



Flexi Mock CAT - 01 (2020)

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VARC

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QA

Sec 1

Direction for questions (1-5): Read the given passage and answer the questions that follow.

[...] In 1991, it felt like a struggle of historic significance finally had been won. The Berlin Wall had fallen, and the Soviet Union was on the verge of collapse. It was a heady time, in which democracy seemed to be in full bloom around the world. Later, thanks to the North Atlantic Treaty Organization (NATO), the world witnessed that expansion throughout Latin America, the Balkans, and the former Warsaw Pact nations, as once-dictatorial nations in South America embraced increasingly free and fair elections, and former Communist-bloc countries in Eastern Europe joined Western democratic institutions.

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Q.1 [11594329]

Which one of the following best describes what the passage is trying to do?

1 ☐ To paint a bleak picture of the future of democracy

2 ☐ To warn elected governments from taking their status for granted

3 ☐ To show how democracy is struggling today

4 ☐ To highlight the resilience of the democratic system

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

This is a main idea question. We can choose the answer by the method of elimination.

Option 1 – The author does show that democracy is struggling. However, the author also concludes by saying that democracy will survive. So, this doesn't match the overall tone of the passage.

Option 2 – This is too narrow. It has been implicitly hinted in only one paragraph.

Option 3 – This is again too narrow. The author starts by recounting a glory time in the tradition of democracy. Then s/he shows the challenges democracy faces today. The author concluded with a hopeful note.

Option 4 – This is the best choice. It matches the tone of the author.

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Q.2 [11594329]

Which of the following has not been cited as a new challenge being encountered by elected governments?

1 ☐ Global economic issues

2 ☐ The issue of scientific ethics

3 ☐ The issue of terrorism

4 ☐ World-wide immigration

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

Refer to the lines: "Strongmen are rising in part because elected governments are struggling to address new challenges: global migration, technological advances, transnational terrorism, international economic unrest." All but option 2 are mentioned. So, option 2 is the correct answer.

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Q.3 [11594329]

What does the author refer to when s/he says "It was not perfect though" in the second paragraph?

1 ☐ The expansion of democracy in 1991

2 ☐ The defeat of authoritarianism

3 ☐ The exhilaration at witnessing the economic and civil liberty of millions of people

4 ☐ The conclusion to a historic struggle

Solution:

Correct Answer : 1

 **Answer key/Solution**

Refer to the first paragraph. The overall idea is that there was expansion of democracy across the globe. But the situation was still far from perfect. Hence, only option 1 makes sense.

Options 2 and 3 can be easily eliminated as they are mentioned in a different context.

Option 4 – The author uses the term ‘historical struggle’ in a metaphorical way.

Bookmark

FeedBack

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Q.4 [11594329]

Which of the following can substitute the word 'sclerotic' as used in the last paragraph?

1 ☐ Exploited

2 ☐ Rhetoric

3 ☐ Inflexible

4 ☐ Expedited

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

The line in question has the words 'abuse' and 'manipulation'. So, the meaning of 'sclerotic' must be negative. This rules out options 2 and 4. As the word manipulation is already there, 'exploited' would make the meaning redundant. So, 'inflexible' is the correct answer. It is also the lexical meaning of the term.

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Q.5 [11594329]

What is the main reason behind the author's hopefulness regarding the future of democracy?

1 ☐ Its status as being the best among the worst forms of government

2 ☐ The fact that it best puts the power in the hands of people

3 ☐ Its power to overcome technological and social challenges

4 ☐ The fact that many countries are rising against strongmen

Solution:

Correct Answer : 2

 Answer key/Solution

Refer to the last two sentences of the passage: "Sometimes democracy will not resolve complex events, or most effectively use technology, or respond speedily.

But it peacefully holds accountable leaders who don't fulfil their promises or better our lives, and rewards those who do. That has proved more valuable in the long run than more immediate urges." Option 2 is the clear answer.

Option 1 can be eliminated as it doesn't clarify the reason.

Option 3 distorts one of the messages of the author. The author clearly states that democracy may not be the answer to all sorts of challenges.

Option 4 is irrelevant.

Bookmark

FeedBack

Direction for questions (6-10): Read the given passage and answer the questions that follow.

[...] Everywhere you look, the competitive environment is more demanding than ever, which means that people at every level, and especially those on the front lines, have to be at their best, their most determined, every day. There's no doubt that giving people raises can up their game. But if you truly want people to elevate their performance, you first have to build up their pride. It's much more likely that people will do things in exceptional ways if they believe deeply in what they do.

Jon R. Katzenbach, the influential management consultant, made this case in a book whose title summarizes its core message — *Why Pride Matters More Than Money*. Katzenbach argues that pride grows out of “the relentless pursuit of worthwhile endeavours.” This “intrinsic pride” becomes “institution-building” when it “prompts the kind of effective, customer-focused behaviours” that distinguish an organization from its rivals. Commitment based on “self-serving or materialistic gains,” he adds, is “short-term, transient, and risky.” It doesn't unleash “the kind of emotional commitment” that builds “long-term sustainability.”

Many of Katzenbach's examples involve elite performers such as McKinsey consultants and Microsoft engineers. But pride may be most powerful, and it is certainly most memorable, when it is embraced by front-line employees who rarely spend time in the spotlight.

A few years back, for example, I studied the customer-service transformation at Mercedes-Benz USA, the sales-and-service arm of the German automaker. Leadership could not understand why the client experience at its dealerships seemed so unremarkable even though the cars themselves were so extraordinary. They had plenty of policies, practices, and financial incentives for front-line employees. The problem, as one senior leader told me, was that “pride in the brand was not quite as strong as we thought, the level of engagement with the work not as deep as we thought.” Dealers could train more, and even pay more, but until front-line people genuinely cared more, it was hard for them to serve customers with an authentic sense of connection.

So, Mercedes devised a creative set of grassroots initiatives to instil pride and incite passion. For example, it invited more than 20,000 front-line employees, the vast majority of whom had never driven a Mercedes vehicle outside the dealership lot, to spend 48 hours with a model of their choice, to get a feel for not just how the cars perform, but how they can turn heads when you pull into a church parking lot or high-school football game. The company also built a Brand Immersion Centre at its huge manufacturing complex near Birmingham, Alabama, where thousands of employees will visit to, well, get immersed in the history of Mercedes-Benz and see for themselves how the cars are built.” Once folks see the levels of excellence we achieve to produce these cars,” a Mercedes executive told me, “they'll understand that it's our obligation to create a customer experience on par with that.”

I witnessed a similar phenomenon when I studied the high-performance culture at DaVita, a company that has delivered impressive results in a brutally tough business — providing dialysis treatments to 200,000 patients with kidney disease. Long-time CEO Kent Thiry describes DaVita as “a community first and a company second.” If the organization's 55,000 people can figure out how to take care of each other, he told me, they will naturally take care of patients, and the business will take care of itself. So, life at DaVita is filled with symbols, traditions, even songs, that bear little resemblance to life inside conventional organizations — all of which are designed to instil a spirit of belonging and a sense of pride. Thiry likes to cite that familiar aphorism, “One cannot pour from an empty cup.” [...]

Q.6 [11594329]

As per the passage, all of the following encourage front line people to perform better EXCEPT:

- 1 ☐ Monetary incentive
- 2 ☐ Emotional connectivity with the product
- 3 ☐ Flexibility to choose their customers
- 4 ☐ Pride in the brand they represent



Solution:

Correct Answer : 3

Your Answer : 3

The passage mentions how pride in one's work can motivate one to give the best to a job.

[🔍 Answer key/Solution](#)

Option 1 – The first paragraph mentions that a pay raise helps people give their best. It is not the most effective method, but it helps.

Options 2 and 4 are part of the central idea of the passage.

Option 3 is nowhere mentioned. So, it is the correct answer.

Bookmark

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Q.7 [11594329]

What is the significance of the aphorism mentioned at the end of the passage?

- 1 ☐ It underscores the value of belongingness and emotional attachment in employees for an effective organisation.
- 2 ☐ It highlights the importance of a work culture that doesn't exhaust its human resource.
- 3 ☐ It explains the core ideology of any successful company as being the ability to replenish the energy levels of its employees.
- 4 ☐ It stresses on the importance of an atmosphere of non-serious relaxation for any effective company.

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

The last paragraph serves to stress or emphasise the significance of creating an atmosphere where employees can feel an emotional connect to their work. So, option 1 is the correct answer.

Options 2, 3, and 4 are incorrect as per the context. The aphorism literally emphasises the importance of rest and rejuvenation. But the paragraph doesn't talk about that. So, we need to choose option 1 which is better connected to the main idea of the passage.

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

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Q.8 [11594329]

Which of the following can be inferred to be the main message of the author behind talking about Mercedes-Benz USA?

- 1 ☐ A proactive company can do wonders to its profit margins by taking innovative marketing initiatives.
- 2 ☐ The main goal of a company can be achieved if the frontline workers feel a sense of pride in their work.
- 3 ☐ A company needs to instil a sense of well being among its frontline employees in order to achieve longevity.
- 4 ☐ The main aim of any company's long term strategy should be to make its employees obligated to create an authentic customer experience.



Solution:

Correct Answer : 2

Your Answer : 2

Answer key/Solution

This is an inference based question. However, it asks us to identify the purpose behind an example cited in the passage. So, we need to keep the main idea in mind.

Refer to the lines: "Many of Katzenbach's examples involve elite performers such as McKinsey consultants and Microsoft engineers. But pride may be most powerful, and it is certainly most memorable, when it is embraced by front-line employees who rarely spend time in the spotlight." Then the author cites the example in question. Option 2 best captures this idea. So, it is the correct answer.

Option 1 – 'Marketing strategy' is not the main point here. Its about employee relationship.

Option 3 – 'Sense of well being' is not the same as 'sense of pride'.

Option 4 – This is a distorted option. 'Obligated' and 'authentic customer experience' are vague terms. Option 2 captures the theme more clearly.

Bookmark

FeedBack

Direction for questions (6-10): Read the given passage and answer the questions that follow.

[...] Everywhere you look, the competitive environment is more demanding than ever, which means that people at every level, and especially those on the front lines, have to be at their best, their most determined, every day. There's no doubt that giving people raises can up their game. But if you truly want people to elevate their performance, you first have to build up their pride. It's much more likely that people will do things in exceptional ways if they believe deeply in what they do.

Jon R. Katzenbach, the influential management consultant, made this case in a book whose title summarizes its core message — *Why Pride Matters More Than Money*. Katzenbach argues that pride grows out of “the relentless pursuit of worthwhile endeavours.” This “intrinsic pride” becomes “institution-building” when it “prompts the kind of effective, customer-focused behaviours” that distinguish an organization from its rivals. Commitment based on “self-serving or materialistic gains,” he adds, is “short-term, transient, and risky.” It doesn't unleash “the kind of emotional commitment” that builds “long-term sustainability.”

Many of Katzenbach's examples involve elite performers such as McKinsey consultants and Microsoft engineers. But pride may be most powerful, and it is certainly most memorable, when it is embraced by front-line employees who rarely spend time in the spotlight.

A few years back, for example, I studied the customer-service transformation at Mercedes-Benz USA, the sales-and-service arm of the German automaker. Leadership could not understand why the client experience at its dealerships seemed so unremarkable even though the cars themselves were so extraordinary. They had plenty of policies, practices, and financial incentives for front-line employees. The problem, as one senior leader told me, was that “pride in the brand was not quite as strong as we thought, the level of engagement with the work not as deep as we thought.” Dealers could train more, and even pay more, but until front-line people genuinely cared more, it was hard for them to serve customers with an authentic sense of connection.

So, Mercedes devised a creative set of grassroots initiatives to instil pride and incite passion. For example, it invited more than 20,000 front-line employees, the vast majority of whom had never driven a Mercedes vehicle outside the dealership lot, to spend 48 hours with a model of their choice, to get a feel for not just how the cars perform, but how they can turn heads when you pull into a church parking lot or high-school football game. The company also built a Brand Immersion Centre at its huge manufacturing complex near Birmingham, Alabama, where thousands of employees will visit to, well, get immersed in the history of Mercedes-Benz and see for themselves how the cars are built.” Once folks see the levels of excellence we achieve to produce these cars,” a Mercedes executive told me, “they'll understand that it's our obligation to create a customer experience on par with that.”

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Q.9 [11594329]

As per the passage, which of the following companies is least likely to succeed in the long run?

- 1 ☐ A life insurance company that gives free insurance policies to the families of its employees
- 2 ☐ An educational start up that gives a personalised classroom like workstation to its teachers
- 3 ☐ A fitness equipment venture that makes its employees maintain a healthy lifestyle by using the company's equipment for free
- 4 ☐ An architectural firm that provides free legal service for its architects



Solution:

Correct Answer : 4

Your Answer : 4

 Answer key/Solution

This is an easy question. The main message of the author is that a company needs to make its employees take pride in their work. The examples of the two companies emphasise on this point. In both cases, the workers were given the chance to understand the products of the company. Options 1, 2, and 3 talk about this personal connection. But option 4 talks about 'legal service' given by an architectural firm. So, the author is likely to view this company with scepticism with respect to its longevity. Hence, option 4 is the correct answer.

Bookmark

FeedBack

Direction for questions (6-10): Read the given passage and answer the questions that follow.

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Q.10 [11594329]

As per the passage, all of the following are false EXCEPT:

- 1 ☐ Worthwhile endeavours make any person proud.
- 2 ☐ Rival companies differ in terms of their customers.
- 3 ☐ A sense of pride in one's work can affect profits of companies.
- 4 ☐ Emotional sustainability leads to long term commitments.



Solution:

Correct Answer : 3

Your Answer : 3

 Answer key/Solution

This is an easy fact based question. We need to find the statement that's true.

Option 1 – It is an extreme conclusion and it distorts the original sentence: “Katzenbach argues that pride grows out of “the relentless pursuit of worthwhile endeavours.”

Option 2 – It too distorts the sentence “This “intrinsic pride” becomes “institution-building” when it “prompts the kind of effective, customer-focused behaviours” that distinguish an organization from its rivals.” Rival companies must have similar customers. It's the approach that is different.

Option 3 – This is the main message of the example. So, it's true.

Option 4 – It clearly distorts the sentence: It doesn't unleash “the kind of emotional commitment” that builds “long-term sustainability.”

Bookmark

FeedBack

Direction for questions (11-14): Read the given passage and answer the questions that follow.

I was five years old, nearly six, when Nelson Mandela was released from prison. I remember seeing it on TV and everyone being happy. I didn't know why we were happy, just that we were. I was aware of the fact that there was a thing called apartheid and it was ending and that was a big deal, but I didn't understand the intricacies of it.

What I do remember, what I will never forget, is the violence that followed. The triumph of democracy over apartheid is sometimes called the Bloodless Revolution. It is called that because very little white blood was spilled. Black blood ran in the streets.

As the apartheid regime fell, we knew that the black man was now going to rule. The question was, which black man? Spates of violence broke out between the Inkatha Freedom Party and the ANC, the African National Congress, as they jockeyed for power. The political dynamic between these two groups was very complicated, but the simplest way to understand it is as a proxy war between Zulu and Xhosa. The Inkatha was predominantly Zulu, very militant and very nationalistic. The ANC was a broad coalition encompassing many different tribes, but its leaders at the time were primarily Xhosa. Instead of uniting for peace, they turned on one another, committing acts of unbelievable savagery. Massive riots broke out. Thousands of people were killed. In the evenings my mom and I would turn on our little black-and-white TV and watch the news. A dozen people killed. Fifty people killed. A hundred people killed.

