



## Mock CAT – 18 2019

Scorecard (procreview.jsp?sid=aaaacfmeUdDwo8biKQs\_wSat Jan 11 22:49:44 IST 2020&qsetId=HLjIQqbH5u0=&qsetName=Mock CAT – 18 2019)

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Qs Analysis (QsAnalysis.jsp?sid=aaaacfmeUdDwo8biKQs\_wSat Jan 11 22:49:44 IST 2020&qsetId=HLjIQqbH5u0=&qsetName=Mock CAT – 18 2019)

Booster Analysis (BoosterAnalysis.jsp?sid=aaaacfmeUdDwo8biKQs\_wSat Jan 11 22:49:44 IST 2020&qsetId=HLjIQqbH5u0=&qsetName=Mock CAT – 18 2019)

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Solutions (Solution.jsp?sid=aaaacfmeUdDwo8biKQs\_wSat Jan 11 22:49:44 IST 2020&qsetId=HLjIQqbH5u0=&qsetName=Mock CAT – 18 2019)

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VARC

DILR

QA

## Sec 1

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

**Railway journeys and tabloid newspapers have not had the dire effects that were predicted. Even the most radically transformative technologies have not had the impact we might have expected. The dramatic electrification of everyday life that has taken place over the last**

few decades has not fundamentally altered the way we relate to each other. Love, jealousy, kindness, anxiety, hatred, ambition, bitterness, joy etc, still seem to have a remarkable family resemblance to the emotions people had in the 1930s. The low-grade bitchiness of office politics may be conducted more efficiently by email, but its essential character hasn't changed. Teenagers communicating by mobile phones and texts and chat rooms and webcams still seem more like teenagers than nodes in an electronic network.

I have to admit a little concern at what we might call the e-ttenuation of life, whereby people find it increasingly difficult to be here now rather than dissipating themselves into an endless electronic elsewhere; but inner absence and wool-gathering is not entirely new, even if it is now electronically orchestrated. It just becomes more publicly visible. What's more, there is something reassuring about electronic technology: because it is widely and cheaply available and because it is so smart, it allows us to be dumb, and so compresses the differences between people.

Of course, people are worried about more invasive innovations; in particular, the direct transformation of the human body. And this is where the gradualness of change is important, because as individuals we have a track record of coping with such changes without falling apart or losing our sense of self entirely. After all, we have all been engaged all our lives in creating a stable sense of our identity out of whatever is thrown at us. This idea is worth dwelling on.

At the root of humanity is what I have called 'the Existential Intuition' – the sense that 'I am this'; our appropriation of our own bodies as persons who participate in a collective culture. Even at a bodily level, this intuition withstands quite radical changes. We grow from something about a foot long and weighing about 7 pounds, to something about 6 foot long and weighing about 150 pounds, and for the greater part of that period we feel that we are the same thing. We assimilate these changes into an evolving and continuous sense of our own identity.

This is possible because change happens gradually and because it happens to all of us. Gradualness ensures continuity of memory alongside an imperceptible change in our bodies and the configuration of the world in which we live. That is why my earlier reassurances emphasized the gradualness of technological advance. If I look at myself objectively, I see that I am the remote descendent of the 10-year-old I once was, and yet my *metamorphosis* is quite unlike that of Kafka's man who turns into a beetle. My dramatic personal growth and development is neither sudden nor solitary; and this will also be true of the changes that take place in human identity in the world of changing technologies.

Yes, we shall change; but the essence of human identity lies in this continuing self-redefinition. And if we remember that our identity and our freedom lie in the intersection between our impersonal but unique bodies and our personal individual memories and shared cultural awareness, it is difficult to worry about the erosion of either our identity or our freedom by technological advance.

**Q.1**

'Even the most radically transformative technologies have not had the impact we might have expected.' Which of the following arguments helps the author reach this conclusion?

- 1  We are able to cope with gradual change.
- 2  We have a strong existential intuition.
- 3  The display of emotions by people has not changed.
- 4  These technologies compress the differences between people.

**Solution:**

**Correct Answer : 3**

**Genre: Philosophy**

**Word Count# 573**

 **Bookmark**

 **Answer key/Solution**

Options 1 and 2 are incorrect because the context here is not about coping with change or about existential intuition. Option 4 is incorrect because technologies compressing differences in people are not related to the impact of technological transformation. Option 3 is the correct choice because the author feels that the basic emotions of man such as love, jealousy, kindness, anxiety, hatred, ambition, bitterness, joy etc, still seem to have a remarkable resemblance with the emotions people had in the 1930s, thereby concluding that radically transformative technologies have not had the impact we might have expected.

