>th</sup>		Santa- 1 <sup>st</sup> or 2 <sup>nd</sup> Gagan – 3 <sup>rd</sup>	

We can also infer the following from the above table/statements:

- Santa's partner will be either Prakash or Maria.
- Karan therefore cannot partner Santa and will partner Maria. Santa will thus partner Prakash.
- Heena will partner one of Gagan, Simran or Chitra.

**FINAL TABLE**

TEAM MEMBERS	ATHLETE FOR FIRST LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
Prakash & Santa	Prakash	3 <sup>rd</sup>	Santa	1 <sup>st</sup>
Karan & Maria	Karan	4 <sup>th</sup>	Maria	2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
		2 <sup>nd</sup>		3 <sup>rd</sup>
			Gagan – 3 <sup>rd</sup>	

Heena and Gagan could be one of the teams but Maria and Karan are definitely one of the teams.

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**Directions for questions 31 to 34:** Answer the questions on the basis of the information given below.

A relay race has four teams of two athletes each competing for the honours. One of the two members of a team runs the first leg and then passes the baton to the second member, who then runs the second leg to finish the race.

Each team gets two ranks- one after the first leg finishes and one on an overall basis, that is, when both legs finishes. Teams and therefore, athletes, do not get a separate rank for their performance in the second leg. Ties for a position/rank are possible and allowed. However in case of a tie, ranks are adjusted accordingly. So, if two teams finishes on 3rd position, no team will then finish 4th. Two teams with same position will be said to have a joint rank.

The following is known about the race:

- (i) Maria and her partner finished second overall whereas Gagan ran the second leg for one of the teams that finished joint 3rd overall.
- (ii) Simran did not partner Santa whereas Chitra did not partner Prakash.
- (iii) Heena, who finished the first leg in 1st position, was part of a team that finished 3rd overall whereas Santa, who ran the second leg, was part of a team that finished the race as either 1st or 2nd overall.
- (iv) Prakash ran and finished the first leg in 3rd position but his team managed the 1st position overall.
- (v) Karan, who ran and finished the first leg in 4th position, was the teammate of either Santa or Maria.

**Q.32 [11594329]**

Who among the following could have been the fastest person in the second leg?

- 1 ☐ Maria
- 2 ☐ Chitra or Simran
- 3 ☐ Gagan
- 4 ☐ Cannot be determined

**Solution:**

**Correct Answer : 1**

 **Answer key/Solution**

Just adding the info to a table will result in the following table:

TEAM MEMBERS	ATHLETE FOR 1 <sup>ST</sup> LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
	Prakash	3 <sup>rd</sup>		1 <sup>st</sup>
Maria				2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
				3 <sup>rd</sup>
	Karan- 4 <sup>th</sup>		Santa- 1 <sup>st</sup> or 2 <sup>nd</sup> Gagan – 3 <sup>rd</sup>	

We can also infer the following from the above table/statements:

- Santa's partner will be either Prakash or Maria.
- Karan therefore cannot partner Santa and will partner Maria. Santa will thus partner Prakash.
- Heena will partner one of Gagan, Simran or Chitra.

#### FINAL TABLE

TEAM MEMBERS	ATHLETE FOR FIRST LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
Prakash & Santa	Prakash	3 <sup>rd</sup>	Santa	1 <sup>st</sup>
Karan & Maria	Karan	4 <sup>th</sup>	Maria	2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
		2 <sup>nd</sup>		3 <sup>rd</sup>
			Gagan – 3 <sup>rd</sup>	

The two teams that finished 3<sup>rd</sup> overall took their teams from 1<sup>st</sup> or 2<sup>nd</sup> overall to to 3<sup>rd</sup>. Their 2<sup>nd</sup> leg athletes must have been Gagan and one of Chitra or Simra. For these two teams, despite the lead over the other two teams that finished 3<sup>rd</sup> and 4<sup>th</sup> after the first leg, they did not finish in the top two positions.

For the other two teams, despite starting from the 3<sup>rd</sup> and 4<sup>th</sup> after the first leg, they must have run faster than Gagan's and Chitra's/Simran's team, to climb to the top two spots. Thus one of Maria or Santa could be fastest. Since the question has been put in terms of who could have been the fastest and not as who did finish the fastest, we can opt for Maria.

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**Directions for questions 31 to 34:** Answer the questions on the basis of the information given below.

A relay race has four teams of two athletes each competing for the honours. One of the two members of a team runs the first leg and then passes the baton to the second member, who then runs the second leg to finish the race.

Each team gets two ranks- one after the first leg finishes and one on an overall basis, that is, when both legs finishes. Teams and therefore, athletes, do not get a separate rank for their performance in the second leg. Ties for a position/rank are possible and allowed. However in case of a tie, ranks are adjusted accordingly. So, if two teams finishes on 3rd position, no team will then finish 4th. Two teams with same position will be said to have a joint rank.

The following is known about the race:

- (i) Maria and her partner finished second overall whereas Gagan ran the second leg for one of the teams that finished joint 3rd overall.
- (ii) Simran did not partner Santa whereas Chitra did not partner Prakash.
- (iii) Heena, who finished the first leg in 1st position, was part of a team that finished 3rd overall whereas Santa, who ran the second leg, was part of a team that finished the race as either 1st or 2nd overall.
- (iv) Prakash ran and finished the first leg in 3rd position but his team managed the 1st position overall.
- (v) Karan, who ran and finished the first leg in 4th position, was the teammate of either Santa or Maria.

**Q.33 [11594329]**

If Gagan did not partner Heena, how many different team member combinations are possible?

1 ☐ Only one

2 ☐ Two

3 ☐ Four

4 ☐ Six

**Solution:**

**Correct Answer : 2**

 **Answer key/Solution**

Just adding the info to a table will result in the following table:

TEAM MEMBERS	ATHLETE FOR 1 <sup>ST</sup> LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
	Prakash	3 <sup>rd</sup>		1 <sup>st</sup>
Maria				2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
				3 <sup>rd</sup>
	Karan- 4 <sup>th</sup>		Santa- 1 <sup>st</sup> or 2 <sup>nd</sup> Gagan – 3 <sup>rd</sup>	

We can also infer the following from the above table/statements:

- Santa's partner will be either Prakash or Maria.
- Karan therefore cannot partner Santa and will partner Maria. Santa will thus partner Prakash.
- Heena will partner one of Gagan, Simran or Chitra.

#### FINAL TABLE

TEAM MEMBERS	ATHLETE FOR FIRST LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
Prakash & Santa	Prakash	3 <sup>rd</sup>	Santa	1 <sup>st</sup>
Karan & Maria	Karan	4 <sup>th</sup>	Maria	2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
		2 <sup>nd</sup>		3 <sup>rd</sup>
			Gagan – 3 <sup>rd</sup>	

If Gagan did not partner Heena, he would have partnered either Simran or Chitra. Similarly, Heena's partner would be one of Chitra or Simran.

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**Directions for questions 31 to 34:** Answer the questions on the basis of the information given below.

A relay race has four teams of two athletes each competing for the honours. One of the two members of a team runs the first leg and then passes the baton to the second member, who then runs the second leg to finish the race.

Each team gets two ranks- one after the first leg finishes and one on an overall basis, that is, when both legs finishes. Teams and therefore, athletes, do not get a separate rank for their performance in the second leg. Ties for a position/rank are possible and allowed. However in case of a tie, ranks are adjusted accordingly. So, if two teams finishes on 3rd position, no team will then finish 4th. Two teams with same position will be said to have a joint rank.

The following is known about the race:

- (i) Maria and her partner finished second overall whereas Gagan ran the second leg for one of the teams that finished joint 3rd overall.
- (ii) Simran did not partner Santa whereas Chitra did not partner Prakash.
- (iii) Heena, who finished the first leg in 1st position, was part of a team that finished 3rd overall whereas Santa, who ran the second leg, was part of a team that finished the race as either 1st or 2nd overall.
- (iv) Prakash ran and finished the first leg in 3rd position but his team managed the 1st position overall.
- (v) Karan, who ran and finished the first leg in 4th position, was the teammate of either Santa or Maria.

**Q.34 [11594329]**

From the five statements given, which of the following statements are redundant and can be removed without affecting the arrangement?

1 ☐ Statement (i)

2 ☐ Statement (ii)

3 ☐ Statement (v)

4 ☐ None of these

**Solution:****Correct Answer : 2** Answer key/Solution

Just adding the info to a table will result in the following table:

TEAM MEMBERS	ATHLETE FOR 1 <sup>ST</sup> LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
	Prakash	3 <sup>rd</sup>		1 <sup>st</sup>
Maria				2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
				3 <sup>rd</sup>
	Karan- 4 <sup>th</sup>		Santa- 1 <sup>st</sup> or 2 <sup>nd</sup> Gagan – 3 <sup>rd</sup>	

We can also infer the following from the above table/statements:

- Santa's partner will be either Prakash or Maria.
- Karan therefore cannot partner Santa and will partner Maria. Santa will thus partner Prakash.
- Heena will partner one of Gagan, Simran or Chitra.

**FINAL TABLE**

TEAM MEMBERS	ATHLETE FOR FIRST LEG	POSITION AFTER 1 <sup>ST</sup> LEG	ATHLETE FOR SECOND LEG	OVERALL POSITION
Prakash & Santa	Prakash	3 <sup>rd</sup>	Santa	1 <sup>st</sup>
Karan & Maria	Karan	4 <sup>th</sup>	Maria	2 <sup>nd</sup>
Heena + 1	Heena	1 <sup>st</sup>		3 <sup>rd</sup>
		2 <sup>nd</sup>		3 <sup>rd</sup>
			Gagan – 3 <sup>rd</sup>	

Clearly statement (ii), that is, Simran did not partner Santa whereas Chitra did not partner Prakash, is redundant information.

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

A company XYZ limited has a two stage internship. In stage one of the internship, interns work in one of the three departments- Strategy, Admin, or Communication- and in the second stage of the internship, they work in a different department from amongst the three departments.

It is known that from the 10 interns recruited, there are 5 females- Sally, Molly, KJ, Anu, and Jyoti and 5 males- Mandy, Nitin, Ritik, Dev, and Keki. All the interns recruited were categorised as Graduates, Post- Graduates or Academic Doctors.

The following is also known about their internship:

- (i) The admin department has 5 interns each and the communication department has 2 interns each during both stages of the internship.
- (ii) Only one department has an all-male team in the first stage.
- (iii) Four of the 10 interns were categorised as Graduates, including Sally and Ritik, whereas another 4 were categorised as Post-Graduates, including KJ and another female who worked together in the Admin department during the first stage.
- (iv) Mandy is an Academic Doctor who works in Strategy during the second stage whereas Jyoti is a Graduate who works in Strategy during the first stage.
- (v) Molly and Sally work in the Communication department in the second stage.
- (vi) Nitin and Keki, who are both Post-Graduates, work in the same department throughout and always have at least one female member in their department.

**Q.35 [11594329]**

Who among the following does not work in the Admin department during the second stage?

1 ☐ Ritik

2 ☐ Nitin

3 ☐ Anu

4 ☐ None of these



**Solution:****Correct Answer : 3****Your Answer : 1**[Answer key/Solution](#)

An important point to note about the set is that the admin department takes in 5 interns, the sum of the strategy and the communication department. Thus, all the 5 interns who work in the admin department in the first stage will fill the strategy and Communication departments in the second stage. Similarly, the 5 people who work in the strategy and communications department will move to the admin department in the second stage. The data given in the set can be arranged as shown below. A quick statement wise analysis:

- Molly and Sally work together in communications during the second stage. So they must have been in the admin dept. in the first stage.
- The department that is all male during the first stage must be Communications. The two males interning in that dept. must be Ritik and Dev. Why? Mandy works in strategy in the second stage so he must have worked in admin in the first stage. Keki and Nitin work together in both stages and have at least 1 female in their department. Once we start filling data, we realise that the two of them worked in the strategy department in the first stage and in the admin in the second stage.
- KJ worked in admin in the first stage. Since the communication department has been taken up by Molly and Sally, KJ must have been placed in the strategy department in the second stage.

	STRATEGY			ADMIN			COMMUNICATION		
	Grad	PG	Doc	Grad	PG	Doc	Grad	PG	Doc
STAGE 1	Jyoti	Keki, Nitin		Sally	KJ	Mandy	Ritik		
	3			5 (incl. Molly, Anu)			2 (incl Dev)		
STAGE 2		KJ	Mandy	Jyoti, Ritik	Keki, Nitin		Sally		
	3 (incl. Anu)			5 (incl Dev)			2 (incl. Molly)		
Graduates	Sally, Ritik, Jyoti, one of Dev/ Molly/ Anu								
PG	Anu/Molly only								
Doctors	Mandy and one of Dev/ Molly/ Anu								

The three people who we can't categorise based on their educational qualifications are Dev, Anu, and Molly. One each from them is a graduate, post graduate and an academic doctor, in no particular order.