Once a month at least we'd drive home and the neighbourhood would be on fire. Hundreds of rioters in the street. My mom would edge the car slowly through the crowds and around blockades made of flaming tires. Nothing burns like a tire – it rages with a fury you can't imagine.

Whenever the riots broke out, all our neighbours would wisely hole up behind closed doors. But not my mom. She'd head straight out, and we'd inch our way past the blockades, she'd give the rioters this look, "Let me pass. I'm not involved in this idiocy." She was unwavering in the face of danger. That always amazed me. It didn't matter that there was a war on our doorstep. She had things to do, places to be. There could be five hundred rioters with a blockade of burning tires on the main road out of Eden Park, and my mother would say, "Get dressed. I've got to go to work. You've got to go to school."

"But aren't you afraid?" I'd say. "There's only one of you and there's so many of them."

"Honey, I'm not alone," she'd say. "I've got all of Heaven's angels behind me."

"Well, it would be nice if we could see them," I'd say. "Because I don't think the rioters know they're there."

She'd tell me not to worry. She always came back to the phrase she lived by: "If God is with me, who can be against me?" She was never scared. Even when she should have been.

Q.11 [11594329]

This passage is an attempt by the narrator to:

1 ☐ understand the true extent of his black heritage.

2 ☐ express a disturbing episode from his childhood.

3 ☐ come to terms with his bleak past.

4 ☐ convey the extent of his personal struggles in life.



Solution:

Correct Answer : 2

Your Answer : 2

This is an easy main idea based question.

 Answer key/Solution

We don't have any data in the passage to support that the narrator is trying to understand his black heritage. The passage is focused on a power tussle between two black groups. It doesn't have a cultural overtone. So, option 1 is eliminated.

The author doesn't refer to his entire past as bleak. He also doesn't show any indication that he has faced difficulty in trying to understand or come to terms with his past. Option 3 is an extreme and distorted option.

Option 4 is wrong as the passage is not focused on the 'personal struggles' of the narrator.

Option 2 is straightforward and simple. So, it is the correct answer.

Bookmark

FeedBack

Direction for questions (11-14): Read the given passage and answer the questions that follow.

I was five years old, nearly six, when Nelson Mandela was released from prison. I remember seeing it on TV and everyone being happy. I didn't know why we were happy, just that we were. I was aware of the fact that there was a thing called apartheid and it was ending and that was a big deal, but I didn't understand the intricacies of it.

What I do remember, what I will never forget, is the violence that followed. The triumph of democracy over apartheid is sometimes called the Bloodless Revolution. It is called that because very little white blood was spilled. Black blood ran in the streets.

As the apartheid regime fell, we knew that the black man was now going to rule. The question was, which black man? Spates of violence broke out between the Inkatha Freedom Party and the ANC, the African National Congress, as they jockeyed for power. The political dynamic between these two groups was very complicated, but the simplest way to understand it is as a proxy war between Zulu and Xhosa. The Inkatha was predominantly Zulu, very militant and very nationalistic. The ANC was a broad coalition encompassing many different tribes, but its leaders at the time were primarily Xhosa. Instead of uniting for peace, they turned on one another, committing acts of unbelievable savagery. Massive riots broke out. Thousands of people were killed. In the evenings my mom and I would turn on our little black-and-white TV and watch the news. A dozen people killed. Fifty people killed. A hundred people killed.

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"But aren't you afraid?" I'd say. "There's only one of you and there's so many of them."

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"Well, it would be nice if we could see them," I'd say. "Because I don't think the rioters know they're there."

She'd tell me not to worry. She always came back to the phrase she lived by: "If God is with me, who can be against me?" She was never scared. Even when she should have been.

Q.12 [11594329]

From the passage, it can be inferred that the narrator:

1 ☐ was way too young to be aware of the political unrest around him.

2 ☐ was too gullible to believe that the rioters would be afraid of visible angels.

3 ☐ didn't believe that the end of apartheid was a good outcome.

4 ☐ didn't grasp the complete extent of the power tussle that followed the fall of apartheid.



Solution:

Correct Answer : 4

Your Answer : 4

This can be answered by the method of elimination.

Answer key/Solution

Option 1 – The author mentions in the first paragraph that he had some awareness of the significance of the fall of apartheid. He also clearly remembers the riots that followed. So, this is not a correct inference.

Option 2 – This is a distorted inference. The author was too young. But we can't conclude that if the angels were actually visible, the rioters would not have been deterred.

Option 3 – This is directly negated by the first two paragraphs.

Option 4 – This is the correct inference. The narrator was five or six years old. He understood something but not the complete extent of the political turmoil. So, this is the best choice.

Bookmark

FeedBack

Direction for questions (11-14): Read the given passage and answer the questions that follow.

I was five years old, nearly six, when Nelson Mandela was released from prison. I remember seeing it on TV and everyone being happy. I didn't know why we were happy, just that we were. I was aware of the fact that there was a thing called apartheid and it was ending and that was a big deal, but I didn't understand the intricacies of it.

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She'd tell me not to worry. She always came back to the phrase she lived by: "If God is with me, who can be against me?" She was never scared. Even when she should have been.

Q.13 [11594329]

The narrator's tone while talking about the Bloodless Revolution is:

1 ☐ contemplative.

2 ☐ sarcastic.

3 ☐ nonchalant.

4 ☐ informative.



Solution:

Correct Answer : 2

Your Answer : 4

 Answer key/Solution

The narrator tells us how the Bloodless Revolution was not really non-violent. He draws a distinction between white people dying and black people being killed (in an indirect manner). So, the tone is definitely not indifferent (nonchalant) or factual (informative). The author is emotional about the topic. Contemplative means thoughtful. This becomes a bit vague. The author doesn't have fond memories of the incident. So, the correct answer is option 2.

Bookmark

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Direction for questions (11-14): Read the given passage and answer the questions that follow.

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Q.14 [11594329]

As per the narrator, the primary reason for the political unrest that followed the fall of apartheid was:

1 ☐ racial differences between the different political groups.

2 ☐ the lack of a powerful black leader.

3 ☐ because of ideological differences between the leaders of both parties.

4 ☐ due to the political aspiration of each group.



Solution:

Correct Answer : 4

Your Answer : 4

 Answer key/Solution

The narrator talks about the two political parties (both black) being dominated by two separate ethnic tribes (Zulu and Xhosa). They both wanted their leaders to be the president.

Option 1 – As both political parties were black, we can't say that there was any racial differences between the two parties.

Option 2 – There was at least one strong black leader. The narrator hints that both parties wanted their respective leader to be the president. So, we can't say that the reason was the lack of a leader.

Option 3 – The ideological difference was probably between the two groups. There is no data regarding the leaders of the two groups.

Option 4 – This is the best answer. As each group wanted to grab power, the unrest was surely the result of political aspiration. So, this is the correct answer.

Bookmark

FeedBack

Direction for questions (15-18): Read the given passage and answer the questions that follow.

The world came together last week for the UN general assembly, and climate crisis was high on the agenda. Many of the discussions focused on changing the energy and transport sectors to mitigate potential catastrophe. Climate activist Greta Thunberg travelled to New York on an emissions-free yacht to deliver her speech at the UN climate summit. The point of her journey was to raise awareness that transatlantic flights generate significant greenhouse gases. That message is getting across: people are putting limits on the number of flights they take each year to conferences, workshops and holidays.

What was not high on the agenda was the impact food systems have on greenhouse gas emissions and other environmental degradation. A slew of high-level reports produced over the last few months all argue that if the world is to make an impact on climate crisis, the food system needs to be radically reshaped.

The way we produce food, the way food is manipulated and moved around the world, and what we as citizens decide to put on our plate, matter for the climate crisis. Food systems contribute 21% to 37% of global greenhouse gases, and are significant contributors to deforestation, biodiversity loss, and declining water tables. The Amazon forest fires in Brazil are directly related one way or another to food production.

Perhaps the biggest problem: livestock. They use a third of global cropland and contribute 15% of global greenhouse gas emissions. A recent New Yorker article noted that “[every] 4lbs of beef you eat contributes to as much global warming as flying from New York to London – and the average American eats that much each month.”

While red meat is generally considered the most resource-intensive food on the planet, the factors that determine whether a given meat is sustainable are complicated. Meat production can be environmentally friendly and efficient when it uses lands of low-opportunity costs, not suitable for crop production or significant carbon sequestration. Meat production can also be efficient in intensive, high-welfare animal systems like free-range pork and poultry. It can be more environmentally friendly when it uses feed that does not compete with human food. [...]

But for the world to make this shift to sustainable consumption, we need governments and the food industry to make it easier. We need investment in public health information and the implementation of policies that promote healthy eating that is affordable, safe, convenient and most of all, tasty. [...]

What we eat matters. Not only for ourselves and the planet, but for the youth who were out marching on the streets last week in the name of their future and right to live on this planet.

Q.15 [11594329]

As per the passage, food systems contribute to all of the following EXCEPT:

- 1 ☐ Loss of forest
 - 2 ☐ Reduction of variety of species
 - 3 ☐ Burning of livestock in the Amazon
 - 4 ☐ Dropping of water tables
-



Solution:

Correct Answer : 3

Your Answer : 3

 Answer key/Solution

Refer to the lines: "Food systems contribute 21% to 37% of global greenhouse gases, and are significant contributors to deforestation, biodiversity loss, and declining water tables. The Amazon forest fires in Brazil are directly related one way or another to food production."

Options 1, 2, and 4 are mentioned.

There is no mention of burning of livestock in the Amazon. So, option 3 is the correct answer.

Bookmark

FeedBack

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Q.16 [11594329]

Why does the author discuss the lack of focus on food systems in the conference?

- 1 ☐ S/he laments the fact that people have forgotten how to eat healthy.
 - 2 ☐ S/he is concerned that food systems are neglected despite being a main source of greenhouse emissions.
 - 3 ☐ S/he laments the fact that the conference didn't focus on greenhouse effects on plants.
 - 4 ☐ S/he is concerned as food systems have undergone radical changes in the last decade.
-



Solution:

Correct Answer : 2

Your Answer : 2

 Answer key/Solution

Refer to the lines: "What was not high on the agenda was the impact food systems have on greenhouse gas emissions and other environmental degradation. A slew of high-level reports produced over the last few months all argue that if the world is to make an impact on climate crisis, the food system needs to be radically reshaped" and "Food systems contribute 21% to 37% of global greenhouse gases, and are significant contributors to deforestation, biodiversity loss, and declining water tables." Option 2 is the clear answer.

Option 1 – Eating healthy is not part of the discussion.

Option 3 – This is factually wrong. In fact, greenhouse emission was the main part of the agenda.

Option 4 – This doesn't completely answer the question. We know that the food systems have undergone changes. But their impact on the environment is the main reason for the author's concern. So, option 2 is the best answer.

Bookmark

FeedBack

Direction for questions (15-18): Read the given passage and answer the questions that follow.

The world came together last week for the UN general assembly, and climate crisis was high on the agenda. Many of the discussions focused on changing the energy and transport sectors to mitigate potential catastrophe. Climate activist Greta Thunberg travelled to New York on an emissions-free yacht to deliver her speech at the UN climate summit. The point of her journey was to raise awareness that transatlantic flights generate significant greenhouse gases. That message is getting across: people are putting limits on the number of flights they take each year to conferences, workshops and holidays.

What was not high on the agenda was the impact food systems have on greenhouse gas emissions and other environmental degradation. A slew of high-level reports produced over the last few months all argue that if the world is to make an impact on climate crisis, the food system needs to be radically reshaped.

The way we produce food, the way food is manipulated and moved around the world, and what we as citizens decide to put on our plate, matter for the climate crisis. Food systems contribute 21% to 37% of global greenhouse gases, and are significant contributors to deforestation, biodiversity loss, and declining water tables. The Amazon forest fires in Brazil are directly related one way or another to food production.

Perhaps the biggest problem: livestock. They use a third of global cropland and contribute 15% of global greenhouse gas emissions. A recent New Yorker article noted that “[every] 4lbs of beef you eat contributes to as much global warming as flying from New York to London – and the average American eats that much each month.”

While red meat is generally considered the most resource-intensive food on the planet, the factors that determine whether a given meat is sustainable are complicated. Meat production can be environmentally friendly and efficient when it uses lands of low-opportunity costs, not suitable for crop production or significant carbon sequestration. Meat production can also be efficient in intensive, high-welfare animal systems like free-range pork and poultry. It can be more environmentally friendly when it uses feed that does not compete with human food. [...]

But for the world to make this shift to sustainable consumption, we need governments and the food industry to make it easier. We need investment in public health information and the implementation of policies that promote healthy eating that is affordable, safe, convenient and most of all, tasty. [...]

What we eat matters. Not only for ourselves and the planet, but for the youth who were out marching on the streets last week in the name of their future and right to live on this planet.

Q.17 [11594329]

The author in the last paragraph aims to:

- 1 ☐ stress on the impact of our actions on the future of the world.
 - 2 ☐ highlight the increase in youth activism across the globe.
 - 3 ☐ explain how we can support youngsters with their political aims.
 - 4 ☐ raise concerns about the importance of sustainable livestock production.
-



Solution:

Correct Answer : 1

Your Answer : 1

 Answer key/Solution

This question has easy to eliminate options. We can directly eliminate options 2 and 3 as they focus on politics or youth activism. These are not the main aim of the passage or the paragraph.

Option 4 – It is mentioned in the previous paragraphs, not the last paragraph.

Option 1 – This is the correct answer.

Bookmark

FeedBack

Direction for questions (15-18): Read the given passage and answer the questions that follow.

The world came together last week for the UN general assembly, and climate crisis was high on the agenda. Many of the discussions focused on changing the energy and transport sectors to mitigate potential catastrophe. Climate activist Greta Thunberg travelled to New York on an emissions-free yacht to deliver her speech at the UN climate summit. The point of her journey was to raise awareness that transatlantic flights generate significant greenhouse gases. That message is getting across: people are putting limits on the number of flights they take each year to conferences, workshops and holidays.

What was not high on the agenda was the impact food systems have on greenhouse gas emissions and other environmental degradation. A slew of high-level reports produced over the last few months all argue that if the world is to make an impact on climate crisis, the food system needs to be radically reshaped.

The way we produce food, the way food is manipulated and moved around the world, and what we as citizens decide to put on our plate, matter for the climate crisis. Food systems contribute 21% to 37% of global greenhouse gases, and are significant contributors to deforestation, biodiversity loss, and declining water tables. The Amazon forest fires in Brazil are directly related one way or another to food production.

Perhaps the biggest problem: livestock. They use a third of global cropland and contribute 15% of global greenhouse gas emissions. A recent New Yorker article noted that “[every] 4lbs of beef you eat contributes to as much global warming as flying from New York to London – and the average American eats that much each month.”

While red meat is generally considered the most resource-intensive food on the planet, the factors that determine whether a given meat is sustainable are complicated. Meat production can be environmentally friendly and efficient when it uses lands of low-opportunity costs, not suitable for crop production or significant carbon sequestration. Meat production can also be efficient in intensive, high-welfare animal systems like free-range pork and poultry. It can be more environmentally friendly when it uses feed that does not compete with human food. [...]

But for the world to make this shift to sustainable consumption, we need governments and the food industry to make it easier. We need investment in public health information and the implementation of policies that promote healthy eating that is affordable, safe, convenient and most of all, tasty. [...]

What we eat matters. Not only for ourselves and the planet, but for the youth who were out marching on the streets last week in the name of their future and right to live on this planet.

Q.18 [11594329]

As per the passage, how did Greta Thunberg’s message make an impact?