**FeedBack**

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

Railway journeys and tabloid newspapers have not had the dire effects that were predicted. Even the most radically transformative technologies have not had the impact we might have expected. The dramatic electronification of everyday life that has taken place over the last few decades has not fundamentally altered the way we relate to each other. Love, jealousy, kindness, anxiety, hatred, ambition, bitterness, joy etc, still seem to have a remarkable family resemblance to the emotions people had in the 1930s. The low-grade bitchiness of office politics may be conducted more efficiently by email, but its essential character hasn't changed. Teenagers communicating by mobile phones and texts and chat rooms and webcams still seem more like teenagers than nodes in an electronic network.

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## Q.2

Which of the following inferences can be drawn from the passage?

- I. Electronic technology is expensive and not available everywhere.
- II. We grow up feeling the same about ourselves most of the time.
- III. The electronic age has fundamentally changed the way in which we relate to each other.
- IV. Teenagers are still acting like teenagers usually do.

1  I and III

2  II and IV

3  I only

4  III only

**Solution:****Correct Answer : 2****Your Answer : 1****Genre: Philosophy****Word Count# 573** **Bookmark** **Answer key/Solution**

**Option 1 is incorrect because both statements I and III cannot be inferred from the passage.**  
**Option 3 is incorrect because statement I is not validated . Option 4 is incorrect because statement III is not validated.** Option 2 is the correct choice because both statements II and IV have been validated in the passage. Statement II can be inferred because the following line in the passage supports this statement, '*We grow from something about... to something about..., and for the greater part of that period we feel that we are the same thing.*' Statement IV can be inferred because the following line in the passage supports this statement, '*Teenagers communicating by mobile phones and texts and chat rooms and webcams still seem more like teenagers than nodes in an electronic network*'

**FeedBack**


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**Yes, we shall change; but the essence of human identity lies in this continuing self-redefinition. And if we remember that our identity and our freedom lie in the intersection between our impersonal but unique bodies and our personal individual memories and shared cultural awareness, it is difficult to worry about the erosion of either our identity or our freedom by technological advance.**

### Q.3

**It can be inferred that the author is chiefly concerned with:**

- 1  the gradualness of change.
- 2  the impact of electronic gadgets on human beings.
- 3  the fact that human growth is neither dramatic, nor sudden or solitary.
- 4  the resilience of human identity in the face of technological advancement.



**Solution:**

**Correct Answer : 4**

**Your Answer : 4**

**Genre: Philosophy**

**Word Count# 573**

**Bookmark**

**Answer key/Solution**

**FeedBack**

**Options 1, 2 and 3 are incorrect because they are too narrow in scope. They capture main ideas of individual paragraphs and not the whole passage. Option 4 is the correct answer because the thrust of the passage is the fact that human beings will be able to survive the change that technological advancement brings as they are attuned to adapting to change.**

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**between our impersonal but unique bodies and our personal individual memories and shared cultural awareness, it is difficult to worry about the erosion of either our identity or our freedom by technological advance.**

**Q.4**

**The meaning of e-ttenuation, as used by the author, is:**

- 1  **decline in the experiencing of life**
- 2  **reduction in the strength of life**
- 3  **decline in the force of life**
- 4  **reduction in the impact of life**



**Solution:**

**Correct Answer : 1**

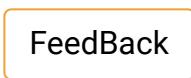
**Your Answer : 2**

**Genre: Philosophy**

**Word Count# 573**

 **Bookmark**
 **Answer key/Solution**

**The meaning of attenuation is the reduction of something. In the sentence, *I have to admit a little concern at what we might call the e-ttenuation of life, whereby people find it increasingly difficulty to be here now rather than dissipating themselves into an endless electronic elsewhere....*the author has used it in the context of experiencing life.**



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

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#### Q.5

Which of the following is most likely to be the concluding sentence of the passage?

- 1  In short, don't change.
- 2  In short, do not be afraid.
- 3  In short, be afraid.
- 4  In short, you will not turn into Kafka's beetle.

**x**

**Solution:****Correct Answer : 2****Your Answer : 1****Genre: Philosophy****Word Count# 573** **Bookmark** **Answer key/Solution**

The tone of the author in the passage is reassuring. The author is explaining how and why change brought about by technology will be handled by human beings. Hence, option 2 is correct.