Anu didn't work in the Admin department during the second stag of the internship.

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

A company XYZ limited has a two stage internship. In stage one of the internship, interns work in one of the three departments- Strategy, Admin, or Communication- and in the second stage of the internship, they work in a different department from amongst the three departments. It is known that from the 10 interns recruited, there are 5 females- Sally, Molly, KJ, Anu, and Jyoti and 5 males- Mandy, Nitin, Ritik, Dev, and Keki. All the interns recruited were categorised as Graduates, Post- Graduates or Academic Doctors.

The following is also known about their internship:

- (i) The admin department has 5 interns each and the communication department has 2 interns each during both stages of the internship.
- (ii) Only one department has an all-male team in the first stage.
- (iii) Four of the 10 interns were categorised as Graduates, including Sally and Ritik, whereas another 4 were categorised as Post-Graduates, including KJ and another female who worked together in the Admin department during the first stage.
- (iv) Mandy is an Academic Doctor who works in Strategy during the second stage whereas Jyoti is a Graduate who works in Strategy during the first stage.
- (v) Molly and Sally work in the Communication department in the second stage.
- (vi) Nitin and Keki, who are both Post-Graduates, work in the same department throughout and always have at least one female member in their department.

**Q.36 [11594329]**

Who among the following interns would be a Post-Graduate if Anu is an Academic Doctor?

1 ☐ Ritik

2 ☐ Jyoti

3 ☐ Dev

4 ☐ Molly



**Solution:****Correct Answer : 4****Your Answer : 4** Answer key/Solution

An important point to note about the set is that the admin department takes in 5 interns, the sum of the strategy and the communication department. Thus, all the 5 interns who work in the admin department in the first stage will fill the strategy and Communication departments in the second stage. Similarly, the 5 people who work in the strategy and communications department will move to the admin department in the second stage. The data given in the set can be arranged as shown below. A quick statement wise analysis:

- Molly and Sally work together in communications during the second stage. So they must have been in the admin dept. in the first stage.
- The department that is all male during the first stage must be Communications. The two males interning in that dept. must be Ritik and Dev. Why? Mandy works in strategy in the second stage so he must have worked in admin in the first stage. Keki and Nitin work together in both stages and have at least 1 female in their department. Once we start filling data, we realise that the two of them worked in the strategy department in the first stage and in the admin in the second stage.
- KJ worked in admin in the first stage. Since the communication department has been taken up by Molly and Sally, KJ must have been placed in the strategy department in the second stage.

	STRATEGY			ADMIN			COMMUNICATION		
	Grad	PG	Doc	Grad	PG	Doc	Grad	PG	Doc
STAGE 1	Jyoti	Keki, Nitin		Sally	KJ	Mandy	Ritik		
	3			5 (incl. Molly, Anu)			2 (incl Dev)		
STAGE 2		KJ	Mandy	Jyoti, Ritik	Keki, Nitin		Sally		
	3 (incl. Anu)			5 (incl Dev)			2 (incl. Molly)		
Graduates	Sally, Ritik, Jyoti, one of Dev/ Molly/ Anu								
PG	Anu/Molly only								
Doctors	Mandy and one of Dev/ Molly/ Anu								

The three people who we can't categorise based on their educational qualifications are Dev, Anu, and Molly. One each from them is a graduate, post graduate and an academic doctor, in no particular order.

If we look at the interns working in the Admin department in the first stage, it is clear that one of the female post-graduates has to partner KJ in that department (Statement (iii)). Since Anu is an Academic Doctor, so Molly must be a post-graduate.

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

A company XYZ limited has a two stage internship. In stage one of the internship, interns work in one of the three departments- Strategy, Admin, or Communication- and in the second stage of the internship, they work in a different department from amongst the three departments. It is known that from the 10 interns recruited, there are 5 females- Sally, Molly, KJ, Anu, and Jyoti and 5 males- Mandy, Nitin, Ritik, Dev, and Keki. All the interns recruited were categorised as Graduates, Post- Graduates or Academic Doctors.

The following is also known about their internship:

- (i) The admin department has 5 interns each and the communication department has 2 interns each during both stages of the internship.
- (ii) Only one department has an all-male team in the first stage.
- (iii) Four of the 10 interns were categorised as Graduates, including Sally and Ritik, whereas another 4 were categorised as Post-Graduates, including KJ and another female who worked together in the Admin department during the first stage.
- (iv) Mandy is an Academic Doctor who works in Strategy during the second stage whereas Jyoti is a Graduate who works in Strategy during the first stage.
- (v) Molly and Sally work in the Communication department in the second stage.
- (vi) Nitin and Keki, who are both Post-Graduates, work in the same department throughout and always have at least one female member in their department.

---

**Q.37 [11594329]**

Which department was either an all-male or an all-female during the first stage of the internship?

---

1 ☐ Strategy

---

2 ☐ Admin

---

3 ☐ Communication

---

4 ☐ Either (1) or (3)



**Solution:****Correct Answer : 3****Your Answer : 4**[Answer key/Solution](#)

An important point to note about the set is that the admin department takes in 5 interns, the sum of the strategy and the communication department. Thus, all the 5 interns who work in the admin department in the first stage will fill the strategy and Communication departments in the second stage. Similarly, the 5 people who work in the strategy and communications department will move to the admin department in the second stage. The data given in the set can be arranged as shown below. A quick statement wise analysis:

- Molly and Sally work together in communications during the second stage. So they must have been in the admin dept. in the first stage.
- The department that is all male during the first stage must be Communications. The two males interning in that dept. must be Ritik and Dev. Why? Mandy works in strategy in the second stage so he must have worked in admin in the first stage. Keki and Nitin work together in both stages and have at least 1 female in their department. Once we start filling data, we realise that the two of them worked in the strategy department in the first stage and in the admin in the second stage.
- KJ worked in admin in the first stage. Since the communication department has been taken up by Molly and Sally, KJ must have been placed in the strategy department in the second stage.

	STRATEGY			ADMIN			COMMUNICATION		
	Grad	PG	Doc	Grad	PG	Doc	Grad	PG	Doc
STAGE 1	Jyoti	Keki, Nitin		Sally	KJ	Mandy	Ritik		
	3			5 (incl. Molly, Anu)			2 (incl Dev)		
STAGE 2		KJ	Mandy	Jyoti, Ritik	Keki, Nitin		Sally		
	3 (incl. Anu)			5 (incl Dev)			2 (incl. Molly)		
Graduates	Sally, Ritik, Jyoti, one of Dev/ Molly/ Anu								
PG	Anu/Molly only								
Doctors	Mandy and one of Dev/ Molly/ Anu								

The three people who we can't categorise based on their educational qualifications are Dev, Anu, and Molly. One each from them is a graduate, post graduate and an academic doctor, in no particular order.

Communication department was an all-male during the first stage of the internship.

[Bookmark](#)[FeedBack](#)

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

A company XYZ limited has a two stage internship. In stage one of the internship, interns work in one of the three departments- Strategy, Admin, or Communication- and in the second stage of the internship, they work in a different department from amongst the three departments. It is known that from the 10 interns recruited, there are 5 females- Sally, Molly, KJ, Anu, and Jyoti and 5 males- Mandy, Nitin, Ritik, Dev, and Keki. All the interns recruited were categorised as Graduates, Post- Graduates or Academic Doctors.

The following is also known about their internship:

- (i) The admin department has 5 interns each and the communication department has 2 interns each during both stages of the internship.
- (ii) Only one department has an all-male team in the first stage.
- (iii) Four of the 10 interns were categorised as Graduates, including Sally and Ritik, whereas another 4 were categorised as Post-Graduates, including KJ and another female who worked together in the Admin department during the first stage.
- (iv) Mandy is an Academic Doctor who works in Strategy during the second stage whereas Jyoti is a Graduate who works in Strategy during the first stage.
- (v) Molly and Sally work in the Communication department in the second stage.
- (vi) Nitin and Keki, who are both Post-Graduates, work in the same department throughout and always have at least one female member in their department.

---

**Q.38 [11594329]**

Which department did Anu work in during the second stage?

---

1 ☐ Strategy

---

2 ☐ Admin

---

3 ☐ Communication

---

4 ☐ Either (1) or (3)





**Solution:****Correct Answer : 1****Your Answer : 4**[Answer key/Solution](#)

An important point to note about the set is that the admin department takes in 5 interns, the sum of the strategy and the communication department. Thus, all the 5 interns who work in the admin department in the first stage will fill the strategy and Communication departments in the second stage. Similarly, the 5 people who work in the strategy and communications department will move to the admin department in the second stage. The data given in the set can be arranged as shown below. A quick statement wise analysis:

- Molly and Sally work together in communications during the second stage. So they must have been in the admin dept. in the first stage.
- The department that is all male during the first stage must be Communications. The two males interning in that dept. must be Ritik and Dev. Why? Mandy works in strategy in the second stage so he must have worked in admin in the first stage. Keki and Nitin work together in both stages and have at least 1 female in their department. Once we start filling data, we realise that the two of them worked in the strategy department in the first stage and in the admin in the second stage.
- KJ worked in admin in the first stage. Since the communication department has been taken up by Molly and Sally, KJ must have been placed in the strategy department in the second stage.

	STRATEGY			ADMIN			COMMUNICATION		
	Grad	PG	Doc	Grad	PG	Doc	Grad	PG	Doc
STAGE 1	Jyoti	Keki, Nitin		Sally	KJ	Mandy	Ritik		
	3			5 (incl. Molly, Anu)			2 (incl Dev)		
STAGE 2		KJ	Mandy	Jyoti, Ritik	Keki, Nitin		Sally		
	3 (incl. Anu)			5 (incl Dev)			2 (incl. Molly)		
Graduates	Sally, Ritik, Jyoti, one of Dev/ Molly/ Anu								
PG	Anu/Molly only								
Doctors	Mandy and one of Dev/ Molly/ Anu								

The three people who we can't categorise based on their educational qualifications are Dev, Anu, and Molly. One each from them is a graduate, post graduate and an academic doctor, in no particular order.

Anu worked in the Strategy department during the second stage of the internship.

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**Directions for questions 39 to 42:** Answer the questions on the basis of the information given below.

180 students studying in Class XI of a school were divided equally into three branches or streams- Science, Commerce and Arts. All students were part of exactly one branch. These students chose to appear for at least 1 exam and a maximum of 3 exams from a choice of three exams- BAT, DAT, and LAT. The following is known about their choices:

- (i) 60% of the commerce students chose to appear only for the LAT exam and not for any other exam. The remaining commerce students appeared, in equal numbers, for only BAT exam and only DAT exam respectively.
- (ii) No student from Science or Arts chose to appear only for LAT.
- (iii) 50% of students from Science and 40% of the Arts students chose to appear for BAT.
- (iv) 40% of students each from Science and Arts chose to appear only for DAT.
- (v) Exactly 24 students chose to appear for only BAT and DAT.
- (vi) 20 students appeared for BAT and LAT.

**Q.39 [11594329]**

How many students, in total, chose to appear for the LAT exam?

1 ☐ 56

2 ☐ 62

3 ☐ 68

4 ☐ 74

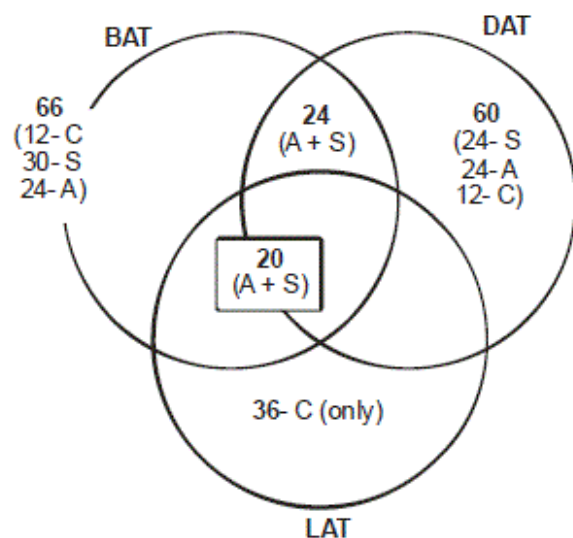
**Solution:**

**Correct Answer : 4**

 **Answer key/Solution**

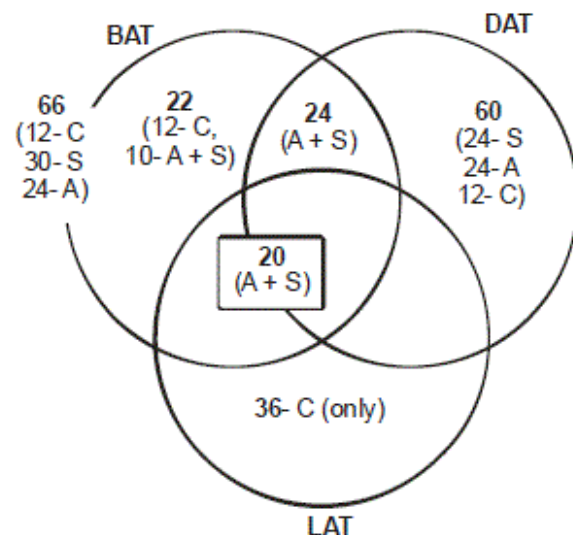
The set is loosely based on the intersection of three sets, with another extra detail in terms of the three streams. It is known that each stream has 60 students.