- 1 ☐ It has made people more aware of the impact of climate change.
 - 2 ☐ As a result of her speech, a lot of people have started taking less environmentally friendly journeys.
 - 3 ☐ As a result of her efforts, greenhouse emission has received widespread media scrutiny.
 - 4 ☐ It has resulted in making people take steps to curb greenhouse emission due to their personal actions.
-



Solution:

Correct Answer : 4

Your Answer : 2

Answer key/Solution

Refer to the lines: "The point of her journey was to raise awareness that transatlantic flights generate significant greenhouse gases. That message is getting across: people are putting limits on the number of flights they take each year to conferences, workshops and holidays." Option 4 is the clear answer.

Option 1 – Climate change is too generic. 'Greenhouse emission' is more specific.

Option 2 – This is wrong. People have started taking more environmentally friendly flights, not less.

Option 3 – This is not part of the passage.

Bookmark

FeedBack

Q.19 [11594329]

Directions for question (19): 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. Some researchers had thought that the packing involves winding the DNA into a spiral, whereas others thought it is condensed as a set of loops.
2. During cell division, genetic molecules that would measure more than two meters long if fully unfurled are packed into bundles just microns wide.
3. A new study settles a debate about how this feat is accomplished.
4. The answer, according to unprecedented imaging, molecular analysis, and computer simulations, turns out to be a bit of both.



Solution:

Correct Answer : 2314

Your Answer : 2314

'This feat' in 3 refers to the molecules being 'packed into bundles' in 2. So, 23 is a pair.

1 and 4 make a pair in terms of question and answer. 4 mentions 'the answer'. It refers to the proposed problem in 1. So, 14 is a pair.

1 can't be the opening sentence. So, 2314 is the correct sequence.

Bookmark

FeedBack

 Answer key/Solution

Q.20 [11594329]

Directions for question (20): 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. Her co-pilot is ninety-nine, and has also decided to spend the day with us.
2. Finally reaching the other end of the jungle, we can at last sit down to eat.
3. She is still driving at age eighty-eight, and takes great pride in that.
4. We have to drive fast to keep up with them on a highway that is sometimes more dirt than asphalt.



Solution:

Correct Answer : 3142

Your Answer : 3142

This paragraph follows a narrative pattern.

Her 'co-pilot' and 'also' in sentence 1 suggest that it is a continuation of another sentence. That sentence is 3. So, 31 make a mandatory pair.

Sentence 4 has the pronoun 'them' which refers to the old lady and her co-pilot. So, 4 should come after 3 and 1.

Sentence 2 has the word 'finally'. It also adds to the other three sentences as they are talking about driving to some place.

Thus, the correct sequence is 3142.

Bookmark

FeedBack

 Answer key/Solution

Q.21 [11594329]

Directions for question (21): The passage given below is followed by four summaries. Choose the option that best captures the author's position.

There is no doubt that language and literature have both been considered as significant attitude of national identity and distinctiveness. A literature of every nationality serves to define the language of that particular society. It can never be argued that today African literature has widely been written among the colonial languages of Europe and Arab, particularly English, French, Arabic and Portuguese, although with some African oral traditions, thereby disregarding many indigenous African languages. And many African writers have chosen to write and/or express their opinions by adopting most of the colonial languages, whereas other creative writers argue that African experience, belief and identity should only be better expressed by indigenous African languages, irrespective of the language barrier found in Africa.

- 1 ☐ There is a division of opinion among African writers regarding the use of colonial languages to express local issues.
- 2 ☐ As language and literature determine the identity and uniqueness of any nation, a writer should write in a local, not colonial, language.
- 3 ☐ Some writers in Africa use colonial languages whereas the others use African languages, thereby adding to the discussion of language of literature and national identity.
- 4 ☐ It is wrong to say that today's literature in Africa is uniquely defined by the colonial languages as different cultures have their own unique narrative style and the oral traditions serve a particular purpose.



Solution:

Correct Answer : 3

Your Answer : 3

 Answer key/Solution

The author in the passage mentions the following points:

- **Every national literature is defined by its language and it is an established fact.**
- **African literature today is written in both colonial languages and local African languages.**

The example of Africa serves to explain the issue or point of language and literature and its relevance to national identity.

Option 1 – There is no division of opinion mentioned. This option doesn't mention the first point of the author.

Option 2 – This is a grand and illogical conclusion, not a summary.

Option 4 – This option is misleading. The paragraph doesn't focus on narrative style or oral traditions.

Option 3 – It mentions both the points. So, it is the correct answer.

Bookmark

FeedBack

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. If you were to cut open a cocoon or chrysalis at just the right time, caterpillar soup would ooze out.
 2. Certain highly organized groups of cells known as imaginal discs survive the digestive process.
 3. First, the caterpillar digests itself, releasing enzymes to dissolve all of its tissues.
 4. You can see the delicate, translucent jade wings, antennae and legs of a pupa that has not yet matured into an adult moth.
 5. But the contents of the pupa are not entirely an amorphous mess.
-

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

The correct order is 3152. If you understand the basic meanings of the sentences, this is an easy question. All except sentence 4 talk about a certain digestive process related to the transformation of the caterpillar into a butterfly.

'Caterpillar soup' in 1 adds to the idea of the caterpillar eating itself in 3. So, 31 is a pair. 5 follows with the 'contents of the pupa' which again relates to the process mentioned in both 3 and 1. 2 explains 'not the amorphous mess' in 5.

Sentence 4 talks about the same topic. But it talks about what you can expect to see inside the chrysalis or cocoon of the caterpillar. So, it would be part of a separate paragraph. Thus, 4 is the odd one out.

Bookmark

FeedBack

Q.23 [11594329]

Directions for question (23): 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. Evidence suggests that businesses cover higher labour costs in one of three ways.
2. The fact that job losses are not rampant does not mean that a higher wage floor is painless.
3. They take a hit to profits, improve productivity, or raise prices.
4. Up to a point, minimum wages can be absorbed without any substantial changes in employment.

✕

Solution:**Correct Answer : 4213****Your Answer : 4123**[🔍 Answer key/Solution](#)

The most obvious pair in this paragraph is 13 (three ways – explained in 3). 'They' in 3 refers to 'businesses' in 1.

1 has to follow 2. 2 talks about the process not being entirely painless. 1 explains one of the challenges or 'pain': recovery of the increase in cost due to higher wage.

4 introduces the topic. It can only come at the beginning. It can surely not follow 3 as 213 is a mandatory sequence. So, the correct sequence is 4213.

Bookmark

FeedBack

Q.24 [11594329]

Directions for question (24): 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. Clear-air turbulence has not been known to cause aircraft to crash.
2. Airplanes and helicopters are the most commonly used platforms for acquiring LIDAR data over broad areas.
3. Forward-looking infrared doppler laser radar (called LIDAR) offers hope of alerting pilots to approaching clear-air turbulence.
4. Detection for warning purposes is difficult and is usually based on pilot reports.
5. But serious damage to airliners and many injuries to passengers have been reported.

Solution:

Correct Answer : 2

Your Answer : 5

The correct order is 1543.

Answer key/Solution

1 talks about air turbulence and its impact on aircrafts. 15 make a pair as 'but' introduces a contrasting view (not being too impactful to serious damage).

4 and 3 talk about methods to prevent this damage.

2 is the odd one out. It talks about data collection related to LIDAR. The main idea of the paragraph is the impact of air turbulence on airplanes. So, 2 has to be the odd one out.

Bookmark

FeedBack

Q.25 [11594329]

Directions for question (25): The passage given below is followed by four summaries. Choose the option that best captures the author's position.

Our plan, developed with expert guidance from our employer-led board, is focused on creating a workforce that is confident, skilled, and qualified. A workforce of around 1.5 million valued by the communities it serves because it gives value back. Ensuring everyone in our sector has the right values - dignity, respect, kindness and compassion - that are at the heart of person centred care and support. The trick is applying those same principles to the way we recruit, retain, and develop the people making up that workforce.

1 ☐ Our plan depends upon people. Hence, we recruit and train only the most sympathetic of humans.

2 ☐ In order to add value to our work, we hire and train with dignity and respect. That is our trick.

3 ☐ We believe in applying human values like dignity and compassion to every aspect of our work in order to make our work more valued.

4 ☐ Our trick of the trade is to apply the same principles to different processes so that we take the maximum value out of our communities.

×

Solution:

Correct Answer : 3

Your Answer : 4

The author in the paragraph mentions two key points:

- In order to be valued by the community we serve, we need to provide a more human approach.
- So, we apply the principles of dignity and compassion to every process of our work, including recruitment and training.

Only option 3 mentions these points without distortion. So, it is the correct answer.

Option 1 – ‘Only’ makes it extreme.

Option 2 – ‘Train with dignity and respect’ is a distortion.

Option 4 – ‘Take the maximum value out’ is a distortion.

Bookmark

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Q.26 [11594329]

Directions for question (26): 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. Mockery is the sincerest form of flattery.
2. Though in a quarter century, the slit has healed and knit, the tongue is still forked.
3. But beware, he speaks in riddles and he has a forked tongue.
4. This checkers-playing-algorithm-monkey-thing is a shameless flatterer.

×

🔍 Answer key/Solution

Solution:**Correct Answer : 1432****Your Answer : 3214****From its scope, sentence 1 is the topic or opening sentence.****14 is a pair – flattery – flatterer.****43 is a pair – ‘Monkey-thing’ – he.****32 is a pair – a forked tongue – the tongue.****So, 1432 is the correct sequence.**

Bookmark

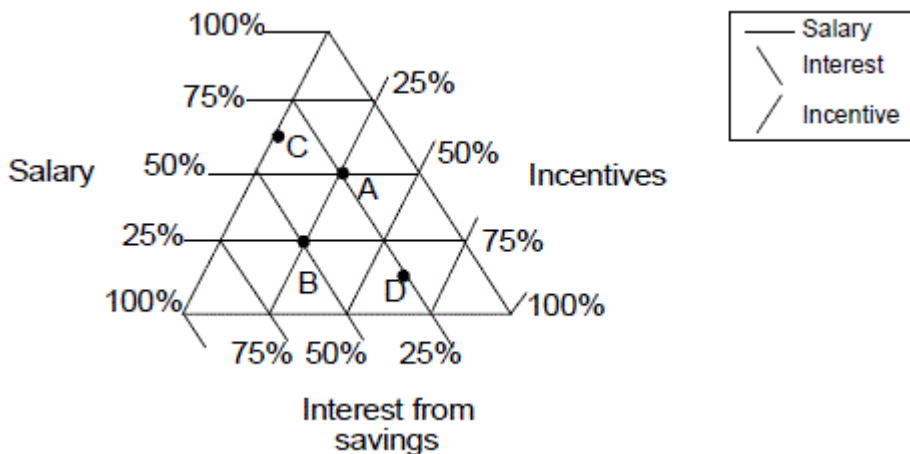
FeedBack

[Answer key/Solution](#)

Sec 2

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

Four salesmen - A, B, C and D report their total income by breaking up into different components: Salary, Incentives and Interest from savings. The diagram given below shows the percentage break-up of the total income of the four salesmen.

**Note:** Salary, incentives and interest from savings are all integral values.**Q.27 [11594329]**

If the total income of B is Rs.18,000 and that of C is Rs.10,000, then find the difference in their salaries.

1 ☐ Rs. 1,7502 ☐ Rs. 7503 ☐ Rs. 2,000

4 ○ Rs. 1,500

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

Salary of B is 25% of his total income.

Therefore, salary of B = $\frac{25}{100} \times 18000 = \text{Rs. } 4,500$

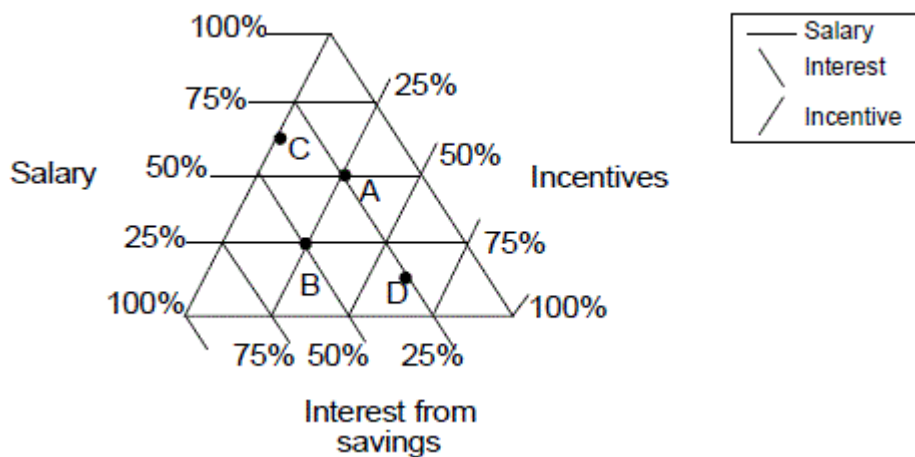
Salary of C is 62.5% of his total income, therefore salary of C = $\frac{62.5}{100} \times 10000 = \text{Rs. } 6,250$.

Hence, difference in their salaries = $6250 - 4500 = \text{Rs. } 1,750$.

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[FeedBack](#)

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

Four salesmen - A, B, C and D report their total income by breaking up into different components: Salary, Incentives and Interest from savings. The diagram given below shows the percentage break-up of the total income of the four salesmen.



Note: Salary, incentives and interest from savings are all integral values.

Q.28 [11594329]

Let minimum and maximum total income of D be Rs. 35,000 and Rs. 42,000. If total income of A is 10% less than the total income of D, then what is the range of incentive (in Rs.) for employee A?

1 ○ (7874, 9450)

2 ○ (7874, 9451)

3 ○ [7874, 9450]

4 ○ [7874, 9451)

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

Since total income of $D_{\min} = \text{Rs. } 35,000$ and $D_{\max} = \text{Rs. } 42,000$, therefore, total income of $A_{\min} = 35000 \left(1 - \frac{10}{100}\right) = \text{Rs. } 31,500$

and, $A_{\max} = 42000 \left(1 - \frac{10}{100}\right) = \text{Rs. } 37,800$.

Now, incentive for employee A will be:

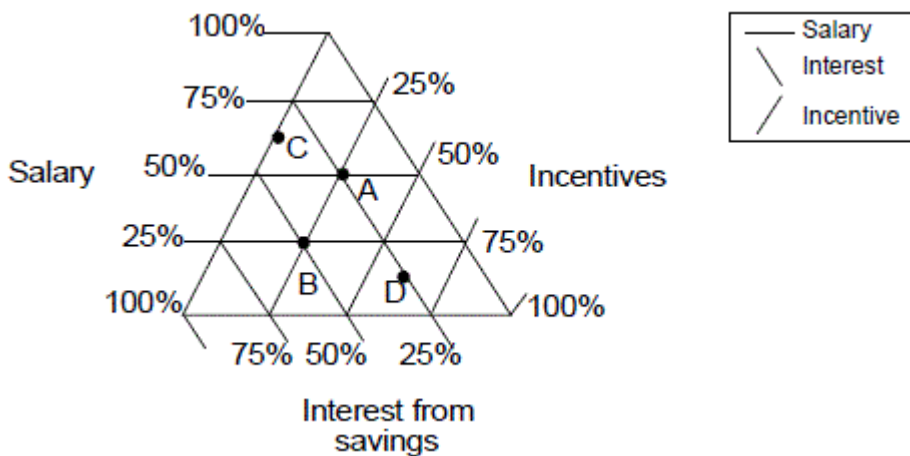
$$\therefore I_{A_{\min}} = 31500 \times \frac{25}{100} = \text{Rs. } 7,875 \text{ and } I_{A_{\max}} = 37800 \times \frac{25}{100} = \text{Rs. } 9,450.$$

Since values have to be integral, therefore, the possible set will be i.e., (7874, 9451).