**FeedBack**

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

Poverty is the pronounced deprivation of well being. It is the inability to satisfy one's basic needs because one lacks income to buy services or from lack of access to services. Absolute poverty or destitution refers to the state of severe deprivation of basic human needs, which commonly includes food, water, sanitation, clothing, shelter, health care, education and information. Relative poverty refers to as being below some relative income threshold, where this threshold differs for each society or country. One may be relatively poor, without being in the state of absolute poverty; relative poverty is often considered as an indirect measure of income inequality. For most of history poverty had been mostly accepted as inevitable as traditional modes of production were insufficient to give an entire population a comfortable standard of living. After the industrial revolution, mass production in factories made wealth increasingly more inexpensive and accessible. Of more importance is the modernization of agriculture, such as fertilizers, in order to provide enough yield to feed the population. People who practice asceticism intentionally live in economic poverty so as to attain spiritual wealth.

Extreme poverty is a global challenge; it is observed in all parts of the world, including the developed economies. The supply of basic needs can be restricted by constraints on government services such as corruption, debt and loan conditionalities and by the brain drain of health care and educational professionals. Strategies of increasing income to make basic needs more affordable typically include welfare, economic freedom, and providing financial services. Today, poverty reduction is a major goal and issue for many international organizations such as the United Nations and the World Bank.

Poverty levels are a snapshot picture in time that omits the transitional dynamics between levels. Mobility statistics supply additional information about the fraction that leave the poverty level. For example, one study finds that in a sixteen year period (1975 to 1991 in the U.S.) only 5% of those in the lower fifth of the income level were still in that level while 95% transitioned to a higher income category. Poverty levels can remain the same while those who rise out of poverty are replaced by others. The transient poor and chronic poor differ in each society. In a nine year period ending in 2005 for the U.S., 50% of the poorest quintile transitioned to a higher quintile.

**Q.6**

**Which of the following can be inferred about relative poverty?**

- 1  In relative poverty people are deprived of basic human needs.
- 2  Relative poverty shows the movement of people from one level of poverty to another.
- 3  Relative poverty refers to level of income inequality.
- 4  Only relative poverty is inevitable.



**Solution:**

**Correct Answer : 3**

**Your Answer : 3**

**Genre: Economics**

**Word Count# 392**



[Answer key/Solution](#)

Option 1 is incorrect because according to the passage it is in absolute poverty that people are deprived of basic human needs. Option 2 is not correct because mobility statistics and not relative poverty show the movement of people from one level of poverty to another. Option 4 is incorrect because poverty per se and not only relative poverty was accepted as inevitable as suggested by the following line in the passage, '*For most of history, poverty had been mostly accepted as inevitable*'. Option 3 is the correct choice because relative poverty is the comparison of poverty against some level of income and according to the passage refers to income inequality.

[FeedBack](#)

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#### Q.7

**Which of the following strengthens the argument that poverty is inevitable?**

- 1  The inability of the government to supply basic services.
- 2  Poverty levels remained the same over a long period of time.
- 3  Many international organizations did not undertake poverty alleviation programs.
- 4  The big gap in the needs of the people and the available resources to satisfy them.



**Solution:****Correct Answer : 4****Your Answer : 4****Genre: Economics****Word Count# 392** **Bookmark** **Answer key/Solution**

**Option 1 is not correct because the inability of the government to supply basic needs can come in the way of reducing poverty but it cannot lead to a hopeless situation where poverty becomes inevitable.** Option 2 is incorrect because, again, poverty levels remaining the same need not necessarily mean that poverty is inevitable. It could also mean that people rising out of poverty are being replaced by others. Option 3 is not the correct option because there is nothing in the passage to suggest that lack of initiative by international organizations made poverty an inevitable result. Option 4 is the correct choice because the following line in the passage supports this argument, '*For most of history, poverty had been mostly accepted as inevitable as traditional modes of production were insufficient to give an entire population a comfortable standard of living*'.

 **FeedBack**

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#### Q.8

According to the passage, which of the following best explains the strategies of increasing incomes?

- 1  Modernizing modes of production.
- 2  Reduction of government control in economic activity.
- 3  Financing of projects by international organizations.
- 4  Reduction in brain drain of professionals.