Just putting the information given in the 6 points can lead to the venn diagram given below. Care must be taken to read the statements carefully in terms of whether the statement is talking about only BAT, only DAT or only LAT or in general the BAT, DAT and LAT exams.



If look at the subject wise break-up, we will realise that

- All commerce students have been placed.
  - From the Science stream, we know the exact situation of 30 students who have opted for BAT (in total), and 24 students who have opted for DAT only. The remaining 6 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
  - Similarly, we know about 24 students opting for BAT (in total) and 24 students who have opted for DAT only, from the Arts stream. The remaining 12 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
  - We also know the total number of BAT students and thus we can find out BAT only students.
- A detailed venn diagram will look like the one below:



Here A stands for Arts students, C for commerce and S for science students.

Total students appearing for LAT = 36 + 20 + 18 = 74.

Bookmark

FeedBack

**Directions for questions 39 to 42:** Answer the questions on the basis of the information given below.

180 students studying in Class XI of a school were divided equally into three branches or streams- Science, Commerce and Arts. All students were part of exactly one branch. These students chose to appear for at least 1 exam and a maximum of 3 exams from a choice of three exams- BAT, DAT, and LAT. The following is known about their choices:

- (i) 60% of the commerce students chose to appear only for the LAT exam and not for any other exam. The remaining commerce students appeared, in equal numbers, for only BAT exam and only DAT exam respectively.
- (ii) No student from Science or Arts chose to appear only for LAT.
- (iii) 50% of students from Science and 40% of the Arts students chose to appear for BAT.
- (iv) 40% of students each from Science and Arts chose to appear only for DAT.
- (v) Exactly 24 students chose to appear for only BAT and DAT.
- (vi) 20 students appeared for BAT and LAT.

**Q.40 [11594329]**

What is the maximum number of science students who could have appeared for the DAT and at least one more exam?

1 ☐ 44

2 ☐ 36

3 ☐ 32

4 ☐ 24

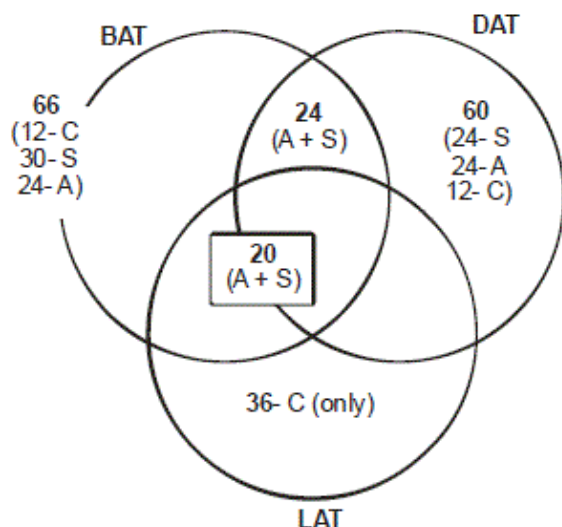
**Solution:**

**Correct Answer : 2**

 **Answer key/Solution**

The set is loosely based on the intersection of three sets, with another extra detail in terms of the three streams. It is known that each stream has 60 students.

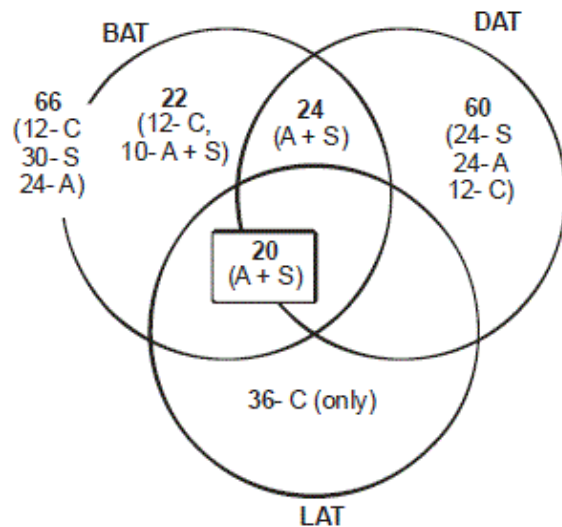
Just putting the information given in the 6 points can lead to the venn diagram given below. Care must be taken to read the statements carefully in terms of whether the statement is talking about only BAT, only DAT or only LAT or in general the BAT, DAT and LAT exams.



If look at the subject wise break-up, we will realise that

- All commerce students have been placed.
- From the Science stream, we know the exact situation of 30 students who have opted for BAT (in total), and 24 students who have opted for DAT only. The remaining 6 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
- Similarly, we know about 24 students opting for BAT (in total) and 24 students who have opted for DAT only, from the Arts stream. The remaining 12 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
- We also know the total number of BAT students and thus we can find out BAT only students.

A detailed venn diagram will look like the one below:



Here A stands for Arts students, C for commerce and S for science students.

To maximise science students appearing for DAT and at least one more exam, we would need to focus on the 30 students who appear for BAT. By placing the maximum of these 30 students within the DAT pie/circle, we will get our answer.

So, assume that those who appear for BAT and DAT only, 24 (in total), are all from science. We can also assume the remaining 6 (from 30) are part of all three region (appearing for all three exams). So from the 20 who have appeared for BAT and LAT, 6 be allotted to the all three region.

Therefore, maximum number appearing for DAT and at least one more exam  
 $= 24 \text{ (only BAT and DAT)} + 6 \text{ (all three)} + 6 \text{ (only LAT and DAT)} = 36$ .

---

**Directions for questions 39 to 42:** Answer the questions on the basis of the information given below.

180 students studying in Class XI of a school were divided equally into three branches or streams- Science, Commerce and Arts. All students were part of exactly one branch. These students chose to appear for at least 1 exam and a maximum of 3 exams from a choice of three exams- BAT, DAT, and LAT. The following is known about their choices:

- (i) 60% of the commerce students chose to appear only for the LAT exam and not for any other exam. The remaining commerce students appeared, in equal numbers, for only BAT exam and only DAT exam respectively.
- (ii) No student from Science or Arts chose to appear only for LAT.
- (iii) 50% of students from Science and 40% of the Arts students chose to appear for BAT.
- (iv) 40% of students each from Science and Arts chose to appear only for DAT.
- (v) Exactly 24 students chose to appear for only BAT and DAT.
- (vi) 20 students appeared for BAT and LAT.

---

**Q.41 [11594329]**

If exactly 12 students chose to appear for all three exams, what minimum number of Arts students could have appeared for exactly two exams?

---

1 ☐ 14

---

2 ☐ 12

---

3 ☐ 16

---

4 ☐ 18

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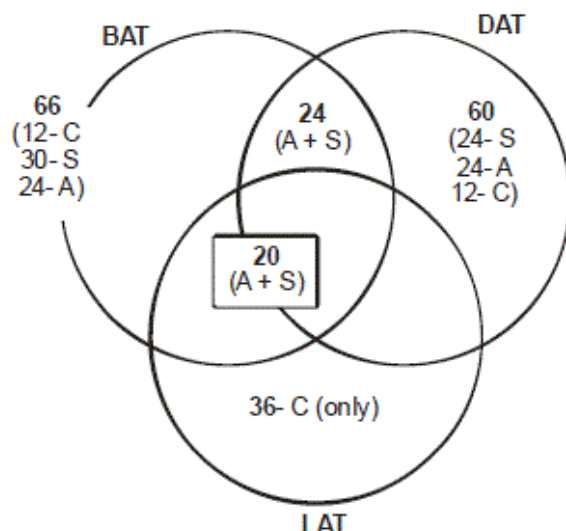
**Solution:**

**Correct Answer : 1**

 **Answer key/Solution**

The set is loosely based on the intersection of three sets, with another extra detail in terms of the three streams. It is known that each stream has 60 students.

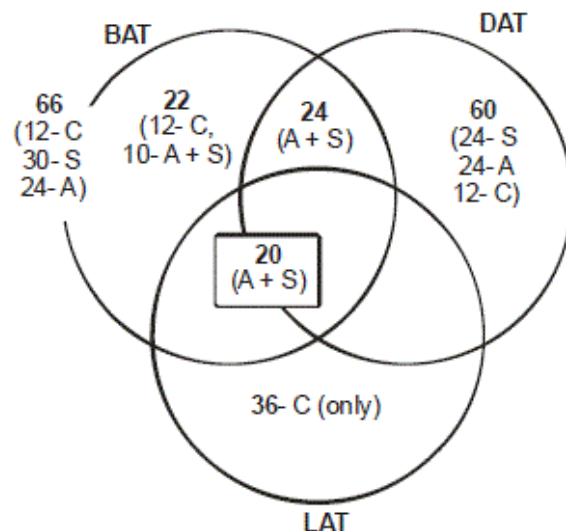
Just putting the information given in the 6 points can lead to the venn diagram given below. Care must be taken to read the statements carefully in terms of whether the statement is talking about only BAT, only DAT or only LAT or in general the BAT, DAT and LAT exams.



If look at the subject wise break-up, we will realise that

- All commerce students have been placed.
- From the Science stream, we know the exact situation of 30 students who have opted for BAT (in total), and 24 students who have opted for DAT only. The remaining 6 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
- Similarly, we know about 24 students opting for BAT (in total) and 24 students who have opted for DAT only, from the Arts stream. The remaining 12 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
- We also know the total number of BAT students and thus we can find out BAT only students.

A detailed venn diagram will look like the one below:



Here A stands for Arts students, C for commerce and S for science students.

If 12 students appear for all three exams, then exactly 8 students will appear for BAT and LAT only.

To minimise students arts students appearing in exactly 2 exams, from the 24 appearing for BAT in total,

- 10 can be assumed to appear for BAT only
- 12 can be assumed to appear for all three exams
- 2 will appear for at one more exam (other than BAT)

Thus minimum number of arts students appearing for exactly 2 exams will be  
 $= 12 \text{ (DAT + LAT only)} + 2 \text{ (BAT and one more exam)} = 14$ .

**Directions for questions 39 to 42:** Answer the questions on the basis of the information given below.

180 students studying in Class XI of a school were divided equally into three branches or streams- Science, Commerce and Arts. All students were part of exactly one branch. These students chose to appear for at least 1 exam and a maximum of 3 exams from a choice of three exams- BAT, DAT, and LAT. The following is known about their choices:

- (i) 60% of the commerce students chose to appear only for the LAT exam and not for any other exam. The remaining commerce students appeared, in equal numbers, for only BAT exam and only DAT exam respectively.
- (ii) No student from Science or Arts chose to appear only for LAT.
- (iii) 50% of students from Science and 40% of the Arts students chose to appear for BAT.
- (iv) 40% of students each from Science and Arts chose to appear only for DAT.
- (v) Exactly 24 students chose to appear for only BAT and DAT.
- (vi) 20 students appeared for BAT and LAT.

**Q.42 [11594329]**

If all commerce students reconsider their decision and decide to give at least one more exam than the one they are giving already, what could be the maximum number of commerce students appearing for the BAT exam?