[Bookmark](#)
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Directions for questions 27 to 30: Answer the questions on the basis of the information given below.

Four salesmen - A, B, C and D report their total income by breaking up into different components: Salary, Incentives and Interest from savings. The diagram given below shows the percentage break-up of the total income of the four salesmen.



Note: Salary, incentives and interest from savings are all integral values.

Q.29 [11594329]

Let total income of D be Rs. 40,000 and incentive of A be Rs. 7,500. If salaries of $D < B < A < C$ then, what is the sum (in Rs.) of maximum possible total income of B and minimum possible total income of C?



Solution:**Correct Answer : 84004****Your Answer : 83997**[Answer key/Solution](#)

Given: total income of D is Rs. 40,000, then salary of D = $40000 \times \frac{12.5}{100} = \text{Rs. } 5,000$ and since incentive of A is

Rs. 7,500, therefore salary of A = $\frac{7500 \times 100}{25} \times \frac{50}{100} = \text{Rs. } 15,000$.

Now we know, salaries (in Rs.) of D (5000) < B < A (15000) < C, we need to find the maximum possible income of B and minimum possible total income of C.

Let total income of $B_{\max} = x$, then $S_{B_{\max}} = \frac{x}{4} = 14999 \Rightarrow x = 59996$.

Similarly, $S_{C_{\min}} = \frac{y \times 62.5}{100} = 15005 \Rightarrow y = 24008$.

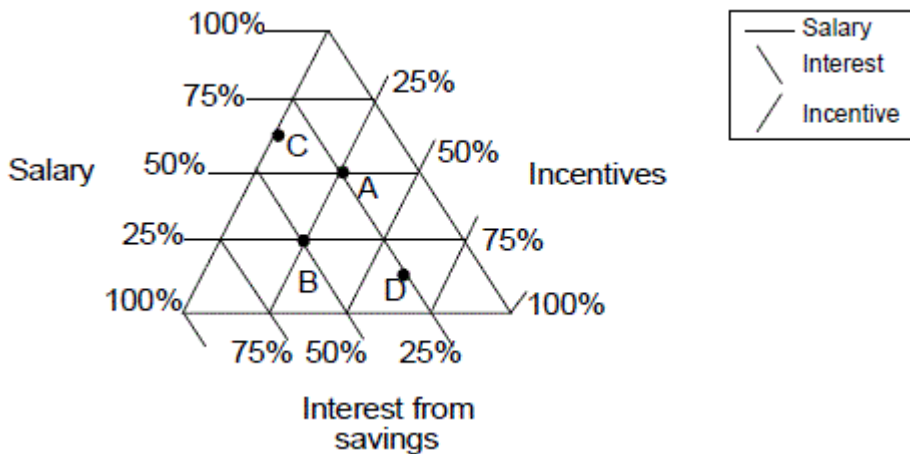
$\therefore \text{Sum} = 59996 + 24008 = \text{Rs. } 84,004$.

Bookmark

FeedBack

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

Four salesmen - A, B, C and D report their total income by breaking up into different components: Salary, Incentives and Interest from savings. The diagram given below shows the percentage break-up of the total income of the four salesmen.



Note: Salary, incentives and interest from savings are all integral values.

Q.30 [11594329]

Let the ratio of interest from savings for employees A, B, C and D be 5 : 8 : 9 : 7, respectively. Then which of the following statements is correct?

- 1 ☐ Average of total income of A and B could be Rs. 45,441.
- 2 ☐ Total income of A < D < B < C.
- 3 ☐ If total income of A is Rs. 25,000, then D's total income must be Rs. 35,000.

4 ☐ Both (2) and (3) are true.



Solution:

Correct Answer : 3

Your Answer : 3

[Answer key/Solution](#)

Given: Ratio of interest from savings (IOS) for employees A, B, C and D are 5x, 8x, 9x and 7x respectively and so their total incomes will be 20x, 16x, 24x, 28x respectively for some x.

Option 1: Average of total income of A and B = $\frac{20x+16x}{2}$ = Rs. 45,441, then x = 2524.5 (Will not give all values as integral). Hence, not possible.

Option 2: Clearly, not true.

Option 3: If 20x = 25000, then x = 1250, then total income of D = 28 × 1250 = Rs. 35,000. True.

Bookmark

FeedBack

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

F	Q	G	M	X
N	C	P	J	S
I	T	A	L	D
K	O	V	B	W
U	E	H	Y	R

Ajay and Vijay decide to play a game on a 5 × 5 board with letters written on it from A to Y where A represents 1, B represents 2, ..., and Y represents 25. Ajay and Vijay, turn wise, has to throw an unbiased dice blindfolded on the board. After the dice is thrown, the letter at which the dice falls and the number on top of the dice are multiplied to get the total score in that particular turn. Let us say, Ajay throws a dice and it falls on "D", the number shown on the dice is 5. Now 4 and 5 will be multiplied to get a total score of 20.

Additional information known to us:

1. The one with the highest score wins the round.
2. It is also noted that whenever the dice fell on a letter which represents an odd number, the number on the top of the dice was an even number and vice-versa.

Q.31 [11594329]

Find the minimum possible sum of scores of both the players if Ajay's dice landed with an even number. Also, Vijay's dice landed either in the same row or in the same column as Ajay.

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

We have to find the minimum sum so we need to find the minimum of each player.

Minimum score for Ajay can be when his dice landed on A, that is third row or third column. His score will be $2 \times 1 = 2$. Now, for Vijay we will have to look for the smallest letter that is at odd position (in alphabetical order) and smallest letter that is at even position in the same row or same column, very clearly it is D. For D, the minimum score will be $4 \times 1 = 4$.

Hence, minimum possible score is 6.

Bookmark

FeedBack

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

F	Q	G	M	X
N	C	P	J	S
I	T	A	L	D
K	O	V	B	W
U	E	H	Y	R

Ajay and Vijay decide to play a game on a 5×5 board with letters written on it from A to Y where A represents 1, B represents 2, ..., and Y represents 25. Ajay and Vijay, turn wise, has to throw an unbiased dice blindfolded on the board. After the dice is thrown, the letter at which the dice falls and the number on top of the dice are multiplied to get the total score in that particular turn. Let us say, Ajay throws a dice and it falls on "D", the number shown on the dice is 5. Now 4 and 5 will be multiplied to get a total score of 20.

Additional information known to us:

1. The one with the highest score wins the round.
2. It is also noted that whenever the dice fell on a letter which represents an odd number, the number on the top of the dice was an even number and vice-versa.

Q.32 [11594329]

For two consecutive rounds, Ajay was winning despite the fact that his dice landed on distinct vowels and Vijay's dice landed on distinct consonants. What could be the maximum total score Vijay scored in both rounds together?

Solution:**Correct Answer : 200** Answer key/Solution

To maximum the score of Vijay such that Vijay also lost, we will have to maximise the score of Ajay.
 Let distinct vowels with highest corresponding number in round 1 and round 2 be O(15) and U(21) respectively.
 Maximum score scored by Ajay in two rounds could be = $(21 \times 6) + (15 \times 6) = 126 + 90 = 216$.
 And the distinct consonants for Vijay in round 1 and round 2 are X(24) and P(16) respectively.
 So, the maximum score scored by Vijay in first and second rounds are $24 \times 5 = 120$ and $16 \times 5 = 80$.
 \therefore Maximum total score scored by Vijay in two rounds such that Ajay wins = $120 + 80 = 200$.

Bookmark

Feedback

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

F	Q	G	M	X
N	C	P	J	S
I	T	A	L	D
K	O	V	B	W
U	E	H	Y	R

Ajay and Vijay decide to play a game on a 5×5 board with letters written on it from A to Y where A represents 1, B represents 2, ..., and Y represents 25. Ajay and Vijay, turn wise, has to throw an unbiased dice blindfolded on the board. After the dice is thrown, the letter at which the dice falls and the number on top of the dice are multiplied to get the total score in that particular turn. Let us say, Ajay throws a dice and it falls on "D", the number shown on the dice is 5. Now 4 and 5 will be multiplied to get a total score of 20.

Additional information known to us:

1. The one with the highest score wins the round.
2. It is also noted that whenever the dice fell on a letter which represents an odd number, the number on the top of the dice was an even number and vice-versa.

Q.33 [11594329]

Ajay throws the dice and it falls on one of the letters which is in the 5th column of the board. Vijay throws the dice and it falls in the 5th row of the board. Find the maximum possible difference between the scores of Ajay and Vijay.

Solution:**Correct Answer : 146** Answer key/Solution

We need to find out the maximum difference between the scores of Ajay and Vijay such that Ajay's dice falls in the 5th column of the grid and Vijay's dice falls in the 5th row of the grid.
 Now, 5th row has the alphabet Y that has the highest value in alphabetical order that is., 25 and therefore can yield the score of $25 \times 6 = 150$. Similarly, column 5th has the alphabet D that has relatively the lowest value in alphabetical order that., 4 and therefore can yield the score of $4 \times 1 = 4$.
 Hence, maximum difference = $150 - 4 = 146$.

Bookmark

Feedback

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

F	Q	G	M	X
N	C	P	J	S
I	T	A	L	D
K	O	V	B	W
U	E	H	Y	R

Ajay and Vijay decide to play a game on a 5×5 board with letters written on it from A to Y where A represents 1, B represents 2, ..., and Y represents 25. Ajay and Vijay, turn wise, has to throw an unbiased dice blindfolded on the board. After the dice is thrown, the letter at which the dice falls and the number on top of the dice are multiplied to get the total score in that particular turn. Let us say, Ajay throws a dice and it falls on "D", the number shown on the dice is 5. Now 4 and 5 will be multiplied to get a total score of 20.

Additional information known to us:

1. The one with the highest score wins the round.
2. It is also noted that whenever the dice fell on a letter which represents an odd number, the number on the top of the dice was an even number and vice-versa.

Q.34 [11594329]

Find the maximum possible difference in their scores if each person's dice lands on a vowel.

Solution:

Correct Answer : 124

If dice falls at A, maximum score and minimum score can be 6 and 2 respectively.
 If dice falls at E, maximum score and minimum score can be 30 and 10 respectively.
 If dice falls at I, maximum score and minimum score can be 54 and 18 respectively.
 If dice falls at O, maximum score and minimum score can be 90 and 30 respectively.
 If dice falls at U, maximum score and minimum score can be 126 and 42 respectively.
 So, required difference is $126 - 2 = 124$.

Bookmark

FeedBack

 Answer key/Solution

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

The "International Business School" conducts an exam every year for selection of candidates for its six campuses namely Ahmedabad, Bangalore, Calcutta, Lucknow, Indore and Kozhikode i.e., (C1, C2, C3, C4, C5 and C6 in no particular order). While filling the form to appear in the exam, a candidate can apply for a maximum of two campuses. The table below shows the number of candidates (in thousands) who have opted for these campuses:

	C1	C2	C3	C4	C5	C6
C1	30	10	25	0	0	0
C2	10	50	0	30	0	0
C3	25	0	17.5	0	0	12.5
C4	0	30	0	15	5	0
C5	0	0	0	5	5	45
C6	0	0	12.5	0	45	2.5

For eg:- The '10' in above table indicates the number of candidates who have opted for both campuses C1 and C2.

- (i) The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode.
- (ii) The number of candidates who preferred Indore and Calcutta was $\frac{1}{6}$ th of the number of candidates who preferred Indore and Ahmedabad.
- (iii) The number of candidates who opted for Bangalore and Kozhikode was half of the number of candidates who opted for Lucknow and Bangalore.

Q.35 [11594329]

Find the ratio of the number of candidates who applied for Indore and those who applied for Bangalore.

1 ☐ 13:18

2 ☐ 11:18

3 ☐ 10:11

4 ☐ None of these

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

We know that "The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode".

Now, the pairs which satisfy the ratio of 2 : 3 in the table are (10, 15) and (30, 45).

However, 15 represents the number of candidates who have filled only C4 as their preference. So, (10, 15) is ruled out.

Now, the possible case is 30 and 45.

30 represents the candidates who preferred C2 and C4.

45 represents the candidates who preferred C5 and C6.

So, C2 and C4 are Ahmedabad and Indore in no particular order while C5 and C6 are Calcutta and Kozhikode in no particular order.

Now, we know "The number of candidates who preferred Indore and Calcutta is $\frac{1}{6}$ th the number of candidates who preferred Indore and Ahmedabad".

The only pair which satisfies the ratio 1:6 in the table is (5, 30).

C2 and C4 are definitely Ahmedabad and Indore in no particular order. Therefore, C4 and C5 must be Indore and Calcutta respectively.

This also verifies that :

C4 is Indore, C2 is Ahmedabad, C5 is Calcutta and C6 is Kozhikode.

Using the same logic, we can move to the last statement presented :

"The number of candidates who opted for Bangalore and Kozhikode are half of those who opted for Lucknow and Bangalore". Using this statement, C3 is Bangalore and C1 is Lucknow.

	Lucknow	Ahmedabad	Bangalore	Indore	Calcutta	Kozhikode
Lucknow	30	10	25	0	0	0
Ahmedabad	10	50	0	30	0	0
Bangalore	25	0	17.5	0	0	12.5
Indore	0	30	0	15	5	0
Calcutta	0	0	0	5	5	45
Kozhikode	0	0	12.5	0	45	2.5
Total	65	90	55	50	55	60

Required ratio = $\frac{50}{55} = 10 : 11$.

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

The "International Business School" conducts an exam every year for selection of candidates for its six campuses namely Ahmedabad, Bangalore, Calcutta, Lucknow, Indore and Kozhikode i.e., (C1, C2, C3, C4, C5 and C6 in no particular order). While filling the form to appear in the exam, a candidate can apply for a maximum of two campuses. The table below shows the number of candidates (in thousands) who have opted for these campuses:

	C1	C2	C3	C4	C5	C6
C1	30	10	25	0	0	0
C2	10	50	0	30	0	0
C3	25	0	17.5	0	0	12.5
C4	0	30	0	15	5	0
C5	0	0	0	5	5	45
C6	0	0	12.5	0	45	2.5

For eg:- The '10' in above table indicates the number of candidates who have opted for both campuses C1 and C2.

- (i) The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode.
- (ii) The number of candidates who preferred Indore and Calcutta was $\frac{1}{6}$ th of the number of candidates who preferred Indore and Ahmedabad.
- (iii) The number of candidates who opted for Bangalore and Kozhikode was half of the number of candidates who opted for Lucknow and Bangalore.

Q.36 [11594329]

Find the number of candidates who applied for exactly two campuses.

1 ☐ 1,23,500

2 ☐ 1,35,500

3 ☐ 1,42,500

4 ☐ None of these

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

We know that "The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode".

Now, the pairs which satisfy the ratio of 2 : 3 in the table are (10, 15) and (30, 45).

However, 15 represents the number of candidates who have filled only C4 as their preference. So, (10, 15) is ruled out.

Now, the possible case is 30 and 45.

30 represents the candidates who preferred C2 and C4.

45 represents the candidates who preferred C5 and C6.

So, C2 and C4 are Ahmedabad and Indore in no particular order while C5 and C6 are Calcutta and Kozhikode in no particular order.

Now, we know "The number of candidates who preferred Indore and Calcutta is $\frac{1}{6}$ th the number of candidates who preferred Indore and Ahmedabad".

