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VARC

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QA

Sec 1

Most people who bother with the matter at all would admit that the English language is in a bad way, but it is generally assumed that we cannot by conscious action do anything about it. Our civilization is decadent and our language — so the argument runs— must inevitably share in the general collapse. It follows that any struggle against the abuse of language is a sentimental archaism, like preferring candles to electric light or hansom cabs to aeroplanes. Underneath this lies the half-conscious belief that language is a natural growth and not an instrument which we shape for our own purposes.

Now, it is clear that the decline of a language must ultimately have political and economic causes: it is not due simply to the bad influence of this or that individual writer. But an effect can become a cause, reinforcing the original cause and producing the same effect in an intensified form, and so on indefinitely. A man may take to drink because he feels himself to be a failure, and then fail all the more completely because he drinks. It is rather the same thing that is happening to the English language. It becomes ugly and inaccurate because our thoughts are foolish, but the slovenliness of our language makes it easier for us to have foolish thoughts. The point is that the process is reversible. Modern English, especially written English, is full of bad habits which spread by imitation and which can be avoided if one is willing to take the necessary trouble. If one gets rid of these habits one can think more clearly, and to think clearly is a necessary first step toward political regeneration: so that the fight against bad English is not frivolous and is not the exclusive concern of professional writers, but is the joint duty of one and all.

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"On the one side we have the free personality: by definition it is not neurotic, for it has neither conflict nor dream. Its desires, such as they are, are transparent, for they are just what institutional approval keeps in the forefront of consciousness; another institutional pattern would alter their number and intensity; there is little in them that is natural, irreducible, or culturally dangerous."

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Q.1
What is the main argument of the author in this passage?

1 ○ There is some correct or pure form of language which should be the goal of every political writing.

2 ○ The evolution of language is a natural process and it can't be shaped by our perceptions or purpose.

3 ○ The main problem of today's writing is the staleness of imagery and the lack of precision, both of which are exacerbated by the use of tacky phrases.

4 ○ The problem with today's writing is multifaceted; however, everyone must take the onus of rectifying the problem.

Solution:

Correct Answer : 4

Genre: Literature and Language / Linguistics

Word Count: 511

Refer to the line: "It is not due simply to the bad influence of this or that individual writer" and "so that the fight against bad English is not frivolous and is not the exclusive concern of professional writers, but is the joint duty of one all". In a way, this statement summarises the author's main argument in the passage which is – English language needs improvement and it should be our collective responsibility.

Option 1 – The author is not focuses on 'pure language' or 'political writing'.

Option 2 – It is factually incorrect. The author, in the first paragraph, categorically states that we are wrong in assuming that the evolution of language can't be controlled by us.

Option 3 – This is too narrow. It only talks about the last paragraph.

Option 4 – Multifaceted problem captures the last paragraph. Onus is on us to rectify – captures the first few paragraphs. This is the correct answer.

FeedBack

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Q.2
The line "A man may take to drink because he feels himself to be a failure, and then fail all the more completely because he drinks" shows that:

1 ○ the author is using an analogy.

2 ○ the author is using onomatopoeia.

3 ○ the author is using anagram.

4 ○ the author is using alliteration.

Analogy is a comparison between one thing and another, typically for the purpose of explanation or clarification. The given statement clearly draws a comparison. Hence 1 is the correct answer.

Option 2 - Onomatopoeia is the formation of a word from a sound associated with what is named.

Option 4 - Alliteration is the occurrence of the same letter or sound at the beginning of adjacent or closely connected words.

Option 3 – It's not a relevant option.

FeedBack

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Q.3

Which of the following can be inferred from the first paragraph?

1 ○ **The decline of the English language is a reflection of the state of society and politics.**

2 ○ **Every language goes through the process of decline which can't be avoided.**

3 ○ **Many people are sceptical of the revival of the English language.**

4 ○ **Just like any society, the English language is also prone to the perils of evolution.**

Solution:

Correct Answer : 3

Genre: Literature and Language / Linguistics

Word Count: 511

The opening of the passage is- "…English language is in a bad way, but it is generally assumed that we cannot by conscious action do anything about it."

Then the author goes on to show how many people think that the current state of the English language can't be changed. So, the correct inference is option 3.

Option 1 – It is too extreme. The author doesn't discuss 'state of politics or society'.

Option 2 – Can't generalise about 'every language' from this paragraph.

Option 4 – 'Evolution of society' is distorted. The author talks about 'evolution of language'.

🔖 **Bookmark**

🔍 **Answer key/Solution**

FeedBack

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Q.4
With which of the following does the author of the passage not agree?

1 ○ **The modern political prose in English is affected by blurred and inept writing.**

2 ○ **The process of correcting modern English is possible as the causes of such bad habits are reversible.**

3 ○ **Drinking and failure are co-dependent on each other.**

4 ○ **It is not correct to blame only writers for the decline of a language.**

Solution:

Correct Answer : 3

Genre: Literature and Language / Linguistics

Word Count: 511

Option 1 – Refer to the line - "This mixture of vague and sheer incompetence is the most marked characteristic of modern English prose, and especially of any kind of political writing." The author will agree with this.

Option 2 – Refer to the line – "Modern English, especially written English, is full of bad habits which spread by imitation and which can be avoided if one is willing to take the necessary trouble." The author will agree with this.

Option 3 – Refer to the line – "A man take to drinking because he feels himself to be a failure, and then fail all the more completely because he drinks." This is a distorted conclusion. So, this option is the correct answer.

Option 4 – Refer to the line – "Now, it is clear that the decline of a language must ultimately have political and economic causes: it is not due simply to the bad influence of this or that individual writer." The author will surely agree with this.

FeedBack

Directions for questions (1to 6): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

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Q.5
Which of the following is true about the example of bad writing cited in the passage?

1 ○ **The writer of the paragraph doesn't have a meaning.**

2 ○ **The writer of the paragraph lacks some writing skill.**

3 ○ **The writer of the paragraph is atrocious in his approach towards writing.**

4 ○ **The writer of the paragraph is nonchalant about the efficacy of his meaning.**

Solution:

Correct Answer : 2

Genre: Literature and Language / Linguistics

Word Count: 511

Refer to the lines – "The staleness of imagery and the lack of precision make the above paragraph an atrocity. The writer either has a meaning and cannot express it, or he inadvertently says something else, or he is almost indifferent as to whether his words mean anything or not." So, out of the options, 2 is the most complete answer. It encompasses all the possibilities.

FeedBack

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Q.6

Which of the following can be inferred from the passage?

1 ○ **English as a language is under political and economic threats.**

2 ○ **The purpose of any language is to nurture societal values and convey fixed meanings.**

3 ○ **The defects in the human spirit cause the promulgation of linguistic disintegration.**

4 ○ **The future of the English language, especially written English, is not entirely hopeless.**

Solution:

Correct Answer : 4

Genre: Literature and Language / Linguistics

Word Count: 511

Option 1 – The author mentions it as a possibility. And he says 'economic or political causes', not 'threats'. So, this is a distorted conclusion.

Option 2 – We can't conclude about all languages from this passage.

Option 3 – The author doesn't blame 'the defects in the human spirit' as the cause of bad writing.

Option 4 – The author does talk about the scope of possible redemption of the language. So, option 4 is the correct answer.

<img> **Bookmark**

<img> **Answer key/Solution**

FeedBack

Directions for questions (7 to 12): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

The money isn't just in treating older women who have spent years trying to conceive. It's in persuading younger women, still in their 20s, to start worrying about their future fertility now — and to pay for pricey tests and services, such as egg freezing, as a hedge against problems down the road.

Sensing a lucrative market, private equity firms are pouring money into building national chains of fertility clinics. Some are spending on splashy advertising and a deliberate strategy of reaching out to young women who are not yet trying to conceive. Venture capitalists are getting into the business, too; this year alone, PitchBook has tallied more than $178 million flowing into startups developing fertility products, such as a test that promises a credit-score-style rating of a woman's fertility.

The new investors say they leave decisions about clinical practice to physicians. But they're nonetheless transforming an industry that has long been dominated by standalone clinics.

Fertility experts see real benefits for patients: Clinics united into national chains have been sharing best practices, introducing newer technologies, and offering more flexible payment plans for customers.

But some doctors see potential drawbacks, too. They worry that the new ethos of treating fertility medicine as a cash cow may lead to clinics pushing patients toward unnecessary tests and services.

And some are concerned about the ethics of aggressively promoting fertility care such as egg freezing — which can cost between $14,000 and $18,000 per cycle in some cities — to healthy young women who may never need it. The procedure carries some risks to the woman and is no guarantee of a future pregnancy; IVF using frozen eggs has just a middling success rate.

There's a fine line that must be walked to steer clear of "preying on someone's emotions," said Dr. Ravi Gada, who co-owns Dallas Fort Worth Fertility Associates, which has turned away multiple overtures from private equity firms.

The U.S. has nearly 500 fertility clinics. Meanwhile, entrepreneurs are promoting an array of new products aimed at assessing fertility.

A $950 genetic test launched this year, called Fertilome, reports on the likelihood that women have certain conditions linked to fertility problems, in an effort to help guide their next steps. The company behind it has marketed it with evening seminars aimed at working women, promising to outline "proactive steps you can take today to reach your future family building goals."

Another startup called Modern Fertility has begun rolling out its test, which measures various hormone levels including several correlated with how many eggs a women has in her ovaries. (Such "ovarian reserve" testing is an increasingly popular metric, though it has some limitations.) The Modern Fertility test, which reports a number akin to a credit score meant to be monitored over time, is now available for $149 at Quest Diagnostics laboratories and will soon be available for use at home.

Q.7
Which of the following is a valid assumption implicit behind the author's statement that the money is in persuading younger women to start worrying about their future fertility?

1 ○ Women in their 20s need to worry more about their future.

2 ○ **It is more profitable to lure younger women as customers for the fertility business.**

3 ○ **More and more women in their 20s are trying to improve their chances of being fertile.**

4 ○ **Older women give up on conceiving naturally and hence they make a lot of profit for the fertility clinics.**

✖

Solution:
Correct Answer : 2
Your Answer : 3
Genre: Medicine/ Health Care
Word Count: 476
As it is an assumption question, we need to use the negation method to evaluate its validity.
Option 1 – Even if they are not worried about their future, they can be worried about 'future fertility'. The two terms are not the same. So, this is not a correct assumption.
Option 2 – If it were not more profitable, the author can't say 'money is there'. Luring younger customer doesn't mean to neglect older customers. So, this assumption is correct.
Option 3 – These women are trying to preserve their fertility. And the number is not the matter. It's profitability. So, option 3 is the correct answer.
Option 4 – It is irrelevant. The assumption should be about younger women, not older ones.

FeedBack

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Q.8
All the following are the real benefits for patients of the fertility clinics except:

1 ○ Introduction of newer technologies

2 ○ Offering more flexible payment plans

3 ○ **The transformation of the fertility industry**

4 ○ **Sharing of best medical practices**

✔

Solution:
Correct Answer : 3
Your Answer : 3
Genre: Medicine/ Health Care
Word Count: 476
Refer to the lines – "Fertility experts see real benefits for patients: Clinics
united into national chains have been sharing best practices, introducing newer technologies, and offering
more flexible payment plans for customers." Options 1, 2, and 4 are clearly mentioned. 3 is not a benefit
for the patients. It is a benefit for the industry or investors.

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Q.9

Which of the following is/are products aimed at assessing fertility?
I. IVF
II. Ovarian reserve testing by Modern Fertility
III. Test named Fertilome, which measures various hormone levels

1 ○ **II and III only**

2 ○ **Only III**

3 ○ **Only I**

4 ○ **I, II, and III**

✔

Solution:

Correct Answer : 1

Your Answer : 1

Genre: Medicine/ Health Care

Word Count: 476

Only 2 and 3 are true according to the last two paragraphs.

1 is incorrect as IVF is a process of freezing eggs for future.

FeedBack

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But some doctors see potential drawbacks, too. They worry that the new ethos of treating fertility medicine as a cash cow may lead to clinics pushing patients toward unnecessary tests and services.

And some are concerned about the ethics of aggressively promoting fertility care such as egg freezing — which can cost between $14,000 and $18,000 per cycle in some cities — to healthy young women who may never need it. The procedure carries some risks to the woman and is no guarantee of a future pregnancy; IVF using frozen eggs has just a middling success rate.

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Q.10

What does the phrase "fine line" signify as per the passage?

1 ○ The ethical boundary that lies between profit and investment

2 ○ The thin ethical boundary that lies between helping and hurting patients

3 ○ **The thin boundary line that lies between treatment and exploitation of someone's emotional vulnerability**

4 ○ **The ethical boundary line that lies between making profit and being unscrupulous**

✔

Solution:

Correct Answer : 3

Your Answer : 3

Genre: Medicine/ Health Care

Word Count: 476

'Fine line' refers to a thin boundary which is almost imperceptible.

Option 1 – As per the passage, the line is between ethically treating people and manipulating them. So, profit and investment can't be taken as binary opposites.

Option 2 – 'Hurting' is not the same as 'manipulating or exploiting'. So, it is not correct.

Option 3 – This is directly mentioned in the passage.

Option 4 – 'Being unscrupulous' is a vague term. It has multiple possible interpretations. So, option 3 remains the best choice.

🔖 **Bookmark**

🔍 Answer key/Solution

FeedBack

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Q.11
Which of the following is/are potential drawbacks of establishing fertility clinics?
I. Forcing patients toward unnecessary tests and services
II. Ethics of aggressively promoting fertility care
III. Fertility clinics most of the times are ineffective

1 ○ **Only I**

2 ○ **Only I and II**

3 ○ **Only III**

4 ○ **I, II, and III**

✖

Solution:

Correct Answer : 2

Your Answer : 4

Genre: Medicine/ Health Care

Word Count: 476

Only 1 and 2 are true according to paragraph #5 and #6.

3 is not factually supported by the passage.

FeedBack

🔖 **Bookmark**

🔍 Answer key/Solution

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Q.12

Which of the following can be inferred about the main message of the author?

1 ○ Opening of new fertility clinics for profit is unnecessary and condemnable.

2 ○ One must be ethically careful before suggesting and promoting the rapidly growing fertility business.

3 ○ **The expansion of the market for infertility treatment comes with a pinch of salt.**

4 ○ **The private investors who are investing exorbitant amount of money into the fertility business must be ethically investigated.**

✖

Solution:

Correct Answer : 2

Your Answer : 4

Genre: Medicine/ Health Care

Word Count: 476

Option 1 – The author doesn't condemn fertility clinics. He raises certain ethical concerns. Secondly, this is not the main focus of the paragraph.

Option 2 – The author focuses on the growing business of fertility and raises certain possible concerns. So, this is the correct option.

Option 3 – 'Pinch of salt' means disbelief or lack of complete belief. This option is irrelevant.

Option 4 – 'Must be ethically investigated' is both alien and extreme.

🔖 Bookmark

🔍 Answer key/Solution

FeedBack

Directions for questions (13 to 18): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

Lakshmi, the goddess of wealth and fortune, is the closest thing Hinduism has to an economic deity. How poorly her earthly sisters in present-day India are faring. There, women are less likely to work than they are in any country in the G20, except for Saudi Arabia. They contribute one-sixth of economic output, among the lowest shares in the world and half the global average. The unrealised contribution of women is one reason India remains so poor.

Yet far from joining the labour force, women have been falling away at an alarming pace. The female employment rate in India, counting both the formal and informal economy, has tumbled from an already low 35% in 2005 to just 26% now. A rise in female employment rates to the male level would provide India with an extra 235m workers, more than the EU has of either gender, and more than enough to fill all the factories in the rest of Asia.

Imagine the repercussions. Were India to rebalance its workforce in this way, the IMF estimates, the world's biggest democracy would be 27% richer. Its people would be well on their way to middle-income status. Beyond the obvious economic benefits are the incalculable human ones. Women who work are likelier to invest more in their children's upbringing, and to have more say over how they lead their lives.

Some of the fall in female employment is a sign of progress. Girls are staying in school, and thus out of the labour force, for longer. But mostly it is the result of two unwelcome trends. As households become richer, they prefer women to stop working outside the home. It is not unusual in developing economies for a family's social standing to be enhanced by having its women remain at home. But India stands out, as its female labour-force participation rate is well below those of countries at comparable income levels.

Social mores are startlingly conservative. A girl's first task is to persuade her own family that she should have a job. The in-laws she will typically move in with after marriage are even more likely to yank her out of the workforce and into social isolation. The workforce has shifted from jobs more often done by women — especially farming, where most Indian women work but are being displaced by mechanisation. At the same time, inflexible and unreformed labour markets have hampered the rise of manufacturing and low-level services, the gateway for women in other poor countries. In neighbouring Bangladesh, whose customs are not so different from India's, a boom in garment manufacturing has increased the number of working women by 50% since 2005. In Vietnam three-quarters of women work. But the mega-factories that boosted female employment there are largely absent in India.

What can be done? Many of the standard answers fall short. Promoting education, a time-tested development strategy, may not succeed. Figures show that the more schooling an Indian woman receives, the less likely she is to work, at least if she has anything less than a university degree. Likewise urbanisation, another familiar way to alleviate poverty: city-dwelling women are half as likely as rural ones to have a job. The most fruitful policy would be to reform India's labour market so that women can be sucked into jobs en masse.

In fact, many fear that all that extra schooling was a parental ploy to improve a daughter's prospects not in the labour market but in the arranged-marriage market, part of the all-important quest to snag a suitable boy. A further push is needed to get Indian women what they really need: a suitable job.

Q.13

Which of the following has been mentioned as a benefit of increasing female employment in India?

1 ○ India will be able to supply workers to the factories of Asia.

2 ○ **More girls will be able to go to school.**

3 ○ **India's economic status will improve.**

4 ○ **More women will help their families become part of the middle-class group.**

✖

Solution:
Correct Answer : 3
Your Answer : 1
Genre: Economics
Word Count: 603
Refer to the lines – "Imagine the repercussions. Were India to rebalance its workforce in this way, the IMF estimates, the world's biggest democracy would be 27% richer. Its people would be well on their way to middle-income status. Beyond the obvious economic benefits are the incalculable human ones. Women who work are likelier to invest more in their children's upbringing, and to have more say over how they lead their lives." Option 3 is the only option that has been mentioned.
Options 1 and 4 – These are beyond the scope of the passage.
Option 2 – The author says that more girls already go to school. It is not cited as a benefit.

FeedBack

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Q.14
Which of the following has not been mentioned as a reason for an increase in female unemployment?

1 ○ **Increase in household income**

2 ○ **Concern for the family's social standing**

3 ○ **Orthodox customs**

4 ○ **Higher female illiteracy rate**

✔

Solution:

Correct Answer : 4

Your Answer : 4

Genre: Economics

Word Count: 603

Refer to these lines "Promoting education, a time-tested development strategy, may not succeed. Figures show that the more schooling an Indian woman receives, the less likely she is to work." So, option 4 is the clear answer. The other option are factually incorrect.

FeedBack

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Q.15
What is the primary purpose of the author?

1 ○ To enumerate the economic advantage of including women in India's labour force

2 ○ **To highlight the detrimental effects of the low participation of women in India's labour force**

3 ○ **To showcase the low participation of women in India's workforce as a reasons for its poor financial growth**

4 ○ **To analyse the causes of low female employment in the country with some suggested remedies**

✔

Solution:

Correct Answer : 4

Your Answer : 4

Genre: Economics

Word Count: 603

In this paragraph, the author analyses the causes of lack of more female share in India's workforce. S/he also suggests some remedies.

Option 1 – It is misleading. The author says more women should be included, not women should be included. This option makes it seem as if women are not part of the current workforce.

Options 2 and 3 – These are partially correct. These only focus on the negative consequences. They don't talk about the remedies.

Option 4 – It is the most complete option.

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Q.16
Which of the following is true according to the passage?

1 ○ India, the world's largest democracy, can do better financially.

2 ○ **India's neighbour, Bangladesh, has increased its working population by 50%.**

3 ○ **Vietnam has more number of factories as compared to India.**

4 ○ **India's financial progress has not been up to the expectation of IMF.**

✔

Solution:

Correct Answer : 1

Your Answer : 1

Genre: Economics

Word Count: 603

Option 1 – Refer to the line – "Were India to rebalance its workforce in this way, the IMF estimates, the world's biggest democracy would be 27% richer.". This option is factually correct.

Option 2 – Refer to the line – "In neighbouring Bangladesh, whose customs are not so different from India's, a boom in garment manufacturing has increased the number of working women by 50% since 2005." The option talks about the entire working population. The passage talks about females in the workforce. Hence, it is incorrect.

Option 3 – Refer to the line – "But the mega-factories that boosted female employment there are largely absent in India." The number of mega factories in Vietnam is more. It doesn't mean the number of factories. Hence, it is incorrect.

Option 4 – It is nowhere mentioned in the passage. So, this is irrelevant.

🔖 **Bookmark**

🔍 Answer key/Solution

FeedBack

Directions for questions (13 to 18): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

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Q.17
According to the author, which of the following will help increase the number of women in India's labour force?

1 ○ **Reforming the Indian labour market**

2 ○ **Promoting education**

3 ○ **Changing villages into urban cities**

4 ○ **Upgrading the economic status of the families**

✔

Solution:

Correct Answer : 1

Your Answer : 1

Genre: Economics

Word Count: 603

Only option 1 has been mentioned as a positive measure.

Options 2, 3, and 4 – The author mentions these as reasons behind the low participation of female in India's labour force. So, these can't be the remedies.

FeedBack

Directions for questions (13 to 18): The passage below is accompanied by a set of six questions. Choose the best answer to each question.

Lakshmi, the goddess of wealth and fortune, is the closest thing Hinduism has to an economic deity. How poorly her earthly sisters in present-day India are faring. There, women are less likely to work than they are in any country in the G20, except for Saudi Arabia. They contribute one-sixth of economic output, among the lowest shares in the world and half the global average. The unrealised contribution of women is one reason India remains so poor.