1 ☐ 44

2 ☐ 48

3 ☐ 54

4 ☐ 60

**Solution:**

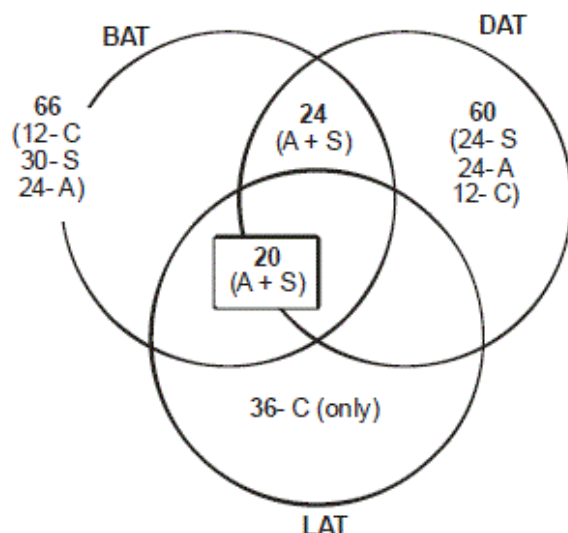
**Correct Answer : 4**

 Answer key/Solution



The set is loosely based on the intersection of three sets, with another extra detail in terms of the three streams. It is known that each stream has 60 students.

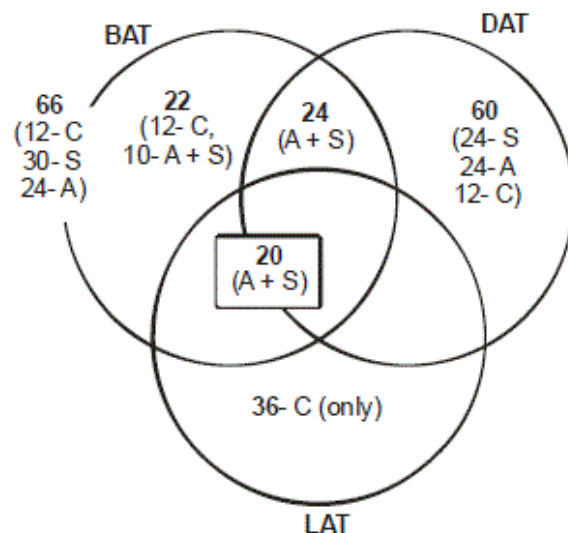
Just putting the information given in the 6 points can lead to the venn diagram given below. Care must be taken to read the statements carefully in terms of whether the statement is talking about only BAT, only DAT or only LAT or in general the BAT, DAT and LAT exams.



If look at the subject wise break-up, we will realise that

- All commerce students have been placed.
- From the Science stream, we know the exact situation of 30 students who have opted for BAT (in total), and 24 students who have opted for DAT only. The remaining 6 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
- Similarly, we know about 24 students opting for BAT (in total) and 24 students who have opted for DAT only, from the Arts stream. The remaining 12 students will surely appear for both LAT and DAT, since the only students allowed to appear only for LAT (based on data) are the commerce students.
- We also know the total number of BAT students and thus we can find out BAT only students.

A detailed venn diagram will look like the one below:



Here A stands for Arts students, C for commerce and S for science students.

To add the maximum number of students to the BAT digram, we can assume:

- The 36 students who appear for LAT only all appear for BAT too.
- The 12 students who appear for DAT only all appear for BAT too.

Thus, all 60 students could end up appearing for the BAT exam.

Bookmark

Feedback



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

Four friends Ishita, Janny, Katty and Lauren went to words of wonder. The park had a water ride where two people sit in a boat which rides through the water. Due to stability requirements, the sum of the weight of two persons who sit in a boat should be atleast 140 kg. Each person decides to go for one ride each with his three other friends.

However, while being weighed in pairs, Katty and Lauren did not meet the minimum weight requirement and so they could not ride as a pair. The weights of all the pairs who rode are 150 kg, 144 kg, 141 kg, 148 kg and 145 kg.

**Q.43 [11594329]**

If Katty was not the lightest, how much did she weigh (in kg)?

**Solution:**

**Correct Answer : 71**

 Answer key/Solution

As Katty and Lauren could not ride as a pair, they weigh the lowest and the second lowest in any order.

So, we can say that the weight of both I and J are greater than that of both L and K.

Let  $I > J > K > L$

$I + J = 150$

And  $I + K = 148$

From this  $J - K = 2$

As  $K + L$  is not given, the next lowest would be  $J + L$  and this is 141.

As  $J - K = 2$ , we get  $K + L = 139$

Now solving we get,  $L = 68$

$K = 71$

$J = 73$

$I = 77$

(Note that weights of K and L and that of I and J are interchangeable)

If Katty was not the lightest, then she weighed 71 kg.

Bookmark

FeedBack

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

Four friends Ishita, Janny, Katty and Lauren went to words of wonder. The park had a water ride where two people sit in a boat which rides through the water. Due to stability requirements, the sum of the weight of two persons who sit in a boat should be atleast 140 kg. Each person decides to go for one ride each with his three other friends.

However, while being weighed in pairs, Katty and Lauren did not meet the minimum weight requirement and so they could not ride as a pair. The weights of all the pairs who rode are 150 kg, 144 kg, 141 kg, 148 kg and 145 kg.

**Q.44 [11594329]**

If Ishita was the heaviest, how much did Janny weigh (in kg)?

**Solution:****Correct Answer : 73** Answer key/Solution

As Katty and Lauren could not ride as a pair, they weigh the lowest and the second lowest in any order.

So, we can say that the weight of both I and J are greater than that of both L and K.

Let  $I > J > K > L$

$I + J = 150$

And  $I + K = 148$

From this  $J - K = 2$

As  $K + L$  is not given, the next lowest would be  $J + L$  and this is 141.

As  $J - K = 2$ , we get  $K + L = 139$

Now solving we get,  $L = 68$

$K = 71$

$J = 73$

$I = 77$

(Note that weights of K and L and that of I and J are interchangeable)

If Ishita was the heaviest, she weighed 77 kg and Janny weighed 73 kg.

Bookmark

FeedBack

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

Four friends Ishita, Janny, Katty and Lauren went to words of wonder. The park had a water ride where two people sit in a boat which rides through the water. Due to stability requirements, the sum of the weight of two persons who sit in a boat should be atleast 140 kg. Each person decides to go for one ride each with his three other friends.

However, while being weighed in pairs, Katty and Lauren did not meet the minimum weight requirement and so they could not ride as a pair. The weights of all the pairs who rode are 150 kg, 144 kg, 141 kg, 148 kg and 145 kg.

**Q.45 [11594329]**

What is the average weight (in kg) of the four friends (upto two decimal place)?

**Solution:****Correct Answer : 72.25** Answer key/Solution

As Katty and Lauren could not ride as a pair, they weigh the lowest and the second lowest in any order.

So, we can say that the weight of both I and J are greater than that of both L and K.

Let  $I > J > K > L$

$I + J = 150$

And  $I + K = 148$

From this  $J - K = 2$

As  $K + L$  is not given, the next lowest would be  $J + L$  and this is 141.

As  $J - K = 2$ , we get  $K + L = 139$

Now solving we get,  $L = 68$

$K = 71$

$J = 73$

$I = 77$

(Note that weights of K and L and that of I and J are interchangeable)

The average weight of the four friends is  $\frac{68 + 71 + 73 + 77}{4} = \frac{289}{4} = 72.25$  kg.

Bookmark

FeedBack

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

Four friends Ishita, Janny, Katty and Lauren went to words of wonder. The park had a water ride where two people sit in a boat which rides through the water. Due to stability requirements, the sum of the weight of two persons who sit in a boat should be atleast 140 kg. Each person decides to go for one ride each with his three other friends.

However, while being weighed in pairs, Katty and Lauren did not meet the minimum weight requirement and so they could not ride as a pair. The weights of all the pairs who rode are 150 kg, 144 kg, 141 kg, 148 kg and 145 kg.

**Q.46 [11594329]**

If the heaviest and lightest among the friends were paired together for the boat ride, what would be the sum of their weights (in kg)?

**Solution:****Correct Answer : 145** Answer key/Solution

As Katty and Lauren could not ride as a pair, they weigh the lowest and the second lowest in any order.

So, we can say that the weight of both I and J are greater than that of both L and K.

Let  $I > J > K > L$

$I + J = 150$

And  $I + K = 148$

From this  $J - K = 2$

As  $K + L$  is not given, the next lowest would be  $J + L$  and this is 141.

As  $J - K = 2$ , we get  $K + L = 139$

Now solving we get,  $L = 68$

$K = 71$

$J = 73$

$I = 77$

(Note that weights of K and L and that of I and J are interchangeable)

The sum of the weights of the two persons who are the heaviest and the lightest would be  $68 + 77 = 145$  kg.

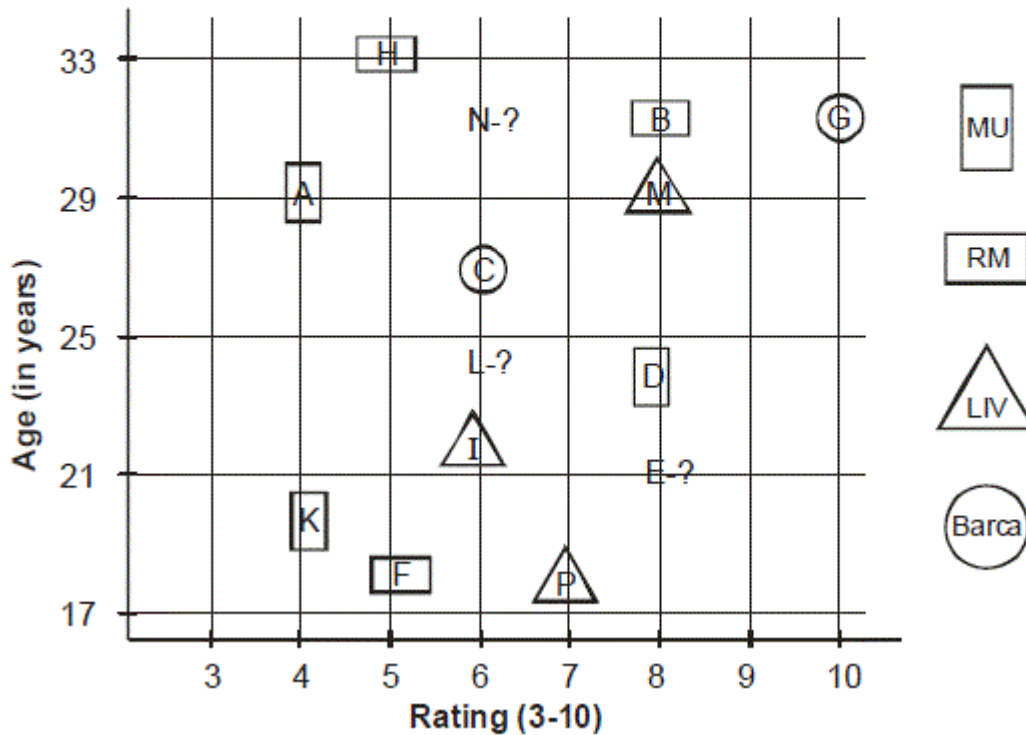
Bookmark

FeedBack

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

A magazine "Football-Talk" wanted to compare 16 new football players - A, B, C, D, ..., O and P - who joined 4 football clubs at the end of 2019-20 league season. The four clubs were Manchester United (MU), Liverpool (LIV), Real Madrid (RM), and Barcelona (Barca). The ages (in years) and ratings of these players were plotted on a graph shown below and all these players were divided into four distinct categories- Young Potentials, Young Maestros, Old Squad members, or Old Maestros. These categories were made on the basis of the rating and age of each player as shared in the table below.

Criterion	Young Potential (YP)	Young Maestros (YM)	Old Squad members (OS)	Old Maestros (OM)
Age	$\leq 25$	$\leq 25$	$\geq 26$	$\geq 26$
Rating	$\leq 6$	$\geq 7$	$\leq 6$	$\geq 7$



- The players marked with a '?' are those whose clubs affiliations have not been marked in the graph. It is also known that two players, O and J, are not marked on the graph. Some other details of the players are known:
- (i) MU and LIV had the same number of Young Maestros (YM). RM had the maximum number of players in the Old Squad members (OS) category.
  - (ii) E had neither joined RM nor MU.
  - (iii) J had been categorised as an Old Maestro (OM) whereas O's age was less than 25 years.
  - (iv) With all its players older than 26 years, Barca had the smallest team whereas MU had 5 players making it the largest in terms of team size.
  - (v) None of the four clubs had seen 3 or more players joining who belonged to the same category.

#### Q.47 [11594329]

Which club had the highest number of players under 25 years ?

- 1 ☐ MU
- 2 ☐ Liverpool
- 3 ☐ RM
- 4 ☐ Barca

**Solution:****Correct Answer : 1**[Answer key/Solution](#)

While the graph may look confusing, this set is essentially a set on arrangement and the table shown below can be used effectively. The young players (YP and YM) are essentially those less than 26 years of age where the older players are those that are 26 or older. A clear distinction similarly holds for Maestros, whose rating is 7 or greater.