The only pair which satisfies the ratio 1:6 in the table is (5, 30).

C2 and C4 are definitely Ahmedabad and Indore in no particular order. Therefore, C4 and C5 must be Indore and Calcutta respectively.

This also verifies that :

C4 is Indore, C2 is Ahmedabad, C5 is Calcutta and C6 is Kozhikode.

Using the same logic, we can move to the last statement presented :

"The number of candidates who opted for Bangalore and Kozhikode are half of those who opted for Lucknow and Bangalore". Using this statement, C3 is Bangalore and C1 is Lucknow.

	Lucknow	Ahmedabad	Bangalore	Indore	Calcutta	Kozhikode
Lucknow	30	10	25	0	0	0
Ahmedabad	10	50	0	30	0	0
Bangalore	25	0	17.5	0	0	12.5
Indore	0	30	0	15	5	0
Calcutta	0	0	0	5	5	45
Kozhikode	0	0	12.5	0	45	2.5
Total	65	90	55	50	55	60

Total of all columns = $65 + 90 + 55 + 50 + 55 + 60 = 375$

Candidates who applied to exactly one campus = $30 + 50 + 17.5 + 15 + 5 + 2.5 = 120$

Students who applied for exactly two campuses = $\frac{\text{Total of all columns} - \text{Who applied for exactly one campus}}{2}$

$$\frac{255}{2} = 127.5 \text{ thousand or } 127500.$$

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

The “International Business School” conducts an exam every year for selection of candidates for its six campuses namely Ahmedabad, Bangalore, Calcutta, Lucknow, Indore and Kozhikode i.e., (C1, C2, C3, C4, C5 and C6 in no particular order). While filling the form to appear in the exam, a candidate can apply for a maximum of two campuses. The table below shows the number of candidates (in thousands) who have opted for these campuses:

	C1	C2	C3	C4	C5	C6
C1	30	10	25	0	0	0
C2	10	50	0	30	0	0
C3	25	0	17.5	0	0	12.5
C4	0	30	0	15	5	0
C5	0	0	0	5	5	45
C6	0	0	12.5	0	45	2.5

For eg:- The ‘10’ in above table indicates the number of candidates who have opted for both campuses C1 and C2.

- The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode.
- The number of candidates who preferred Indore and Calcutta was $\frac{1}{6}$ th of the number of candidates who preferred Indore and Ahmedabad.
- The number of candidates who opted for Bangalore and Kozhikode was half of the number of candidates who opted for Lucknow and Bangalore.

Q.37 [11594329]

Which of these campuses was chosen by the least number of candidates?

1 ☐ Ahmedabad

2 ☐ Bangalore

3 ☐ Indore

4 ☐ Lucknow

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

We know that "The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode".

Now, the pairs which satisfy the ratio of 2 : 3 in the table are (10, 15) and (30, 45).

However, 15 represents the number of candidates who have filled only C4 as their preference. So, (10, 15) is ruled out.

Now, the possible case is 30 and 45.

30 represents the candidates who preferred C2 and C4.

45 represents the candidates who preferred C5 and C6.

So, C2 and C4 are Ahmedabad and Indore in no particular order while C5 and C6 are Calcutta and Kozhikode in no particular order.

Now, we know "The number of candidates who preferred Indore and Calcutta is $\frac{1}{6}$ th the number of candidates who preferred Indore and Ahmedabad".

The only pair which satisfies the ratio 1:6 in the table is (5, 30).

C2 and C4 are definitely Ahmedabad and Indore in no particular order. Therefore, C4 and C5 must be Indore and Calcutta respectively.

This also verifies that :

C4 is Indore, C2 is Ahmedabad, C5 is Calcutta and C6 is Kozhikode.

Using the same logic, we can move to the last statement presented :

"The number of candidates who opted for Bangalore and Kozhikode are half of those who opted for Lucknow and Bangalore". Using this statement, C3 is Bangalore and C1 is Lucknow.

	Lucknow	Ahmedabad	Bangalore	Indore	Calcutta	Kozhikode
Lucknow	30	10	25	0	0	0
Ahmedabad	10	50	0	30	0	0
Bangalore	25	0	17.5	0	0	12.5
Indore	0	30	0	15	5	0
Calcutta	0	0	0	5	5	45
Kozhikode	0	0	12.5	0	45	2.5
Total	65	90	55	50	55	60

Indore campus was chosen by least number of candidates.

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

The “International Business School” conducts an exam every year for selection of candidates for its six campuses namely Ahmedabad, Bangalore, Calcutta, Lucknow, Indore and Kozhikode i.e., (C1, C2, C3, C4, C5 and C6 in no particular order). While filling the form to appear in the exam, a candidate can apply for a maximum of two campuses. The table below shows the number of candidates (in thousands) who have opted for these campuses:

	C1	C2	C3	C4	C5	C6
C1	30	10	25	0	0	0
C2	10	50	0	30	0	0
C3	25	0	17.5	0	0	12.5
C4	0	30	0	15	5	0
C5	0	0	0	5	5	45
C6	0	0	12.5	0	45	2.5

For eg:- The ‘10’ in above table indicates the number of candidates who have opted for both campuses C1 and C2.

- (i) The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode.
- (ii) The number of candidates who preferred Indore and Calcutta was $\frac{1}{6}$ th of the number of candidates who preferred Indore and Ahmedabad.
- (iii) The number of candidates who opted for Bangalore and Kozhikode was half of the number of candidates who opted for Lucknow and Bangalore.

Q.38 [11594329]

Find the absolute difference (in thousands) between number of candidates who opted for Ahmedabad and the number of candidates who opted for Indore.

1 ☐ 20

2 ☐ 25

3 ☐ 30

4 ☐ 40

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

We know that "The number of candidates who preferred Ahmedabad and Indore was $\frac{2}{3}$ rd of the number of candidates who applied for Calcutta and Kozhikode".

Now, the pairs which satisfy the ratio of 2 : 3 in the table are (10, 15) and (30, 45).

However, 15 represents the number of candidates who have filled only C4 as their preference. So, (10, 15) is ruled out.

Now, the possible case is 30 and 45.

30 represents the candidates who preferred C2 and C4.

45 represents the candidates who preferred C5 and C6.

So, C2 and C4 are Ahmedabad and Indore in no particular order while C5 and C6 are Calcutta and Kozhikode in no particular order.

Now, we know "The number of candidates who preferred Indore and Calcutta is $\frac{1}{6}$ th the number of candidates who preferred Indore and Ahmedabad".

The only pair which satisfies the ratio 1:6 in the table is (5, 30).

C2 and C4 are definitely Ahmedabad and Indore in no particular order. Therefore, C4 and C5 must be Indore and Calcutta respectively.

This also verifies that :

C4 is Indore, C2 is Ahmedabad, C5 is Calcutta and C6 is Kozhikode.

Using the same logic, we can move to the last statement presented :

"The number of candidates who opted for Bangalore and Kozhikode are half of those who opted for Lucknow and Bangalore". Using this statement, C3 is Bangalore and C1 is Lucknow.

	Lucknow	Ahmedabad	Bangalore	Indore	Calcutta	Kozhikode
Lucknow	30	10	25	0	0	0
Ahmedabad	10	50	0	30	0	0
Bangalore	25	0	17.5	0	0	12.5
Indore	0	30	0	15	5	0
Calcutta	0	0	0	5	5	45
Kozhikode	0	0	12.5	0	45	2.5
Total	65	90	55	50	55	60

Number of candidates who opted for Ahmedabad = 90

Number of candidates who opted for Indore = 50

Absolute difference = $90 - 50 = 40$.

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

Five friends namely Anju, Binita, Chetan, Deepak and Esha went to the college canteen and ordered Appam, Biryani, Cheese Chilly, Dosa and Egg Omelette, respectively and ate their respective foods. The cost (in Rs.) of these five foods were 63, 45, 79, 81 and 52 in no particular order. These 5 persons then made following statements about the foods they ate. Each friend gave two statements, exactly one of which was true.

Anju :

- (i) The cost of Appam was more than the cost of Biryani.
- (ii) Chetan ate the third most costliest item.

Binita :

- (i) Dosa was the third costliest item.
- (ii) The cost of Egg Omelette was less than the cost of Dosa.

Chetan :

- (i) The cost of Cheese Chilly was more than the cost of Dosa.
- (ii) The cost of Appam was less than the cost of Egg Omelette.

Deepak :

- (i) I ate the most economical item.
- (ii) Egg Omelette was the third costliest item.

Esha :

- (i) The cost of Appam was less than that of Egg Omelette.
- (ii) Appam was the least expensive item.

Q.39 [11594329]

Find the absolute difference (in Rs.) in the cost of food items eaten by Anju and Binita.

Solution:

Correct Answer : 7

 **Answer key/Solution**

Let us assume that the first statement of Anju is a lie and the second is true. Using Anju's second statement, Cheese chilly is the third most expensive item.

Accordingly, Binita's first statement is false as Dosa cannot be the third costliest item. So, Binita's first statement must be false and second must be true. Henceforth, price of Egg Omelette must be less than that of Dosa.

Going by the Deepak's first statement, it has to be false because now Dosa cannot be the least expensive item. Observing carefully, second statement of Deepak also turns out to be false. This is certainly not a feasible solution. Hence, NOT POSSIBLE.

Now, let us assume that the first statement of Anju is true and second is false. Then Appam is costlier than Biryani and certainly Cheese chilly is not the third most expensive item.

Second statement of Esha says that Appam was the least expensive item. This can't be true in this case, because it has to be costlier than Biryani at least. So, if second statement of Esha is false, then her first statement must be true. So, Egg Omelette must be costlier than Appam.

Accordingly, second statement of Chetan must also be true. Henceforth, his first statement must be false. Therefore, Dosa was costlier than Cheese Chilly.

Now, this proves that first statement of Deepak must be false. Therefore, second statement of Deepak must be true. Therefore, Egg Omelette must be the third costliest item.

Earlier we had proved that Egg Omelette is costlier than Appam, which in turn is costlier than Biryani. So, Biryani must be the least expensive item and Appam must be fourth on the list. We also know that Dosa was costlier than Cheese Chilly, so Dosa is the most expensive item and Cheese Chilly is the second on the list.

Statements made by Binita are also getting verified by the same. So, this whole case is necessarily true.

Let us tabulate all the information :

Name	Dish	Price (in Rs.)
Anju	Appam	52
Binita	Biryani	45
Chetan	Cheese Chilly	79
Deepak	Dosa	81
Esha	Egg Omelette	63

The difference in the cost of food items eaten by Anju and Binita is $52 - 45 = \text{Rs. } 7$.

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

Five friends namely Anju, Binita, Chetan, Deepak and Esha went to the college canteen and ordered Appam, Biryani, Cheese Chilly, Dosa and Egg Omelette, respectively and ate their respective foods. The cost (in Rs.) of these five foods were 63, 45, 79, 81 and 52 in no particular order. These 5 persons then made following statements about the foods they ate. Each friend gave two statements, exactly one of which was true.

Anju :

- (i) The cost of Appam was more than the cost of Biryani.
- (ii) Chetan ate the third most costliest item.

Binita :

- (i) Dosa was the third costliest item.
- (ii) The cost of Egg Omelette was less than the cost of Dosa.

Chetan :

- (i) The cost of Cheese Chilly was more than the cost of Dosa.
- (ii) The cost of Appam was less than the cost of Egg Omelette.

Deepak :

- (i) I ate the most economical item.
- (ii) Egg Omelette was the third costliest item.

Esha :

- (i) The cost of Appam was less than that of Egg Omelette.
- (ii) Appam was the least expensive item.

Q.40 [11594329]

Find the median cost (in Rs.) of the food items eaten by Chetan, Deepak and Esha.

Solution:

Correct Answer : 79

 **Answer key/Solution**

Let us assume that the first statement of Anju is a lie and the second is true. Using Anju's second statement, Cheese chilly is the third most expensive item.

Accordingly, Binita's first statement is false as Dosa cannot be the third costliest item. So, Binita's first statement must be false and second must be true. Henceforth, price of Egg Omelette must be less than that of Dosa.

Going by the Deepak's first statement, it has to be false because now Dosa cannot be the least expensive item. Observing carefully, second statement of Deepak also turns out to be false. This is certainly not a feasible solution. Hence, NOT POSSIBLE.

Now, let us assume that the first statement of Anju is true and second is false. Then Appam is costlier than Biryani and certainly Cheese chilly is not the third most expensive item.

Second statement of Esha says that Appam was the least expensive item. This can't be true in this case, because it has to be costlier than Biryani at least. So, if second statement of Esha is false, then her first statement must be true. So, Egg Omelette must be costlier than Appam.

Accordingly, second statement of Chetan must also be true. Henceforth, his first statement must be false. Therefore, Dosa was costlier than Cheese Chilly.

Now, this proves that first statement of Deepak must be false. Therefore, second statement of Deepak must be true. Therefore, Egg Omelette must be the third costliest item.

Earlier we had proved that Egg Omelette is costlier than Appam, which in turn is costlier than Biryani. So, Biryani must be the least expensive item and Appam must be fourth on the list. We also know that Dosa was costlier than Cheese Chilly, so Dosa is the most expensive item and Cheese Chilly is the second on the list.

Statements made by Binita are also getting verified by the same. So, this whole case is necessarily true.

Let us tabulate all the information :

Name	Dish	Price (in Rs.)
Anju	Appam	52
Binita	Biryani	45
Chetan	Cheese Chilly	79
Deepak	Dosa	81
Esha	Egg Omelette	63

The cost of the food items eaten by Chetan, Deepak and Esha are 79, 81 and 63 respectively. So, to find the median cost we will first arrange them in increasing order and then the middle number will be the median. So, 63, 79, 81. Hence, median cost is Rs. 79.

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

Five friends namely Anju, Binita, Chetan, Deepak and Esha went to the college canteen and ordered Appam, Biryani, Cheese Chilly, Dosa and Egg Omelette, respectively and ate their respective foods. The cost (in Rs.) of these five foods were 63, 45, 79, 81 and 52 in no particular order. These 5 persons then made following statements about the foods they ate. Each friend gave two statements, exactly one of which was true.

Anju :

- (i) The cost of Appam was more than the cost of Biryani.
- (ii) Chetan ate the third most costliest item.

Binita :

- (i) Dosa was the third costliest item.
- (ii) The cost of Egg Omelette was less than the cost of Dosa.

Chetan :

- (i) The cost of Cheese Chilly was more than the cost of Dosa.
- (ii) The cost of Appam was less than the cost of Egg Omelette.

Deepak :

- (i) I ate the most economical item.
- (ii) Egg Omelette was the third costliest item.

Esha :

- (i) The cost of Appam was less than that of Egg Omelette.
- (ii) Appam was the least expensive item.

Q.41 [11594329]

How many persons spoke a lie first?

1 ☐ 2

2 ☐ 3

3 ☐ 4

4 ☐ 5

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

Let us assume that the first statement of Anju is a lie and the second is true. Using Anju's second statement, Cheese chilly is the third most expensive item.

Accordingly, Binita's first statement is false as Dosa cannot be the third costliest item. So, Binita's first statement must be false and second must be true. Henceforth, price of Egg Omelette must be less than that of Dosa.

Going by the Deepak's first statement, it has to be false because now Dosa cannot be the least expensive item. Observing carefully, second statement of Deepak also turns out to be false. This is certainly not a feasible solution. Hence, NOT POSSIBLE.

Now, let us assume that the first statement of Anju is true and second is false. Then Appam is costlier than Biryani and certainly Cheese chilly is not the third most expensive item.