Yet far from joining the labour force, women have been falling away at an alarming pace. The female employment rate in India, counting both the formal and informal economy, has tumbled from an already low 35% in 2005 to just 26% now. A rise in female employment rates to the male level would provide India with an extra 235m workers, more than the EU has of either gender, and more than enough to fill all the factories in the rest of Asia.

Imagine the repercussions. Were India to rebalance its workforce in this way, the IMF estimates, the world's biggest democracy would be 27% richer. Its people would be well on their way to middle-income status. Beyond the obvious economic benefits are the incalculable human ones. Women who work are likelier to invest more in their children's upbringing, and to have more say over how they lead their lives.

Some of the fall in female employment is a sign of progress. Girls are staying in school, and thus out of the labour force, for longer. But mostly it is the result of two unwelcome trends. As households become richer, they prefer women to stop working outside the home. It is not unusual in developing economies for a family's social standing to be enhanced by having its women remain at home. But India stands out, as its female labour-force participation rate is well below those of countries at comparable income levels.

Social mores are startlingly conservative. A girl's first task is to persuade her own family that she should have a job. The in-laws she will typically move in with after marriage are even more likely to yank her out of the workforce and into social isolation. The workforce has shifted from jobs more often done by women — especially farming, where most Indian women work but are being displaced by mechanisation. At the same time, inflexible and unreformed labour markets have hampered the rise of manufacturing and low-level services, the gateway for women in other poor countries. In neighbouring Bangladesh, whose customs are not so different from India's, a boom in garment manufacturing has increased the number of working women by 50% since 2005. In Vietnam three-quarters of women work. But the mega-factories that boosted female employment there are largely absent in India.

What can be done? Many of the standard answers fall short. Promoting education, a time-tested development strategy, may not succeed. Figures show that the more schooling an Indian woman receives, the less likely she is to work, at least if she has anything less than a university degree. Likewise urbanisation, another familiar way to alleviate poverty: city-dwelling women are half as likely as rural ones to have a job. The most fruitful policy would be to reform India's labour market so that women can be sucked into jobs en masse.

In fact, many fear that all that extra schooling was a parental ploy to improve a daughter's prospects not in the labour market but in the arranged-marriage market, part of the all-important quest to snag a suitable boy. A further push is needed to get Indian women what they really need: a suitable job.

Q.18
Which of the following can be inferred from the passage?

1 ○ In Bangladesh, majority of the females are part of the labour force.

2 ⚪ **Increase in female employment will lead to greater self freedom for females.**

3 ⚪ **A female with a university degree will be more likely to join the labour force.**

4 ⚪ **Keeping the female child in school for a longer duration is not beneficial in the long run.**

[✖]

Solution:

Correct Answer : 2

Your Answer : 3

Genre: Economics

Word Count: 603

Refer to the line – "Women who work are likelier to invest more in their children's upbringing, and to have more say over how they lead their lives."
Option 1 can be negated as "In Bangladesh the female work force has increased by 50% and not to 50%."
Option 3 is wrong because we cannot be sure that a female with university degree will join the work force.
Option 4 is wrong as it may not be beneficial for increasing employment but it may be beneficial in some other way (selecting a prospective groom).

[FeedBack]

Directions for questions (19 to 21): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

Like Ramos's unflattering portrait of the Mexican in the *Profile*, the purpose of Uranga's analysis of Mexican sentimentality is not simply to put the Mexican on trial. Instead, there is an underlying lesson about the human condition that the Anglo-European can learn from Mexican self-examination. To be accidental is not the tragic fate of Mexicans – the peculiar source of their misery or fascination with death. Instead, it is an essential feature of being human. In other words, if Uranga is right, the belief in the self-sufficiency or substantiality of human existence that defines modern European history – a belief that provided Europeans with a justification for a history of conquest, colonialism, exclusion and exploitation – is not just mistaken or false, it is inhuman.

It is worth pointing out that Uranga's use of 'ontology' is problematic, given that the object of his analysis is the specific being of the Mexican. As the philosopher Guillermo Hurtado of the National Autonomous University of Mexico pointed out in 2011, Uranga engages in a 'micro-regional ontology', not ontology proper. Hurtado asks: 'How far can the regionalisation of an ontology be taken?' However, the seeming regionalisation of ontology did not bother Uranga, as he believed that the results of the analytic would show that Mexican being, as insufficient and accidental, represents being in general. So, for Uranga and el grupo Hiperión, or los hiperiones, the existential analytic of Mexican existence (or Dasein, as Heidegger might have it) would open the path to a greater truth, 'the Mexican is human and the human is Mexican'. Thus, while it might be problematic for a more traditional phenomenologist, we like to see Uranga's appropriations of the phenomenological-existential method as creative, a refusal to employ an approach that already exists and a willingness to adjust the method to match the (historical) object of study.

Q.19
According to the passage, what lesson can the Anglo-European learn from Mexican self-examination?

1 ○ **To be accidental is not the tragic fate of Mexicans.**

2 ○ **To be accidental is a human condition.**

3 ○ **To be accidental is not just the fate of Mexicans, but also of Anglo-Europeans.**

4 ○ **To be accidental is the source of human misery and fascination with death.**

Solution:

Correct Answer : 2

Genre: Philosophy / Metaphysics

Word Count: 303

The lesson that the Anglo- European can learn is mentioned in the fourth and fifth line of the first paragraph. It states that to be accidental is not just restricted to Mexicans, but is an essential feature of being human. Hence, option 2 is correct.

Option 4 – It focuses on the cause effect relationship between being accidental and being miserable, which is not the focus of the lesson.

Options 1 and 3 – These are factually not correct.

FeedBack

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Q.20

The line "However, the seeming...general." point to the fact that the method of reasoning used by Urania in his analytic is:

1 ○ **deductive.**

2 ○ inductive.

3 ○ circular.

4 ○ causal.

Solution:

Correct Answer : 2

Genre: Philosophy / Metaphysics

Word Count: 303

The line of reasoning is clearly inductive as we are generalising the results of an analysis of Mexicans.

Deductive reasoning is the opposite of this.

FeedBack

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Q.21

Which of the following can be inferred about Uranga from the passage?

1 ○ If Uranga's analytic is correct, the Europeans are inhuman.

2 ○ Both Ramo's and Uranga's have tried to give the same lesson on human condition while using different approaches.

3 ○ Though Uranga was creative, he can be called rigid as he didn't accept people's criticism of his use of 'ontology'.

4 ○ **Uranga's actions hint towards an unorthodox man sure of himself.**

Solution:

Correct Answer : 4

Genre: Philosophy / Metaphysics

Word Count: 303

Option 1 is extreme. The first para calls Europeans' belief in the self-sufficiency or substantiality as inhuman, not the Europeans themselves.

The approach of Ramo is not mentioned in the passage. So option 2 is rejected.

The paragraph nowhere alludes to Uranga being rigid. Also, it is not the 'criticism' that didn't bother Uranga, but the 'seeming regionalisation'. We don't know whether this criticism reached Uranga or not. So, option 3 is eliminated.

Option 4 can be inferred from two instances: how the seeming regionalisation didn't bother him because of his belief (sure of himself) and how he refused to employ an existing approach and instead adjusted the method to the object of study.

> FeedBack

Directions for questions (22 to 24): The passage below is accompanied by a set of three questions. Choose the best answer to each question.

Cycads look the part of foliage on a "Jurassic Park" film set for a reason. The plants are indeed very ancient. They evolved during the Permian period, millions of years before the first dinosaurs existed. Although classified in the same group as conifers, cycads do not release their pollen into the wind like the rest of their kin. Instead, each species of cycad that remains today relies on a specific type of beetle for pollination. This is unusual for a non-flowering plant like the cycad, and has left palaeobotanists curious about how long the plants have relied upon this method. The answer, it seems, is just about forever.

According to a study by Chenyang Cai of the University of Bristol, in Britain, reported in Current Biology this week, cycads have been luring beetles to do their bidding for nearly 100m years. Dr Cai has found the evidence in a fossil. Seeing two organisms interacting with one another in a fossil is remarkably rare; it usually involves finding the teeth of a predator lodged in the bones of prey. So it was particularly exciting for Dr Cai when he spotted cycad pollen fossilised alongside a 2mm-long beetle found in northern Myanmar.

The beetle died 99m years ago, when it got trapped inside sticky tree sap. This sap eventually hardened into amber around the insect and preserved its corpse in pristine condition. Since the amber is clear, Dr Cai and his colleagues have been able to study the beetle and the other material that got lodged in the sap. Their analysis revealed not just the cycad pollen but also that the bug belongs to the family Boganiidae, of which cycad-pollinating beetles are a part.

Crucially, the beetle has cavities just below its jaw filled with tiny hardened hairs that are used by these insects today to feed upon and transport cycad pollen. In the face of the fierce competition brought about by the evolution of flowering plants, the asteroid impact that did in the dinosaurs, the rise of mammals and numerous ice ages, cycads seem to have come up with a reproductive plan and stuck to it steadfastly.

Q.22

Which one of these is the central idea of the final paragraph?

1 ○ **To show how Dr. Cai has proven the primary mode of pollen transfer by which cycads reproduce**

2 ○ **To show how beetles saved cycads from an evolutionary catastrophe**

3 ○ **To show how cycads were crucially dependent on beetles for their reproduction when the asteroid attack on earth caused dinosaurs to become extinct**

4 ○ **To show the importance of beetles in the survival of cycads through centuries of evolution**

Solution:

Correct Answer : 4

Genre: Biology

Word Count: 363

Options 1 and 2 are too narrow.

Option 3 – It is a distorted option. The passage doesn't say that when asteroid attached earth, the beetles were dependent on cycads. It creates a distorted cause-effect relationship.

Option 4 is the correct answer.

🔖 Bookmark

🔍 Answer key/Solution

> FeedBack

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Q.23

Which one of these is not true according to the passage?

1 ○ **Dr. Cai of the University of Bristol has spotted fossilised cycad pollen alongside the fossil of a beetle**

2 ○ **Paleobotanists have been curious about the method of pollination used by non-flowering plants like cycads.**

3 ○ **The beetle, whose fossil was discovered by Dr. Cai, died before the era of the dinosaurs.**

4 ○ **It is rare to find clear evidence of the interaction of two organisms in a fossil.**

✔

Solution:
Correct Answer : 3
Your Answer : 3
Genre: Biology
Word Count: 363
Option 1 – Refer to the lines – "According to a study by Chenyang Cai of the
University of Bristol, in Britain, reported in Current Biology this week, cycads have been luring beetles to do their bidding for nearly 100m years. Dr Cai has found the evidence in a fossil." So, this option is true.
Option 2 – Refer to the line – "This is unusual for a non-flowering plant like the cycad, and has left palaeobotanists curious about how long the plants have relied upon this method. The answer, it seems, is just about forever." So, this is true too.
Option 3 – No data is given regarding the time period of the extinction of dinosaurs. The beetle died 99m years ago. So, this option may or may not be true.
Option 4 – Refer to the line – "Seeing two organisms interacting with one another in a fossil is remarkably rare; it usually involves finding the teeth of a predator lodged in the bones of prey." So, this option is true too.

🔖 **Bookmark**

🔑 Answer key/Solution

FeedBack

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Q.24
Why does the author mention the Bogannidae family of beetles?

1 ○ To establish Dr. Cai's finding that the beetle fossil found in Myanmar proves that cycads used beetles for pollination

2 ○ To establish Dr. Cai's finding that beetles of the Bogannidae family pollinate cycads

3 ○ To establish Dr. Cai's finding that cycads have been luring beetles for pollination for around 100 years

4 ○ To establish Dr. Cai's finding that corpses of the Bogannidae family of beetles are preserved in a pristine condition

✖

Solution:

Correct Answer : 1

Your Answer : 2

Genre: Biology

Word Count: 363

Authors typically give examples to strengthen their main idea. Only option 1 is relevant to the main idea of the passage. So, it is the correct answer.

FeedBack

Q.25

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

One of the first visible effects of currency depreciation is that the country's imports become more expensive and exports cheaper. The reason is simple. It takes more rupees to pay for the same quantum of imports and fewer dollars for a buyer to pay for the same quantity of exports. More expensive imports are likely to drive inflation upward, especially in India where input products constitute a large part of our imports. In addition, a depreciating rupee also impacts the oil import bill since it costs more rupees per barrel of oil, which plays its own part in pushing inflation up.

1. Inflation leads to currency depreciation which is characterised by increase in the price of imported items.

2. With the fall in currency, inflation goes up.

3. With the rise in inflation, the import tax increases and export tax decreases which therefore results in currency depreciation.

4. Currency depreciation is characterised by import prices going up and export prices going down.

✖

Solution:

Correct Answer : 4

Your Answer : 2

Currency depreciation leads to inflation. The paragraph talks about the effects of currency depreciation. Out of the given options, only option 4 captures the essence of the paragraph.

FeedBack

Q.26

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

In a way, each language-game is spoken in a micro-dialect, one that is affected not just by region, but location, relationships, identity, history, power. When I'm having lunch with my parents, I'm participating in a different language-game than when I'm at a bar with my friends or serving coffee to strangers. Likewise, when we are determining whether some kinds of speech can be understood as violence, it's important to examine the larger context. When Milo Yiannopoulos says "feminism is cancer," for instance, it may be heard differently by Haidt and Lukianoff than by Lisa Feldman Barrett. As white men, Haidt and Lukianoff likely don't have a reference point to understand what it feels like for a woman to hear these words. They won't cut the same way.

1. In the absence of a reference point, white men are unable to fathom how violence in language affects women.
2. The meaning of language depends on a multitude of things and meanings are often prone to subjective interpretation.
3. Each speaker uses language in a different manner, where one's background and belief play a paramount role in conveying the meaning to the listener.
4. Each language is used as a micro-dialect where the meaning is never fixed, but always fluid.

Solution:

Correct Answer : 2

The main points the author raises in the paragraph are: The way one uses language is subjective; the perceived meanings may vary from person to person. Option 2 captures this perfectly.

Option 1- This is an extreme conclusion, not the summary of the paragraph.

The focus of the paragraph is not on blaming white men for their lack of comprehension. Secondly, the author gives the examples of two white men, not all.

Option 3 – The second part is wrong. It's the listeners' background that determines comprehension, not the speakers'.

Option 4 – This is a distorted version of the first point. The paragraph doesn't say that the meaning is never fixed.

🔖 **Bookmark**

🔑 Answer key/Solution

FeedBack

Q.27

Directions for question 27: The passage given below is followed by four summaries. Choose the option that best captures the author's position.

By developing a bespoke helmet with movement-tracking capability, researchers have studied visual attention in homing pigeons, according to a study published. Because pigeons move their heads in coordination with their eye movements, the former can be used as a proxy for their visual attention. The trackers, strapped to the birds' heads, logged data about their head movements and location. The researchers found that the birds moved their heads more when flying alone than when flying in pairs. They also decreased this scanning behaviour when flying over major landmarks such as railway tracks. The study concluded that a drop in head movement implied a shift in the pigeon's focus.

1. Researchers, while analyzing the pigeons' movement by using a bespoke helmet, found data to calculate the head movement and location of the birds.
2. Researchers analyzed pigeons' head movement in flight and discovered that while flying in groups the birds become less cautious.
3. Researchers analyzed pigeons' head movements in flight and concluded that flying in groups is more beneficial for birds.
4. Researchers analyzed pigeons' head movements in flight by using a tracker and found that the shift of the bird's focus was related to a drop in its head movement.

✖

Solution:

Correct Answer : 4

Your Answer : 1

There are two main points in the paragraph: Researchers studied the movement of the pigeons; the conclusion or the finding of the study showed a correlation between the bird's focus and its head movement. So, option 4 is correct.

Option 1 – 'Data to calculate' is irrelevant.

Option 2 – 'Birds become less cautious' is incorrect.

Option 3 – It only covers the second point and presents it in a distorted manner. '...more beneficial for birds' is not true for 'all birds'. The option goes beyond the scope of the paragraph.

🔖 Bookmark

🔍 Answer key/Solution

FeedBack

Q.28

Directions for question 28: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. Nevertheless, in the composition of Raleigh's History of the World, Orwell's apocryphal tale does not quite square with the facts.
2. This was hardly an ideal research centre, but with characteristic energy Raleigh devoted years of work to his History of the World.
3. On the death of Queen Elizabeth in 1603, he was tried for high treason on trumped-up charges and imprisoned in the Tower of London.
4. Written during the first seven years of his long (1603-1616) incarceration, The History of the World is Raleigh's most important prose work.
5. Raleigh is one of those larger-than-life characters – an inveterate buccaneer and a gifted poet, parodied by Shakespeare in Love's Labours Lost – who has long been an object of awestruck anecdote.

Solution:
Correct Answer : 51324
5 is the opening sentence as it introduces the topic.
5and 1 make a mandatory pair – 1 (with 'nevertheless' mildly contradict 5).
324 make a mandatory sequence.
'This was...research centre' in 2 refers to 'Tower of London' in 3. So, 32 becomes a mandatory pair.
4 will come after that as it adds to the theme of Raleigh's incarceration.
So, 51324 is the correct sequence.

FeedBack

Q.29

Directions for question 29: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. Furthermore, in organized team sports, children work together to accomplish a task and learn from their mistakes.
2. These lessons directly translate into the classroom and beyond, and they are the reason that Little League considers itself a youth leadership organization, as much as it does a competitive baseball and softball program.
3. To be successful in baseball and softball, you need to learn from failure and losing, more so than the act of winning.
4. While striving to win, children learn about teamwork, leadership and sportsmanship, all of which can contribute to their development as solid citizens.
5. Perfect games are a rarity. Even some of our World Series champions have had to fight back from a tough defeat earlier in a tournament.

Solution:

Correct Answer : 35412

The first word of the question 'furthermore' gives a strong clue. It's a linking word which takes an existing idea forward.

So, 1 will come before 4. 4 talks about the achievement and learning of children. 1 adds to this theme.

3 talks about games in general. So does 5. So, these two will come at the beginning of the paragraph keeping in mind the general-specific flow of thoughts.

2 will come after both 4 and 1. 'These lessons' refer to the ideas mentioned in 4 and 1.

So, 35412 is the correct sequence.

FeedBack

Q.30

Directions for question 30: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. The extinctions coincided with increased volcanic activity in Siberia, but evidence has not supported this as a sole cause.
2. The largest mass extinction, occurring 252 million years ago at the end of the Permian Period, before dinosaurs walked the Earth, wiped out approximately 95 percent of all life.
3. They showed that the methanogenic archaea acquired the ability to break down acetate, which had built up in sediments, through gene transfer from a bacterium about 250 million years ago, just before the mass extinction.
4. MIT's Daniel Rothman and colleagues presented compelling evidence that an unprecedented increase in methane-producing microbes is the cause.
5. The cause of the event has long been a topic of debate.

Solution:

Correct Answer : 25143

2 has to be the opening sentence as it introduces the main topic.

'The extinctions' in 1 talk about 2. However, 5 has to come between 2 and 1. 'The cause of the event' refers to 'the extinction'.

1 gives more idea about the 'debate' mentioned in 5.

4 and 3 make a pair as 'they' in 3 refers to 'Rothman and colleagues' in 4. 4 and 3 can't come before 251.

So, 25143 is the correct sequence.

FeedBack

Q.31

Directions for question 31: The five sentences (labelled 1, 2, 3, 4, 5) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper order for the sentences and key in this sequence of five numbers as your answer.

1. In the study, the team targeted a region of a gene called doublesex that is responsible for female development.
2. Female Anopheles gambiae mosquitoes with two copies of the altered doublesex gene did not lay eggs.
3. After eight generations, the drive had spread through the entire population, such that no eggs were laid.
4. This is the first time a gene drive—a genetic element that ensures its own inheritance—has caused a population of mosquitoes to self-destruct, a result that holds promise for combating malaria.
5. A gene drive has successfully caused the collapse of a malaria-carrying mosquito population in the lab, researches report.

✖

Solution:

Bookmark

Correct Answer : 54123

Answer key/Solution

Your Answer : 52134

'A gene drive' in 5 suggests that it is the best opening sentence. (Notice the use of the indefinite article)

5 and 4 make a mandatory pair . "This is the first time" refers to "the report".

1 comes next as 'the study' refers to 5 and 4.

2 and 3 come next as they explain the findings of the study. "The drive" in 3 refers to 2.

So, 54123 is the correct sequence.

FeedBack

Q.32

Directions for question 32: 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. But so aloof is he from general suspicion, so immune from criticism, so admirable in his management of self-effacement, that for those very words that you have uttered he could hale you to a court and emerge with your year's pension as a solatium for his wounded character.
2. But in calling this man a criminal you are uttering libel in the eyes of the law- and there lie the glory and the wonder of it!
3. Foul-mouthed doctor and slandered professor – such would be your respective roles!
4. The greatest schemer of all time, the organizer of every deviltry, the controlling brain of the underworld, a brain which might have made or marred the destiny of nations – that's the man!
5. Led on by some rudimentary aspirations towards right, and encouraged by the judicious stimulation of an occasional ten-pound note sent to him by devious methods, he has once or twice given me advance information which has been of value.

Solution:

Correct Answer : 5

The correct order is 2413. The odd sentence is 5.

It can be easily answered if one is able to understand the sentence structure.

1, 2, 3, and 4 talk about a man who is ruthless and will not tolerate slander. 5 talks about someone who helps the speaker with information. So, it is a different topic altogether.

P.S. Kudos to you if you got the Sherlock reference. Sentences 1, 2, 3, and 4 talk about 'THE MORIARTY'. Sentence 5 talks about one of the informants of Sherlock. Hint: Read The Valley of Fear.

FeedBack

Q.33

Directions for question 33: 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. For this reason young people, who are beginners in everything, do not yet know how to love: they must learn.
2. With their whole being, with all their strength, concerted on their solitary, fearful, upward beating hearts, they have to learn to love.
3. To love is also good, for love is hard.
4. Love between one person and another: that is perhaps the hardest thing it is laid on us to do, the utmost, the ultimate trial and test, the work for which all other work is just preparation.
5. Whoever looks at the matter seriously finds that, as for death, which is difficult, no explanation, no solution, has yet been discovered for love, which is difficult too.