Lets have a look at the statements.

- i. MU has 5 players, which is more than the others. Thus, others must have 4 or less. If Barca, who has the least number of players and two of its players can be identified using the graph, has only 2 players, then LIV and RM combined would need to have 9 to make up 16 players. That is not possible as each of LIV and RM need to have less than 5 players. Thus, Barca has 3 new players and RM and LIV both have 4 new players.
- ii. As we concluded that, RM has 4 new players and has maximum OS players, RM must have 2 OS players. This 2<sup>nd</sup> OS player from RM must be N. That completes the line-up of RM.
- iii. As Barca has only older players, and still needs one more player to complete total 3, the only unplaced older player is J. So. J must be a Barca player. That completes the line-up of Barca.
- iv. As E is not an MU player, s/he must be a Liverpool player. That completes the line-up of Liverpool.
- vi. The remaining players, O and L, both must be from MU. Since MU and LIV have the same number of YM players, O must be a YM player given that L is a YP player.

Category Clubs	YP	YM	OS	OM	Total
MU	K, L	D, O	A	-	5
Liv	I	P, E	-	M	4
RM	F	-	H, N	B	4
Barca	-	-	C	G, J	3

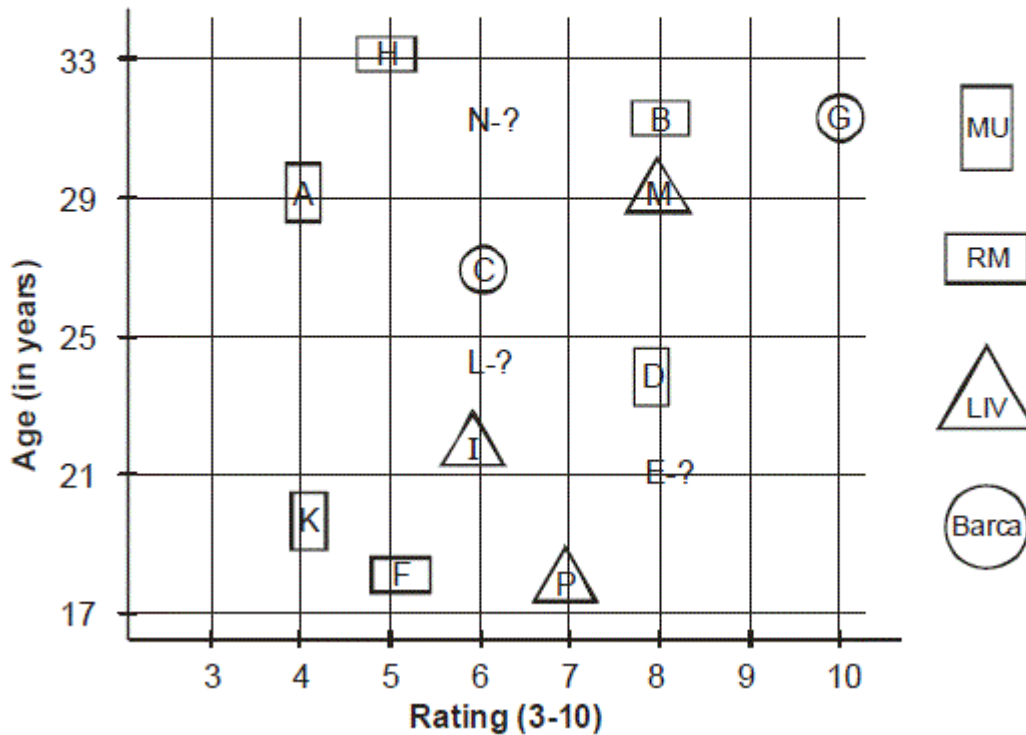
MU have 4 young players, which is highest from all the four clubs.

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

A magazine "Football-Talk" wanted to compare 16 new football players - A, B, C, D, ...., O and P - who joined 4 football clubs at the end of 2019-20 league season. The four clubs were Manchester United (MU), Liverpool (LIV), Real Madrid (RM), and Barcelona (Barca). The ages (in years) and ratings of these players were plotted on a graph shown below and all these players were divided into four distinct categories- Young Potentials, Young Maestros, Old Squad members, or Old Maestros. These categories were made on the basis of the rating and age of each player as shared in the table below.

Criterion	Young Potential (YP)	Young Maestros (YM)	Old Squad members (OS)	Old Maestros (OM)
Age	$\leq 25$	$\leq 25$	$\geq 26$	$\geq 26$
Rating	$\leq 6$	$\geq 7$	$\leq 6$	$\geq 7$



- The players marked with a '?' are those whose clubs affiliations have not been marked in the graph. It is also known that two players, O and J, are not marked on the graph. Some other details of the players are known:
- (i) MU and LIV had the same number of Young Maestros (YM). RM had the maximum number of players in the Old Squad members (OS) category.
  - (ii) E had neither joined RM nor MU.
  - (iii) J had been categorised as an Old Maestro (OM) whereas O's age was less than 25 years.
  - (iv) With all its players older than 26 years, Barca had the smallest team whereas MU had 5 players making it the largest in terms of team size.
  - (v) None of the four clubs had seen 3 or more players joining who belonged to the same category.

#### Q.48 [11594329]

How many clubs had seen the entry of at least 1 player from each category?



**Solution:****Correct Answer : 0**[Answer key/Solution](#)

While the graph may look confusing, this set is essentially a set on arrangement and the table shown below can be used effectively. The young players (YP and YM) are essentially those less than 26 years of age where the older players are those that are 26 or older. A clear distinction similarly holds for Maestros, whose rating is 7 or greater.

Lets have a look at the statements.

- i. MU has 5 players, which is more than the others. Thus, others must have 4 or less. If Barca, who has the least number of players and two of its players can be identified using the graph, has only 2 players, then LIV and RM combined would need to have 9 to make up 16 players. That is not possible as each of LIV and RM need to have less than 5 players. Thus, Barca has 3 new players and RM and LIV both have 4 new players.
- ii. As we concluded that, RM has 4 new players and has maximum OS players, RM must have 2 OS players. This 2<sup>nd</sup> OS player from RM must be N. That completes the line-up of RM.
- iii. As Barca has only older players, and still needs one more player to complete total 3, the only unplaced older player is J. So. J must be a Barca player. That completes the line-up of Barca.
- iv. As E is not an MU player, s/he must be a Liverpool player. That completes the line-up of Liverpool.
- vi. The remaining players, O and L, both must be from MU. Since MU and LIV have the same number of YM players, O must be a YM player given that L is a YP player.

Category Clubs	YP	YM	OS	OM	Total
MU	K, L	D, O	A	-	5
Liv	I	P, E	-	M	4
RM	F	-	H, N	B	4
Barca	-	-	C	G, J	3

No club has players from each category (Refer table).

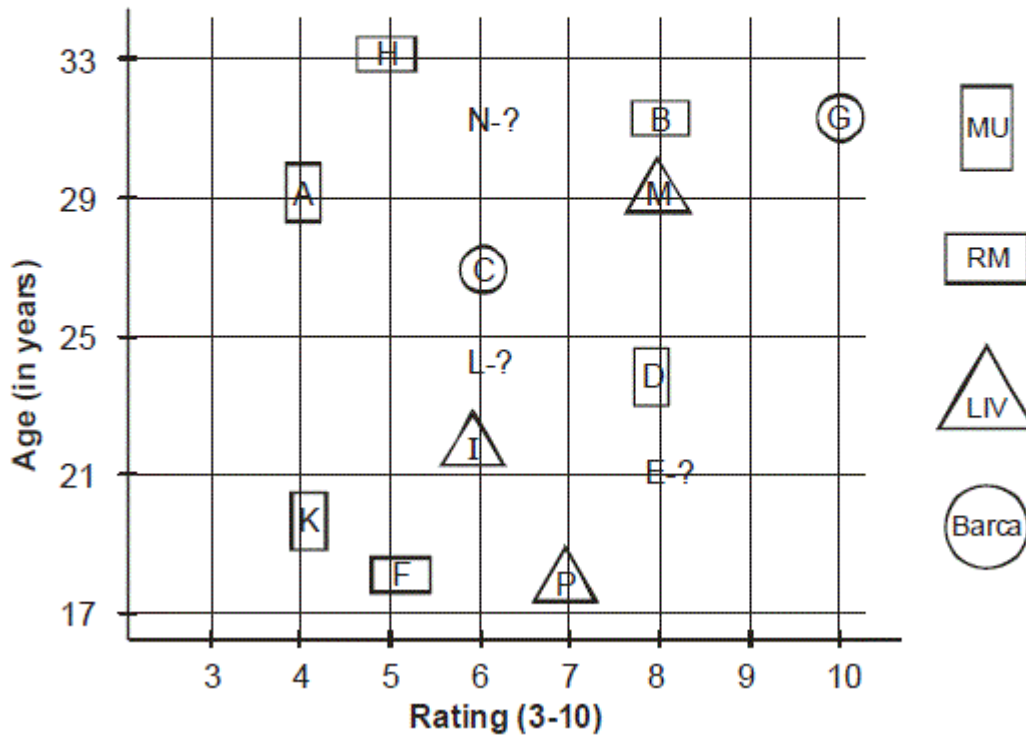
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- The players marked with a '?' are those whose clubs affiliations have not been marked in the graph. It is also known that two players, O and J, are not marked on the graph. Some other details of the players are known:
- (i) MU and LIV had the same number of Young Maestros (YM). RM had the maximum number of players in the Old Squad members (OS) category.
  - (ii) E had neither joined RM nor MU.
  - (iii) J had been categorised as an Old Maestro (OM) whereas O's age was less than 25 years.
  - (iv) With all its players older than 26 years, Barca had the smallest team whereas MU had 5 players making it the largest in terms of team size.
  - (v) None of the four clubs had seen 3 or more players joining who belonged to the same category.

#### Q.49 [11594329]

Which clubs' older players (OMs and OSs) had the highest average rating?

- 1 ☐ Liverpool
- 2 ☐ RM
- 3 ☐ Barca
- 4 ☐ Cannot be determined

**Solution:****Correct Answer : 4**[Answer key/Solution](#)

While the graph may look confusing, this set is essentially a set on arrangement and the table shown below can be used effectively. The young players (YP and YM) are essentially those less than 26 years of age where the older players are those that are 26 or older. A clear distinction similarly holds for Maestros, whose rating is 7 or greater.

Lets have a look at the statements.

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- As we concluded that, RM has 4 new players and has maximum OS players, RM must have 2 OS players. This 2<sup>nd</sup> OS player from RM must be N. That completes the line-up of RM.
- As Barca has only older players, and still needs one more player to complete total 3, the only unplaced older player is J. So. J must be a Barca player. That completes the line-up of Barca.
- As E is not an MU player, s/he must be a Liverpool player. That completes the line-up of Liverpool.
- The remaining players, O and L, both must be from MU. Since MU and LIV have the same number of YM players, O must be a YM player given that L is a YP player.

Category Clubs	YP	YM	OS	OM	Total
MU	K, L	D, O	A	-	5
Liv	I	P, E	-	M	4
RM	F	-	H, N	B	4
Barca	-	-	C	G, J	3

Lets look at the average rating of older players (OMs and OSs) of each club.

LIV- 8 (only M)

$$\text{RM- } \frac{(5+6+8)}{3} = 6.33 \text{ (from H, N and B)}$$

$$\text{Barca- } \frac{(10+6+J)}{3} \geq 7.67 \text{ (J's rating must be at least 7 as J is an OM)}$$

Thus, highest rating cannot be determined.