Second statement of Esha says that Appam was the least expensive item. This can't be true in this case, because it has to be costlier than Biryani at least. So, if second statement of Esha is false, then her first statement must be true. So, Egg Omelette must be costlier than Appam.

Accordingly, second statement of Chetan must also be true. Henceforth, his first statement must be false. Therefore, Dosa was costlier than Cheese Chilly.

Now, this proves that first statement of Deepak must be false. Therefore, second statement of Deepak must be true. Therefore, Egg Omelette must be the third costliest item.

Earlier we had proved that Egg Omelette is costlier than Appam, which in turn is costlier than Biryani. So, Biryani must be the least expensive item and Appam must be fourth on the list. We also know that Dosa was costlier than Cheese Chilly, so Dosa is the most expensive item and Cheese Chilly is the second on the list.

Statements made by Binita are also getting verified by the same. So, this whole case is necessarily true.

Let us tabulate all the information :

Name	Dish	Price (in Rs.)
Anju	Appam	52
Binita	Biryani	45
Chetan	Cheese Chilly	79
Deepak	Dosa	81
Esha	Egg Omelette	63

Three persons namely Binita, Chetan and Deepak spoke a lie first.

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

Five friends namely Anju, Binita, Chetan, Deepak and Esha went to the college canteen and ordered Appam, Biryani, Cheese Chilly, Dosa and Egg Omelette, respectively and ate their respective foods. The cost (in Rs.) of these five foods were 63, 45, 79, 81 and 52 in no particular order. These 5 persons then made following statements about the foods they ate. Each friend gave two statements, exactly one of which was true.

Anju :

- (i) The cost of Appam was more than the cost of Biryani.
- (ii) Chetan ate the third most costliest item.

Binita :

- (i) Dosa was the third costliest item.
- (ii) The cost of Egg Omelette was less than the cost of Dosa.

Chetan :

- (i) The cost of Cheese Chilly was more than the cost of Dosa.
- (ii) The cost of Appam was less than the cost of Egg Omelette.

Deepak :

- (i) I ate the most economical item.
- (ii) Egg Omelette was the third costliest item.

Esha :

- (i) The cost of Appam was less than that of Egg Omelette.
- (ii) Appam was the least expensive item.

Q.42 [11594329]

Which of these is the least expensive item?

1 ☐ Biryani

2 ☐ Egg Omelette

3 ☐ Dosa

4 ☐ Cheese Chilly

Solution:**Correct Answer : 1** Answer key/Solution

Let us assume that the first statement of Anju is a lie and the second is true. Using Anju's second statement, Cheese chilly is the third most expensive item.

Accordingly, Binita's first statement is false as Dosa cannot be the third costliest item. So, Binita's first statement must be false and second must be true. Henceforth, price of Egg Omelette must be less than that of Dosa.

Going by the Deepak's first statement, it has to be false because now Dosa cannot be the least expensive item. Observing carefully, second statement of Deepak also turns out to be false. This is certainly not a feasible solution. Hence, NOT POSSIBLE.

Now, let us assume that the first statement of Anju is true and second is false. Then Appam is costlier than Biryani and certainly Cheese chilly is not the third most expensive item.

Second statement of Esha says that Appam was the least expensive item. This can't be true in this case, because it has to be costlier than Biryani at least. So, if second statement of Esha is false, then her first statement must be true. So, Egg Omelette must be costlier than Appam.

Accordingly, second statement of Chetan must also be true. Henceforth, his first statement must be false. Therefore, Dosa was costlier than Cheese Chilly.

Now, this proves that first statement of Deepak must be false. Therefore, second statement of Deepak must be true. Therefore, Egg Omelette must be the third costliest item.

Earlier we had proved that Egg Omelette is costlier than Appam, which in turn is costlier than Biryani. So, Biryani must be the least expensive item and Appam must be fourth on the list. We also know that Dosa was costlier than Cheese Chilly, so Dosa is the most expensive item and Cheese Chilly is the second on the list.

Statements made by Binita are also getting verified by the same. So, this whole case is necessarily true.

Let us tabulate all the information :

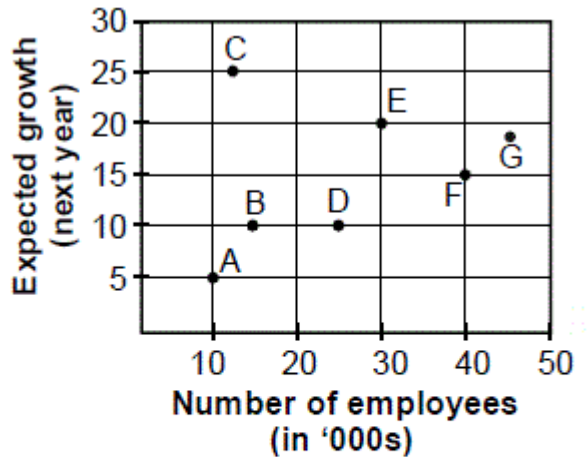
Name	Dish	Price (in Rs.)
Anju	Appam	52
Binita	Biryani	45
Chetan	Cheese Chilly	79
Deepak	Dosa	81
Esha	Egg Omelette	63

Clearly, Biryani is the least expensive item.

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Directions for questions 43 to 66: Answer the questions on the basis of the information given below.

The data given below shares the details of seven companies - A, B, C, D, E, F, and G - from the FMCG sector. The graph shows the expected growth rate of revenue, in percentage, for the next year against the number of employees working in the company (in thousands). The table thereafter shares the exact value of the revenue of the seven companies.



Revenue for each company (in Rs. Cr.)

Company	A	B	C	D	E	F	G
Revenue	8.4	12	7.68	21.6	24	16	26.4

Q.43 [11594329]

If both companies A and F continue to grow in revenue at the given rates for the next two years, what will be the difference in their revenue two years down the line?

- 1 ☐ 9.2 Cr
- 2 ☐ 11.55 Cr
- 3 ☐ 11.9 Cr
- 4 ☐ 13.25 Cr



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

The table gives the revenue of each company in crore rupees.

The graph plots the expected percentage growth rate in revenue v/s the number of employees in the company.

A grows at 5% per annum.

For the next two years, its revenue will be = Present revenue $\times (1.05)^2 = 8.4 \times (1.05)^2 = \text{Rs. } 9.26 \text{ cr}$

F grows at 15% per annum.

Therefore, for the next two years, its revenue will be = Present revenue $\times (1.15)^2 = 16 \times (1.15)^2 = \text{Rs. } 21.16 \text{ cr}$

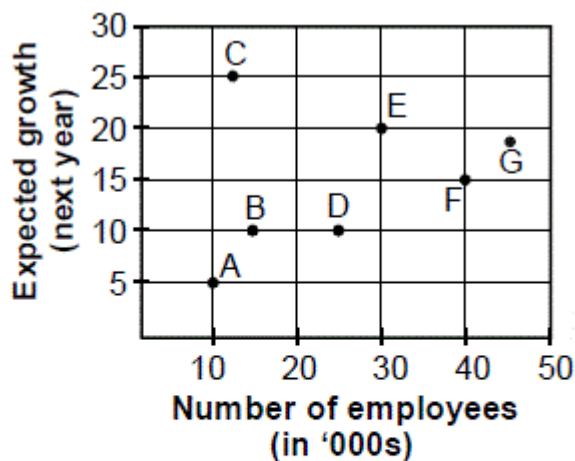
Difference in revenue = $21.16 - 9.26 = \text{Rs. } 11.9 \text{ cr}$.

Bookmark

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Directions for questions 43 to 66: Answer the questions on the basis of the information given below.

The data given below shares the details of seven companies - A, B, C, D, E, F, and G - from the FMCG sector. The graph shows the expected growth rate of revenue, in percentage, for the next year against the number of employees working in the company (in thousands). The table thereafter shares the exact value of the revenue of the seven companies.



Revenue for each company (in Rs. Cr.)

Company	A	B	C	D	E	F	G
Revenue	8.4	12	7.68	21.6	24	16	26.4

Q.44 [11594329]

Which company would have the same revenue per employee as company A after 1 year of growth?

1 ☐ E

2 ☐ C

3 ☐ D

4 ○ B

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

The table gives the revenue of each company in crore rupees.

The graph plots the expected percentage growth rate in revenue v/s the number of employees in the company.

For company A, revenue per ten thousand employees after one year of growth = $\frac{[8.4 \text{ cr} \times 1.05(5\% \text{ increase})]}{1} = \text{Rs. } 8.82 \text{ cr}$

From the options, the (increased) revenue per ten thousand employees can be approximated

Option 1: for E, revenue per 10,000 employees = $\frac{[24 \text{ cr} \times 1.2(20\% \text{ increase})]}{3} = \text{Rs. } 9.6 \text{ cr}$

Option 2: for C, revenue per 10,000 employees = $\frac{[7.68 \text{ cr} \times 1.25(25\% \text{ increase})]}{1.2} < \text{Rs. } 8 \text{ cr}$

Option 3: for D, revenue per 10,000 employees = $\frac{[21.6 \text{ cr} \times 1.1(10\% \text{ increase})]}{2.5} = \text{Rs. } 9.5 \text{ cr}$

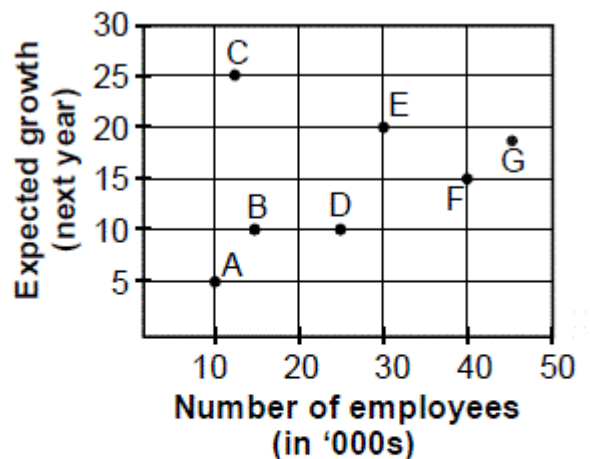
Option 4: for B, revenue per 10,000 employees = $\frac{[12 \text{ cr} \times 1.1(10\% \text{ increase})]}{1.5} = \text{Rs. } 8.8 \text{ cr}$

Clearly, value of company B is closest to the company A.

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Directions for questions 43 to 66: Answer the questions on the basis of the information given below.

The data given below shares the details of seven companies - A, B, C, D, E, F, and G - from the FMCG sector. The graph shows the expected growth rate of revenue, in percentage, for the next year against the number of employees working in the company (in thousands). The table thereafter shares the exact value of the revenue of the seven companies.



Revenue for each company (in Rs. Cr.)

Company	A	B	C	D	E	F	G
Revenue	8.4	12	7.68	21.6	24	16	26.4

Q.45 [11594329]

If all companies grow at the same rate for the next two years as given in the graph, which of the following companies would have the highest revenue per employee ratio?

1 ☐ E

2 ☐ C

3 ☐ D

4 ☐ B



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

The table gives the revenue of each company in crore rupees.

The graph plots the expected percentage growth rate in revenue v/s the number of employees in the company.

We have already calculated revenue per 10,000 employees in the previous question. If we extend the percentage growth by another year on that value (of revenue per ten thousand employees), we will find the values given below.

Option 1: for E, new revenue per 10,000 employees = $[9.6\text{cr} \times 1.2 \text{ (20\% increase)}] > \text{Rs. } 11 \text{ cr}$

Option 2: for C, new revenue per 10,000 employees = $[8\text{cr} \times 1.25 \text{ (25\% increase)}] < \text{Rs. } 10 \text{ cr}$

Option 3: for D, new revenue per 10,000 employees = $[9.5\text{cr} \times 1.1 \text{ (10\% increase)}] < \text{Rs. } 11 \text{ cr}$

Option 4: for B, new revenue per 10,000 employees = $[8.8\text{cr} \times 1.1 \text{ (10\% increase)}] < \text{Rs. } 10 \text{ cr}$

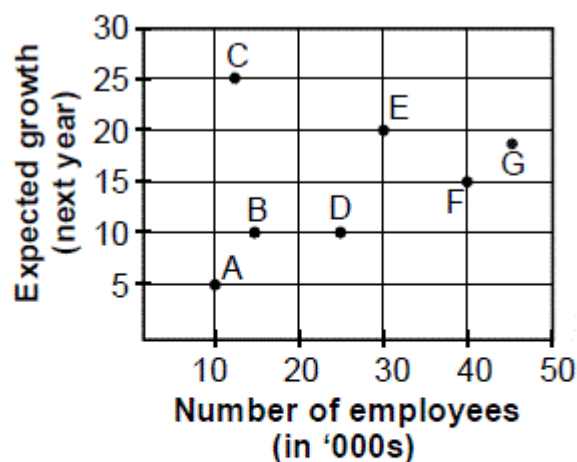
Company E clearly has the highest value after 2 years of sustained growth.

Bookmark

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Directions for questions 43 to 66: Answer the questions on the basis of the information given below.

The data given below shares the details of seven companies - A, B, C, D, E, F, and G - from the FMCG sector. The graph shows the expected growth rate of revenue, in percentage, for the next year against the number of employees working in the company (in thousands). The table thereafter shares the exact value of the revenue of the seven companies.



Revenue for each company (in Rs. Cr.)

Company	A	B	C	D	E	F	G
Revenue	8.4	12	7.68	21.6	24	16	26.4

Q.46 [11594329]

Company F and G announce an immediate merger to form company X while company D and E merge to form company Y. If the growth rate (for the next year) for X and Y is expected to be the average of the growth rates of their constituents, which of the two companies are expected to have the higher revenue next year?

1 ☐ X2 ☐ Y

3 ☐ Both will have the same revenue

4 ☐ Cannot be determined



Solution:

Correct Answer : 2

Your Answer : 2

[Answer key/Solution](#)

The table gives the revenue of each company in crore rupees.

The graph plots the expected percentage growth rate in revenue v/s the number of employees in the company.

Revenue of X = F's revenue + G's revenue = 16 + 26.4 = Rs. 42.4 cr

Average growth rate = $\frac{15+19}{2} = 17\%$

X's revenue next year = 42.4cr × 1.17 = Approx Rs. 50 cr

Revenue of Y = D's revenue + E's revenue = 21.6 + 24 = Rs. 45.6 cr

Average growth rate = $\frac{10+20}{2} = 15\%$

Y's revenue next year = 45.6cr × 1.15 = Approx Rs. 52 cr

Y's revenue next year will be more than X's revenue.

Bookmark

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

Thirteen students from 3 different colleges: 6 from college Alpha, 4 from college Beta and 3 from college Gamma are sitting on 15 chairs in a row. Students from the same college are sitting together and any two students from two different colleges are separated by at least one empty chair. The students are A, B, C, D, E, F, P, Q, R, S, X, Y and Z. Further it is known that:

- (i) A and P are sitting together. The same is true for B and Y as well as C and X.
- (ii) Y and R are separated by only one chair and that chair is empty.
- (iii) E and Q are from college Gamma and are sitting at the last two chairs.
- (iv) A, C and F belong to different colleges.
- (v) A is sitting at the third chair from the starting and R is sitting before X. S and Z are from A's college.

Q.47 [11594329]

What is the total possible number of ways in which they can sit?