Solution:

Correct Answer : 5

The correct order is 3412.

5 talks about the issue of facing death. 'Love' here is not the main topic. The other four sentences talk about love and its difficulties. They also focus on 'lovers'.

So, option 5 is the odd one out.

FeedBack

Q.34

Directions for question 34: 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. There are more Mughal artefacts stacked in this private house in the Welsh countryside than are on display at any one place in India – even the National Museum in Delhi.
2. According to the Oxford English Dictionary, this word was rarely heard outside the plains of north India until the late 18th century, when it suddenly became a common term across Britain.
3. We still talk about the British conquering India, but that phrase disguises a more sinister reality.
4. To understand how and why it took root and flourished in so distant a landscape, one need only visit Powis Castle.
5. One of the very first Indian words to enter the English language was the Hindustani slang for plunder: "loot".

Solution:
Correct Answer : 3
Your Answer : 1
The correct order is 5241.
Sentence 3 talks about 'British conquering India'.
The other four sentences talk about the origin of the word loot and its example.
So, 3 is the odd one out.

FeedBack

Sec 2

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

In TS Education Pvt ltd., there are four categories of employees: Category A, B, C and D. No employee has a basic salary less than 2 lakhs. If TDS is deducted from the employees' salary, it is deducted at 10% of the basic salary. If GST is paid to an employee, it is paid at 18% of the basic salary. Also it is known that:
Category A employees have their basic salary less than 5 lakhs but not less than 2 lakhs and neither TDS is deducted from their salaries nor they are paid the GST. Category B employees who have their basic salary less than 10 lakhs but not less than 5 lakhs are paid the GST but no TDS is deducted from their salaries.
Category C employees who have their basic salary less than 20 lakhs but not less than 10 lakhs are not paid the GST but TDS is deducted from their salaries.
Category D employees who have their basic salary not less than 20 lakhs are paid the GST and TDS too is deducted from their salaries.
Net salary is the final salary after deducting TDS (wherever applicable) and/or including GST (wherever applicable). The basic salary and the net salary of each employee is an integral multiple of 1000.

Q.35

If there are at least 5 employees in each category but not more than 10 employees in any category, then what is the minimum possible average net salary (in thousands) of all employees if the average net salary is an integral multiple of 1000?

Solution:
Correct Answer : 774

Let the basic salary of an employee be 'X' thousands.
In Category A, the net salary will be 'X' thousands only.

In Category B, the net salary will be X + 0.18 X = 1.18X thousand = $\dfrac{59X}{50}$ thousand. This means the net salary will definitely be a multiple of 59 and X will be a multiple of 50. So minimum salary is Rs. 5,90,000.

In Category C, the net salary will be X – 0.1 X = 0.9X thousand = $\dfrac{9X}{10}$ thousand. This means the net salary will definitely be a multiple of 9 and X will be a multiple of 10. So minimum salary is Rs. 9,00,000.

In Category D, the net salary will be X – 0.1X + 0.18 X = 1.08X thousand = $\dfrac{27X}{25}$ thousand. This means the net salary will definitely be a multiple of 27 and X will be a multiple of 25. So minimum salary is Rs. 21,60,000.

Minimum possible average net salary will be there when there are maximum number of employees in Category A and B that is 10, but minimum possible number of employees in category C and D that is 5. So the minimum possible

average net salary (in thousands) is $\dfrac{10 \times 200 + 10 \times 590 + 5 \times 900 + 5 \times 2160}{30}$ = 773.33. Hence, the minimum possible

net salary is Rs. 7,74,000 which is possible by taking the salary of one of the employees from category A as 202 thousand.

> FeedBack

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

In TS Education Pvt ltd., there are four categories of employees: Category A, B, C and D. No employee has a basic salary less than 2 lakhs. If TDS is deducted from the employees' salary, it is deducted at 10% of the basic salary. If GST is paid to an employee, it is paid at 18% of the basic salary. Also it is known that:
Category A employees have their basic salary less than 5 lakhs but not less than 2 lakhs and neither TDS is deducted from their salaries nor they are paid the GST. Category B employees who have their basic salary less than 10 lakhs but not less than 5 lakhs are paid the GST but no TDS is deducted from their salaries.
Category C employees who have their basic salary less than 20 lakhs but not less than 10 lakhs are not paid the GST but TDS is deducted from their salaries.
Category D employees who have their basic salary not less than 20 lakhs are paid the GST and TDS too is deducted from their salaries.
Net salary is the final salary after deducting TDS (wherever applicable) and/or including GST (wherever applicable). The basic salary and the net salary of each employee is an integral multiple of 1000.

Q.36
Which of the following cannot be the net salary of a Category C employee?

1 ○ **10,80,000**

2 ○ **9,00,000**

3 ○ **18,90,000**

4 ○ **None of these**

Solution:

Correct Answer : 3

Your Answer : 3

Let the basic salary of an employee be 'X' thousands.
In Category A, the net salary will be 'X' thousands only.

In Category B, the net salary will be X + 0.18 X = 1.18X thousand = $\frac{59X}{50}$ thousand. This means the net salary will definitely be a multiple of 59 and X will be a multiple of 50. So minimum salary is Rs. 5,90,000.

In Category C, the net salary will be X – 0.1 X = 0.9X thousand = $\frac{9X}{10}$ thousand. This means the net salary will definitely be a multiple of 9 and X will be a multiple of 10. So minimum salary is Rs. 9,00,000.

In Category D, the net salary will be X – 0.1X + 0.18 X = 1.08X thousand = $\frac{27X}{25}$ thousand. This means the net salary will definitely be a multiple of 27 and X will be a multiple of 25. So minimum salary is Rs. 21,60,000.

The salary of category C employee is 0.9X where X is from 10,00,000 to 19,99,999. Hence, 18,90,000 is not possible as in that case X will be 21,00,000.

FeedBack

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

In TS Education Pvt ltd., there are four categories of employees: Category A, B, C and D. No employee has a basic salary less than 2 lakhs. If TDS is deducted from the employees' salary, it is deducted at 10% of the basic salary. If GST is paid to an employee, it is paid at 18% of the basic salary. Also it is known that: Category A employees have their basic salary less than 5 lakhs but not less than 2 lakhs and neither TDS is deducted from their salaries nor they are paid the GST. Category B employees who have their basic salary less than 10 lakhs but not less than 5 lakhs are paid the GST but no TDS is deducted from their salaries.
Category C employees who have their basic salary less than 20 lakhs but not less than 10 lakhs are not paid the GST but TDS is deducted from their salaries.
Category D employees who have their basic salary not less than 20 lakhs are paid the GST and TDS too is deducted from their salaries.
Net salary is the final salary after deducting TDS (wherever applicable) and/or including GST (wherever applicable). The basic salary and the net salary of each employee is an integral multiple of 1000.

Q.37
What is the minimum possible net salary (in thousands) of an employee from Category D whose net salary is equal to the sum of the net salaries of some employees of Category B?

1 ○ **3186**

2 ○ **2950**

3 ○ **2079**

4 ○ **2360**

Solution:
Correct Answer : 1

Let the basic salary of an employee be 'X' thousands.
In Category A, the net salary will be 'X' thousands only.

In Category B, the net salary will be X + 0.18 X = 1.18X thousand = $\dfrac{59X}{50}$ thousand. This means the net salary will definitely be a multiple of 59 and X will be a multiple of 50. So minimum salary is Rs. 5,90,000.

In Category C, the net salary will be X − 0.1 X = 0.9X thousand = $\dfrac{9X}{10}$ thousand. This means the net salary will definitely be a multiple of 9 and X will be a multiple of 10. So minimum salary is Rs. 9,00,000.

In Category D, the net salary will be X − 0.1X + 0.18 X = 1.08X thousand = $\dfrac{27X}{25}$ thousand. This means the net salary will definitely be a multiple of 27 and X will be a multiple of 25. So minimum salary is Rs. 21,60,000.

The salary of Category D employees is a multiple of 27 and of category B employees is a multiple of 59 hence it must be a multiple of 59 and 27 both. Also it must be greater than Rs. 21,60,000. So the minimum salary is Rs. 31,86,000.

FeedBack

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

In TS Education Pvt ltd., there are four categories of employees: Category A, B, C and D. No employee has a basic salary less than 2 lakhs. If TDS is deducted from the employees' salary, it is deducted at 10% of the basic salary. If GST is paid to an employee, it is paid at 18% of the basic salary. Also it is known that: Category A employees have their basic salary less than 5 lakhs but not less than 2 lakhs and neither TDS is deducted from their salaries nor they are paid the GST. Category B employees who have their basic salary less than 10 lakhs but not less than 5 lakhs are paid the GST but no TDS is deducted from their salaries.
Category C employees who have their basic salary less than 20 lakhs but not less than 10 lakhs are not paid the GST but TDS is deducted from their salaries.
Category D employees who have their basic salary not less than 20 lakhs are paid the GST and TDS too is deducted from their salaries.
Net salary is the final salary after deducting TDS (wherever applicable) and/or including GST (wherever applicable). The basic salary and the net salary of each employee is an integral multiple of 1000.

Q.38
The net salary of an employee is a multiple of 27000. Which category he might be belonging to?

1 ○ **Category C**

2 ○ **Category C or D**

3 ○ **Category B or C**

4 ○ **Any of B, C or D**

Solution:

Correct Answer : 2

Let the basic salary of an employee be 'X' thousands.
In Category A, the net salary will be 'X' thousands only.

In Category B, the net salary will be X + 0.18 X = 1.18X thousand = $\frac{59X}{50}$ thousand. This means the net salary will definitely be a multiple of 59 and X will be a multiple of 50. So minimum salary is Rs. 5,90,000.

In Category C, the net salary will be X – 0.1 X = 0.9X thousand = $\frac{9X}{10}$ thousand. This means the net salary will definitely be a multiple of 9 and X will be a multiple of 10. So minimum salary is Rs. 9,00,000.

In Category D, the net salary will be X – 0.1X + 0.18 X = 1.08X thousand = $\frac{27X}{25}$ thousand. This means the net salary will definitely be a multiple of 27 and X will be a multiple of 25. So minimum salary is Rs. 21,60,000.

The salary of employees of category B is from 59 × 10 to 59 × 19 in thousands. For category C, it is from 90 × 10 to 90 × 19 in thousands. For category D, it is always a multiple of 27,000. Hence for C or D it can be a multiple of 27,000.

FeedBack

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

In an 'ABC' tuition classes, the performance of 22 students of a batch is represented by their teacher in the form of a matrix having two rows, 1 and 2, from top to bottom and 11 columns numbered as 1, 2, 3, 4,..., 11, from left to right. Every student knows which cell of matrix represents his performance. This matrix is filled with numbers from 1 to 22 to represent the ranking of these 22 students in the class. Some points that teacher has to keep in mind, while filling this matrix, are as follows:
• No two even or odd numbers can be in the same column.
• All the even multiples of 3 should be in consecutive columns with in the same row, and the same follows for all the odd multiples of 3.
• 1 and 3 should be in column 1 and column 11.
• There should be exactly one column between the column having number 3 and the column having number 12.
• 21 is in the 1st row and 9th column.
• 14 and 22 should be in the same row and there should be 6 columns between the column having number 14 and the column having number 22.
• All multiples of 4 (except 12) should be in consecutive columns. Same holds true for 5 and 10.
• All multiples of 5, 10 and 4 (except 12) should be in the same row.
• Sum of the numbers in the 1st column is the second highest prime number and that of in 3rd column is the highest prime number less than 31.

Q.39
What is the sum of the numbers in the second row?

1 ○ **150**

2 ○ **139**

3 ○ **131**

Solution:

Correct Answer : 4

The even multiples of 3 are 6, 12, 18 and the odd multiples are 3, 9, 15, 21.

If 21 is in row 1 and 9th column, thus 3, 9 and 15 must occupy the columns 8, 10 and 11 in the same row. But 3 should be in the end column. Thus, it must be in column 11. 12 must be in the 9th column and row 2 as there is a gap of one column between 3 and 12. In row 1, in 8th and 10th column 15 and 9 will come. As 3 is in the 11th column, so 1 will come in the column 1. So the other number in column 1 has to be 22 as sum of the numbers in column 1 must be a prime number (23, which is the second highest prime number less than 31). Thus, 22 and 14 will take position in column 1 and 8 respectively. Further as 12 is in row 2, column 9 hence 6 and 18 (even multiple of 3) must occupy the 10th and 11th place in row 2.

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1							15/9	21	9/15	3
Row 2	22							14	12	6/18	18/6

Multiples of 4 (except 12) are 4, 8, 16, 20. Multiples of 5, 10, 15 and 20. Multiples of 10 are 10 and 20. In order to satisfy the condition that the multiples of the particular numbers should be together the number 15 must be in the 8th column to arrange the multiples. Therefore, 9 must be in column 10 and 5 must be in the 7th column. Since all the multiples must be in the same row hence they are in row 1 as 15 is in row 1.

Sum of the numbers of the 3rd column is the highest prime number less than 31, thus it will be 29.29 can be expressed as the sum of 16 and 13. Thus, the numbers of the 3rd column must be 16 and 13. 2 must be in the 7th column as all other numbers in column 2, 3, 4, 5 and 6 are even thus 2 cannot be placed in them.

Thus we get the matrix like,

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1	4/8	16	8/4	20	10	5	15	21	9	3
Row 2	22	11/7 17/19	13	11/7 17/19	11/7 17/19	11/7 17/19	2	14	12	6/18	18/6

Sum of the numbers of the second row = 22 + 11 + 7 + 17 + 19 + 13 + 2 + 14 + 12 + 6 + 18 = 141

FeedBack

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

In an 'ABC' tuition classes, the performance of 22 students of a batch is represented by their teacher in the form of a matrix having two rows, 1 and 2, from top to bottom and 11 columns numbered as 1, 2, 3, 4,..., 11, from left to right. Every student knows which cell of matrix represents his performance. This matrix is filled with numbers from 1 to 22 to represent the ranking of these 22 students in the class. Some points that teacher has to keep in mind, while filling this matrix, are as follows:
• No two even or odd numbers can be in the same column.
• All the even multiples of 3 should be in consecutive columns with in the same row, and the same follows for all the odd multiples of 3.
• 1 and 3 should be in column 1 and column 11.
• There should be exactly one column between the column having number 3 and the column having number 12.
• 21 is in the 1st row and 9th column.
• 14 and 22 should be in the same row and there should be 6 columns between the column having number 14 and the column having number 22.
• All multiples of 4 (except 12) should be in consecutive columns. Same holds true for 5 and 10.
• All multiples of 5, 10 and 4 (except 12) should be in the same row.
• Sum of the numbers in the 1st column is the second highest prime number and that of in 3rd column is the highest prime number less than 31.

Q.40
What are the numbers in column 7?

1 ○ **15 and 14**

2 ○ **5 and 2**

3 ○ **5 and 14**

4 ○ **10 and 19**

Solution:

Correct Answer : 2

Bookmark

🔍 Answer key/Solution

The even multiples of 3 are 6, 12, 18 and the odd multiples are 3, 9, 15, 21.
If 21 is in row 1 and 9th column, thus 3, 9 and 15 must occupy the columns 8, 10 and 11 in the same row. But 3 should be in the end column. Thus, it must be in column 11. 12 must be in the 9th column and row 2 as there is a gap of one column between 3 and 12. In row 1, in 8th and 10th column 15 and 9 will come. As 3 is in the 11th column, so 1 will come in the column 1. So the other number in column 1 has to be 22 as sum of the numbers in column 1 must be a prime number (23, which is the second highest prime number less than 31). Thus, 22 and 14 will take position in column 1 and 8 respectively. Further as 12 is in row 2, column 9 hence 6 and 18 (even multiple of 3) must occupy the 10th and 11th place in row 2.

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1							15/9	21	9/15	3
Row 2	22							14	12	6/18	18/6

Multiples of 4 (except 12) are 4, 8, 16, 20. Multiples of 5, 10, 15 and 20. Multiples of 10 are 10 and 20. In order to satisfy the condition that the multiples of the particular numbers should be together the number 15 must be in the 8th column to arrange the multiples. Therefore, 9 must be in column 10 and 5 must be in the 7th column. Since all the multiples must be in the same row hence they are in row 1 as 15 is in row 1.
Sum of the numbers of the 3rd column is the highest prime number less than 31, thus it will be 29. 29 can be expressed as the sum of 16 and 13. Thus, the numbers of the 3rd column must be 16 and 13. 2 must be in the 7th column as all other numbers in column 2, 3, 4, 5 and 6 are even thus 2 cannot be placed in them.
Thus we get the matrix like,

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1	4/8	16	8/4	20	10	5	15	21	9	3
Row 2	22	11/7 17/19	13	11/7 17/19	11/7 17/19	11/7 17/19	2	14	12	6/18	18/6

The numbers in the 7th column are 5 and 2.

FeedBack

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

In an 'ABC' tuition classes, the performance of 22 students of a batch is represented by their teacher in the form of a matrix having two rows, 1 and 2, from top to bottom and 11 columns numbered as 1, 2, 3, 4,..., 11, from left to right. Every student knows which cell of matrix represents his performance. This matrix is filled with numbers from 1 to 22 to represent the ranking of these 22 students in the class. Some points that teacher has to keep in mind, while filling this matrix, are as follows:
• No two even or odd numbers can be in the same column.
• All the even multiples of 3 should be in consecutive columns with in the same row, and the same follows for all the odd multiples of 3.
• 1 and 3 should be in column 1 and column 11.
• There should be exactly one column between the column having number 3 and the column having number 12.
• 21 is in the 1st row and 9th column.
• 14 and 22 should be in the same row and there should be 6 columns between the column having number 14 and the column having number 22.
• All multiples of 4 (except 12) should be in consecutive columns. Same holds true for 5 and 10.
• All multiples of 5, 10 and 4 (except 12) should be in the same row.
• Sum of the numbers in the 1st column is the second highest prime number and that of in 3rd column is the highest prime number less than 31.

Q.41

What is the sum of the numbers in column 10?

1 ○ **15**

2 ○ **27**

3 ○ **15 or 27**

4 ○ **27 or 21**

Solution:

Correct Answer : 3

🔖 **Bookmark**

🔍 **Answer key/Solution**

The even multiples of 3 are 6, 12, 18 and the odd multiples are 3, 9, 15, 21.
If 21 is in row 1 and 9th column, thus 3, 9 and 15 must occupy the columns 8, 10 and 11 in the same row. But 3 should be in the end column. Thus, it must be in column 11. 12 must be in the 9th column and row 2 as there is a gap of one column between 3 and 12. In row 1, in 8th and 10th column 15 and 9 will come. As 3 is in the 11th column, so 1 will come in the column 1. So the other number in column 1 has to be 22 as sum of the numbers in column 1 must be a prime number (23, which is the second highest prime number less than 31). Thus, 22 and 14 will take position in column 1 and 8 respectively. Further as 12 is in row 2, column 9 hence 6 and 18 (even multiple of 3) must occupy the 10th and 11th place in row 2.

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1							15/9	21	9/15	3
Row 2	22							14	12	6/18	18/6

Multiples of 4 (except 12) are 4, 8, 16, 20. Multiples of 5, 10, 15 and 20. Multiples of 10 are 10 and 20. In order to satisfy the condition that the multiples of the particular numbers should be together the number 15 must be in the 8th column to arrange the multiples. Therefore, 9 must be in column 10 and 5 must be in the 7th column. Since all the multiples must be in the same row hence they are in row 1 as 15 is in row 1.
Sum of the numbers of the 3rd column is the highest prime number less than 31, thus it will be 29.29 can be expressed as the sum of 16 and 13. Thus, the numbers of the 3rd column must be 16 and 13. 2 must be in the 7th column as all other numbers in column 2, 3, 4, 5 and 6 are even thus 2 cannot be placed in them.
Thus we get the matrix like,

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1	4/8	16	8/4	20	10	5	15	21	9	3
Row 2	22	11/7 17/19	13	11/7 17/19	11/7 17/19	11/7 17/19	2	14	12	6/18	18/6

9 + 6 = 15 or 9 + 18 = 27

FeedBack

In an 'ABC' tuition classes, the performance of 22 students of a batch is represented by their teacher in the form of a matrix having two rows, 1 and 2, from top to bottom and 11 columns numbered as 1, 2, 3, 4,..., 11, from left to right. Every student knows which cell of matrix represents his performance. This matrix is filled with numbers from 1 to 22 to represent the ranking of these 22 students in the class. Some points that teacher has to keep in mind, while filling this matrix, are as follows:
• No two even or odd numbers can be in the same column.
• All the even multiples of 3 should be in consecutive columns with in the same row, and the same follows for all the odd multiples of 3.
• 1 and 3 should be in column 1 and column 11.
• There should be exactly one column between the column having number 3 and the column having number 12.
• 21 is in the 1st row and 9th column.
• 14 and 22 should be in the same row and there should be 6 columns between the column having number 14 and the column having number 22.
• All multiples of 4 (except 12) should be in consecutive columns. Same holds true for 5 and 10.
• All multiples of 5, 10 and 4 (except 12) should be in the same row.
• Sum of the numbers in the 1st column is the second highest prime number and that of in 3rd column is the highest prime number less than 31.

Q.42
If 11 is in column 2, and 17 and 2 are next to each other, then 7 can be in which column?

1 ⚪ **4**

2 ⚪ **6**

3 ⚪ **3**

4 ⚪ **1**

The even multiples of 3 are 6, 12, 18 and the odd multiples are 3, 9, 15, 21.
If 21 is in row 1 and 9th column, thus 3, 9 and 15 must occupy the columns 8, 10 and 11 in the same row. But 3 should be in the end column. Thus, it must be in column 11. 12 must be in the 9th column and row 2 as there is a gap of one column between 3 and 12. In row 1, in 8th and 10th column 15 and 9 will come. As 3 is in the 11th column, so 1 will come in the column 1. So the other number in column 1 has to be 22 as sum of the numbers in column 1 must be a prime number (23, which is the second highest prime number less than 31). Thus, 22 and 14 will take position in column 1 and 8 respectively. Further as 12 is in row 2, column 9 hence 6 and 18 (even multiple of 3) must occupy the 10th and 11th place in row 2.