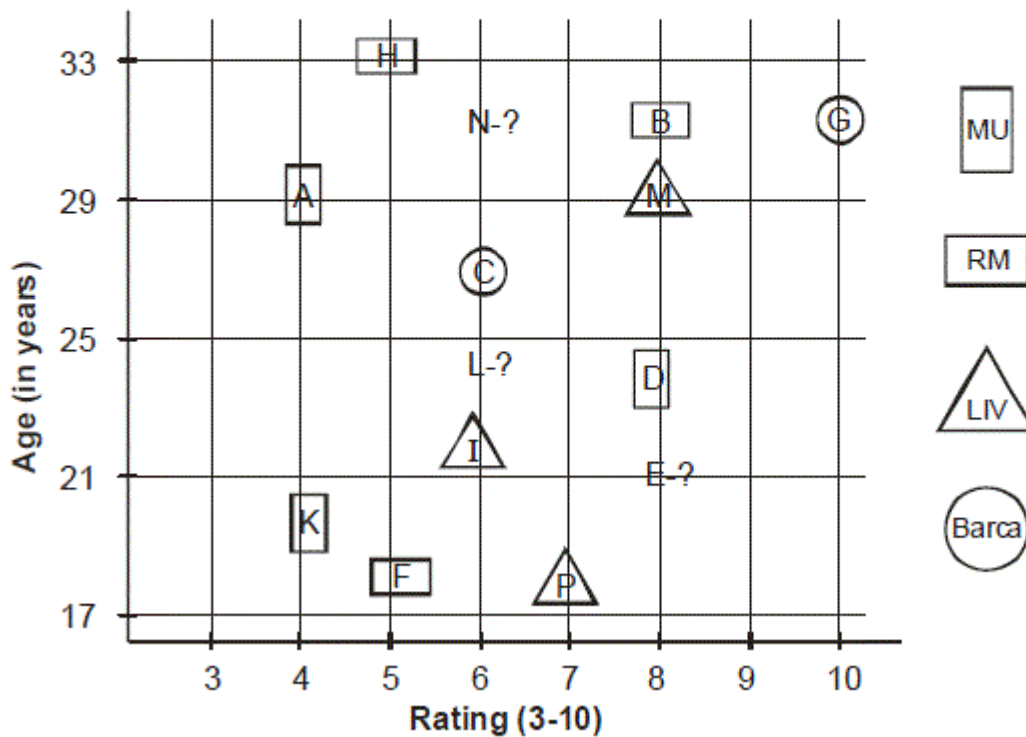
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- The players marked with a '?' are those whose clubs affiliations have not been marked in the graph. It is also known that two players, O and J, are not marked on the graph. Some other details of the players are known:
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  - (iv) With all its players older than 26 years, Barca had the smallest team whereas MU had 5 players making it the largest in terms of team size.
  - (v) None of the four clubs had seen 3 or more players joining who belonged to the same category.

#### Q.50 [11594329]

Which of the following groups had players all belonging to different clubs?

1 ☐ K, L, E, J

2 ☐ F, L, G, N

3 ☐ F, G, M, J

4 ☐ E, G, H, L

**Solution:****Correct Answer : 4**[Answer key/Solution](#)

While the graph may look confusing, this set is essentially a set on arrangement and the table shown below can be used effectively. The young players (YP and YM) are essentially those less than 26 years of age where the older players are those that are 26 or older. A clear distinction similarly holds for Maestros, whose rating is 7 or greater.

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- ii. As we concluded that, RM has 4 new players and has maximum OS players, RM must have 2 OS players. This 2<sup>nd</sup> OS player from RM must be N. That completes the line-up of RM.
- iii. As Barca has only older players, and still needs one more player to complete total 3, the only unplaced older player is J. So. J must be a Barca player. That completes the line-up of Barca.
- iv. As E is not an MU player, s/he must be a Liverpool player. That completes the line-up of Liverpool.
- vi. The remaining players, O and L, both must be from MU. Since MU and LIV have the same number of YM players, O must be a YM player given that L is a YP player.

Category Clubs	YP	YM	OS	OM	Total
MU	K, L	D, O	A	-	5
Liv	I	P, E	-	M	4
RM	F	-	H, N	B	4
Barca	-	-	C	G, J	3

The all players of group 'E, G, H, L' belong to different clubs.

[Bookmark](#)[Feedback](#)**Sec 3****Q.51 [11594329]**

Three filler taps A, B and C can fill an empty cistern in 6 hours, 8 hours and 10 hours, respectively. A drain tap D in the cistern, can empty a half full cistern in 12 hours. Initially, the cistern is empty. B, C and D are opened. B and C are closed after one and a half hours. A is now opened and allowed to run for an hour. How much total time (in hours) will it take to fill the cistern if A, B and D are opened simultaneously after the first two and a half hours?

1 ☐ 2.42 ☐ 4.93 ☐ 5.34 ☐ 4.3

**Solution:****Correct Answer : 2**[Answer key/Solution](#)

Let the amount of work to be done to either fill an empty cistern or empty a full cistern be LCM (6, 8, 10, 24) = 120 units

Work done by tap A in one hour =  $120/6 = 20$  units

Work done by tap B in one hour =  $120/8 = 15$  units

Work done by tap C in one hour =  $120/10 = 12$  units

Work done by tap D in one hour =  $120/24 = 5$  units

Work done in the first two and a half hours =  $(15 + 12) \times 3/2 + 20 \times 1 - 5 \times 5/2 = 48$  units

Work remaining =  $120 - 48 = 72$  units

Work done by taps A, B and D together in one hour when they opened simultaneously =  $20 + 15 - 5 = 30$  units

So, time required to fill the remaining cistern =  $72/30 = 2.4$  hours

Hence, total time required to fill the empty cistern =  $2.5 + 2.4 = 4.9$  hours.

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**Q.52 [11594329]**

If  $(|x| - 2)(x + 1) \geq 0$ , then the maximum possible value of  $5x - 4x^2 + 11$  is

**Solution:****Correct Answer : 5**[Answer key/Solution](#)

If  $x > 0$ , then  $(|x| - 2)(x + 1) = (x - 2)(x + 1) \geq 0$

i.e.,  $x \geq 2$  ( $x$  taken to be positive)

If  $x < 0$ , then  $(|x| - 2)(x + 1) = (-x - 2)(x + 1) \geq 0$  or  $(x + 2)(x + 1) \leq 0$

i.e.,  $-1 \geq x \geq -2$

At  $x = 2$ , we will get the maximum value of the expression i.e., 5.

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**Q.53 [11594329]**

A vegetable vendor sells oranges by offering a discount of 20%. The vendor, though, has already marked up the cost of the oranges by 33.33%. If the vendor only sells oranges in packs of 3 kg which have lost half a kg each due to heat (and thus evaporation of water), what will be the vendor's final loss/ profit %?

1 ☐ Profit, 16.67%

2 ☐ Loss, 8.33%

3 ☐ Profit, 8.33%

4 ☐ Loss, 11.11%

**Solution:****Correct Answer : 4**[Answer key/Solution](#)

Since the vendor loses 0.5 kg for every 3 kg, he will only be able to sell 5 kg out of every 6 kg he has.  
Using multiplication ratios,

$$\text{SP for the vendor} = \text{Cost} \times \left(1 + \frac{33.33}{100}\right) \times \left(1 - \frac{20}{100}\right) \times \frac{5}{6} = \frac{8}{9} \text{ times Cost}$$

Thus, loss =  $\frac{1}{9}$  of cost = 11.11%.

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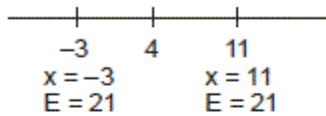
**Q.54 [11594329]**

If  $|x + 3| + |x - 4| + |x - 11| < 500$ , how many integer values of  $x$  are possible which satisfy the above inequality?

**Solution:****Correct Answer : 333**[Answer key/Solution](#)

Using the number line method, (i.e., the concept of distance)

$$E = |x + 3| + |x - 4| + |x - 11|$$



On moving 1 unit to the left of  $(-3)$ , the value of the expression (E) increases by 3 units and same is the case on moving 1 unit to the right of 11.

We can at maximum increase E to 499, i.e., 478 more

$$\Rightarrow \frac{478}{3} = 159.$$

That means we can move 159 units to the left of  $(-3)$  that is till  $(-162)$  and 159 units to the right of 11 that is 170;

Total possible values of  $x = 162 + 1 + 170 = 333.$

$\begin{array}{ccc} \swarrow & \downarrow & \searrow \\ \text{negative} & \text{zero} & \text{positive} \\ \text{values} & & \text{values} \end{array}$

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**Q.55 [11594329]**

Tarun, Pankaj and Golu have certain number of 1 Re. and 50 paise coins with them. The ratio of number of 1 Re. coins with them is 4 : 5 : 9 and the ratio of number of 50 paise coins is 3 : 10 : 16. If the difference between the total amount with Golu and Pankaj is twice the difference between the total amount with Pankaj and Tarun, then the amount with Golu is how much percent more than the amount with Pankaj?

1 ☐ 66.66%2 ☐ 73.33%

3 ○ 62.5%

4 ○ 83.33%

**Solution:****Correct Answer : 2****Your Answer : 2**
[🔍 Answer key/Solution](#)

Let the number of 1 Re. coins with Tarun, Pankaj and Golu be  $4x$ ,  $5x$  and  $9x$  respectively and the number of 50 paisa coins be  $3y$ ,  $10y$  and  $16y$  respectively.

$$\text{So, } (9x + 8y) - (5x + 5y) = 2 \left[ \left( 5x + 5y - \left( 4x + \frac{3y}{2} \right) \right) \right]$$

$$\Rightarrow 4x + 3y = 2 \left[ x + \frac{7y}{2} \right]$$

$$\Rightarrow 4x + 3y = 2x + 7y$$

$$\Rightarrow 2x = 4y$$

$$\Rightarrow x = 2y$$

$$\therefore \text{Amount with Golu} = 18y + 8y = 26y$$

$$\text{Amount with Pankaj} = 10y + 5y = 15y$$

$$\text{Hence, required answer} = \frac{11y}{15y} \times 100 = \frac{220}{3} = 73.33\%.$$

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**Q.56 [11594329]**

The number of integral values 'x' can take if,  $\sqrt{\log_{10} \log_{10} (7x - x^2)}$  is a real number, is

**Solution:****Correct Answer : 4**
[🔍 Answer key/Solution](#)

$$\log_{10} \log_{10} (7x - x^2) \geq 0$$

$$\log_{10} (7x - x^2) \geq 1$$

$$7x - x^2 \geq 10$$

$$0 \geq x^2 - 7x + 10$$

$$0 \geq (x - 2)(x - 5)$$

$$2 \leq x \leq 5$$

Hence, x can take 4 integral values.

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**Q.57 [11594329]**

Neha, Pooja and Ritika work on a project. After they complete  $\frac{1}{4}$ th of the project, Ritika takes a break. Then Neha and Pooja work on the project for 7 days. After that Ritika relieves both of them and completes the remaining project in 5 days. Pooja works 50% faster than Neha whereas Ritika alone can finish the entire project in 20 days. How long would Neha take to finish the entire project?

1 ☐ 40 days2 ☐  $23\frac{1}{3}$  days3 ☐ 35 days4 ☐  $27\frac{1}{2}$  days**Solution:****Correct Answer : 3** Answer key/Solution

Ritika takes 20 days for the entire project. In the last 5 days all alone, she can complete  $\frac{1}{4}$ th of the project.

Therefore, what she would have completed in the other 10 days was done by Neha and Pooja in 7 days, or the rates of Ritika to Neha and Pooja together is 7 : 10. As Pooja is 50% faster than Neha, the rates of Neha, Pooja, Ritika are 4, 6, 7 respectively.

The entire project is 7(20) or 140 units.

So, Neha would take  $\frac{140}{4} = 35$  days to complete it.

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**Q.58 [11594329]**

Dhrishashtra took his 100 sons to an ice cream parlour. There were 3 flavours available namely chocolate, vanilla and red velvet all costing Rs. 5 per scoop. 15 of his sons have a scoop of all three flavours while 50 of his sons had a scoop of at least 2 flavours. Total bill paid by Dhrishashtra was Rs. 695. How many of his sons did not have any ice cream?

**Solution:****Correct Answer : 26** Answer key/Solution

15 who took three will spend Rs. 225 and 35 who took exactly two spend Rs. 350 so the remaining amount should be spend by those who took exactly 1. So exactly 1 comes out to be 24, thus who did not took any will be 26.

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**Q.59 [11594329]**

Customers spend varying amounts at a vegetable vendor. The 4<sup>th</sup> last and the 3<sup>rd</sup> last customers spend Rs. 510 on average, increasing the average expenditure per customer by Rs. 15. The last two customers spend Rs. 330 on average but the average spend per customer does not change. The number of customers that visited the vegetable vendor must have been

1 ☐ 212 ☐ 243 ☐ 254 ☐ 28**Solution:****Correct Answer : 4** Answer key/Solution

It is clear that the final average is Rs. 330. The average before the last four customers came in must have been Rs. 15 less than 330, thus equal to Rs. 315. If N customers came in that day, we can say  
Spend of (N - 4) customers + spend of 4<sup>th</sup> last and 3<sup>rd</sup> last customers + spend of last 2 customers = Total spending  
So, 315 (N - 4) + 1020 + 660 = 330N (Total spend = Average x number of customers)  
Hence, N = 28 customers.

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**Q.60 [11594329]**

If  $\log_x y + \log_y x^6 = 5$ , then find the product of possible integral values of  $\log_x y$ .