1 ☐ 64

2 ☐ 72

3 ☐ 80

4 ☐ 96

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

Using statement (I) and (II), B, Y and R are sitting on 3 consecutively occupied chairs with the chair between Y and R empty. i.e., B Y (empty) R Or R (empty) Y B. Also, the last two chairs are occupied by Gamma students. This means the third last chair must also be occupied by a Gamma student. Two of the three Gamma students are E and Q. Using statement (IV), we can say that the third Gamma student must be F as A and P are from the same college and C and X are from the same college. As R is sitting before X, X must be from the 2nd college in the row. Using all the conclusions above, we can make the following arrangements:

S/Z Z/S A P B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z Z/S A P B Y (empty) R C/X X/C D (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R C/X X/C D (empty) F E/Q Q/E

_ _ A P _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Now, here S, Z and D can sit in these three blank chairs in total 6 ways.

_ P A _ _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Here also, S, D and Z can sit in 6 ways.

So, the total possible number of ways in which they can sit is $8 + 8 + 8 + 8 + 24 + 24 = 80$.

Bookmark

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

Thirteen students from 3 different colleges: 6 from college Alpha, 4 from college Beta and 3 from college Gamma are sitting on 15 chairs in a row. Students from the same college are sitting together and any two students from two different colleges are separated by at least one empty chair. The students are A, B, C, D, E, F, P, Q, R, S, X, Y and Z. Further it is known that:

- (i) A and P are sitting together. The same is true for B and Y as well as C and X.
- (ii) Y and R are separated by only one chair and that chair is empty.
- (iii) E and Q are from college Gamma and are sitting at the last two chairs.
- (iv) A, C and F belong to different colleges.
- (v) A is sitting at the third chair from the starting and R is sitting before X. S and Z are from A's college.

Q.48 [11594329]

For how many people, their exact position can be determined?

1 ☐ 12 ☐ 23 ☐ 34 ☐ 4

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

Using statement (I) and (II), B, Y and R are sitting on 3 consecutively occupied chairs with the chair between Y and R empty. i.e., B Y (empty) R Or R (empty) Y B. Also, the last two chairs are occupied by Gamma students. This means the third last chair must also be occupied by a Gamma student. Two of the three Gamma students are E and Q. Using statement (IV), we can say that the third Gamma student must be F as A and P are from the same college and C and X are from the same college. As R is sitting before X, X must be from the 2nd college in the row. Using all the conclusions above, we can make the following arrangements:

S/Z Z/S A P B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z Z/S A P B Y (empty) R C/X X/C D (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R C/X X/C D (empty) F E/Q Q/E

_ _ A P _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Now, here S, Z and D can sit in these three blank chairs in total 6 ways.

_ P A _ _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Here also, S, D and Z can sit in 6 ways.

For two people, A and F, their exact position can be determined.

Bookmark

FeedBack

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

Thirteen students from 3 different colleges: 6 from college Alpha, 4 from college Beta and 3 from college Gamma are sitting on 15 chairs in a row. Students from the same college are sitting together and any two students from two different colleges are separated by at least one empty chair. The students are A, B, C, D, E, F, P, Q, R, S, X, Y and Z. Further it is known that:

- (i) A and P are sitting together. The same is true for B and Y as well as C and X.
- (ii) Y and R are separated by only one chair and that chair is empty.
- (iii) E and Q are from college Gamma and are sitting at the last two chairs.
- (iv) A, C and F belong to different colleges.
- (v) A is sitting at the third chair from the starting and R is sitting before X. S and Z are from A's college.

Q.49 [11594329]

If P and B are from the same college, then who cannot sit adjacent to R?

1 ☐ C2 ☐ X3 ☐ D4 ☐ F

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

Using statement (I) and (II), B, Y and R are sitting on 3 consecutively occupied chairs with the chair between Y and R empty. i.e., B Y (empty) R Or R (empty) Y B. Also, the last two chairs are occupied by Gamma students. This means the third last chair must also be occupied by a Gamma student. Two of the three Gamma students are E and Q. Using statement (IV), we can say that the third Gamma student must be F as A and P are from the same college and C and X are from the same college. As R is sitting before X, X must be from the 2nd college in the row. Using all the conclusions above, we can make the following arrangements:

S/Z Z/S A P B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z Z/S A P B Y (empty) R C/X X/C D (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R C/X X/C D (empty) F E/Q Q/E

_ _ A P _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Now, here S, Z and D can sit in these three blank chairs in total 6 ways.

_ P A _ _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Here also, S, D and Z can sit in 6 ways.

If P and B are from the same college, then F cannot sit adjacent to R.

Bookmark

FeedBack

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

Thirteen students from 3 different colleges: 6 from college Alpha, 4 from college Beta and 3 from college Gamma are sitting on 15 chairs in a row. Students from the same college are sitting together and any two students from two different colleges are separated by at least one empty chair. The students are A, B, C, D, E, F, P, Q, R, S, X, Y and Z. Further it is known that:

- (i) A and P are sitting together. The same is true for B and Y as well as C and X.
- (ii) Y and R are separated by only one chair and that chair is empty.
- (iii) E and Q are from college Gamma and are sitting at the last two chairs.
- (iv) A, C and F belong to different colleges.
- (v) A is sitting at the third chair from the starting and R is sitting before X. S and Z are from A's college.

Q.50 [11594329]

What can be the minimum number of people sitting between Z and C?

1 ☐ 22 ☐ 33 ☐ 44 ☐ 5

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

Using statement (I) and (II), B, Y and R are sitting on 3 consecutively occupied chairs with the chair between Y and R empty. i.e., B Y (empty) R Or R (empty) Y B. Also, the last two chairs are occupied by Gamma students. This means the third last chair must also be occupied by a Gamma student. Two of the three Gamma students are E and Q. Using statement (IV), we can say that the third Gamma student must be F as A and P are from the same college and C and X are from the same college. As R is sitting before X, X must be from the 2nd college in the row. Using all the conclusions above, we can make the following arrangements:

S/Z Z/S A P B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z Z/S A P B Y (empty) R C/X X/C D (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R D C/X X/C (empty) F E/Q Q/E

S/Z P A Z/S B Y (empty) R C/X X/C D (empty) F E/Q Q/E

_ _ A P _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Now, here S, Z and D can sit in these three blank chairs in total 6 ways.

_ P A _ _ R (empty) Y B C/X X/C (empty) F E/Q Q/E

Here also, S, D and Z can sit in 6 ways.

At minimum, three people can sit between Z and C.

Bookmark

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Sec 3

Q.51 [11594329]

If $(3x + 2) + (3x + 5) + (3x + 8) + (3x + 11) + \dots + (3x + 68) = 1702$, then find the sum of $1^3 + 2^3 + 3^3 + \dots + x^3$.

1 ☐ 76722 ☐ 93003 ☐ 82814 ☐ None of these**Solution:****Correct Answer : 3** Answer key/Solution

We know all the terms are in Arithmetic Progression. Looking at the common difference (3), first term $(3x + 2)$ and last term $(3x + 68)$, we get to know that there are 23 terms in this Arithmetic Progression.

On the left hand side, we will get, $\text{sum} = 69x + 805 = 1702$

Therefore, $69x = 897$

$\Rightarrow x = 13$

Sum of cubes of first 13 natural numbers will be $[x(x + 1)/2]^2 = 8281$.

Bookmark

FeedBack

Q.52 [11594329]

The average of 11, 17, 29, 49 and x lies between 23 and 30 (both included). If ' x ' is an integer which is greater than the average of the given five numbers, then the value of ' x ' is

1 ☐ $31 \leq x \leq 45$

2 ☐ $27 \leq x \leq 45$

3 ☐ $29 \leq x \leq 41$

4 ☐ $27 \leq x \leq 44$



Solution:

Correct Answer : 4

Your Answer : 4

We know that

$$\frac{11 + 17 + 29 + 49 + x}{5} \text{ lies between 23 and 30 (both included)}$$

$$23 \leq \frac{(11 + 17 + 29 + 49 + x)}{5} \leq 30$$

Therefore, $9 \leq x \leq 44$

Now, values of x cannot be as low as 9 because the question states that x is greater than the average, so we will have to look for values greater than 23.

x cannot be 24, 25 and 26 because then also, x will be less than the average of the 5 terms. If we take x as at least 27, then all the conditions are satisfied. So, values of x are from 27 to 44. (both included).

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Answer key/Solution

Q.53 [11594329]

Two regular polygons have x and y sides, respectively such that $x : y = 1 : 3$. The ratio of interior angle of polygon having x sides and interior angle of polygon having y sides is 3 : 4. Find the number of diagonals in a polygon that has $(2x + y)$ sides.

1 ☐ 300

2 ☐ 250

3 ☐ 510

4 ☐ 405

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

The formula for each interior angles is $180 - \left(\frac{360}{n}\right)$ where n represents the number of sides of a polygon.

$$\text{Now, } 180 - \left(\frac{360}{x}\right) = \left(\frac{3}{4}\right) \left[180 - \left(\frac{360}{3x}\right)\right]$$

Solving this, we get $x = 6$

Therefore, $y = 18$

Now, number of diagonals of a polygon having 30 sides will be $\frac{n(n-3)}{2}$ i.e., 405 diagonals.

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Q.54 [11594329]

Consider a function $f : \mathbb{R} \rightarrow \mathbb{R}$ satisfying $f(x + y) = f(x) + f(y)$ for all x, y in \mathbb{R} such that $f(1) = 7$.

If $f(1) + f(2) + \dots + f(n) = \frac{7^k n(n+1)}{m}$, then $k + m$ is equal to _____.

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

Given $f(x + y) = f(x) + f(y)$ and $f(1) = 7$

$$f(2) = 7 + 7 = 14$$

$$f(3) = 14 + 7 = 21$$

$$f(4) = 21 + 7 = 28$$

and so on

$$f(n) = 7.n$$

Thus, $f(1) + f(2) + f(3) + \dots + f(n)$

$$= (7 + 14 + 21 + 28 + \dots + 7.n)$$

$$= 7 (1 + 2 + 3 + \dots + n)$$

$$= \frac{7(n)(n+1)}{2}$$

$$\therefore k = 1 \text{ and } m = 2 \Rightarrow k + m = 3.$$

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Q.55 [11594329]

A trader bought an article and then sold it at a certain price. Had he bought it at 20% less and sold at 20% more, he would have doubled his profit percentage. What percentage of the selling price is the cost price?



Solution:**Correct Answer : 50****Your Answer : 50** Answer key/Solution

Let the original CP and SP of an article be x and y , respectively.
Given that

$$\frac{1.2y - 0.8x}{0.8x} = 2 \left[\frac{y - x}{x} \right] \Rightarrow \frac{12y - 8x}{8x} = 2 \left[\frac{y - x}{x} \right] \Rightarrow \frac{x}{y} = \frac{1}{2}$$

\therefore The cost price and selling price are in the ratio 1 : 2.

The required percentage = $\frac{1}{2} \times 100 = 50\%$.

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Q.56 [11594329]

In a get together of 78 colleagues, each colleague ate at least one of the three food items namely Idli, Dhokla and Dosa. Exactly 34 people ate Idli, 52 people ate Dhokla and 39 people ate Dosa. If 17 people ate all three items, then find the number of people who ate exactly two items.

1 ☐ 82 ☐ 103 ☐ 114 ☐ 13☒ **x****Solution:****Correct Answer : 4****Your Answer : 2** Answer key/Solution

Let number of people who ate exactly two things be x, y, z for three different combinations.

So, we need to find out $x + y + z$.

$$78 = 34 + 52 + 39 - (x + 17) - (y + 17) - (z + 17) + 17$$

Bringing x, y and z on LHS and taking all other terms to RHS we get the required sum as 13.

Bookmark

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Q.57 [11594329]

If $(x - a)(x - 12) + 2 = 0$ and ' x ' is an integer, find the number of possible integer values for ' a '.

1 ☐ 02 ☐ 1

3 ○ 2

4 ○ 3

×

Solution:

Correct Answer : 3

Your Answer : 1

$(x - a)(x - 12) = -2$

Since, x and a are integers,

Therefore, there will be total 4 possible cases:

Case 1: When $x - a = 1$ and $x - 12 = -2$ implies $x = 10$ and $a = 9$.

Case 2: When $x - a = 2$ and $x - 12 = -1$ implies $x = 11$ and $a = 9$.

Case 3: When $x - a = -1$ and $x - 12 = 2$ implies $x = 14$ and $a = 15$.

Case 4: When $x - a = -2$ and $x - 12 = 1$ implies $x = 13$ and $a = 15$.

Therefore, $a = 9$ or 15 , that means a has only 2 possible values.

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🔍 Answer key/Solution

Q.58 [11594329]

How many positive value /s of 'a' satisfy the equation $(a - 5)^{2\log_2 a - \log_a 16} = (a - 5)^7$?

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

We know that on LHS as well as RHS base is the same, so we can equate the powers.

$$2 \log_2 a - \log_2 16 = 7$$

This can be written as :

$$2 \log_2 a - 4 \log_2 2 = 7$$

$$2 \log_2 a - \frac{4}{\log_2 a} = 7$$

Let $\log_2 a = x$

$$\text{Now, } \frac{2x - 4}{x} = 7$$

Solving for x, we get x is either $-\frac{1}{2}$ or 4

$$\log_2 a = 4 \text{ or } -\frac{1}{2}$$

$a = 16$ and 0.7071 (According to Case 1 mentioned below)

Also, $a = 6$ is possible. (Case 2)

And $a = 5$ is also possible. (Case 4)

[Note: When $a^x = a^y$ then following cases arise:

Case 1: If base are not equal to 0, 1, -1

then, $x = y$.

Case 2: If base are equal to 1, i.e., $a = 1$

then, x and y could be anything.

Case 3: If base are equal to -1

then, if x is odd then y should be odd and if x is even then y should also be even.

Case 4: If base are equal to 0

then x and y could be anything but 0.]

Hence, total 4 values of 'a' are possible.

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Q.59 [11594329]

The price of raw materials in a company has gone up by 20%. Also, the labour cost has increased to $\frac{1}{4}$ th of the total cost of production which was earlier $\frac{1}{6}$ th of the total cost of production. By how much percent should the company reduce its usage of raw materials to keep the total cost of production same as before?

1 ☐ 202 ☐ 253 ☐ 33.334 ☐ 16.66

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

Let total cost be Rs. 600

So, labour cost = Rs. 100 and raw material cost = Rs. 500.

Let the cost of 1 unit of raw material be Re. 1

Now, the raw material cost is Rs. 500 this means we have used 500 units of raw material.

It is given that the raw material cost increases by 20% so now 1 unit of raw material will cost Rs 1.2 which means in Re.1 we get 5/6 units of raw material.

Now we want the new total cost to be same as before i.e., new total cost will be Rs 600.

So, now the labour cost is 1/4th of the total cost so it will be Rs 150 thus the cost of raw material will become Rs 450.

Therefore, in Rs 450 we will get = $5/6 (450) = 375$ units of raw material.

So, our raw material usage reduces from 500 units to 375 units which is a 125 drop on 500 which is equivalent to 25% drop in raw material usage.

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Q.60 [11594329]If $a_0 = 5, a_1 = 5, a_n = a_{n-1} \times a_{n-2} + 1$, for $n > 1$, then1 ☐ a_{110} is even and a_{111} is odd.2 ☐ a_{110} is even and a_{111} is even3 ☐ a_{110} is odd and a_{111} is odd4 ☐ a_{110} is odd and a_{111} is even**Solution:****Correct Answer : 1** Answer key/Solution

$$a_0 = 5 \text{ odd}$$

$$a_1 = 5 \text{ odd}$$

$$a_2 = 5 \times 5 + 1 = 26 \text{ even}$$

$$a_3 = 26 \times 5 + 1 = 131 \text{ odd}$$

$$a_4 = 131 \times 26 + 1 = 3407 \text{ odd}$$

$$a_5 = a_4 \times a_3 + 1 = \text{odd} \times \text{odd} + 1 = \text{even}$$

So, we observe that a_n is even whenever n is of the form $3k + 2$ where $k = 0, 1, 2, 3, 4, \dots$ rest are all odd. $\therefore a_{110}$ is even and a_{111} is odd.