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1							15/9	21	9/15	3
Row 2	22							14	12	6/18	18/6

Multiples of 4 (except 12) are 4, 8, 16, 20. Multiples of 5, 10, 15 and 20. Multiples of 10 are 10 and 20. In order to satisfy the condition that the multiples of the particular numbers should be together the number 15 must be in the 8th column to arrange the multiples. Therefore, 9 must be in column 10 and 5 must be in the 7th column. Since all the multiples must be in the same row hence they are in row 1 as 15 is in row 1.
Sum of the numbers of the 3rd column is the highest prime number less than 31, thus it will be 29.29 can be expressed as the sum of 16 and 13. Thus, the numbers of the 3rd column must be 16 and 13. 2 must be in the 7th column as all other numbers in column 2, 3, 4, 5 and 6 are even thus 2 cannot be placed in them.
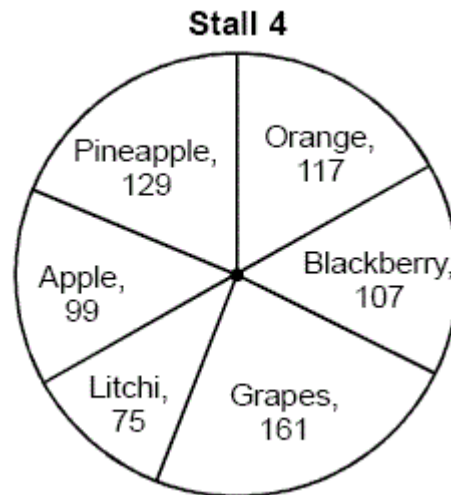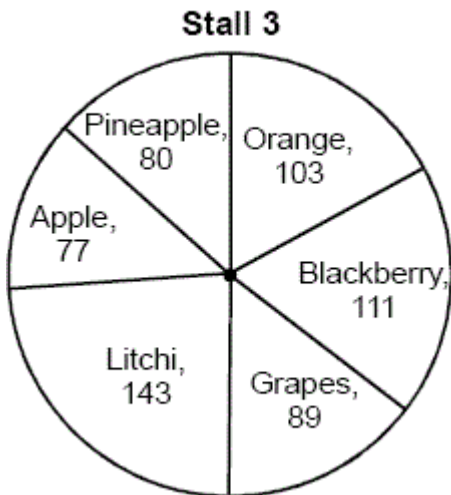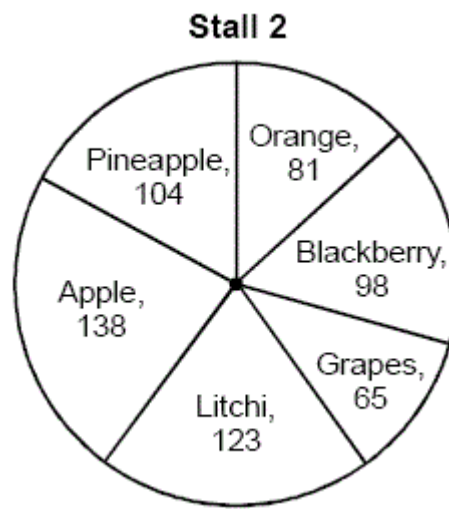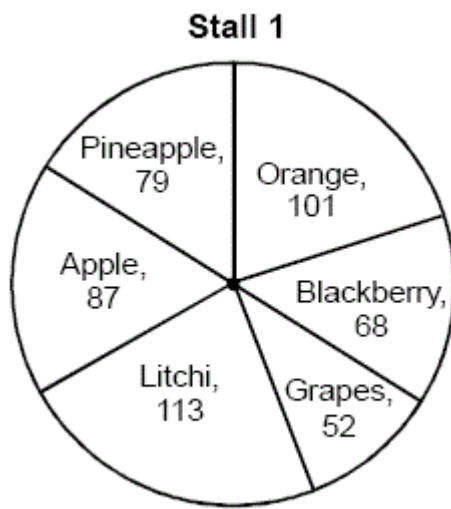Thus we get the matrix like,

Columns	1	2	3	4	5	6	7	8	9	10	11
Row 1	1	4/8	16	8/4	20	10	5	15	21	9	3
Row 2	22	11/7 17/19	13	11/7 17/19	11/7 17/19	11/7 17/19	2	14	12	6/18	18/6

If 17 is next to 2 then it must be in column 6. Thus 7 must be in column 4 or 5. But 5 is not given as the option.
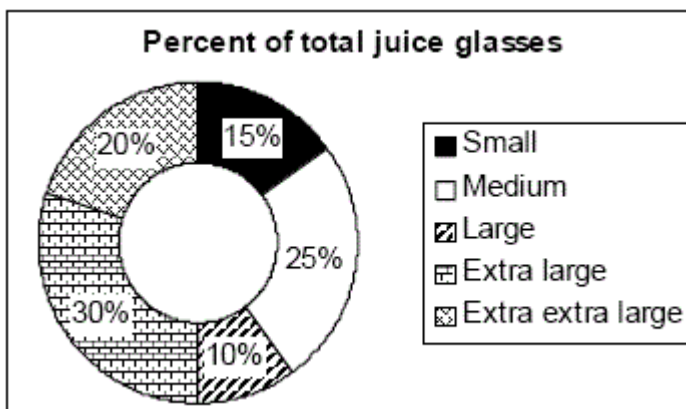
FeedBack

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

In a recent National Teacher's Convention held in Bangalore, a few volunteers of Mysore University took the initiative to set up four stalls - Stall 1, Stall 2, Stall 3 and Stall 4 - to distribute fruit juices to all participants in the convention for free. They arranged six kinds of juices - Pineapple, Orange, Blackberry, Grapes, Litchi and Apple - in all of the four stalls. The pie charts given below provide the total number of glasses of each type of juice available in the four stalls.

Stall 1

Pineapple, 79
Orange, 101
Apple, 87
Blackberry, 68
Litchi, 113
Grapes, 52

Stall 2

Orange, 81
Pineapple, 104
Blackberry, 98
Apple, 138
Grapes, 65
Litchi, 123

Stall 3

Pineapple, 80
Orange, 103
Apple, 77
Blackberry, 111
Litchi, 143
Grapes, 89

Stall 4

Pineapple, 129
Orange, 117
Apple, 99
Blackberry, 107
Litchi, 75
Grapes, 161

Every glass of juice in these stalls is classified into five groups - 'Small', 'Medium', 'Large', 'Extra large' and 'Extra extra large' - based on their capacities. The pie chart given below shows the number of juice glasses in each of the above groups as a percentage of the total number of juice glasses in these four stalls.

Percent of total juice glasses

15% — Small
25%
10%
30%
20%

- ■ Small
- □ Medium
- ▨ Large
- ▦ Extra large
- ▧ Extra extra large

Q.43

In Stall 2 and Stall 3, the total number of juice glasses in the 'Extra large' group as a percent of the total juice glasses in the respective stalls is not more than 1 percent. In Stall 1, the total number of juice glasses in the 'Extra large' group as a percent of the total juice glasses in Stall 1 cannot be less than

Solution:

Correct Answer : 4

According to the given information, in Stall 2 and Stall 3, the total number of juice glasses in the 'Extra Large' group as a percent of the total juice glasses in the respective stalls is not more than 1 percent.

As, we have to find the minimum value of the total number of juice glasses in the 'Extra Large' group of Stall 1 as a percent of the total juice glasses in Stall 1.

∴ Maximum number of juice glass in 'Extra Large' group in stall 2 and 3 = $\frac{1}{100} \times (1212)$ [Total juice glasses in Stall 1 and 3 is 609 + 603 = 1212]

∴ Maximum number of juice glass in 'Extra Large' group in stall 2 and 3 = 12.12

⟹ Maximum number of there glasses, we can consider is 12.

Now, in Stall 4, total number of juice glasses = 688.

So in order to minimise the value of the total number of juice glasses in the 'Extra Large' group as a percent of the total juice glasses in Stall 1 so, these 688 glasses in Stall 4 will be in 'Extra Large' group.

Total number of juice glasses in all the stalls = 2400

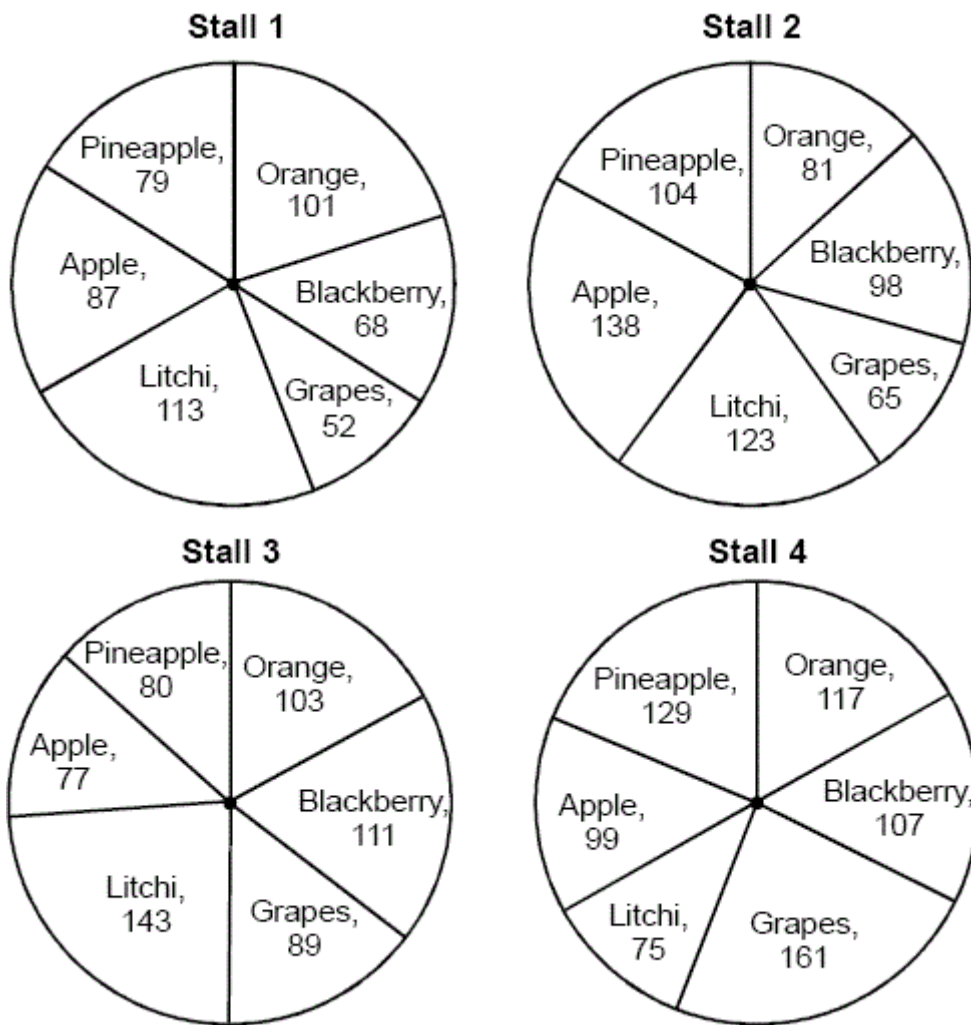Total number of juice glasses in 'Extra Large' category = 30% of 2400 = 720.

∴ In Stall 1, the total number of juice glasses in the 'Extra Large' group will not be less than = 720 – 12 – 688 = 20

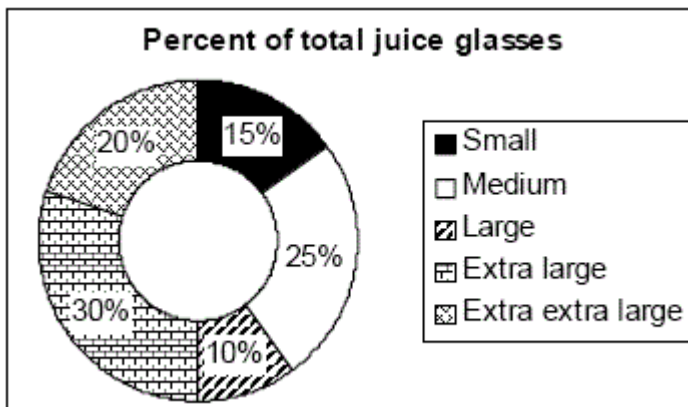Thus, the required percentage = $\frac{20}{500} \times 100 = 4\%$.

FeedBack

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

In a recent National Teacher's Convention held in Bangalore, a few volunteers of Mysore University took the initiative to set up four stalls - Stall 1, Stall 2, Stall 3 and Stall 4 - to distribute fruit juices to all participants in the convention for free. They arranged six kinds of juices - Pineapple, Orange, Blackberry, Grapes, Litchi and Apple - in all of the four stalls. The pie charts given below provide the total number of glasses of each type of juice available in the four stalls.

Stall 1

Stall 2

Stall 3

Stall 4

Stall 1: Pineapple, 79; Orange, 101; Apple, 87; Blackberry, 68; Litchi, 113; Grapes, 52

Stall 2: Orange, 81; Pineapple, 104; Blackberry, 98; Apple, 138; Grapes, 65; Litchi, 123

Stall 3: Pineapple, 80; Orange, 103; Apple, 77; Blackberry, 111; Litchi, 143; Grapes, 89

Stall 4: Pineapple, 129; Orange, 117; Apple, 99; Blackberry, 107; Litchi, 75; Grapes, 161

Every glass of juice in these stalls is classified into five groups - 'Small', 'Medium', 'Large', 'Extra large' and 'Extra extra large' - based on their capacities. The pie chart given below shows the number of juice glasses in each of the above groups as a percentage of the total number of juice glasses in these four stalls.

Percent of total juice glasses

20% , 15% , 25% , 30% , 10%

- ■ Small
- ☐ Medium
- ▨ Large
- ⊞ Extra large
- ⊠ Extra extra large

Q.44

In Stall 2 and in Stall 3, the total number of juice glasses in the 'Extra large' group as a percent of the total juice glasses in the respective stalls is not more than 1 percent.

If the ratio of the number of juice glasses in Stall 1 and Stall 4 that are in the 'Extra large' group is 2 : 7 , then find the difference between the total number of juice glasses in Stall 1 and in Stall 4 which does not come under the 'Extra large' group.

1 ◯ 207

2 ○ **212**

3 ○ **214**

4 ○ **Either (1) or (2)**

Solution:
Correct Answer : 4

According to the given information, in Stall 2 and in Stall 3, the total number of juice glasses in the 'Extra large' group as a percent of the total juice glasses in the respective stalls is not more than 1 percent.
Total number of juice glasses in these stalls = 2,400
Assume that the total number of juice glasses in Stall 1 and Stall 4, which are in the 'Extra large' group are 2x and 7x respectively.
So, the total number of juice glasses in Stall 1 and Stall 4, which are not in the 'Extra large' group is 500 – 2x and 688 – 7x respectively.
Also, assume that the total number of juice glasses in Stall 2 and Stall 3, which are in the 'Extra large' group is Y.
Thus, Y + 2x + 7x = 720
And Y will not be more than 6 + 6 = 12. (Already explained in previous question)
On taking y = 12, the value of x, we get is not an integer.
∴ We should take such value, such that after reducing that value from 720, we get the multiple of 9.
∴ Y = 9 or Y = 0.
Therefore, the value of x may be 79 or 80.
Now, it is required to find the difference as follows:
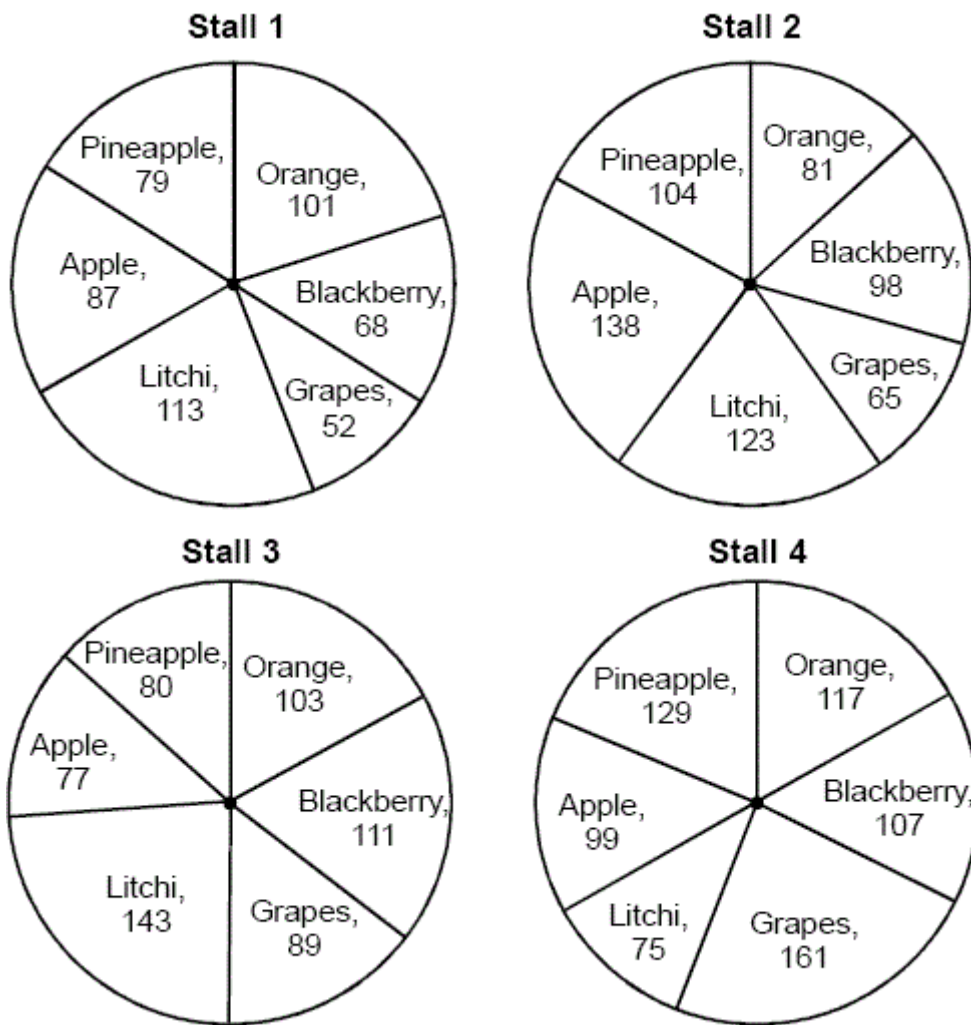= 500 – 2x – (688 – 7x) = 5x – 188
When, x = 80, then the difference will be 212 and when x = 79, then the difference will be 207.
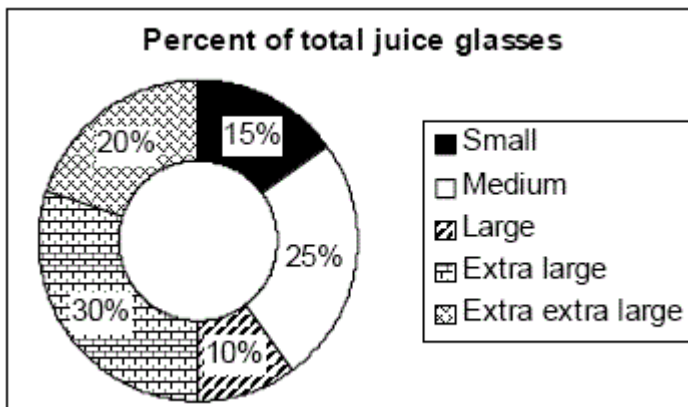
FeedBack

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

In a recent National Teacher's Convention held in Bangalore, a few volunteers of Mysore University took the initiative to set up four stalls - Stall 1, Stall 2, Stall 3 and Stall 4 - to distribute fruit juices to all participants in the convention for free. They arranged six kinds of juices - Pineapple, Orange, Blackberry, Grapes, Litchi and Apple - in all of the four stalls. The pie charts given below provide the total number of glasses of each type of juice available in the four stalls.

Stall 1

Pineapple, 79
Orange, 101
Apple, 87
Blackberry, 68
Litchi, 113
Grapes, 52

Stall 2

Orange, 81
Pineapple, 104
Blackberry, 98
Apple, 138
Grapes, 65
Litchi, 123

Stall 3

Pineapple, 80
Orange, 103
Apple, 77
Blackberry, 111
Litchi, 143
Grapes, 89

Stall 4

Pineapple, 129
Orange, 117
Apple, 99
Blackberry, 107
Litchi, 75
Grapes, 161

Every glass of juice in these stalls is classified into five groups - 'Small', 'Medium', 'Large', 'Extra large' and 'Extra extra large' - based on their capacities. The pie chart given below shows the number of juice glasses in each of the above groups as a percentage of the total number of juice glasses in these four stalls.

Percent of total juice glasses

15%
20%
25%
30%
10%

- Small
- Medium
- Large
- Extra large
- Extra extra large

Q.45

All the glasses with one of the three juices namely, Blackberry, Grapes and Orange, are in one of the three groups, 'Small', 'Medium' and 'Large' only. Moreover, the number of juice glasses of Litchi, Apple and Pineapple, which are in one of the three groups of 'Small', 'Medium' and 'Large' are 'a', 'b' and 'c' respectively.

Which of the following can be the value of a : b : c?

1 ○ **12 : 7 : 18**

2 ○ **13 : 17 : 17**

3 ○ **14 : 7 : 16**

4 ○ **15 : 7 : 18**

Solution:

Correct Answer : 2

According to the given information, all the glasses with one of the three juices namely, Blackberry, Grapes and Orange are in one of the three groups, 'Small', 'Medium' and 'Large' only.
Now, the total number of juice glasses with one of the three juices namely, Blackberry, Grapes and Orange is:
= 384 + 367 + 402 = 1153
Now, the total number of juice glasses in three groups, 'Small', 'Medium' and 'Large' is:
= 360 + 600 + 240 = 1200
∴ The total number of juice glasses of Litchi, Apple and Pineapple, which are in one of the 3 groups of 'Small', 'Medium' and 'Large' is = 1200 − 1153 = 47
⇒ a + b + c = 47
Therefore, from the given alternatives, option (2) i.e. (13 + 17 + 17 = 47) can be the value of a : b : c.