**Solution:****Correct Answer : 6** Answer key/Solution

$$\log_x y + \log_y x^6 = 5$$

$$\log_x y + 6 \log_y x = 5$$

$$\text{Let } \log_x y = a$$

$$\text{So, } \log_y x = \frac{1}{a}$$

$$\Rightarrow a + \frac{6}{a} = 5$$

$$\Rightarrow \frac{a^2 + 6}{a} = 5$$

$$\Rightarrow a^2 + 6 = 5a$$

$$\Rightarrow a^2 - 5a + 6 = 0$$

$$\Rightarrow (a - 2)(a - 3) = 0$$

$$a = 2 \text{ or } a = 3$$

$$a = \log_x y = 2 \text{ or } 3$$

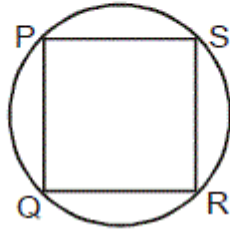
So, the product of possible values is 6.

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**Q.61 [11594329]**

A park has a square track inscribed inside a circular track as shown in the figure. A starts running on the circular track from vertex P whereas B starts running on the square track at the same time from diametrically opposite point R, both running in anti-clockwise direction. They meet for the first time at point S after B has just covered one round and A is yet to finish his one round. If they run a 100 m race, who will win and by how many meters (nearest value)? (Take  $\pi = 3.14$  &  $\sqrt{2} = 1.4$ )



1 ☐ A, by 34 m

2 ☐ B, by 34 m

3 ☐ A, by 62 m

4 ☐ B, by 42 m

**Solution:**

**Correct Answer : 2**

[🔗 Answer key/Solution](#)

When they meet for the first time, B has covered distance equal to 5 times the side of the inscribed square whereas A has covered  $\frac{3}{4}$ th of the circumference of the circle. Given that both have running for the same time,  
Ratio of Distances = Ratio of speeds

$$\frac{D_A}{D_B} = \frac{S_A}{S_B}$$

$$\frac{\frac{3}{4} \times 2\pi R}{5a} = \frac{S_A}{S_B}$$

Since for a square inscribed in a circle,

$$a = \sqrt{2} \times R$$

$$\text{Thus, } \frac{\pi 3\sqrt{2}}{20} = \frac{S_A}{S_B}$$

$$\frac{S_A}{S_B} = \frac{0.6594}{1}$$

It is clear that B will win the race. By the time, B covers 100 m, we can calculate the distance A will cover,

$$\frac{D_A}{D_B} = \frac{S_A}{S_B}$$

$$\frac{D_A}{100} = 0.6594$$

$$\Rightarrow D_A = 65.94\text{m}$$

Hence, B will win the race by  $(100 - 65.94) = 34.06$  m or nearest value is 34 m among the given options.

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### Q.62 [11594329]

In a batch of 150 students, the number of students who go to gym to keep fit is 96 whereas the number of students who play sports is 75. A few students prefer both to keep fit. Which of the following cannot be the number of students who prefer to either going to gym or playing sports?

1 ☐ 99

2 ☐ 87

3 ☐ 131

4 ☐ 125

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

Let's check option 1 i.e., 99. We can say that if 99 students pursue only one activity, then

$$96 + 75 = (\text{Only gym} + \text{both gym and sports}) + (\text{Only sports} + \text{both gym and sports})$$

$$= (\text{Only gym} + \text{only sports}) + 2 \times \text{both} = 99 + 2 (\text{both})$$

$$\Rightarrow \text{both} = 36$$

$$\text{Total pursuing at least 1 activity } (A \cup B) = 96 + 75 - 36 = 135 \text{ (that number is possible)}$$

Let's check at Option 3, 131. We can say that if 131 students pursue only one activity, then

$$96 + 75 = (\text{Only gym} + \text{both gym and sports}) + (\text{Only sports} + \text{both gym and sports}) = (\text{Only gym} + \text{only sports}) + 2 \times \text{both}$$

$$= 131 + 2 (\text{both})$$

$$\Rightarrow \text{both} = 20$$

$$\text{Total pursuing at least 1 activity } (A \cup B) = 96 + 75 - 20 = 151 \text{ (that number is not possible)}$$

As only 150 students are part of the total (universal set), we cannot have 151 students pursuing at least 1 activity

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**Q.63 [11594329]**

Everyday Vijay meets his friend Ajay at a restaurant that lies on the path connecting their houses. Today, Vijay and Ajay started 30 minutes and 15 minutes, respectively later than their usual time. As a result, they meet at a point 5 km away from the restaurant on the same path. What is the speed of Vijay in kmph if speed of Ajay is 60 Kmph?

1 ☐ 202 ☐ 303 ☐ 454 ☐ 60**Solution:****Correct Answer : 2** Answer key/Solution

Let's say they meet at a point P(restaurant) at 10 a.m. every day. Today Ajay is 15 mins late so he will reach the point P at 10:15 a.m. and Vijay will be 15 minutes away from this point (say at a point P'), as he will reach the point P at 10:30 a.m. Since they meet 5 km away from this point, it means Ajay will cover this distance i.e., 5 km (from old meeting point

P to new meeting point P') in  $\frac{5}{60} = \frac{1}{12}$  hours = 5 minutes. It means Ajay will be at this point at 10:20 a.m. To meet Ajay at this point P', Vijay also has to be there at the same time. So, Vijay reaches P' at 10:20 a.m. Now, he is 10 minutes far from the point P. PP' can be covered by Ajay and Vijay in 5 minutes and 10 minutes, respectively. Vijay takes twice the time taken by Ajay to cover the same distance. Hence, his speed must be half of the speed of Ajay. So, speed of Vijay will be 30 kmph.

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**Q.64 [11594329]**

If a, b, c are distinct positive integers, what is the highest value of  $a \times b \times c$  if  $a + b + c = 41$ ?

1 ☐ 2496

2 ☐ 2548

3 ☐ 2520

4 ☐ 2535

✖

**Solution:**

**Correct Answer : 3**

**Your Answer : 2**

[🔍 Answer key/Solution](#)

If the sum of three numbers is constant, then the product will be maximum if the numbers are equal. (Through AM and GM)

In this instance, however, with a, b, c being distinct integers, they cannot all be equal.

So, we need to look at a, b, c to be as close to each other as possible.

$a = 13$ ,  $b = 14$ ,  $c = 14$  is the possibility, but a, b, c have to be distinct. So, this can be ruled out.

The other possibilities are

$a = 12$ ,  $b = 14$ ,  $c = 15$ ; product = 2520

$a = 12$ ,  $b = 13$ ,  $c = 16$ ; product = 2496

Hence, maximum product = 2520.

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**Q.65 [11594329]**

A sanitizer trader trades two qualities of sanitizers - type A which costs him Rs. 600/liter and type B which costs Rs. 800/liter. He mixes some quantity of type A with type B and sells it at Rs. 1000/ liter thereby making a profit of 40%. What is the ratio in which type A and type B sanitizers have been mixed?

1 ☐ 4 : 5

2 ☐ 3 : 4

3 ☐ 2 : 3

4 ☐ 5 : 7

✓

**Solution:****Correct Answer : 2****Your Answer : 2**[Answer key/Solution](#)

Cost price of the mixture = Rs.  $\frac{1000}{1.4}$  per liter

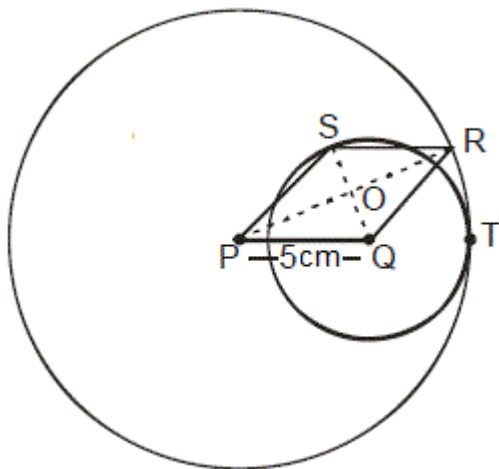
Using Alligation Method,

$$\begin{array}{r}
 600 \quad 800 \\
 \diagdown \quad \diagup \\
 \frac{1000}{1.4} \\
 \diagup \quad \diagdown \\
 800 - \frac{1000}{1.4} \quad \frac{1000}{1.4} - 600 \\
 = \frac{600}{7} \quad = \frac{800}{7}
 \end{array}$$

So, required ratio = 600 : 800 = 3 : 4.

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**Q.66 [11594329]**

A rhombus PQRS has a side of 5 cm. A circle with centre P passes through one of its vertices R. Likewise, a circle with centre Q passes through S. If two circles touch each other at T, then what is the area of rhombus (in sq. cm)?

1 ☐ 752 ☐ 75/23 ☐ 75/44 ☐ 75/8

**Solution:****Correct Answer : 3**[Answer key/Solution](#)

Let  $R$  and  $r$  be the radii of bigger and smaller circles respectively.

As we know that diagonals of rhombus bisect each other at  $90^\circ$ . Hence, here we need to find out the sum of areas of 4 right angled  $\Delta$ s.

$$\therefore \text{Area of rhombus PQRS} = \frac{4 \times \left(\frac{R}{2}\right) \times \left(\frac{r}{2}\right)}{2} = \frac{Rr}{2}. \quad [\text{as } PO = R/2 \text{ and } OQ = r/2]$$

In  $\Delta POQ$ ,  $PO^2 + OQ^2 = PQ^2$

$$\text{so, } \left(\frac{R}{2}\right)^2 + \left(\frac{r}{2}\right)^2 = 5^2$$

$$\Rightarrow R^2 + r^2 = 100 \quad \dots (i)$$

Circles touch each other at point  $T$  and this point will be collinear to  $P$  and  $Q$ , as the centres of circles lie on  $PQ$ .

$$\therefore PQ = PT - QT = R - r$$

$$\Rightarrow 5 = R - r \quad \dots (ii)$$

From (i) and (ii),  $(R - r)^2 = R^2 + r^2 - 2Rr$

$$\Rightarrow 5^2 = 100 - 2Rr$$

$$\Rightarrow 2Rr = 75$$

$$\therefore Rr = 75/2$$

$$\therefore \text{Area of rhombus} = 1/2 \times 75/2 = 75/4.$$

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**Q.67 [11594329]**

If 62.5% of the smallest natural number is raised to power  $n$ , becomes equal to  $(2.56)^5$ , then find the value of  $n$ .

✕

**Solution:****Correct Answer : -10****Your Answer : 10**[Answer key/Solution](#)

$$62.5\% = \frac{5}{8} \text{ so } \left[\frac{5}{8} \times 1\right]^n = (2.56)^5$$

$$\text{So, } (2.56)^5 = \left(\frac{256}{100}\right)^5 = \left(\frac{64}{25}\right)^5 = \left(\left(\frac{8}{5}\right)^2\right)^5 = \left(\left(\frac{5}{8}\right)^{-2}\right)^5 = \frac{5^{(-10)}}{8}$$

$$\text{Thus, } \left(\frac{5}{8}\right)^n = \left(\frac{5}{8}\right)^{(-10)}, \text{ so by law of indices } n = -10.$$

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**Q.68 [11594329]**

In a regular pentagon  $ABCDE$ , find the ratio of the area of triangle  $ACD$  to the area of the pentagon  $ABCDE$ .

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1 ☐  $\frac{\cos 36^\circ}{1 + \cos 36^\circ}$

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2 ☐  $\frac{1}{\cos 36^\circ}$

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3 ☐  $\frac{1}{1 + \cos 36^\circ}$

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4 ☐  $\frac{1}{\sin 36^\circ}$

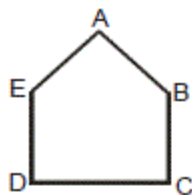
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**Solution:**

**Correct Answer : 1**

 **Answer key/Solution**





Each angle of a regular pentagon is  $108^\circ$ .

In  $\triangle AED$ ,  $\angle E = 108^\circ$  and  $AE = ED = b$  (let say)

So,  $\angle EAD = \angle EDA = 36^\circ$ .

Similarly,  $\angle BAC = 36^\circ$ .