**X**

**Solution:****Correct Answer : 2****Your Answer : 1****Genre: Economics****Word Count# 392** **Bookmark** **Answer key/Solution**

Option 1 is incorrect because although modernizing means of production may indirectly lead to an increase in incomes, this strategy is not discussed in the passage. Option 3 is not correct because there is nothing in the passage to suggest that financing by international institutions will lead to increase in incomes. Option 4 is not correct because according to the passage, brain drain is a constraint in supply of services and does not lead to lesser income. Option 2 is the correct choice because according to the passage, '*Strategies of increasing income... typically include welfare, economic freedom, and providing financial services.*' Reduction of government controls in economic activity will lead to economic freedom and thereby support the given strategies.

 **FeedBack**

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#### Q.9

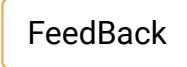
**What is the meaning of quintile as used in the passage?**

- 1  A subset obtained.
- 2  An aspect of planets that are distant from each other by one fifth of a zodiac.
- 3  Any of the quantiles which divide an ordered sample population into five equally numerous subsets.
- 4  An aspect of 72°



**Solution:****Correct Answer : 3****Your Answer : 3****Genre: Economics****Word Count# 392** **Bookmark** **Answer key/Solution**

The context is that of a population sample; hence 3 is the best option.

 **FeedBack**

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

Poverty is the pronounced deprivation of well being. It is the inability to satisfy one's basic needs because one lacks income to buy services or from lack of access to services. Absolute poverty or destitution refers to the state of severe deprivation of basic human needs, which commonly includes food, water, sanitation, clothing, shelter, health care, education and information. Relative poverty refers to as being below some relative income threshold, where this threshold differs for each society or country. One may be relatively poor, without being in the state of absolute poverty; relative poverty is often considered as an indirect measure of income inequality. For most of history poverty had been mostly accepted as inevitable as traditional modes of production were insufficient to give an entire population a comfortable standard of living. After the industrial revolution, mass production in factories made wealth increasingly more inexpensive and accessible. Of more importance is the modernization of agriculture, such as fertilizers, in order to provide enough yield to feed the population. People who practice asceticism intentionally live in economic poverty so as to attain spiritual wealth.

Extreme poverty is a global challenge; it is observed in all parts of the world, including the developed economies. The supply of basic needs can be restricted by constraints on government services such as corruption, debt and loan conditionalities and by the brain drain of health care and educational professionals. Strategies of increasing income to make basic needs more affordable typically include welfare, economic freedom, and providing financial services. Today, poverty reduction is a major goal and issue for many international organizations such as the United Nations and the World Bank.

Poverty levels are a snapshot picture in time that omits the transitional dynamics between levels. Mobility statistics supply additional information about the fraction that leave the poverty level. For example, one study finds that in a sixteen year period (1975 to 1991 in the U.S.) only 5% of those in the lower fifth of the income level were still in that level while 95% transitioned to a higher income category. Poverty levels can remain the same while those who rise out of poverty are replaced by others. The transient poor and chronic poor differ in each society. In a nine year period ending in 2005 for the U.S., 50% of the poorest quintile transitioned to a higher quintile.

**Q.10**

The passage is an example of:

1  **critical text**

2  **narrative text**

3  **argumentative text**

4  **explanatory text**



**Solution:**

**Correct Answer : 4**

**Your Answer : 4**

**Genre: Economics**

**Word Count# 392**

**Bookmark**

**Answer key/Solution**

**The author is neither arguing a particular point of view, nor is s/he critical of an event or policy. The text goes beyond simple narration as it analyzes the various aspects of poverty. Hence, 4 is the correct choice.**

**FeedBack**

**Direction for questions (11-15): Read the given passage and answer the questions that follow.**

One of Kannabiran's formulations which had a profound impact on demystifying the relationship between the state, citizen and law enforcement concerned the centrality of the state in the administration of criminal justice. While it is in the course of crime detection, investigation and apprehension of the accused that human rights violations ordinarily take place, it is in the realm of state violence that the fault lines underlying existing criminal jurisprudence surface. Stressing that there is no permanence about any definition of a crime and criminal law, he pointed to the absolute power accorded to the state to implement the law and the real context of abuse, misuse and vindictive administration of the laws.

We have used this particular dictum in innumerable cases involving political challenges to the state, particularly in major TADA cases involving minorities and dalits. In May 2009 at the height of the war against Tamils in Sri Lanka, a peaceful protest took place in Coimbatore against army convoys suspected to be taking arms and explosives to help the Sri Lankan army. Two PUCL observers were also arrested and charged with sedition! We used Kannabiran's classic definition in arguments inside courts and in public meetings. Citizens at large clearly understood the message. The simplicity of the formulation masked the profundity of its understanding of criminal law.