FeedBack

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

In a recent National Teacher's Convention held in Bangalore, a few volunteers of Mysore University took the initiative to set up four stalls - Stall 1, Stall 2, Stall 3 and Stall 4 - to distribute fruit juices to all participants in the convention for free. They arranged six kinds of juices - Pineapple, Orange, Blackberry, Grapes, Litchi and Apple - in all of the four stalls. The pie charts given below provide the total number of glasses of each type of juice available in the four stalls.

Stall 1

Pineapple, 79
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Grapes, 52

Stall 2

Pineapple, 104
Orange, 81
Blackberry, 98
Apple, 138
Grapes, 65
Litchi, 123

Stall 3

Pineapple, 80
Orange, 103
Apple, 77
Blackberry, 111
Litchi, 143
Grapes, 89

Stall 4

Pineapple, 129
Orange, 117
Apple, 99
Blackberry, 107
Litchi, 75
Grapes, 161

Every glass of juice in these stalls is classified into five groups - 'Small', 'Medium', 'Large', 'Extra large' and 'Extra extra large' - based on their capacities. The pie chart given below shows the number of juice glasses in each of the above groups as a percentage of the total number of juice glasses in these four stalls.

Percent of total juice glasses

15%
20%
25%
30%
10%

- ■ Small
- □ Medium
- ▨ Large
- ⊞ Extra large
- ▨ Extra extra large

Q.46

All the glasses with one of the three juices namely, Blackberry, Grapes and Orange, are in one of the three groups, 'Small', 'Medium' and 'Large' only. Moreover, the number of juice glasses of Litchi, Apple and Pineapple, which are in one of the three groups of 'Small', 'Medium' and 'Large' are 'a', 'b' and 'c' respectively.

If the value of a is maximum possible, then the total number of juice glasses of Litchi in Stall 2 that does not come under the 'Small', 'Medium' or 'Large' group cannot be less than

Solution:

Correct Answer : 76

According to the given information, all the glasses with one of the three juices namely, Blackberry, Grapes and Orange are in one of the three groups, 'Small', 'Medium' or 'Large' only.

Now, the total number of juice glasses with one of the three juices namely, Blackberry, Grapes and Orange is:

= 384 + 367 + 402 = 1153

Now, the total number of juice glasses in three groups, 'Small', 'Medium' and 'Large' is:

= 360 + 600 + 240 = 1200

∴ The total number of juice glasses of Litchi, Apple and Pineapple, which are in one of the 3 groups of 'Small', 'Medium' and 'Large' is = 1200 − 1153 = 47

⇒ a + b + c = 47

Now if the value of a is maximum possible so a's maximum possible value will be 47.

Now, it is required to increase the number of juice glasses of Litchi, which comes under the 'Small', 'Medium' or 'Large' group in Stall 2, in order to reduce the number of juice glasses of Litchi in Stall 2, which does not come under the 'Small', 'Medium' or 'Large' group.

Therefore, the required answer will be, = 123 − 47 = 76.

FeedBack

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

In High School Examination of Gujarat Education Board in 2018, a total of 10 exams were conducted over a total of 5 sections - Science, Mathematics, Social, Language and English. Some of these sections are divided into sub-sections as
• Science into Chemistry, Biology and Physics
• Social into Civics and History
• Language into Sanskrit and Hindi
• English into Poetry and Pose

Maximum marks for each of the ten exams were 100. The total marks scored by a student in these exams are calculated by performing the following steps:

The total score of a section is calculated by determining the average marks in the papers of all the subsections of that section. And the total score of a student in all 5 sections taken together was counted as the average of his scores in the 5 sections. The figures for the top ten students of a school in various subjects are provided in the table given below, EXCEPT the marks scored by David in sub-section Poetry.

| Name | Science | | | Maths | Social | | Language | | English | | Total |
	Chemistry	Biology	Physics		Civics	History	Sanskrit	Hindi	Poetry	Prose	
Alia	99	96	96	99	96	95	93	82	93	92	94.3
Sanjay	96	97	95	98	96	97	93	92	96	95	
Trisha	98	79	96	99	94	85	91	92	96	87	
Shruti	89	85	96	100	98	97	95	94	95	96	
Prayag	98	95	98	98	95	83	93	90	94	94	
Sahil	98	99	97	96	98	96	97	94	94	92	95.9
Jackie	94	98	90	100	97	94	92	90	95	94	95.0
Raju	99	95	97	97	96	95	94	94	98	96	
Arush	96	97	98	98	93	95	96	94	98	96	
David	98	98	98	95	95	96	94	96	?	96	96.0

Q.47

Find out the total marks scored by David in the Poetry exam.

1 ◯ **92**

2 ◯ **95**

3 ◯ **97**

4 ◯ **99**

Solution:

Correct Answer : 3

The marks obtained by David can be calculated as follows:

Science Section $= 98 \times \dfrac{3}{3} = 98$

Maths Section = 95

Social Section $= \dfrac{96 + 95}{2} = 95.5$

Language Section $= = \dfrac{96 + 94}{2} = 95$

As per the data provided, the total marks scored by David is 96.
Now, calculate the marks scored by David in all the sections as follows:

$\Rightarrow 96 \times 5 = 480$

$\Rightarrow 98 + 95 + 95.5 + 95 + 48 + \dfrac{x}{2} = 480$

$\Rightarrow \dfrac{x}{2} = 48.5 \Rightarrow x = 97$

Therefore, the total mark scored by David in the Poetry paper is 97.

FeedBack

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

In High School Examination of Gujarat Education Board in 2018, a total of 10 exams were conducted over a total of 5 sections - Science, Mathematics, Social, Language and English. Some of these sections are divided into sub-sections as
• Science into Chemistry, Biology and Physics
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Maximum marks for each of the ten exams were 100. The total marks scored by a student in these exams are calculated by performing the following steps:

The total score of a section is calculated by determining the average marks in the papers of all the subsections of that section. And the total score of a student in all 5 sections taken together was counted as the average of his scores in the 5 sections. The figures for the top ten students of a school in various subjects are provided in the table given below, EXCEPT the marks scored by David in sub-section Poetry.

| Name | Science | | | Maths | Social | | Language | | English | | Total |
	Chemistry	Biology	Physics		Civics	History	Sanskrit	Hindi	Poetry	Prose	
Alia	99	96	96	99	96	95	93	82	93	92	94.3
Sanjay	96	97	95	98	96	97	93	92	96	95	
Trisha	98	79	96	99	94	85	91	92	96	87	
Shruti	89	85	96	100	98	97	95	94	95	96	
Prayag	98	95	98	98	95	83	93	90	94	94	
Sahil	98	99	97	96	98	96	97	94	94	92	95.9
Jackie	94	98	90	100	97	94	92	90	95	94	95.0
Raju	99	95	97	97	96	95	94	94	98	96	
Arush	96	97	98	98	93	95	96	94	98	96	
David	98	98	98	95	95	96	94	96	?	96	96.0

Q.48
All these top ten students were given a chance to reattempt and upgrade their marks in any one of the sub-sections, in order to increase their total marks. All the students chose that subject smartly, to increase their total score with maximum possible marks, and hence obtained 100 marks in that paper after the reattempt. Who among the following students has the maximum total score after reattempt?

1 ○ **Arush**

2 ○ **Alia**

3 ○ **Prayag**

4 ○ **David**

Solution:

Correct Answer : 1

If the main objective is to increase the scores, every student of the ten students will obviously choose to upgrade their marks in the subject paper that would affect the section score the most.

Now, consider the given alternatives.

For option (1), when Arush selects to reattempt Civics:

Original section score of Arush in the Social Section = 94

New section score of Arush will now change as follows $= \dfrac{\left\{\dfrac{(95+100)}{2}\right\} - 94}{5} = 0.7$

Therefore, the new total marks obtained by Arush will be = 96.2 + 0.7 = 96.9

Hence, the new score obtained by Arush is 96.9.

For option (2), when Alia selects to reattempt Hindi:

Original section score of Alia in Language section = 87.5

New section score of Alia will now change as follows $= \dfrac{\left\{\dfrac{(93+100)}{2}\right\} - 87.5}{5} = 1.8$

Therefore, the new total marks obtained by Alia will be = 94.3 + 1.8 = 96.1

Hence, the new score obtained by Alia is 96.1.

For option (3), when Prayag selects to reattempt History:

Original section score of Prayag in Social section = 89

New section score of Prayag will now change as follows $= \dfrac{\left\{\dfrac{(95+100)}{2}\right\} - 89}{5} = 1.7$

Therefore, the new total marks obtained by Prayag will be = 93.9 + 1.7 = 95.6

Hence, the new score obtained by Prayag is 95.6.

For option (4), when David selects to reattempt Sanskrit

Original section score of David in Language section = 95

Therefore, the new total marks obtained by David will be = 96.5

FeedBack

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

In High School Examination of Gujarat Education Board in 2018, a total of 10 exams were conducted over a total of 5 sections - Science, Mathematics, Social, Language and English. Some of these sections are divided into sub-sections as
• Science into Chemistry, Biology and Physics
• Social into Civics and History
• Language into Sanskrit and Hindi
• English into Poetry and Pose

Maximum marks for each of the ten exams were 100. The total marks scored by a student in these exams are calculated by performing the following steps:

The total score of a section is calculated by determining the average marks in the papers of all the subsections of that section. And the total score of a student in all 5 sections taken together was counted as the average of his scores in the 5 sections. The figures for the top ten students of a school in various subjects are provided in the table given below, EXCEPT the marks scored by David in sub-section Poetry.

Name	Science			Maths	Social		Language		English		Total
	Chemistry	Biology	Physics		Civics	History	Sanskrit	Hindi	Poetry	Prose	
Alia	99	96	96	99	96	95	93	82	93	92	94.3
Sanjay	96	97	95	98	96	97	93	92	96	95	
Trisha	98	79	96	99	94	85	91	92	96	87	
Shruti	89	85	96	100	98	97	95	94	95	96	
Prayag	98	95	98	98	95	83	93	90	94	94	
Sahil	98	99	97	96	98	96	97	94	94	92	95.9
Jackie	94	98	90	100	97	94	92	90	95	94	95.0
Raju	99	95	97	97	96	95	94	94	98	96	
Arush	96	97	98	98	93	95	96	94	98	96	
David	98	98	98	95	95	96	94	96	?	96	96.0

Q.49
Had Jackie, Alia, Prayag and Trisha all scored 100 in Hindi sub-section of Language section, then what will be their positions in the descending order of their total scored marks?

1 ○ Jackie, Trisha, Prayag, Alia

2 ○ Prayag, Trisha, Alia, Jackie

3 ○ Alia, Jackie, Prayag, Trisha

4 ○ Alia, Trisha, Prayag, Jackie

Solution:

Correct Answer : 3

If Jackie scored 100 in Hindi subsection $= \dfrac{\dfrac{94+98+90}{3}+100+\dfrac{97+94}{2}+\dfrac{92+100}{2}+\dfrac{95+94}{2}}{5} = 96$

If Alia scored 100 in Hindi sub-section $= \dfrac{\dfrac{99+96+96}{3}+99+\dfrac{96+95}{2}+\dfrac{93+100}{2}+\dfrac{93+92}{2}}{5} = 96.1$

If Prayag scored 100 in Hindi sub-section $= \dfrac{\dfrac{98+95+98}{3}+98+\dfrac{95+83}{2}+\dfrac{93+100}{2}+\dfrac{94+94}{2}}{5} = 94.9$

If Trisha scored 100 in Hindi sub-section $= = \dfrac{\dfrac{98+79+96}{3}+99+\dfrac{94+85}{2}+\dfrac{91+100}{2}+\dfrac{96+87}{2}}{5} = 93.3$

Therefore, descending order of their total marks = Alia, Jackie, Prayag, Trisha.

FeedBack

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

In High School Examination of Gujarat Education Board in 2018, a total of 10 exams were conducted over a total of 5 sections - Science, Mathematics, Social, Language and English. Some of these sections are divided into sub-sections as
• Science into Chemistry, Biology and Physics
• Social into Civics and History
• Language into Sanskrit and Hindi
• English into Poetry and Pose

Maximum marks for each of the ten exams were 100. The total marks scored by a student in these exams are calculated by performing the following steps:

The total score of a section is calculated by determining the average marks in the papers of all the subsections of that section. And the total score of a student in all 5 sections taken together was counted as the average of his scores in the 5 sections. The figures for the top ten students of a school in various subjects are provided in the table given below, EXCEPT the marks scored by David in sub-section Poetry.

| Name | Science | | | Maths | Social | | Language | | English | | Total |
	Chemistry	Biology	Physics		Civics	History	Sanskrit	Hindi	Poetry	Prose	
Alia	99	96	96	99	96	95	93	82	93	92	94.3
Sanjay	96	97	95	98	96	97	93	92	96	95	
Trisha	98	79	96	99	94	85	91	92	96	87	
Shruti	89	85	96	100	98	97	95	94	95	96	
Prayag	98	95	98	98	95	83	93	90	94	94	
Sahil	98	99	97	96	98	96	97	94	94	92	95.9
Jackie	94	98	90	100	97	94	92	90	95	94	95.0
Raju	99	95	97	97	96	95	94	94	98	96	
Arush	96	97	98	98	93	95	96	94	98	96	
David	98	98	98	95	95	96	94	96	?	96	96.0

Q.50
The Gujarat Education Board announces a prize of Rs. 50,000 and a laptop to the student who has secured the highest score in Social section. However, they have set a criterion that only the students, among the ten students, who have secured at least 95 in all the 5 sections are eligible for the prize. Which student received that prize?

1 ○ **Shruti**

2 ○ **Sahil**

3 ○ **Raju**

4 ○ **David**

Solution:

Correct Answer : 4

According to the data provided in the given table, only David is eligible for the prize money and the computer. Hence, David receives the prize from the Gujarat Education Board.

FeedBack

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

A startup company, Bluebells, recruited certain number of employees and the company initially operated in six different departments- Strategic Development(SD), Rural Improvement(RI), Technical Content(TC), Human Resources(HR), Buisness Ideas(BI), and Risk Engagement(RE).
All employees were have to share the work of different departments among themselves since the company was in the initial stages of establishment. The following statements identify the preferences of the employees to do the work in different departments:

• All the employees who like to work in RI department also like to work in BI department.
• All the employees who like to work in TC department also like to work in HR department.
• All the employees who like to work in BI department do not like to work in TC department and viceversa.
• Some employees who like to work in BI department also like to work in SD department.
• Some employees who like to work in HR department also like to work in BI department.
• All the employees who like to work in HR department also like to work in RE department.
Note: If Shivam, Chetan and Balu Rai are some of the many employees of the company, then answer the following questions.

Q.51
If Shivam likes to work in HR department, then which of the following must be true?

1 ⚪ **He may or may not like to work in TC.**

2 ⚪ **He does not like to work in RI.**

3 ⚪ **He likes to work in SD.**

4 ⚪ **He likes to work in TC.**

✔

Solution:

Correct Answer : 1
Your Answer : 1

Statement I:

All the employees who like work in RI department also likes to work in BI department.
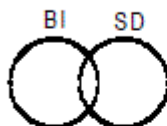
Statement II:

All the employees who like to work in TC department also like to work in HR department.
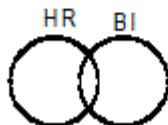
Statement III:

All the employees who like to work in BI department do not like to work in TC department and vice versa.

Statement IV:

Some employees who like to work in BI department also like in work in SD department.
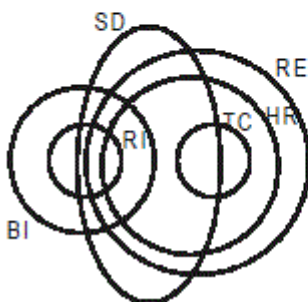
Statement V:

Some employees who like to work in HR department also like to work in BI department.

By statement VI:

All the employees who like to work in HR department also like to work in RE department.
Combining all the above figures, we get:-

FeedBack

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

A startup company, Bluebells, recruited certain number of employees and the company initially operated in six different departments- Strategic Development(SD), Rural Improvement(RI), Technical Content(TC), Human Resources(HR), Buisness Ideas(BI), and Risk Engagement(RE).
All employees were have to share the work of different departments among themselves since the company was in the initial stages of establishment. The following statements identify the preferences of the employees to do the work in different departments:

• All the employees who like to work in RI department also like to work in BI department.
• All the employees who like to work in TC department also like to work in HR department.
• All the employees who like to work in BI department do not like to work in TC department and viceversa.
• Some employees who like to work in BI department also like to work in SD department.
• Some employees who like to work in HR department also like to work in BI department.
• All the employees who like to work in HR department also like to work in RE department.
Note: If Shivam, Chetan and Balu Rai are some of the many employees of the company, then answer the following questions.

Q.52
If Balu Rai likes to work in RI department, then he may also like to work in any of the departments, except

1 ○ SD

2 ○ TC

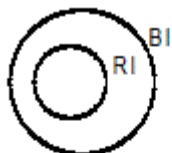3 ○ HR

4 ○ BI

✔

Solution:
Correct Answer : 2
Your Answer : 2

🔖 Bookmark

🔍 Answer key/Solution

Statement I:

All the employees who like work in RI department also likes to work in BI department.

Statement II:

All the employees who like to work in TC department also like to work in HR department.

Statement III:

All the employees who like to work in BI department do not like to work in TC department and vice versa.

Statement IV:

Some employees who like to work in BI department also like in work in SD department.

Statement V:

Some employees who like to work in HR department also like to work in BI department.

By statement VI:

All the employees who like to work in HR department also like to work in RE department.
Combining all the above figures, we get:-

FeedBack

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

A startup company, Bluebells, recruited certain number of employees and the company initially operated in six different departments- Strategic Development(SD), Rural Improvement(RI), Technical Content(TC), Human Resources(HR), Buisness Ideas(BI), and Risk Engagement(RE).
All employees were have to share the work of different departments among themselves since the company was in the initial stages of establishment. The following statements identify the preferences of the employees to do the work in different departments:

• All the employees who like to work in RI department also like to work in BI department.
• All the employees who like to work in TC department also like to work in HR department.
• All the employees who like to work in BI department do not like to work in TC department and viceversa.
• Some employees who like to work in BI department also like to work in SD department.
• Some employees who like to work in HR department also like to work in BI department.
• All the employees who like to work in HR department also like to work in RE department.
Note: If Shivam, Chetan and Balu Rai are some of the many employees of the company, then answer the following questions.

Q.53
If Chetan likes to work in TC department, then which of the following must be false?

1 ○ He does not like to work in SD.

2 ○ He likes to work in RE.

3 ○ He does not like to work in RI.

4 ○ He may like to work in BI.

✖

Solution:
Correct Answer : 4
Your Answer : 3

🔖 Bookmark

🔍 Answer key/Solution

Statement I:

All the employees who like work in RI department also likes to work in BI department.
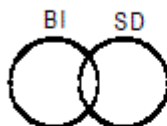
Statement II:

All the employees who like to work in TC department also like to work in HR department.
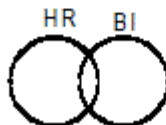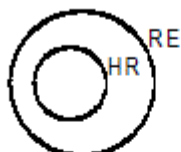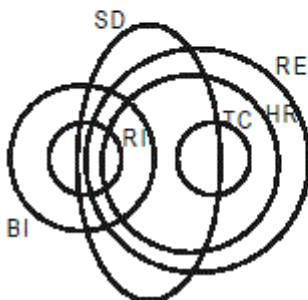
Statement III:

All the employees who like to work in BI department do not like to work in TC department and vice versa.

Statement IV:

Some employees who like to work in BI department also like in work in SD department.

Statement V:

Some employees who like to work in HR department also like to work in BI department.

By statement VI:

All the employees who like to work in HR department also like to work in RE department.
Combining all the above figures, we get:-

FeedBack

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

A startup company, Bluebells, recruited certain number of employees and the company initially operated in six different departments- Strategic Development(SD), Rural Improvement(RI), Technical Content(TC), Human Resources(HR), Buisness Ideas(BI), and Risk Engagement(RE).
All employees were have to share the work of different departments among themselves since the company was in the initial stages of establishment. The following statements identify the preferences of the employees to do the work in different departments:

• All the employees who like to work in RI department also like to work in BI department.
• All the employees who like to work in TC department also like to work in HR department.
• All the employees who like to work in BI department do not like to work in TC department and viceversa.
• Some employees who like to work in BI department also like to work in SD department.
• Some employees who like to work in HR department also like to work in BI department.
• All the employees who like to work in HR department also like to work in RE department.
Note: If Shivam, Chetan and Balu Rai are some of the many employees of the company, then answer the following questions.

Q.54
Based on the information provided, which of the following statements must be true?

1 ○ All employees who like to work in BI also like to work in RI.

2 ○ None of those employees who do not like to work in RE like to work in SD.

3 ○ Those who like to work in SD may or may not like to work in TC.

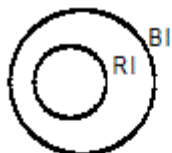4 ○ None of those employees who like to work in RI do not like to work in HR.

✔

Solution:
Correct Answer : 3
Your Answer : 3

🔖 **Bookmark**

🔍 Answer key/Solution

Statement I:

All the employees who like work in RI department also likes to work in BI department.
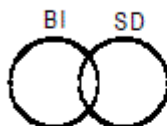
Statement II:

All the employees who like to work in TC department also like to work in HR department.
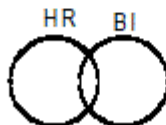
Statement III:

All the employees who like to work in BI department do not like to work in TC department and vice versa.

Statement IV:

Some employees who like to work in BI department also like in work in SD department.
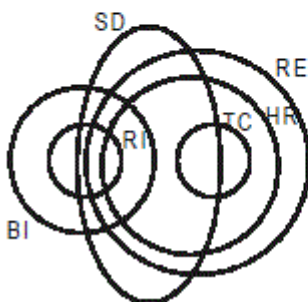
Statement V:

Some employees who like to work in HR department also like to work in BI department.