So,  $\angle DAC = 108 - (36 + 36) = 36^\circ$

Also,  $AD = AC = a$  (let say)

So, area of  $\triangle ADC = \frac{1}{2} \times AC \times CD \times \sin 72^\circ = \frac{1}{2} \times a \times b \times \sin 72^\circ$

Area of pentagon = Sum of areas of the three triangles = Area of  $\triangle AED$  + Area of  $\triangle ADC$  + Area of  $\triangle ABC$ .

$$= \frac{1}{2} \times AE \times ED \times \sin(\angle AED) + \frac{1}{2} \times AC \times CD \times \sin 72^\circ + \frac{1}{2} \times AB \times BC \times \sin(\angle ABC)$$

$$= \frac{1}{2} \times b \times b \times \sin 108^\circ + \frac{1}{2} \times a \times b \times \sin 72^\circ + \frac{1}{2} \times b \times b \times \sin 108^\circ$$

$$\text{So, required ratio} = \frac{\frac{1}{2} ab \sin 72^\circ}{\frac{1}{2} ab \sin 72^\circ + b^2 \sin 108^\circ} = \frac{\frac{1}{2} ab \sin 72^\circ}{\frac{1}{2} ab \sin 72^\circ + b^2 \sin 72^\circ} \quad (\text{As } \sin 108^\circ = \sin 72^\circ)$$

$$= \frac{\frac{1}{2} ab}{\frac{1}{2} ab + b^2} = \frac{\frac{1}{2} a}{\frac{1}{2} a + b}$$

Now, using sine rule in  $\triangle ADC$ ,

$$\frac{b}{\sin 36^\circ} = \frac{a}{\sin 72^\circ} \Rightarrow b = \frac{a \sin 36^\circ}{\sin 72^\circ}$$

Put this value of  $b$  in the above equation, we get,

$$\text{Required ratio} = \frac{\frac{1}{2} a}{\frac{1}{2} a + \frac{a \sin 36^\circ}{\sin 72^\circ}}$$

$$= \frac{\frac{1}{2}}{\frac{1}{2} + \frac{1}{2 \cos 36^\circ}} \quad (\text{As } \sin 72^\circ = 2 \sin 36^\circ \cos 36^\circ)$$

$$= \frac{\cos 36^\circ}{1 + \cos 36^\circ}$$

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### Q.69 [11594329]

P and Q are two 2-digit odd natural numbers, each having 6 factors. If  $P > Q$ , then the difference between the maximum and minimum value of  $(P/Q)$  is closest to

1 ○ 1

$$2 \bigcirc 1.54$$

$$3 \bigcirc 0.8$$

$$4 \bigcirc 1.32$$

**Solution:**

**Correct Answer : 1**

 Answer key/Solution

For natural number to have 6 factors following are the 2 cases possible:

$M = p_1^a p_2^b p_3^c$  where  $p_1, p_2, p_3 \rightarrow$  prime numbers.

Number of factors =  $(a + 1)(b + 1)(c + 1)$

Case I  $\rightarrow 3 \times 2 \times 1 = 6$

OR

Case II  $\rightarrow 6 \times 1 \times 1 = 6$

Case I implies numbers which are product of a prime number and a square of another prime number.

There are 4 such odd 2 - digit numbers i.e.,

$$(3^2 \times 5), (3^2 \times 7), (3^2 \times 11) \text{ \& } (5^2 \times 3);$$

$$= 45 \quad = 63 \quad = 99 \quad = 75$$

Case II implies 5th power of a prime number and there is no 5th power of an odd prime number which is of 2 - digits.

Hence, 45, 63, 99 and 75 are the only 4 numbers which satisfy the given conditions.

Now, to maximise  $\left(\frac{P}{Q}\right)$ , take  $P = 99$  and  $Q = 45$

$$\rightarrow \text{Max} \left(\frac{P}{Q}\right) = \frac{99}{45}$$

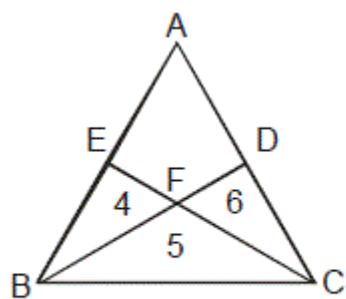
To minimise  $\left(\frac{P}{Q}\right)$ , take  $P = 75$  and  $Q = 63$  such that  $P > Q$

$$\rightarrow \text{Min} \left(\frac{P}{Q}\right) = \frac{75}{63}$$

Hence,  $\text{Max} \left(\frac{P}{Q}\right) - \text{Min} \left(\frac{P}{Q}\right) = \frac{99}{45} - \frac{75}{63} = 1.01$ , which is closest to 1.

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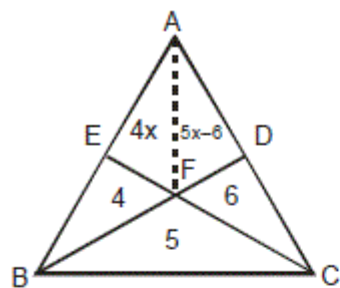
**Q.70 [11594329]**

In  $\triangle ABC$ , area of triangles  $BEF$ ,  $BFC$  and  $CD F$  are 4, 5 and 6 sq. units, respectively. Find the area of  $\triangle ABC$  (in sq. units).

**Solution:**

**Correct Answer : 495**

[Q. Answer key/Solution](#)



Let's join AF.

As we know, the ratio of areas of  $\Delta$ s is same as ratio of their bases if their heights are equal.

$$\frac{\text{Ar}(\Delta AEF)}{\text{Ar}(\Delta AFC)} = \frac{EF}{FC} = \frac{\text{Ar}(\Delta BEF)}{\text{Ar}(\Delta BFC)}$$

$$\therefore \frac{EF}{FC} = \frac{4}{5}$$

$\therefore$  If  $\text{Ar}(\Delta AEF) = 4x$

Then,  $\text{Ar}(\Delta AFD) = 5x - 6$  as  $\text{Ar}(\Delta AFC) = 5x$

Now, in the same way,

$$\frac{BF}{FD} = \frac{\text{Ar}(\Delta ABF)}{\text{Ar}(\Delta AFD)} = \frac{\text{Ar}(\Delta BFC)}{\text{Ar}(\Delta FDC)} = \frac{5}{6}$$

$$\therefore \frac{\text{Ar}(\Delta ABF)}{\text{Ar}(\Delta AFD)} = \frac{5}{6} \Rightarrow \frac{4x + 4}{5x - 6} = \frac{5}{6}$$

$$\Rightarrow 24x + 24 = 25x - 30 \Rightarrow x = 54$$

So, area of  $\Delta ABC$

$$= 4 + 5 + 6 + 4x + 5x - 6$$

$$= 15 + 9x - 6$$

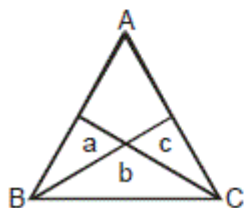
$$= 9x + 9$$

$$= 9(x + 1)$$

$$= 9(54 + 1)$$

$$= 9 \times 55 = 495 \text{ sq. units.}$$

**Shortcut:**



$$\text{Area of } \Delta ABC = \frac{ac(a + 2b + c)}{b^2 - ac} + (a + b + c)$$

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### Q.71 [11594329]

A, B and C are three real numbers and are in A.P. in the same order. A + B, B + C, A + C are in G.P. not necessarily in the same order. The number of integral value(s) the common ratio of this G.P. can take is

**Solution:****Correct Answer : 2** Answer key/Solution

Take A, B and C as  $x - d$ ,  $x$  and  $x + d$  (Since they are in A.P.)

3 cases are possible as the middle term of the G.P. can be any of the 3 terms:

**Case 1:**

B + C is the middle term

This means,

$$(2x - d)(2x) = (2x + d)^2$$

Solving this, we get,

Either  $d = 0$ , this means the common ratio of G.P. is '1' (Since the G.P. is  $2x, 2x, 2x$ )

or  $d = -6x$ , this means, the common ratio of G.P. is '-2' or '-1/2' (the G.P. is  $8x, -4x, 2x$  or  $2x, -4x, 8x$ )

**Case 2 and 3:**

Keeping other two terms as middle terms, same values of common ratios will be obtained.

Hence, two integral values of common ratio are possible.

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**Q.72 [11594329]**

Let PQRS be a rectangle and let M and N be the points on QR and RS, respectively such that area  $(\Delta PSN) = 24$ , area  $(\Delta RNM) = 16$  and area  $(\Delta PQM) = 100$ . Find the ratio of the area of the triangle PNM to that of the rectangle.

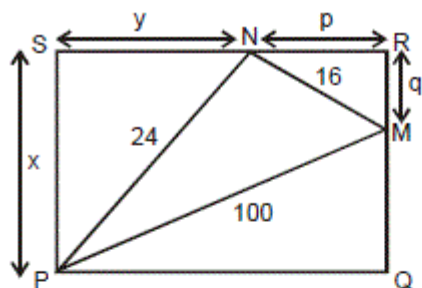
1 ☐ 7 : 12

2 ☐ 5 : 12

3 ☐ 6 : 17

4 ☐ 3 : 17

---

**Solution:****Correct Answer : 2**[Answer key/Solution](#)In  $\triangle PSN$ ,

$$\frac{1}{2} \times x \times y = 24$$

$$\Rightarrow x \times y = 48$$

Let's take,  $x = 12$ ,  $y = 4$ .In  $\triangle NRM$ ,

$$\frac{1}{2} \times p \times q = 16$$

$$\Rightarrow p \times q = 32$$

Let's take  $p = 16$ ,  $q = 2$ Now,  $PQ = SR = y + p = 20$ 

$$MQ = QR - RM = PS - RM = x - q = 12 - 2 = 10$$

$$\text{Now, area of } \triangle PMQ = \frac{1}{2} \times 20 \times 10 = 100$$

So, our assumed values satisfy the given condition

$$\therefore \text{Area of rectangle PQRS} = 20 \times 12 = 240$$

$$\text{So, area of } \triangle PNM = 240 - (24 + 16 + 100) = 100$$

$$\text{Hence, the required ratio} = \frac{100}{240} = 5 : 12.$$

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**Q.73 [11594329]**If  $a_1 = 1$ ,  $a_2 = 2 + 3$ ,  $a_3 = 4 + 5 + 6$ ,  $a_4 = 7 + 8 + 9 + 10$ , ..., then find  $a_{15}$ .1 ☐ 16952 ☐ 17853 ☐ 15954 ☐ 2165

**Solution:****Correct Answer : 1**[Answer key/Solution](#)

$$\begin{aligned}
 a_1 &= 1 \\
 a_2 &= 2 + 3 \\
 a_3 &= 4 + 5 + 6 \\
 a_4 &= 7 + 8 + 9 + 10 \\
 &\vdots
 \end{aligned}$$

Now if we see last number of each term,

i.e., 1, 3, 6, 10, ... they form a special series with general term,  $T_n = \frac{n(n+1)}{2}$

So for the fifteenth term, last number will be  $= \frac{15 \times 16}{2} = 120$ .

$a_{15}$  will have 15 terms starting from 106.

So,  $a_{15} = 106 + 107 + \dots + 120$

$\therefore a_{15} = 1695$ .

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**Q.74 [11594329]**

Let a function 'g' be defined as  $g(x) = \min\{5x-12, 18-2x-x^2\}$ , where x is a real number. What is the maximum possible value of g(x)?

✕

**Solution:****Correct Answer : 3****Your Answer : 19**[Answer key/Solution](#)

If we plot the two graphs (roughly), we will find that they intersect in the first quadrant for the maximum value.

Let's equate them and find the point of intersection

$$5x - 12 = 18 - 2x - x^2$$

We will get  $(x^2 + 7x - 30) = 0$  or  $(x - 3)(x + 10) = 0$

So at  $x = 3$ , maximum value of  $g(x) = 3$ .

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**Q.75 [11594329]**

a is the product of four consecutive even natural numbers. If  $b = a + 16$ ,  $\frac{b}{16}$  must be \_\_\_\_

- I. a perfect square
- II. prime
- III. odd

1 ☐ I and II only


2 ☐ I and III only

3 ☐ II and III only

4 ☐ III only

**Solution:**

**Correct Answer : 2**

 [Answer key/Solution](#)

Let the four consecutive even natural numbers be  $2x$ ,  $2x + 2$ ,  $2x + 4$  and  $2x + 6$ .

$$a = 16(x)(x + 1)(x + 2)(x + 3)$$

$$b = 16 [1 + [(x)(x + 3)(x + 2)(x + 1)]]$$

$$b = 16 [1 + (x^2 + 3x)(x^2 + 3x + 2)]$$

$$b = 16 (x^2 + 3x + 1)^2$$

$$\frac{b}{16} = (x^2 + 3x + 1)^2 \text{ is a perfect square.}$$

It cannot be prime.

As  $x^2 + 3x$  is always even,  $\frac{b}{16}$  will be odd.

Hence, I and III are true.

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