KGK forever urged us, as also other lawyers, to never take for granted any audience; he exhorted us to address all - from the lowest court to a meeting of jurists - as though we were taking a class. In our 17 years of close interaction we never once heard him use an expletive or speak ill of any person. While he was caustic in his comments, he maintained a dignity and decorum in his political and legal criticism. He was by no means a 'soft' person and could be as hard-hitting as anyone when presenting his analysis. But to many of us young activists and lawyers, he offered a different role model - of a person who through personal example became the embodiment of the ethical and political values he advocated.

Kannabiran's contribution to human rights was not only in the field of criminal law. Actually he played a very direct, proactive and catalytic role on many issues of major social and political import. From social justice issues to environmental rights, from issues of election rights to the right of sexual minorities, there were no taboo issues for Kannabiran.

#### **Q.11**

**Which of the following cannot be inferred from the passage?**

- 1  Kannabiran believed that definitions of crime and criminal laws are prone to changes.
- 2  Kannabiran contributed to human rights.
- 3  The process of crime detection usually leads to violation of human rights.
- 4  Kannabiran restricted his work to field of human rights only.

**Solution:****Correct Answer : 4****Genre: Personality****Word Count# 408** **Bookmark** **Answer key/Solution**

Option 1 can be inferred from the lines "*Stressing that there is no permanence about any definition of a crime and criminal law, he pointed to the absolute power accorded to the state to implement the law and the real context of abuse, misuse and vindictive administration of the laws*". Option 2 can be inferred from the lines "*Kannibaran's contribution to human rights was not only in the field of criminal law*". Option 3 can be inferred from the lines "*While it is in the course of crime detection, investigation and apprehension of the accused that human rights violations ordinarily take place*". Thus the correct answer is option 4.

 FeedBack

**Direction for questions (11-15): Read the given passage and answer the questions that follow.**

One of Kannabiran's formulations which had a profound impact on demystifying the relationship between the state, citizen and law enforcement concerned the centrality of the state in the administration of criminal justice. While it is in the course of crime detection, investigation and apprehension of the accused that human rights violations ordinarily take place, it is in the realm of state violence that the fault lines underlying existing criminal jurisprudence surface. Stressing that there is no permanence about any definition of a crime and criminal law, he pointed to the absolute power accorded to the state to implement the law and the real context of abuse, misuse and vindictive administration of the laws.

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#### **Q.12**

**The attitude of the author towards Kannabiran appears to be**

1  smitten

2  eulogistic

3  complaisant

4  ambivalent

**Solution:****Correct Answer : 2****Genre: Personality****Word Count# 408****Bookmark****Answer key/Solution**

The author is formally praising Kannabiran in the passage, citing him as a "*role model- of a person who through personal example became the embodiment of the ethical and political values he advocated*". Thus the author's attitude towards Kannibaran is eulogistic.

**FeedBack**

**Direction for questions (11-15):** Read the given passage and answer the questions that follow.

One of Kannabiran's formulations which had a profound impact on demystifying the relationship between the state, citizen and law enforcement concerned the centrality of the state in the administration of criminal justice. While it is in the course of crime detection, investigation and apprehension of the accused that human rights violations ordinarily take place, it is in the realm of state violence that the fault lines underlying existing criminal jurisprudence surface. Stressing that there is no permanence about any definition of a crime and criminal law, he pointed to the absolute power accorded to the state to implement the law and the real context of abuse, misuse and vindictive administration of the laws.

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**Q.13**

**"The simplicity of the formulation masked the profundity of its understanding of criminal law" pertains to which of the following?**

- 1  There being no permanence about any definition of crime and criminal law.
- 2  The absolute power accorded to the state to implement the law.
- 3  The real context of abuse, misuse and vindictive administration of laws.
- 4  The centrality of the state in the administration of criminal justice.

**Solution:**

**Correct Answer : 4**

**Genre: Personality**

**Word Count# 408**

 **Bookmark**

 **Answer key/Solution**

The formulation refers to Kannibaran's formulation mentioned in the second paragraph of the passage. Thus, '*'The simplicity of the formulation masked the profundity of its understanding of criminal law'*' pertains to the centrality of the state in the administration of criminal justice.