By statement VI:

All the employees who like to work in HR department also like to work in RE department.
Combining all the above figures, we get:-

FeedBack

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

Four players play 10 rounds, R1 through R10, of a game in such a manner that in every round each player gets a different rank from 1 to 4. Moreover a player gets each of the four ranks in at least two rounds and in at most three rounds, out of these 10 rounds. Following table gives us the rank obtained by each player in each of the 10 rounds. It also gives us the sum of the ranks got by the each player in the 10 rounds. Some values in the table have been replaced by letters intentionally.

Round	Player 1	Player 2	Player 3	Player 4
R1	3	A	B	1
R2	2	1	C	D
R3	4	E	F	2
R4	1	G	3	H
R5	I	1	4	J
R6	3	K	1	L
R7	M	N	2	4
R8	O	2	4	P
R9	Q	3	R	1
R10	S	4	T	2
Total	U	23	27	26

Q.55
What is the value of (B + C)?

Solution:

Correct Answer : 7

In each round the sum of the ranks = 1 + 2 + 3 + 4 = 10.
In 10 rounds the sum of the ranks = 10 × 10 = 100.
So, U + 23 + 27 + 26 = 100 or U = 24.
It is given that each player scored every rank at least two times and at most three times in the 10 rounds. By using this piece of information we can conclude that for any of the four players the sum of the ranks must be of the form: 2(1 + 2 + 3 + 4) + p + q = 20 + p + q, where 'p' and 'q' are the ranks obtained by the player three times each.
For Player 1: p + q = 4 that leads to p = 1 and q = 3.
For Player 2: p + q = 3 that leads to p = 1 and q = 2.
For Player 1: p + q = 7 that leads to p = 3 and q = 4.
For Player 1: p + q = 6 that leads to p = 2 and q = 4.
So, Player 1 must have score rank 4 in exactly 2 rounds but he cannot score rank 4 in R5, R7, R8 and R10 so he must have scored rank 4 in R9, which leads to Q = 4.
By applying the similar logical approach for each of the four players and for each of the 10 rounds we can reach to the following table:

Round	Player 1	Player 2	Player 3	Player 4
R1	3	2	4	1
R2	2	1	3	4
R3	4	E	F	2
R4	1	G	3	H
R5	2	1	4	3
R6	3	K	1	L
R7	M	N	2	4
R8	1	2	4	3
R9	4	3	2	1
R10	S	4	T	2
Total	24	23	27	26

Further we can conclude that:
(i)   If M = 1 then S = 3 and then T = 1, F = 3, E = 1 and N = 3.
(ii)   If M = 3 then S = 1 and then T = 3, F = 1, E = 3 and N = 1.
(iii)   If G = 2 then K = 4, L = 2 and H = 4.
(iv)   If G = 4 then K = 2, L = 4 and H = 2.

B + C = 4 + 3 = 7.

FeedBack

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

Four players play 10 rounds, R1 through R10, of a game in such a manner that in every round each player gets a different rank from 1 to 4. Moreover a player gets each of the four ranks in at least two rounds and in at most three rounds, out of these 10 rounds. Following table gives us the rank obtained by each player in each of the 10 rounds. It also gives us the sum of the ranks got by the each player in the 10 rounds. Some values in the table have been replaced by letters intentionally.

Round	Player 1	Player 2	Player 3	Player 4
R1	3	A	B	1
R2	2	1	C	D
R3	4	E	F	2
R4	1	G	3	H
R5	I	1	4	J
R6	3	K	1	L
R7	M	N	2	4
R8	O	2	4	P
R9	Q	3	R	1
R10	S	4	T	2
Total	U	23	27	26

Q.56
What is the absolute difference between the values of J and P?

Solution:
Correct Answer : 0

In each round the sum of the ranks = 1 + 2 + 3 + 4 = 10.
In 10 rounds the sum of the ranks = 10 × 10 = 100.
So, U + 23 + 27 + 26 = 100 or U = 24.
It is given that each player scored every rank at least two times and at most three times in the 10 rounds. By using this piece of information we can conclude that for any of the four players the sum of the ranks must be of the form: 2(1 + 2 + 3 + 4) + p + q = 20 + p + q, where 'p' and 'q' are the ranks obtained by the player three times each.
For Player 1: p + q = 4 that leads to p = 1 and q = 3.
For Player 2: p + q = 3 that leads to p = 1 and q = 2.
For Player 1: p + q = 7 that leads to p = 3 and q = 4.
For Player 1: p + q = 6 that leads to p = 2 and q = 4.
So, Player 1 must have score rank 4 in exactly 2 rounds but he cannot score rank 4 in R5, R7, R8 and R10 so he must have scored rank 4 in R9, which leads to Q = 4.
By applying the similar logical approach for each of the four players and for each of the 10 rounds we can reach to the following table:

Round	Player 1	Player 2	Player 3	Player 4
R1	3	2	4	1
R2	2	1	3	4
R3	4	E	F	2
R4	1	G	3	H
R5	2	1	4	3
R6	3	K	1	L
R7	M	N	2	4
R8	1	2	4	3
R9	4	3	2	1
R10	S	4	T	2
Total	24	23	27	26

Further we can conclude that:
(i)   If M = 1 then S = 3 and then T = 1, F = 3, E = 1 and N = 3.
(ii)   If M = 3 then S = 1 and then T = 3, F = 1, E = 3 and N = 1.
(iii)   If G = 2 then K = 4, L = 2 and H = 4.
(iv)   If G = 4 then K = 2, L = 4 and H = 2.

|J – P| = 3 – 3 = 0.

FeedBack

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

Four players play 10 rounds, R1 through R10, of a game in such a manner that in every round each player gets a different rank from 1 to 4. Moreover a player gets each of the four ranks in at least two rounds and in at most three rounds, out of these 10 rounds. Following table gives us the rank obtained by each player in each of the 10 rounds. It also gives us the sum of the ranks got by the each player in the 10 rounds. Some values in the table have been replaced by letters intentionally.

Round	Player 1	Player 2	Player 3	Player 4
R1	3	A	B	1
R2	2	1	C	D
R3	4	E	F	2
R4	1	G	3	H
R5	I	1	4	J
R6	3	K	1	L
R7	M	N	2	4
R8	O	2	4	P
R9	Q	3	R	1
R10	S	4	T	2
Total	U	23	27	26

Q.57

If the value of M is 1, then what is the value of F?

Solution:

Correct Answer : 3

🔖 **Bookmark**

🔍 Answer key/Solution

In each round the sum of the ranks = 1 + 2 + 3 + 4 = 10.
In 10 rounds the sum of the ranks = 10 × 10 = 100.
So, U + 23 + 27 + 26 = 100 or U = 24.
It is given that each player scored every rank at least two times and at most three times in the 10 rounds. By using this piece of information we can conclude that for any of the four players the sum of the ranks must be of the form: 2(1 + 2 + 3 + 4) + p + q = 20 + p + q, where 'p' and 'q' are the ranks obtained by the player three times each.
For Player 1: p + q = 4 that leads to p = 1 and q = 3.
For Player 2: p + q = 3 that leads to p = 1 and q = 2.
For Player 1: p + q = 7 that leads to p = 3 and q = 4.
For Player 1: p + q = 6 that leads to p = 2 and q = 4.
So, Player 1 must have score rank 4 in exactly 2 rounds but he cannot score rank 4 in R5, R7, R8 and R10 so he must have scored rank 4 in R9, which leads to Q = 4.
By applying the similar logical approach for each of the four players and for each of the 10 rounds we can reach to the following table:

Round	Player 1	Player 2	Player 3	Player 4
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R2	2	1	3	4
R3	4	E	F	2
R4	1	G	3	H
R5	2	1	4	3
R6	3	K	1	L
R7	M	N	2	4
R8	1	2	4	3
R9	4	3	2	1
R10	S	4	T	2
Total	24	23	27	26

Further we can conclude that:
(i)   If M = 1 then S = 3 and then T = 1, F = 3, E = 1 and N = 3.
(ii)   If M = 3 then S = 1 and then T = 3, F = 1, E = 3 and N = 1.
(iii)   If G = 2 then K = 4, L = 2 and H = 4.
(iv)   If G = 4 then K = 2, L = 4 and H = 2.

If M = 1 then F = 3.

FeedBack

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

Four players play 10 rounds, R1 through R10, of a game in such a manner that in every round each player gets a different rank from 1 to 4. Moreover a player gets each of the four ranks in at least two rounds and in at most three rounds, out of these 10 rounds. Following table gives us the rank obtained by each player in each of the 10 rounds. It also gives us the sum of the ranks got by the each player in the 10 rounds. Some values in the table have been replaced by letters intentionally.

Round	Player 1	Player 2	Player 3	Player 4
R1	3	A	B	1
R2	2	1	C	D
R3	4	E	F	2
R4	1	G	3	H
R5	I	1	4	J
R6	3	K	1	L
R7	M	N	2	4
R8	O	2	4	P
R9	Q	3	R	1
R10	S	4	T	2
Total	U	23	27	26

Q.58
For how many rounds, out of the 10, is it possible to uniquely determine the rank of each and every player?

Solution:
Correct Answer : 5

In each round the sum of the ranks = 1 + 2 + 3 + 4 = 10.
In 10 rounds the sum of the ranks = 10 × 10 = 100.
So, U + 23 + 27 + 26 = 100 or U = 24.
It is given that each player scored every rank at least two times and at most three times in the 10 rounds. By using this piece of information we can conclude that for any of the four players the sum of the ranks must be of the form: 2(1 + 2 + 3 + 4) + p + q = 20 + p + q, where 'p' and 'q' are the ranks obtained by the player three times each.
For Player 1: p + q = 4 that leads to p = 1 and q = 3.
For Player 2: p + q = 3 that leads to p = 1 and q = 2.
For Player 1: p + q = 7 that leads to p = 3 and q = 4.
For Player 1: p + q = 6 that leads to p = 2 and q = 4.
So, Player 1 must have score rank 4 in exactly 2 rounds but he cannot score rank 4 in R5, R7, R8 and R10 so he must have scored rank 4 in R9, which leads to Q = 4.
By applying the similar logical approach for each of the four players and for each of the 10 rounds we can reach to the following table:

Round	Player 1	Player 2	Player 3	Player 4
R1	3	2	4	1
R2	2	1	3	4
R3	4	E	F	2
R4	1	G	3	H
R5	2	1	4	3
R6	3	K	1	L
R7	M	N	2	4
R8	1	2	4	3
R9	4	3	2	1
R10	S	4	T	2
Total	24	23	27	26

Further we can conclude that:
(i)   If M = 1 then S = 3 and then T = 1, F = 3, E = 1 and N = 3.
(ii)   If M = 3 then S = 1 and then T = 3, F = 1, E = 3 and N = 1.
(iii)   If G = 2 then K = 4, L = 2 and H = 4.
(iv)   If G = 4 then K = 2, L = 4 and H = 2.

For R1, R2, R5, R8 and R9, it is possible to uniquely determine the values of the ranks obtained by each and every player. Hence, the answer is 5.

FeedBack

Directions for questions 59 to 62 : Refer to the data below and answer the questions that follows:

Recently, six bollywood film actors - Varun, Siddharth, Ranveer, Ranbir, Farhan and Vicky - signed a movie project with six different directors - Abbas, Rakesh, Imitiaz, Zoya, Mastan and Suraj - not necessarily in the same order. With each actor, one actress out of six different actresses - Alia, Deepika, Priyanka, Anushka, Vidya and Kareena - signed for the similar project for 6 different movies - Abhimaan, Sholay 2, Badnasib, Farz, Don 3 and Naam - not necessarily in the same order.

Further details known to us are:
I. Siddharth will work in a movie directed by Mastan but he signed the project with neither Kareena nor Anushka.
II. Ranbir and Varun signed the project with neither Deepika nor Priyanka but they are going to work with the directors Abbas and Suraj respectively.
III. Naam and Badnasib will feature Kareena and Deepika and the movie will be directed by Mastan and Zoya, in any order.
IV. Farhan will work in Don 3 and Ranveer in Sholay 2.
V. Farhan is not going to work with Rakesh.

Q.59

Vicky signed the movie project with which director?

1 ○ **Rakesh**

2 ○ **Imitiaz**

3 ○ **Zoya**

4 ○ **Suraj**

✔

Solution:

Correct Answer : 3

Your Answer : 3

By statement I, Siddharth will work with Mastan and by statement II, Ranbir and Varun will work with Abbas and Suraj respectively. By statement 4, Farhan is in Don 3 and Ranveer is in Sholay 2.

Actor	Director	Actress	Movie
Varun	Suraj		
Siddharth	Mastan		
Ranveer			Sholay 2
Ranbir	Abbas		
Farhan			Don 3
Vicky			

By statement III, Zoya has to be working with Vicky and since Mastan will work with Siddharth, Therefore they will work in Naam and Badnasib with Kareena and Deepika, in any order.

By statement V, Farhan will work with Imitiaz and Ranveer will work with Rakesh.

By statement I and III, Siddharth will work with Deepika and Vicky will work with Kareena.

The final table will look like:

Varun	Suraj		Abhimaan/ Farz
Siddharth	Mastan	Deepika	Naam/ Badnasib
Ranveer	Rakesh		Sholay 2
Ranbir	Abbas		Farz/ Abhimaan
Farhan	Imitiaz		Don 3
Vicky	Zoya	Kareena	Badnasib/ Naam

Vicky signed the movie project with Zoya.

FeedBack

Directions for questions 59 to 62 : Refer to the data below and answer the questions that follows:

Recently, six bollywood film actors - Varun, Siddharth, Ranveer, Ranbir, Farhan and Vicky - signed a movie project with six different directors - Abbas, Rakesh, Imitiaz, Zoya, Mastan and Suraj - not necessarily in the same order. With each actor, one actress out of six different actresses - Alia, Deepika, Priyanka, Anushka, Vidya and Kareena - signed for the similar project for 6 different movies - Abhimaan, Sholay 2, Badnasib, Farz, Don 3 and Naam - not necessarily in the same order.

Further details known to us are:
I. Siddharth will work in a movie directed by Mastan but he signed the project with neither Kareena nor Anushka.
II. Ranbir and Varun signed the project with neither Deepika nor Priyanka but they are going to work with the directors Abbas and Suraj respectively.
III. Naam and Badnasib will feature Kareena and Deepika and the movie will be directed by Mastan and Zoya, in any order.
IV. Farhan will work in Don 3 and Ranveer in Sholay 2.
V. Farhan is not going to work with Rakesh.

Q.60
Which movie was directed by Imitiaz?

1 ○ Don 3

2 ○ Sholay 2

3 ○ Naam

4 ○ Abhimaan

✔

Solution:

Correct Answer : 1

Your Answer : 1

By statement I, Siddharth will work with Mastan and by statement II, Ranbir and Varun will work with Abbas and Suraj respectively. By statement 4, Farhan is in Don 3 and Ranveer is in Sholay 2.

Actor	Director	Actress	Movie
Varun	Suraj		
Siddharth	Mastan		
Ranveer			Sholay 2
Ranbir	Abbas		
Farhan			Don 3
Vicky			

By statement III, Zoya has to be working with Vicky and since Mastan will work with Siddharth, Therefore they will work in Naam and Badnasib with Kareena and Deepika, in any order.

By statement V, Farhan will work with Imitiaz and Ranveer will work with Rakesh.

By statement I and III, Siddharth will work with Deepika and Vicky will work with Kareena.

The final table will look like:

Varun	Suraj		Abhimaan/ Farz
Siddharth	Mastan	Deepika	Naam/ Badnasib
Ranveer	Rakesh		Sholay 2
Ranbir	Abbas		Farz/ Abhimaan
Farhan	Imitiaz		Don 3
Vicky	Zoya	Kareena	Badnasib/ Naam

Imitiaz directed Don 3.

FeedBack

Recently, six bollywood film actors - Varun, Siddharth, Ranveer, Ranbir, Farhan and Vicky - signed a movie project with six different directors - Abbas, Rakesh, Imitiaz, Zoya, Mastan and Suraj - not necessarily in the same order. With each actor, one actress out of six different actresses - Alia, Deepika, Priyanka, Anushka, Vidya and Kareena - signed for the similar project for 6 different movies - Abhimaan, Sholay 2, Badnasib, Farz, Don 3 and Naam - not necessarily in the same order.

Further details known to us are:
I. Siddharth will work in a movie directed by Mastan but he signed the project with neither Kareena nor Anushka.
II. Ranbir and Varun signed the project with neither Deepika nor Priyanka but they are going to work with the directors Abbas and Suraj respectively.
III. Naam and Badnasib will feature Kareena and Deepika and the movie will be directed by Mastan and Zoya, in any order.
IV. Farhan will work in Don 3 and Ranveer in Sholay 2.
V. Farhan is not going to work with Rakesh.

Q.61
If Vidya will work against Ranbir, then Anushka can be featured in which movie?

1 ○ The one which will feature Ranveer

2 ○ the one directed by Abbas

3 ○ The one which will feature Siddharth

4 ○ The one which will feature Vicky

✖

By statement I, Siddharth will work with Mastan and by statement II, Ranbir and Varun will work with Abbas and Suraj respectively. By statement 4, Farhan is in Don 3 and Ranveer is in Sholay 2.

Actor	Director	Actress	Movie
Varun	Suraj		
Siddharth	Mastan		
Ranveer			Sholay 2
Ranbir	Abbas		
Farhan			Don 3
Vicky			

By statement III, Zoya has to be working with Vicky and since Mastan will work with Siddharth, Therefore they will work in Naam and Badnasib with Kareena and Deepika, in any order.

By statement V, Farhan will work with Imitiaz and Ranveer will work with Rakesh.

By statement I and III, Siddharth will work with Deepika and Vicky will work with Kareena.

The final table will look like:

Varun	Suraj		Abhimaan/ Farz
Siddharth	Mastan	Deepika	Naam/ Badnasib
Ranveer	Rakesh		Sholay 2
Ranbir	Abbas		Farz/ Abhimaan
Farhan	Imitiaz		Don 3
Vicky	Zoya	Kareena	Badnasib/ Naam

If Vidya will work against Ranbir, then out of the given options, Anushka will be featured in the movie which will feature Ranveer.

FeedBack

Directions for questions 59 to 62 : Refer to the data below and answer the questions that follows:

Recently, six bollywood film actors - Varun, Siddharth, Ranveer, Ranbir, Farhan and Vicky - signed a movie project with six different directors - Abbas, Rakesh, Imitiaz, Zoya, Mastan and Suraj - not necessarily in the same order. With each actor, one actress out of six different actresses - Alia, Deepika, Priyanka, Anushka, Vidya and Kareena - signed for the similar project for 6 different movies - Abhimaan, Sholay 2, Badnasib, Farz, Don 3 and Naam - not necessarily in the same order.

Further details known to us are:
I. Siddharth will work in a movie directed by Mastan but he signed the project with neither Kareena nor Anushka.
II. Ranbir and Varun signed the project with neither Deepika nor Priyanka but they are going to work with the directors Abbas and Suraj respectively.
III. Naam and Badnasib will feature Kareena and Deepika and the movie will be directed by Mastan and Zoya, in any order.
IV. Farhan will work in Don 3 and Ranveer in Sholay 2.
V. Farhan is not going to work with Rakesh.

Q.62
If Vidya will work with neither Imitiaz nor Abbas, Farhan will not work with Anushka, and Abhimaan will feature neither Varun nor Alia, then which of the following is definitely false?

1 ○ Farz will be directed by Suraj and will feature Vidya and Varun.

2 ○ Ranbir will work with Anushka and Abbas, who directed movie Abhimaan.

3 ○ Movie Abhimaan, to be directed by Suraj, will feature Anushka.

4 ○ Vicky will be featured in the movie Badnasib, directed by Zoya.

✔

Solution:
Correct Answer : 3
Your Answer : 3

🔖 Bookmark

🔍 Answer key/Solution

By statement I, Siddharth will work with Mastan and by statement II, Ranbir and Varun will work with Abbas and Suraj respectively. By statement 4, Farhan is in Don 3 and Ranveer is in Sholay 2.

Actor	Director	Actress	Movie
Varun	Suraj		
Siddharth	Mastan		
Ranveer			Sholay 2
Ranbir	Abbas		
Farhan			Don 3
Vicky			

By statement III, Zoya has to be working with Vicky and since Mastan will work with Siddharth, Therefore they will work in Naam and Badnasib with Kareena and Deepika, in any order.

By statement V, Farhan will work with Imitiaz and Ranveer will work with Rakesh.

By statement I and III, Siddharth will work with Deepika and Vicky will work with Kareena.

The final table will look like:

Varun	Suraj		Abhimaan/ Farz
Siddharth	Mastan	Deepika	Naam/ Badnasib
Ranveer	Rakesh		Sholay 2
Ranbir	Abbas		Farz/ Abhimaan
Farhan	Imitiaz		Don 3
Vicky	Zoya	Kareena	Badnasib/ Naam

By given conditions in the questions, the table given above can be modified to:

Varun	Suraj	Vidya/ Anushka/ Alia	Farz
Siddharth	Mastan	Deepika	Naam/ Badnasib
Ranveer	Rakesh	Vidya/ Alia/ Anushka	Sholay 2
Ranbir	Abbas	Anushka/ Priyanka	Abhimaan
Farhan	Imitiaz	Alia/ Priyanka	Don 3
Vicky	Zoya	Kareena	Badnasib/ Naam

By the table, Abhimaan will be not be directed by Suraj, therefore option (3) is definitely false.