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Q.61 [11594329]Find the sum of real roots of $x^5 - 13x^3 + 36x = 0$.

✕

Solution:**Correct Answer : 0****Your Answer : 5**

$$x(x^4 - 13x^2 + 36) = 0$$

Now either $x = 0$ or $(x^4 - 13x^2 + 36) = 0$

Let $x^2 = y$

$$\text{Therefore, } y^2 - 13y + 36 = 0$$

Solving this, we get $y = 4$ or $y = 9$

Therefore, $x = 2, -2, 3, -3$

$$\text{Required sum} = 0 + 2 + 3 + (-2) + (-3) = 0.$$

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Answer key/Solution

Q.62 [11594329]

A milkman has three containers C1, C2 and C3 each having 10 liters of mixture of milk and water. The purity of milk in each of these containers are 42%, 60% and 69% respectively. He pours 2 liters of mixture from C1 to C2, then 2 liters from C2 to C3 and finally 2 liters from C3 to C1. Find the percentage of milk in container C1 at the end.

1 ☐ 472 ☐ 493 ☐ 514 ☐ 53**Solution:****Correct Answer : 1**

Answer key/Solution

If the milkman takes two liters of milk from C1, which is 42% pure, and pours it into 10 liters of mixture C2 with 60% purity then, by using the method of alligations, we get to know that

$$\Rightarrow \frac{(60 - x)}{(x - 42)} = \frac{1}{5} \Rightarrow 300 - 5x = x - 42$$

Therefore, $x = 57$.

Now, C2 is 57% pure.

Now, 2 liters of C2 is poured into 10 liters of C3, using the same method now we can find out that purity of C3 will now be 67%.

Again, 2 liters of C3 is poured into 8 liters of C1 and by using the method of alligations, we get to know that the purity of C1 is now 47%.

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Q.63 [11594329]

If $f(x, y, z) = \begin{cases} x^2 + y^2 + z^2 & , \text{ when all } x, y, z \text{ are prime} \\ x \times y \times z & , \text{ when all } x, y, z \text{ are composite} \\ x \times y + z & , \text{ else} \end{cases}$, then find $f(f(4, 9, 12), f(11, 7, 6), f(13, 11, 7))$.

1 ☐ 361952 ☐ 154383 ☐ 16984 ☐ 1516**Solution:****Correct Answer : 1**

$f(4, 9, 12)$ — they are composite
 Therefore, $f(4, 9, 12) = 4 \times 9 \times 12 = 432$
 $f(13, 11, 7)$ — they are prime
 Therefore, $f(13, 11, 7) = (13 \times 13) + (11 \times 11) + (7 \times 7) = 339$
 $f(11, 7, 6)$ — else condition
 $f(11, 7, 6) = 11 \times 7 + 6 = 83$
 Therefore, this can be re written as $f(432, 83, 339)$
 Now, the third case applies
 Therefore, $f(432, 83, 339) = 432 \times 83 + 339 = 36195$.

 Answer key/Solution

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Q.64 [11594329]

The graphs of the equations $x - y = 2$ and $kx + y = 3$, where k is a constant, intersect at the point (x, y) in the first quadrant, if and only if k is

1 ☐ equal to -1 2 ☐ greater than -1 3 ☐ less than $3/2$ 4 ☐ lying between -1 and $3/2$

Solution:**Correct Answer : 4**[Answer key/Solution](#)Given: $x - y = 2$ and $kx + y = 3$

$$\Rightarrow x = \frac{5}{1+k}, y = \frac{3-2k}{1+k}$$

Since we need to find out the intersection point (x, y) in the first quadrant,
 $\Rightarrow 1 + k > 0$ and $3 - 2k > 0$

$$\Rightarrow k > -1 \text{ and } k < \frac{3}{2}.$$

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Q.65 [11594329]

Sum of the cubes of the digits of a three digit number is 684 while sum of the squares of these digits is 110. If the difference between the largest and the smallest digits of the number is 2, then find the sum of all such numbers possible.

Solution:**Correct Answer : 3996**[Answer key/Solution](#)

We know that sum of the cubes of these digits is 684. 684 is less than 729 (cube of 9) so, all of them must be less than 9.

A bigger hint is that difference between the largest and the smallest digit is 2. But it is not necessary that they are consecutive numbers because two of the digits can be identical also. So, we will have to think in both directions.

First of all, let us think of three consecutive numbers, that is., (5, 6, 7) and (6, 7, 8).

We will find that (5, 6, 7) satisfy all the possible conditions. So, (6, 7, 8) is eliminated.

We still need to check if it is possible that two numbers are identical.

If (5, 6, 7) satisfies, then (5, 5, 7) doesn't satisfy. Let us check (6, 6, 8). It doesn't satisfy any condition.

So, three digits are 5, 6, and 7.

\therefore Required sum is $567 + 576 + 657 + 675 + 756 + 765 = 3996$.

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Q.66 [11594329]

Each of the two friends - A and B - lend Rs. 20,000 to G, who is starting a business. G agrees to pay only 15% of the annual profit to A, while 12% of the annual profit in addition to 5% interest per year on his loan to B. What amount of the profit (in Rs.) is left with G, if it is known that A receives Rs. 119 more than B at the end of the year?

1 ☐ 26,2292 ☐ 27,2293 ☐ 28,4394 ☐ 25,679

Solution:**Correct Answer : 1** Answer key/Solution

Let the total profit made by G be x.

$$\frac{15x}{100} - \left[\frac{12x}{100} + \left(\frac{5}{100} \times 20000 \right) \right] = 119$$

$$\frac{3x}{100} - 1000 = 119 \Rightarrow x = 37300$$

Amount saved by G will be:

$$37300 - \left[\frac{15x}{100} + \frac{12x}{100} + \left(\frac{5}{100} \times 20000 \right) \right] = \text{Rs. } 26,229.$$

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Q.67 [11594329]

P's rate of doing work is 40% more than that of Q and Q's rate of doing work is 40% more than that of R. If Q alone takes $31\frac{1}{7}$ days to complete a work, in how many days P, Q and R together complete the work?

1 ☐ 12 days2 ☐ 10 days3 ☐ 14 days4 ☐ 18 days**Solution:****Correct Answer : 2** Answer key/Solution

Let the rate of P, Q and R be p, q, and r respectively.

q = 140% of r and p = 196% of r

Hence, p + q + r = 436% of r

Since Q alone take $\frac{218}{7}$ daysP, Q, R would take $\frac{140}{436} \left(\frac{218}{7} \right)$ i.e., 10 days.

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Q.68 [11594329]

Find the value of $\frac{1}{(\alpha+1)(\beta+1)} + \frac{1}{(\alpha-2)(\beta-2)} + \frac{1}{(\alpha-3)(\beta-3)}$ where α and β are the roots of $(x-1)(x-3) + (x-3)(x-2) + (x-2)(x+1) = 0$.

1 ☐ -9/102 ☐ -11/213 ☐ -21/104 ☐ -19/10**Solution:****Correct Answer : 3****Your Answer : 3**

We have :-

$$(x-1)(x-3) + (x-3)(x-2) + (x-2)(x+1) = 0$$

$$\Rightarrow 3x^2 - 10x + 7 = 0$$

$$\Rightarrow x = 1 \text{ and } x = \frac{7}{3}$$

Now, put $\alpha = 1$ and $\beta = \frac{7}{3}$

$$\therefore \frac{1}{(\alpha+1)(\beta+1)} + \frac{1}{(\alpha-2)(\beta-2)} + \frac{1}{(\alpha-3)(\beta-3)} = \frac{3}{20} - 3 + \frac{3}{4} = \frac{18}{20} - 3 = \frac{9}{10} - 3 = \frac{9-30}{10} = \frac{-21}{10}$$

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[Answer key/Solution](#)
Q.69 [11594329]

A man covers a distance of 180 km from town A to town B. The first one-third of the distance, he covers by walking. The second one-third he travels on a scooter and the remaining distance he travels by car. The average speed of the car is 3 times the average speed by walking and 10 kmph more than the average speed of the scooter. The time spent on the scooter is 1 hour more than that spent in the car. What is the time taken for the entire journey?

1 ☐ 10 hours2 ☐ 11 hours3 ☐ 12 hours4 ☐ Cannot be determined

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

Let the speed by walking = x kmph
 then speed by car = $3x$ kmph
 and speed by scooter = $(3x - 10)$ kmph

$$\text{Given } \frac{60}{3x-10} = \frac{60}{3x} + 1 \Rightarrow x = 10$$

\therefore Speed by walking = 10 kmph,
 Speed by car = 30 kmph
 and speed by scooter = 20 kmph

$$\text{Total time taken} = \frac{60}{10} + \frac{60}{20} + \frac{60}{30} = 11 \text{ hours.}$$

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Q.70 [11594329]

The three vertices of a triangle are $(3, 3)$, $(1, 3/2)$ and $(2, 7/2)$, then the sum of squares of two smaller sides is

1 ☐ Greater than the square of the largest side

2 ☐ Smaller than the square of the largest side

3 ☐ Equal to the square of the largest side

4 ☐ Cannot be determined

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

Let us find the slopes of all three sides:

$$m_1 = \frac{\frac{7}{2} - 3}{2 - 3} = -\frac{1}{2}$$

$$m_2 = \frac{\frac{3}{2} - 3}{1 - 3} = \frac{3}{4}$$

$$m_3 = \frac{\frac{7}{2} - \frac{3}{2}}{2 - 1} = 2$$

Now, if we compare the three slopes, the product of 1^{st} and 3^{rd} is -1 , this clearly shows that these lines will be perpendicular to each other, signifying this to be a right angled triangle. For a right angled triangle, the sum of squares of two smaller sides is always equal to the square of the largest side.

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Q.71 [11594329]

If $7^{(a+1)} - 5^{(b-2)} = 16682$ and $7^{(a-2)} + 5^{(b+1)} = 15674$, then find the value of the product of a and b.

1 ☐ 92 ☐ 203 ☐ 154 ☐ None of these**Solution:****Correct Answer : 2** Answer key/Solution

We know that cyclicity of last digit of 7 is 7, 9, 3, and 1 when raised to power of the form $4k + 1$, $4k + 2$, $4k + 3$, and $4k$ respectively. The last digit of 5 remains 5 irrespective of power of 5.

Now, the last digit of RHS of first equation is 2. Therefore, the last digit of the term with $7^{(a+1)}$ must be 7. Now, this means, that power of 7 must be of the form $4k + 1$ i.e., 1, 5, 9, etc.

Now, 1 is a very small power, any power above 5 will give a very large number. So, let us say that value of $a + 1 = 5$, that is., 7^5 will be 16807 and if we substitute this in the equation we need to add 125 to it to get the desired figure on RHS. Therefore, $b = 5$ and $a = 4$.

Note: These two values $b = 5$ and $a = 4$ satisfy the second condition also.

Therefore, $5 \times 4 = 20$ is the required answer.

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Q.72 [11594329]

If $x = (13^a + 2)(11^b - 3)(7^c - 4)(5^d + 4)$ where a, b, c and d are Natural numbers, then find the minimum possible value of $(a + b)(c + d)$ such that x is a perfect cube.

1 ☐ 02 ☐ 363 ☐ 244 ☐ 48**Solution:****Correct Answer : 3** Answer key/Solution

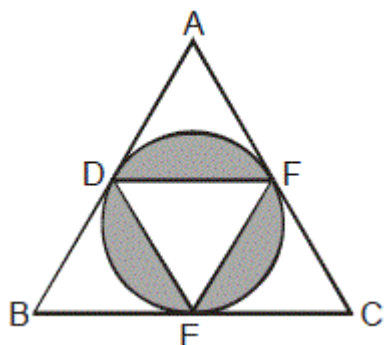
5, 7, 11, and 13 are all prime numbers therefore, for the entire number to be a perfect cube, all the powers must be multiples of 3. Therefore, the minimum possible values of a, b, c, and d must be 1, 3, 4, and 2 considering they are natural numbers. Required answer therefore, is $(1 + 3)(4 + 2) = 24$.

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Q.73 [11594329]

In the given figure, ABC is an equilateral triangle whose side length is $2\sqrt{3}$ cm. A circle is drawn inside the triangle which passes through the midpoints D, E and F of its sides. Find the area of the shaded region.



1 ☐ $\frac{1}{4}(4\pi - 3\sqrt{3})\text{cm}^2$

2 ☐ $\frac{1}{4}(2\pi - \sqrt{3})\text{cm}^2$

3 ☐ $\frac{1}{4}(\pi - 3\sqrt{3})\text{cm}^2$

4 ☐ $\frac{1}{4}(3\pi - \sqrt{3})\text{cm}^2$



Solution:

Correct Answer : 1

Your Answer : 1

[Answer key/Solution](#)

Let the height of equilateral triangle ABC be 'h' cm.

$$\text{Area of } \triangle ABC = \frac{\sqrt{3}}{4} \times (2\sqrt{3})^2 = \frac{1}{2}h \times 2\sqrt{3}$$

$h = 3$ cm.

\therefore Radius of circle (r) = 1 cm

\Rightarrow Area of circle = $\pi \times r^2 = \pi \text{ cm}^2$

$$\text{and area of inside triangle} = \frac{\sqrt{3}}{4} \times \left(\frac{2\sqrt{3}}{2}\right)^2 = \frac{\sqrt{3}}{4} \times 3 = \frac{3\sqrt{3}}{4} \text{ cm}^2$$

$$\text{area of shaded region} = \left(\pi - \frac{3\sqrt{3}}{4}\right) \text{ cm}^2 = \frac{1}{4}(4\pi - 3\sqrt{3}) \text{ cm}^2.$$

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Q.74 [11594329]

The ratio of number of students in B.Com to number of students in BBA in a college is 3 : 5. The ratio of the fee charged by the college per year from each student of B.Com and BBA is 1 : 2. If the fee charged from all the BBA students in a particular year is Rs. 1 Cr, find the total amount of fee (in Rs. lakhs) charged from the students of B.Com.

1 ☐ 252 ☐ 303 ☐ 184 ☐ 22**Solution:****Correct Answer : 2**[🔍 Answer key/Solution](#)

Let the total number of students in B.Com be $3x$ and in BBA be $5x$.

Let the fee charged from each student of B.Com and BBA be Rs. y and Rs. $2y$, respectively.

Total collection from B.Com students will be $3xy$ while total collection from BBA students will be $10xy$.

If $10xy = 1\text{Cr}$, then $3xy = \text{Rs. } 30 \text{ lakhs}$ (by unitary method).

[Bookmark](#)[FeedBack](#)**Q.75 [11594329]**

The passing percentage in an exam is 40%. Ajay scored 30% while Vijay scored 70% marks in that exam. How much less marks (in percentage) did Sanjay score than the passing marks if Sanjay's score is 30% less than the arithmetic mean of Ajay's and Vijay's score?

1 ☐ 5%2 ☐ 10%3 ☐ 15%4 ☐ None of these

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

Let the maximum marks be 100.

So, passing marks = 40

Ajay scored 30, Vijay scored 70, their average is 50. Therefore, Sanjay's score is 30% less than 50 i.e., 35

He scored 5 marks less than 40

∴ Required percentage = $\frac{5}{40} \times 100 = 12.5\%$.

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