FeedBack

Directions for questions 63 to 66 : Refer to the data below and answer the questions that follows:

Municipal Corporation of a city calculates the Municipal Rental Value (MRV) for the calculation of tax on the income from house property and for calculating Municipal Tax for a year. MRV depends upon the cost of construction of the house and the value of the land in the ratio 2:1.
So, MRV of a house is given as,
MRV = 10% of (2 × Total construction cost + Total value of the land).
Further, Municipal Tax is 10% of the MRV.
Some information about the 10 houses of a colony is as follows:
1. These are the only houses in the colony.
2. Area of each house in the colony is either 100 sq. meters or 200 sq. meters.
3. The value of the land of the houses varies between Rs. 1000 and Rs. 2000 per sq. meter and is an integer value.
4. Cost of construction of the houses varies between Rs. 500 and Rs. 1500 per sq. meter and is an integer value.
Following table provides us some extra information from the calculation books of Municipal Corporation about these houses of the colony:

Name of the Houses	MRV (in Rs.)	Municipal Tax (in Rs.)	Area of the House (in sq. meters)	Value of the land per sq. meter (in Rs.)	Construction cost per sq. meter (in Rs.)
Goel Villa		3650			1100
Arpan Ashiyana	51000		200		
Shanti Niketan	28000		100		
Nirankari Villa		3500			1000
Shanti Kunj				1500	
Megha Niketan		7600	200		
Vaibhav Villa		4400			
Raghav's House	52000				
Kiran Niketan	87000				
Panghat		5300			

Q.63
Which of the following can be the construction cost (per square meter) for the house 'Panghat'?

1 ○ Rs. 900

2 ○ Rs.850

3 ○ Rs. 775

4 ○ Rs. 925

Solution:

Correct Answer : 3

Municipal Tax = 10% of MRV and MRV = 10% (2 × Total construction cost + Total value of the land)

For 'Panghat', Muncipal Tax is Rs. 5300
∴ MRV = Rs. 53000

So, $53000 = \dfrac{10}{100}$ (2 × Total construction cost + Total value of the land)

530000 = 2 × Total construction cost + Total value of the land.
⇒ Total value of the land = 530000 − 2 × Total construction cost ....(i)
Now area of the house can be either 200 m² or 100 m².
Put options one by one to verify the answer.
First put option 1), i.e. construction cost per m² is Rs. 900. From here, two cases arise
(a) When area = 200 m²
(b) When area = 100 m²

Case (a): Area = 200 m²
∴ Total construction cost = 900 × 200 = 180000
Put this value in eq. (i)
∴ Total value of the land = 530000 − 2 × 180000 = 170000
∴ Value of the land per sq. meter = Rs. 850 which does not lie in the given range of the value of the land.
Hence, not possible.

Case (b): When Area = 100 m²
∴ Total construction cost = 900 × 100 = 90000
Put this value in eq. (i)
∴ Total value of the land = Rs. 350000
∴ Value of the land per sq. meter = Rs. 3500
(Again does not lie in the given range, hence, not possible).

Similarly, option 2 and option 4 will not satisfy as the value of the land per sq. meter will not lie in the given range.
Now consider option 3, when construction cost per sq. meter is Rs. 775.
Case (a) when area = 200 m².
Case (b) when area = 100 m².

Considering case (a):
Area = 200 sq. meter
Construction cost per sq. meter = Rs. 775

Total value of the land = 530000 − 2 × 775 × 200 = 220000

∴ The value of the land per sq. meter = $\dfrac{220000}{200}$ = Rs. 1100 (Possible)

Case (b): Area = 100 sq. meter
Construction cost per sq. meter = Rs. 775
Total value of the land = 530000 − 2 × 775 × 100 = 375000

∴ The value of the land per sq. meter = $\dfrac{375000}{100}$ = Rs. 3750 (Not possible)

Hence, ony area possible for 'Panghat' is 200 sq. meter and among the given options Rs. 775 could be the construction cost per sq. meter.

FeedBack

Directions for questions 63 to 66 : Refer to the data below and answer the questions that follows:

Municipal Corporation of a city calculates the Municipal Rental Value (MRV) for the calculation of tax on the income from house property and for calculating Municipal Tax for a year. MRV depends upon the cost of construction of the house and the value of the land in the ratio 2:1.
So, MRV of a house is given as,
MRV = 10% of (2 × Total construction cost + Total value of the land).
Further, Municipal Tax is 10% of the MRV.
Some information about the 10 houses of a colony is as follows:
1. These are the only houses in the colony.
2. Area of each house in the colony is either 100 sq. meters or 200 sq. meters.
3. The value of the land of the houses varies between Rs. 1000 and Rs. 2000 per sq. meter and is an integer value.
4. Cost of construction of the houses varies between Rs. 500 and Rs. 1500 per sq. meter and is an integer value.
Following table provides us some extra information from the calculation books of Municipal Corporation about these houses of the colony:

Name of the Houses	MRV (in Rs.)	Municipal Tax (in Rs.)	Area of the House (in sq. meters)	Value of the land per sq. meter (in Rs.)	Construction cost per sq. meter (in Rs.)
Goel Villa		3650			1100
Arpan Ashiyana	51000		200		
Shanti Niketan	28000		100		
Nirankari Villa		3500			1000
Shanti Kunj				1500	
Megha Niketan		7600	200		
Vaibhav Villa		4400			
Raghav's House	52000				
Kiran Niketan	87000				
Panghat		5300			

Q.64
Municipal tax for "Shanti Kunj' is 3.5% of its total construction cost. Find the cost of construction per square meter (in Rs.) of 'Shanti Kunj'.

Solution:

Correct Answer : 1000

Municipal Tax = 10% of MRV and MRV = 10% (2 × Total construction cost + Total value of the land)

Municipal tax = 3.5% of total construction cost of Shanti Kunj ...(i)
As Municipal tax is 10% of MRV.
∴ MRV = 10 Municipal tax.
As MRV = 10% (2 total construction cost + Total value of the land)
∴ 10 Municipal tax = 10% (2 × total construction cost + Total value of the land)

⇒ Municipal Tax = $\frac{1}{100}$ (2 × total construction cost + Total value of the land) ...(ii)

Both values of Municipal tax in (i) and (ii) are equal

∴ $\frac{3.5}{100}$ (Total construction cost) = $\frac{1}{100}$ (2 × total construction cost + Total value of the land)

⇒ 1.5 Total construction cost = Total value of the land) ...(iii)
Now, value of the land per sq. meter for Shanti Kunj = Rs. 1500 (given)
Case (a): When area = 200 m²
So, 1.5 total construction cost = 1500 × 200 = 300000
Total construction cost = Rs. 200000

∴ Construction cost per sq. meter = $\frac{200000}{200}$ = Rs. 1000

Case (b): When Area = 100 m²
        Put values in equation (iii)
1.5 Total construction cost = 1500 × 100
    Total construction cost = 150000

∴ Total Construction cost = $\frac{150000}{1.5}$ = Rs. 100000

∴ Construction cost per sq. meter = $\frac{100000}{100}$

    = Rs. 1000
∴ In both cases, the value is same i.e. Rs. 1000

FeedBack

Directions for questions 63 to 66 : Refer to the data below and answer the questions that follows:

Municipal Corporation of a city calculates the Municipal Rental Value (MRV) for the calculation of tax on the income from house property and for calculating Municipal Tax for a year. MRV depends upon the cost of construction of the house and the value of the land in the ratio 2:1.
So, MRV of a house is given as,
MRV = 10% of (2 × Total construction cost + Total value of the land).
Further, Municipal Tax is 10% of the MRV.
Some information about the 10 houses of a colony is as follows:
1. These are the only houses in the colony.
2. Area of each house in the colony is either 100 sq. meters or 200 sq. meters.
3. The value of the land of the houses varies between Rs. 1000 and Rs. 2000 per sq. meter and is an integer value.
4. Cost of construction of the houses varies between Rs. 500 and Rs. 1500 per sq. meter and is an integer value.
Following table provides us some extra information from the calculation books of Municipal Corporation about these houses of the colony:

Name of the Houses	MRV (in Rs.)	Municipal Tax (in Rs.)	Area of the House (in sq. meters)	Value of the land per sq. meter (in Rs.)	Construction cost per sq. meter (in Rs.)
Goel Villa		3650			1100
Arpan Ashiyana	51000		200		
Shanti Niketan	28000		100		
Nirankari Villa		3500			1000
Shanti Kunj				1500	
Megha Niketan		7600	200		
Vaibhav Villa		4400			
Raghav's House	52000				
Kiran Niketan	87000				
Panghat		5300			

Q.65
Which of the following is the value of the land (per sq. meter) for 'Goel Villa' ?

1 ○ Rs.1200

2 ○ Rs. 1000

3 ○ Rs. 1640

4 ○ Rs. 1450

Solution:

Correct Answer : 4

Municipal Tax = 10% of MRV and MRV = 10% (2 × Total construction cost + Total value of the land)

For Goel Villa, Municipal Tax = Rs. 3650 and construction cost per sq. meter = Rs. 1100

∴ MRV = 10 Municipal Tax

  MRV = Rs. 36500

Case (a): When area = 200 sq. Meter

As MRV = 10% (2 × Total construction cost + Total Volume of the land)

∴ $36500 = \dfrac{1}{10}$ (2 × 1100 × 200 + Total value of the land)

Here, we will get negative value of total value of the land which is not possible.

Case b: When Area = 100 sq. Meter

$36500 = \dfrac{1}{10}$ (2 × 1100 × 100 + Total Value of the land)

∴ Total value of the land = Rs. 145000

Hence, the value of the land per sq. meter

$= \dfrac{145000}{100} = $ Rs. 1450

FeedBack

Directions for questions 63 to 66 : Refer to the data below and answer the questions that follows:

Municipal Corporation of a city calculates the Municipal Rental Value (MRV) for the calculation of tax on the income from house property and for calculating Municipal Tax for a year. MRV depends upon the cost of construction of the house and the value of the land in the ratio 2:1.
So, MRV of a house is given as,
MRV = 10% of (2 × Total construction cost + Total value of the land).
Further, Municipal Tax is 10% of the MRV.
Some information about the 10 houses of a colony is as follows:
1. These are the only houses in the colony.
2. Area of each house in the colony is either 100 sq. meters or 200 sq. meters.
3. The value of the land of the houses varies between Rs. 1000 and Rs. 2000 per sq. meter and is an integer value.
4. Cost of construction of the houses varies between Rs. 500 and Rs. 1500 per sq. meter and is an integer value.
Following table provides us some extra information from the calculation books of Municipal Corporation about these houses of the colony:

Name of the Houses	MRV (in Rs.)	Municipal Tax (in Rs.)	Area of the House (in sq. meters)	Value of the land per sq. meter (in Rs.)	Construction cost per sq. meter (in Rs.)
Goel Villa		3650			1100
Arpan Ashiyana	51000		200		
Shanti Niketan	28000		100		
Nirankari Villa		3500			1000
Shanti Kunj				1500	
Megha Niketan		7600	200		
Vaibhav Villa		4400			
Raghav's House	52000				
Kiran Niketan	87000				
Panghat		5300			

Q.66
Which of the following house/houses will create problem in calculating the total area of all the ten houses of the colony?

1 ○ **Goel Villa and Shanti Kunj**

2 ○ **Shanti Kunj and Vaibhav Villa**

3 ○ **Shanti Kunj only**

4 ○ **Vaibhav Villa and Megha Niketan**

Solution:

Correct Answer : 2

Municipal Tax = 10% of MRV and MRV = 10% (2 × Total construction cost + Total value of the land)

For Goel Villa, we have already calculated the only possible area of the house in the previous question i.e. 100 sq. meter.
So, it will not create problem.

Similarly, for Nirankari Villa, area can be calculated i.e. 100 sq. meter

For Vaibhav Villa,
    Municipal Tax = Rs. 4400
    MRV = Rs. 44000
Area can be 200 sq. meter or 100 sq. meter.
Case (a) : When Area = 200 sq. meter
MRV = 10% (2 × Total construction cost + Total value of the land)
440000 = (2 × 200 × Construction cost per sq. meter + 200 × Value of land per sq. meter)
4400 = 4 Construction cost per sq. meter + 2 Value of the land per sq. meter
2200 = 2 Construction cost per sq. meter + Value of the land per sq. meter
Now take any value of the construction cost per sq. meter i.e. Rs. 550 (which lies in the given range)
Then, value of the land per sq. meter = Rs. 1100 (which is in the given range)
Hence area = 200 sq. meter is possible for Vaibhav Villa
Case (b) : When area = 100 sq. Meter
MRV = 10% (2 × Total construction cost + Total value of the land)
440000 = 2 × 100 × Construction cost per sq. meter + 100 × Value of the land per sq. meter
4400 = 2 Construction cost per sq. meter + value of the land
Now, take any possible value of the construction cost, let it be Rs. 1400 per sq. meter, then the value of the land per sq. meter
= Rs. 1600 (which lies in the given range)
Hence Area = 100 sq. meter is also possible for Vaibhav Villa
⇒ Hence, Vaibhav Villa will create problem

For 'Shanti Kunj', the values of MRV and Municipal Tax are not known. Hence area cannot be calculated. So area can be either 100 or 200 sq. meter.
Hence, it will create problem.

For 'Raghav's House', MRV = Rs. 52000.
Case (a): When area of the house = 200 sq. meter
MRV = 10% (2 × Total construction cost + Total value of the land)
520000 = 2 × 200 × Construction cost per sq. meter + Value of the land per sq. meter × 200)
∴ 2600 = 2 Construction cost per sq. meter + Value of the land per sq. meter
Now take any value of the construction cost per sq. meter from the given range such that we get positive value of the value of the land per sq. meter.
For eg. If construction cost per sq. meter is Rs. 600, then the value of the land per sq. meter will be Rs. 1400 (which lies in the given range).
Hence area = 200 m² of Raghav's House is possible.

Case (b): Area = 100 sq. meter
Similarly MRV = Rs 52000
∴ 520000 = 2 × 100 × Construction cost per sq. meter + value of the land per sq. meter × 100
5200 = 2 Construction cost per sq. meter + value of the land per sq. meter
Now for any value of the construction cost per sq. meter from the range, the value of land per sq. meter will not lie in the given range.
For e.g. if construction cost per sq. meter is Rs. 600.
∴ Value of the land per sq. meter = Rs. 4000 (beyond the range)
Hence area = 100 sq. meter for Raghav's House is not possible.

So, the only possible area of Raghav's House = 200 sq. meter.

Similarly, for Kiran Niketan, area can be calculated, and it will be 200 sq. meter.

Therefore, only Shanti Kunj and Vaibhav Villa will create problem while calculating the total area of the all houses of the colony.

FeedBack

Sec 3

Q.67

Find the remainder when the number 1234567...5354 is divided by 32.

1 ○ **14**

2 ○ **12**

3 ○ **16**

4 ○ **10**

Solution:

Correct Answer : 4

The divisibility for 32 is that the last 5 digits of number must divide 32. So, therefore, the remainder it gives with last 5 digits is the remainder for whole number.

So, last 5 digits are 25354 and when we divide it by 32 remainder is 10.

🔖 **Bookmark**

🔍 **Answer key/Solution**

FeedBack

Q.68

In how many ways can 6 people sit on six chairs arranged in a row, such that Raju sits on the chair which is second from the left end, and Kat and Kaif are immediate neighbours of each other?

Solution:

Correct Answer : 36

Let six chairs be chair 1 to 6.

━━ ━━ ━━ ━━ ━━ ━━
 1   2   3   4   5   6

Raju sits on chair 2
Kat and Kaif can sit on 3, 4, 5, 6 and they must be immediate neigbours.
So, there are 6 ways of arranging them
Now 3 places are left and 3 people have to sit they can sit in 3! ways
So, total arrangements are 6 × 3! = 6 × 6 = 36.

🔖 **Bookmark**

🔍 **Answer key/Solution**

FeedBack

Q.69

Average of 5 consecutive 2 digit numbers is 36 less than the average of the 5 numbers formed by reversing the digits of those 5 numbers. If the difference between the largest number in both the cases is 54, then which of the following can be the sum of the original 5 numbers?

1 ○ **125**

2 ○ **176**

3 ◯ **110**

4 ◯ **130**

Solution:

Correct Answer : 4

Difference between a two digit number and a number with reversed digit has to be 54. So, there are 3 cases possible
71 – 17 = 54, 82 – 28 = 54, 93 – 39 = 54
So, the largest of five original two-digit numbers must be among: 17, 28 or 39
Since, it is given that the numbers ar consecutive, so when we take 28 as largest among the 5 the sum comes out to be 130, which is one of the options.

FeedBack

Q.70

40 people can finish some work in 90 days. Each of these 40 people is equally efficient. On the first day only one of them worked. Second day onwards, two more people joined the group every day. In how many days will the work get over?

Solution:

Correct Answer : 60

Total work = 40 × 90 = 3600.
Let one person does 1 unit of work
So on 1st day, 1 person does 1 unit of work
On 2nd day, 3 people do 3 units of work
On 3rd day, 5 people do 5 units of work.

⋮

and so on
This forms on A.P.
1 + 3 + 5 + 7 + ...
Number of days will be the number of terms in this series.

$$\frac{n}{2}[2 \times 1 + (n-1)2] = 3600$$

On solving, we get n = 60 days.

FeedBack

Q.71

The centres of 3 circles, which touch each other externally, form a triangle of sides 14 cm, 18 cm and 20 cm. Find the radius of the smallest circle.

1 ◯ **7 cm**

2 ◯ **6 cm**

3 ◯ **8 cm**

4 ◯ **12 cm**

Solution:

Correct Answer : 2
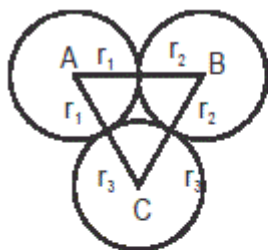
$r_1 + r_2 = 14$
$r_2 + r_3 = 18$ adding we get, $r_1 + r_2 + r_3 = 26$ cm
$r_3 + r_1 = 20$

∴ Smallest radius = $26 - (r_1 + r_3)$
= 6 cm.

FeedBack

Q.72

0.abababab......= c/d, where c and d are distinct single digits natural numbers which are relatively prime to each other. If a and b are also single digit whole numbers not necessarily distinct, then how many distinct values can the number ab assume?

1 ○ **10**

2 ○ **11**

3 ○ **8**

4 ○ **9**

Solution:

Correct Answer : 3

$0.\text{abababab}...... = \dfrac{c}{d} \Rightarrow \dfrac{ab}{99} = \dfrac{c}{d}$

$\dfrac{ab}{99} = \dfrac{c}{b}$, where a, b are single digit whole numbers not necessarily distinct such that c and d are relatively prime single digits natural numbers.

∴ ab = 11, 22, 33, 44, 55, 66, 77, 88

and corresponding $\dfrac{c}{d}$ will be: $\dfrac{1}{9}, \dfrac{2}{9}, \dfrac{1}{3}, \dfrac{4}{9}, \dfrac{5}{9}, \dfrac{2}{3}, \dfrac{7}{9}, \dfrac{8}{9}$

∴ ab can assume 8 distinct values.

FeedBack

Q.73

Under dynamic fare pricing of Rajdhani Express, first 25% of the total seats are booked at a discount of 20% of the fare. There is no discount on 26.66% of the remaining seats and hence booked on actual fare and the rest of the seats are booked at 40% extra. If only 90% of the seats are booked by passengers, then the revenue generated by this scheme is what percent more than the revenue generated when all the seats of Rajdhani Express were booked at the actual fare price.

1 ○ **1%**

2 ○ **2%**

3 ○ **3%**

4 ○ **4%**

Solution:
Correct Answer : 3

🔖 Bookmark

🔑 Answer key/Solution

Let the price of each ticket = 100
and number of seats = 100
so total cost = 10000

As 20% subsidy is provided of 25% of seats = $\left(\dfrac{25 \times 100}{100}\right)\left(100\left(1 - \dfrac{20}{100}\right)\right) = 25 \times 80 = 2000.$

$\left(26.66\% = \dfrac{4}{15}\right)$ of remaining seat = $75 \times \dfrac{4}{15}$, therefore, price is, $20 \times 100 = 2000$

As total occupancy is 90% so, price of left seats are = $45 \times 140 = 6300$

Total revenue earned = 10300

Profit% = $\dfrac{300}{10000} \times 100 = 3\%$

FeedBack

Q.74

The selling price of 20 apples is equal to the cost price of 28 apples, which in turn is equal to the discount offered on 20 apples. If on 20 apples markup percentage is reduced to its half and discount offered is made equivalent to the cost price of 10 apples, then find the profit or loss%.

1 ○ **40% loss**

2 ○ **20% loss**

3 ○ **20% profit**

4 ○ **40% profit**

Solution:

Correct Answer : 4

Let the cost price of an Apple = Rs. 1
So, cost price of 28 Apples = selling price of 20 Apples = Discount on 20 Apple = Rs. 28
So, MP of 20 Apples = Rs. 56
Discount of 20 Apples = 28 or 50%

$\text{Profit\%} = \dfrac{8}{20} \times 100 = 40\%$

$\text{Mark up\%} = \dfrac{36}{20} \times 100 = 180\%$

New markup = 90%

$20 \times \dfrac{90}{100} = 18$

So, new marked price = (20 + 18) = Rs. 38

New discount = Rs. 10
Selling price = Rs. 28

$\text{Profit\%} = \dfrac{8}{20} \times 100 = 40\%$

Hence, 4th option

FeedBack

Q.75

In a village 'X', the ratio of male to female population is 1 : 3, whereas in another village 'Y', the ratio of male to female population is 4 : 5. If the ratio of male population to the female population of both the villages taken together is 2 : 3, then find the ratio of males in village X to males in village Y.

1 ◯ **1 : 6**

2 ◯ **1 : 4**

3 ◯ **2 : 3**

4 ◯ **Cannot be determined**

✔

Solution:

Correct Answer : 1

Your Answer : 1

Let the total population of village X = 4a

and total population of village Y = 9b

Ratio of male to females of both the village = 2 : 3

$$\frac{a + 4b}{3a + 5b} = \frac{2}{3} \Rightarrow$$ On solving this

We get ratio of a : b = 2 : 3

So now ratio of males in Village X to Village Y = $\frac{a}{4b} = \frac{1}{4} \times \frac{2}{3} = \frac{1}{6}$.

FeedBack

Q.76

The concentration of alcohol in two different bottles of wine is a% and b% such that a and b are in ratio 7 : 2. When both are mixed in equal quantities, 63% of alcohol is formed. In what ratio should we mix the content of two bottles to make a 56% alcohol solution?

1 ○ **6 : 5**

2 ○ **2 : 3**

3 ○ **7 : 5**

4 ○ **9 : 4**

Solution:

Correct Answer : 2

As the concentration Ratio is 7 : 2 and they are mixed in equal quantities.
So, using alligation method
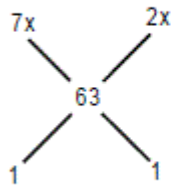
7x – 63 = 63 – 2x
⇒ 9x = 126
⇒ x = 14

So concentration level in 1st is 98% and 28% in 2nd bottle. To make a 56% solution we should mix it in
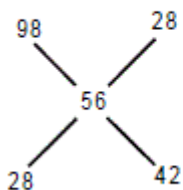
28 : 42 ratio or 2 : 3 is the answer. Hence 2nd Option.

FeedBack

Q.77

Find the average of the following series:

1 × 2 × 3 × 4 + 2 × 3 × 4 × 5 + 3 × 4 × 5 × 6 + … + 11 × 12 × 13 × 14

1 ○ **6552**

2 ○ **7801**

3 ○ **15514**

4 ○ **32760**

Solution:

Correct Answer : 1

The sum of the series of the form n(n + 1) (n + 2) (n + 3) is $\dfrac{n(n+1)(n+2)(n+3)(n+4)}{5}$

So, average will be $\dfrac{(n+1)(n+2)(n+3)(n+4)}{5} = \dfrac{12 \times 13 \times 14 \times 15}{5} = 6552$.

FeedBack

Q.78

There are two inlet pipes P and Q and one outlet pipe R, connected to a tank. P and Q can fill the tank in 10 and 12 minutes respectively while R can empty it in 15 minutes. Inlet pipe P was opened for first two minutes and then closed and now Q was opened. After 7 minutes from then it was observed that outlet pipe R was left open from the beginning. On realizing this, R was closed immediately. In how much more time will Q fill the tank?

1 ○ $9\frac{3}{5}$ minutes

2 ○ $9\frac{4}{5}$ minutes

3 ○ $10\frac{1}{5}$ minutes

4 ○ $10\frac{2}{5}$ minutes

Solution:
Correct Answer : 2

Let the capacity of tank be LCM (10, 12, 15) = 60 units
Pipe P will fill at 6 units/min, Pipe Q will fill at 5 units/min and pipe R will empty at 4 units/min
In first two mins, 6 × 2 = 12 units is filled. In next 7 mins pipe Q will fill 7 × 5 = 35 units but Pipe R is opened since beginning,

so 9 × 4 = 36 units will be taken out. Right now tank is filled 12 + 35 − 36 = 11 units. Now Q will take $\dfrac{60-11}{5} = \dfrac{49}{5} = 9\frac{4}{5}$ mins

more to fill the tank.

[FeedBack]

Q.79

A car travels three distances, in ratio 1 : 2 : 3, at the speed of 20 kmph, 30 kmph and 50 kmph respectively. Find the average speed (in kmph) of the journey.

1 ○ 1800/41

2 ○ 1800/43

3 ○ 1800/47

4 ○ 1800/53

[✔]

Solution:

Correct Answer : 4

Your Answer : 4

Let the distance be d, 2d and 3d

Now take d as LCM (20, 30, 50) = 300

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$\frac{6d}{\frac{d}{20} + \frac{2d}{30} + \frac{3d}{50}} = \frac{1800}{\frac{300}{20} + \frac{600}{30} + \frac{900}{50}} = \frac{1800}{15 + 20 + 18} = \frac{1800}{53}$$

FeedBack

Q.80

Find the radius (up to one decimal places) of the circle which passes through the points having coordinates (2,3), (2,6) and (6,3).

Solution:

Correct Answer : 2.5

As the circle passes through three distinct points A(2, 3), B(2, 6) & C(6, 3) so the length of points from each other is

$$\overline{AB} = \sqrt{(6-3)^2 + (2-2)^2} = 3$$

$$\overline{BC} = \sqrt{(6-3)^2 + (6-2)^2} = 5$$

$$\overline{AC} = \sqrt{(3-3)^2 + (6-2)^2} = 4$$

Since, $3^2 + 4^2 = 5^2$.

So, the triangle formed is a right angled triangle, hence, radius of circle is $\frac{5}{2} = 2.5$

FeedBack

Q.81

Maximum how many terms of the progression: 2, 5, 8,.... can be considered, if the sum of the progression has to be less than 3000.

Solution:

Correct Answer : 44

Let the maximum number of terms be x
a = 2 and d = 3

$\therefore$ sum = $\frac{x}{2}$ [2(2) + (x − 1)3] < 3000

x(1 + 3x) < 6000, by deduction we get
x = 44 will give the value < 6000 here.

FeedBack

Q.82

If T is a 2-digit number, then find the probability of T leaving the remainder as 2 when divided by 4.

1 ○ **11/45**

2 ○ **17/45**

3 ○ **29/90**

4 ○ **23/90**

Solution:

Correct Answer : 4

We have total 90 2-digits number (10 to 99)
Now as per the condition given, we have 23 numbers which leave the remainder as 2 when divided by 4.

$\therefore$ Required probability is $\frac{23}{90}$

(1st number 4(2) + 2 = 10 ; 4(3) + 2) = 24 …… so on).

FeedBack

Q.83

A person who has a certain amount of money with him goes to market. He can buy 50 oranges or 40 mangoes with that money. But he retains 10% of the amount for taxi fare and buys 20 mangoes and some oranges from the remaining amount. Find the number of oranges purchased by him.

Solution:
Correct Answer : 20

Let total amount with him be 200 (LCM of 40,50).
1 orange = 4
1 mango = 5
10% amount retained + 20 mangoes purchased = 20 + 100
Amount left = 80

Since, 1 orange = 4, therefore, in Rs. 80, $\dfrac{80}{4}$ = 20 oranges can be purchased.

FeedBack

Q.84

If p and q are the roots of the equation $x^2 + bx + c = 0$, where *c < 0 < b and p < q,* then

1 ○ 0 < p < q

2 ○ p < 0 < q < |p|

3 ○ p < q < 0

4 ○ p < 0 < |p| < q

Solution:
Correct Answer : 2

Given , c<0<b
Since p+q = -b ....(1)
and pq = c
From given data, c<0
∴ pq<0
⇒ Either (p is negative, q is positive)
Or, (p is positive, q is negative).
From Eq. 1, b > 0
⇒ –b <0
⇒ p+q <0 therefore the sum is negative
Now since sum is negative and one of p and q is negative and also p < q, we can conclude that p is negative and q is positive but |p| > q
Hence we have p< 0 <q< |p|

FeedBack

Q.85

In how many ways can 5 identical balls be distributed among 5 identical boxes such that any box can have any number of balls?

1 ○ 5^5

2 ⚪ 1

3 ⚪ 7

4 ⚪ $^9C_4$

Solution:

Correct Answer : 3

Let 5 identical boxes be x_1, x_2, x_3, x_4 and x_5 and any box can hold any number of balls from 0 to 5 such that sum of balls in all the boxes is 5.
This is done by the use of integer partitions.
$x_1 + x_2 + x_3 + x_4 + x_5 = 5$.
Just as there are 7 partitions of integer 5:
(0, 0, 0, 0, 5), (0, 0, 0, 1, 4), (0, 0, 1, 2, 2), (0, 0, 0, 2, 3). (0, 1, 1, 1, 2), (0, 0, 1, 1, 3), (1, 1, 1, 1, 1).

FeedBack

Q.86
Three series are as follows:
S_1 = 2 + 5 + 8 + 11 + ... + 452
S_2 = 3 + 7 + 11 + 15 + ... + 603
S_3 = 5 + 11 + 17 + 23 + ... + 515
Find the sum of all the terms which are common in the 3 series.

1 ⚪ **8399**

2 ⚪ **8447**

3 ⚪ **15059**

4 ⚪ **8272**

First common term of the 3 Arithmetic Progression is 11 and the series formed by taking the common terms of the 2 or more arithmetic progression is also an A.P. with common difference equal to the L.C.M of the common differences of the given A.P's i.e. in this case common difference of the new A.P. is LCM (3, 4, 6) = 12. Let T_n be the last term of the ⇒ A.P formed by taking the common terms of the 3 given A.P's

⇒ T_n = 11 + (n − 1)12 ≤ 452

⇒ (n − 1) 12 ≤ 441 ⇒ n − 1 ≤ $\dfrac{441}{12}$ = 36.75

⇒ n = 37

Sum of all the common terms (S_n)

$= \dfrac{37}{2}\left[2\times11+(37-1)12\right]$

= 37 [11 + 36 × 6] = 37 × 227 = 8399

FeedBack

Q.87

A fruit seller gives a discount on apples equivalent to the 25 % of the selling price of apples and this selling price gives him a profit of $16\dfrac{2}{3}$% when calculated on S.P. By what percentage did he mark up the price of the apples before offering the discount?

Cost price + Profit = Selling price and Marked Price = Selling price + Discount
i.e. CP + P + D = MP
S.P = 12x, P = 2x, D = 3x
∴ CP = 10x & MP = 15x
Clearly, MP is 50% above C.P.

FeedBack

Q.88

If $\left[\dfrac{x}{5}\right]=\left[\dfrac{x}{7}\right]$, where [a] represents the greatest integer less than or equal to a and x is a natural number, then how many values can x take?

1 ○ **8**

2 ○ **11**

3 ○ **10**

4 ⚪ 9

Solution:

Correct Answer : 1

Case I: When $\frac{x}{5}<1$ and $\frac{x}{7}<1$ then, $\left[\frac{x}{5}\right]=\left[\frac{x}{7}\right]=0$

Here, x = 1, 2, 3, 4

Case II: When $1\le\frac{x}{5}<2$ and $1\le\frac{x}{7}<2$, then $\left[\frac{x}{5}\right]=\left[\frac{x}{7}\right]=1$

Here x = 7, 8, 9.

Case III: When $2\le\frac{x}{5}<3$ and $2\le\frac{x}{7}<3$ and $\left[\frac{x}{5}\right]=\left[\frac{x}{7}\right]=2$

Here x = 14.
Hence, value of x will be 1,2,3,4,7,8,9,14.

FeedBack

Q.89
An ant is sitting on a vertex of a cube of edge 'a' units. Find the minimum distance that ant has to travel in order to reach the vertex at the other end of the body diagonal from this vertex. (Note- the Ant cannot fly).

1 ⚪ $(\sqrt{2}+1)\,a$

2 ⚪ $a\sqrt{5}$

3 ⚪ $2\sqrt{3}\,a$

4 ⚪ 3a

✖

Solution:

Correct Answer : 2

Your Answer : 3
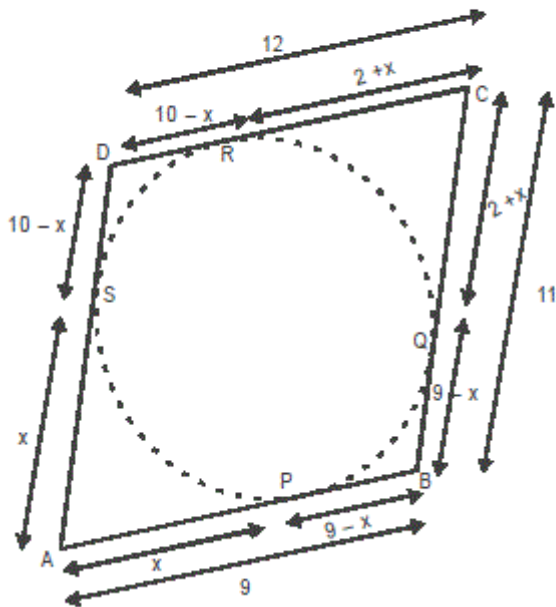**Minimum distance will be diagonal of rectangle of length = 2a and width = a, if one face of cube is cut open.**

FeedBack

Q.90
A circle is inscribed in a quadrilateral ABCD. If AB = 9 units, BC = 11 units and CD = 12 units, then find AD.

Solution:

Correct Answer : 10

Let the sides AB, BC, CD and DA touch the circle at points P, Q, R and S respectively.
∴ Using property of tangents
BP = BQ
CQ = CR
DS = DR
AS = AP

Clearly, AD = 10 - x + x = 10 units.

FeedBack

Q.91

Let x, y and z are three distinct positive integers such that x and y are odd and z is even. Which one of the following statements cannot be true?

1 ○ $(x - z)^2$ y is even

2 ○ $(x - z)$ y^2 is odd

3 ○ $(x + y)^3$ z is even

4 ○ $(x - y)^2$ z is even

Solution:

Correct Answer : 1

$(x - z)^2$ y is even cannot be true, because x is odd and z is even. Therefore, x − z is odd. And y is odd, therefore, $(x - z)^2$ will be odd and $(x - z)^2$ y will be odd.

FeedBack

Q.92

The circumference of the front wheel of a cart is 30 ft and that of the back wheel is 36 ft. What is the distance (in ft) travelled by the cart when the front wheel has done five more revolutions than the back wheel?

Solution:

Correct Answer : 900

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🔍 Answer key/Solution

The circumference of the front wheel is 30 ft and that of the rear wheel is 36 feet. Let the rear wheel makes n revolutions. At this time, the front wheel should have made n + 5 revolutions. As both the wheels would have covered the same distance, n × 36 = (n + 5) × 30.

36n = 30n + 150
6n = 150
n = 25.
∴ Distance covered = 25 × 36 = 900 ft

FeedBack

Q.93

If one root of $x^2 + px + 12 = 0$ is 4 and an other equation $x^2 + px + q = 0$ has equal roots, then the value of q is

1 ○ **49/4**

2 ○ **4/49**

3 ○ **4**

4 ○ **1/4**

Solution:

Correct Answer : 1

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🔍 Answer key/Solution

Let α and β be the roots of $x^2 + px + 12 = 0$

$\Rightarrow \alpha + \beta = -p$ and $\alpha\beta = 12$

Let $\alpha = 4$

then $4 + \beta = -p$ and $4\beta = 12$

$\Rightarrow \beta = 3$ and $p = -7$

Given: $x^2 - 7x + q = 0$ has equal roots.

$\Rightarrow \dfrac{7 + \sqrt{49 - 4q}}{2} = \dfrac{7 - \sqrt{49 - 4q}}{2}$

$\Rightarrow q = \dfrac{49}{4}$

FeedBack

Q.94

What is the sum of all possible prime numbers, which are denoted by p, such that $(p^2 + 11)$ has exactly six different positive divisors (including 1 and the number itself)?

Solution:

Correct Answer : 3

Every prime number greater than 3 can be written as (6k ± 1) for some natural value of k.
So, $p^2 + 11 = (6k \pm 1)^2 + 11 = (36k^2 \pm 12k + 1) + 11 = 12(3k^2 \pm k + 1)$.
12 already have 6 positive divisors viz. 1, 2, 3, 4, 6 and 12. That means $(3k^2 \pm k + 1) = 1$ so that no more divisors exist. $(3k^2 \pm k + 1) = 1$ gives, k = 0, ±1/3. Only k = 1/3 makes (6k ±1) a valid prime number which is 3. Hence, p = 3 is the only prime number possible.

FeedBack

Q.95

If A and B are two natural numbers such that
LCM (A, B) = $2^4 \times 5^3 \times 7^4$ and LCM (8A, 25 B) = $2^4 \times 5^3 \times 7^4$, then how many values can A take?

1 ○ **10**

2 ○ **1**

3 ○ **5**

4 ○ **Data Inconsistent**

Solution:

Correct Answer : 1

LCM (A, B) = $2^4 \times 5^3 \times 7^4$
LCM (8A, 25B) = $2^4 \times 5^3 \times 7^4$
A → must be a multiple of 5^3 → 1 value possible.
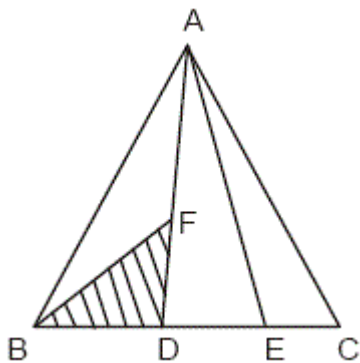A → can be a multiple of $7^0, 7^1, 7^2, 7^3, 7^4$ → 5 values possible.
A → can be a multiple of $2^0, 2^1$ → 2 values possible.
i.e. 1 × 5 × 2 = 10 possible values.

FeedBack

Q.96

In a triangle ABC, D and E are points on BC such that BD : DE : EC = 2 : 2 : 1 and F is a point on AD such that AF : FD = 3 : 1, as shown in the figure above. Find the ratio of the area of the triangle (BFD) to the area of the triangle (ABC).

1 ◯ **1 : 4**

2 ◯ **2 : 5**

3 ◯ **1 : 10**

4 ◯ **None of these**

Solution:
Correct Answer : 3

🔖 Bookmark

🔍 Answer key/Solution

Area of ΔABD is $\frac{2}{5}$ of the area of ΔABC

(∵ the ratio of base BD of triangle ABD is $\frac{2}{5}$ th of the base BC of triangle ABC and their heights are equal)

Area of ΔBFD is $\frac{1}{4}$ th of the area of ΔABD

(∵ the ratio of base FD of triangle BFD is $\frac{1}{4}$ th of the base AD of triangle ABD)

Hence, Area of ΔBFD = $\frac{2}{5} \times \frac{1}{4}$ Area of ΔABC $\frac{1}{10}$ Area of ΔABC

FeedBack

Q.97

Two trains running in opposite directions cross a man in 40 seconds and 28 seconds respectively. The two trains cross each other in 38 seconds. The ratio of the lengths of the two train is

1 ◯ **10 : 7**

2 ○ **50 : 7**

3 ○ **10 : 3**

4 ○ **34 : 33**

✔

Solution:

Correct Answer : 2

Your Answer : 2

Let the length of two trains b ℓ_1 and ℓ_2.

$\dfrac{\ell_1}{S_1} = 40$ ... (i), $\dfrac{\ell_2}{S_2} = 28$ ... (ii), $\dfrac{\ell_1 + \ell_2}{S_1 + S_2} = 38$ ... (iii)

Using the above relations, $\dfrac{S_1}{S_2} = \dfrac{5}{1}$

Divide (i) by (ii)

$\dfrac{\frac{\ell_1}{S_1}}{\frac{\ell_2}{S_2}} = \dfrac{40}{28} \Rightarrow \dfrac{\ell_1}{\ell_2} = \dfrac{40}{28} \times \dfrac{S_1}{S_2} = \dfrac{40}{28} \times \dfrac{5}{1} \Rightarrow \dfrac{\ell_1}{\ell_2} = \dfrac{50}{7}$

FeedBack

Q.98

If a, b, c are positive real numbers and abc = 27, then the minimum value of is

$$\dfrac{a^6 + b^6}{a^4 - a^2 b^2 + b^4} + \dfrac{b^6 + c^6}{c^4 - b^2 c^2 + b^4} + \dfrac{c^6 + a^6}{c^4 - c^2 a^2 + a^4}$$

1 ○ **54**

2 ○ **36**

3 ○ **27**

4 ○ **18**

Solution:

Correct Answer : 1

$$\frac{(a^2 + b^2)(a^4 - a^2b^2 + b^4)}{a^4 - a^2b^2 + b^4} = a^2 + b^2 \quad [\text{As } a^6 + b^6 = (a^2 + b^2)(a^4 - a^2b^2 + b^4)]$$

Similarly, $\dfrac{c^6 + a^6}{c^4 - c^2a^2 + a^4} = c^2 + a^2$

The expression (say E) = $a^2 + b^2 + b^2 + c^2 + c^2 + a^2$

$\qquad = 2(a^2 + b^2 + c^2)$

∴ We know that

$$AM(a^2, b^2, c^2) \geq GM(a^2, b^2, c^2)$$

$$\frac{a^2 + b^2 + c^2}{3} \geq \sqrt[3]{a^2b^2c^2}$$

Hence, the minimum value of $a^2 + b^2 + c^2$ is

$$3 \times \sqrt[3]{(abc)^2} = 3\sqrt[3]{(27)^2} = 3(3)^2 = 27$$

∴ Minimum value of E is 54.

FeedBack

Q.99

Find the value of the following function:

$\log_2 3 \times \log_3 4 \times \log_4 5 \times \dots \times \log_{19} 20$.

1 ○ **1 + log 2**

2 ○ **2 + (log 2)$^{-1}$**

3 ○ **2 + log 2**

4 ○ **1 + (log 2)$^{-1}$**

Solution:

Correct Answer : 4

$\log_2 3 \times \log_3 4 \times \log_4 5 \times \dots \times \log_{19} 20$

$$= \frac{\log 3}{\log 2} \times \frac{\log 4}{\log 3} \times \frac{\log 5}{\log 4} \times \dots \times \frac{\log 19}{\log 18} \times \frac{\log 20}{\log 19}$$

$$\Rightarrow \frac{\log 20}{\log 2} = \frac{\log 2}{\log 2} + \frac{\log 10}{\log 2} = 1 + (\log 2)^{-1}$$

FeedBack

Q.100

A sum of money amounts to Rs. 5120 in 3 years and to Rs. 7290 in 6 years at certain rate of compound interest, compounded annually. Find the rate of interest.

1 ○ **7.5%**

2 ⚪ **12.5%**

3 ⚪ **10%**

4 ⚪ **15%**

✔

Solution:

Correct Answer : 2

Your Answer : 2

$$p\left(1+\frac{R}{100}\right)^3 = 5120 \qquad \dots \text{ (i)}$$

$$p\left(1+\frac{R}{100}\right)^6 = 7290 \qquad \dots \text{ (ii)}$$

$$\frac{\text{(ii)}}{\text{(i)}} \Rightarrow \left(1+\frac{R}{100}\right)^3 = \frac{729}{512} \Rightarrow \frac{R}{100} = \frac{1}{8} \Rightarrow R = 12.5\%.$$

FeedBack

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🔍 **Answer key/Solution**