**FeedBack**

**Direction for questions (11-15): Read the given passage and answer the questions that follow.**

One of Kannabiran's formulations which had a profound impact on demystifying the relationship between the state, citizen and law enforcement concerned the centrality of the state in the administration of criminal justice. While it is in the course of crime detection, investigation and apprehension of the accused that human rights violations ordinarily take place, it is in the realm of state violence that the fault lines underlying existing criminal jurisprudence surface. Stressing that there is no permanence about any definition of a crime and criminal law, he pointed to the absolute power accorded to the state to implement the law and the real context of abuse, misuse and vindictive administration of the laws.

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#### **Q.14**

**The excerpt is most likely a part of:**

- 1  a legal report
- 2  a biography
- 3  an exposé
- 4  a paean

**Solution:****Correct Answer : 2****Genre: Personality****Word Count# 408** **Bookmark** **Answer key/Solution**

The excerpt appears to be a part of a biography. Option 1 is incorrect since the author expresses his admiration for Kannibaran at length in the passage, which would be quite inappropriate if included in a legal report. Option 3 is incorrect as nowhere in the passage is Kannibaran criticized or countered. A paean is a song of praise and hence option 4 is incorrect.

 FeedBack

**Direction for questions (11-15): Read the given passage and answer the questions that follow.**

One of Kannabiran's formulations which had a profound impact on demystifying the relationship between the state, citizen and law enforcement concerned the centrality of the state in the administration of criminal justice. While it is in the course of crime detection, investigation and apprehension of the accused that human rights violations ordinarily take place, it is in the realm of state violence that the fault lines underlying existing criminal jurisprudence surface. Stressing that there is no permanence about any definition of a crime and criminal law, he pointed to the absolute power accorded to the state to implement the law and the real context of abuse, misuse and vindictive administration of the laws.

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#### **Q.15**

**"There were no taboo issues for Kannabiran". By this the author means to say:**

- 1  that Kannabiran did not have any reservations in deliberating any kind of issues.**
- 2  that Kannabiran played a very important role in major social justice issues and those pertaining to environmental rights.**
- 3  that Kannabiran played a very proactive role in many issues of election rights and rights of sexual minorities.**

- 4  that Kannabiran played a direct, proactive and catalytic role in issues falling under the umbrella of human rights as a whole.

**Solution:**

**Correct Answer : 1**

**Genre: Personality**

**Word Count# 408**

 **Bookmark**

 **Answer key/Solution**

The word 'taboo' refers to any prohibitions resulting from social or other conventions. "There were no taboo issues for Kannabiran"- by this the author means to say that Kannibaran did not have any reservation in deliberating any kind of issue. Hence, option 1 is correct.

**FeedBack**

**Direction for questions (16-20): Read the given passage and answer the questions that follow.**

The hypothesis that moral judgments are emotionally based can explain why they vary across cultures and resist transformation through reasoning, but this is not enough to prove that moral relativism is true. An argument for relativism must also show that there is no basis for morality beyond the emotions with which we have been conditioned. The relativists must provide reasons for thinking that objectivist theories of morality fail.

Objectivism holds that there is one true morality binding upon all of us. To defend such a view, the objectivist must offer a theory of where morality comes from, such that it can be universal in this way. There are three main options: Morality could come from a benevolent god; it could come from human nature (for example, we could have evolved an innate set of moral values); or it could come from rational principles that all rational people must recognize, like the rules of logic and arithmetic. Much ink has been spilled defending each of these possibilities, and it would be impossible here to offer a critical review of all ethical theories. Instead, let's consider some simple reasons for pessimism. The problem with divine commands as a cure for relativism is that there is no consensus among believers about what God or the gods want us to do. Even when there are holy scriptures containing lists of divine commands, there are disagreements about interpretation: Does "Thou shalt not kill?" cover enemies? Does it cover animals? Does it make one culpable for manslaughter and self-defense? Does it prohibit suicide? The philosophical challenge of proving that a god exists is already hard; figuring out who that god is and what values are divinely sanctioned is vastly harder.

The problem with human nature as a basis for universal morality is that it lacks normative import, that is, this doesn't itself provide us with any definitive view of good and bad. Suppose we have some innate moral values. Why should we abide by them? Non-human primates often kill, steal, and rape without getting punished by members of their troops. Perhaps our innate values promote those kinds of behaviors as well. Does it follow that we shouldn't punish them? Certainly not. If we have innate values – which are open to debate – they evolved to help us cope with life as hunter-gatherers in small competitive bands. To live in large stable societies, we are better off following the 'civilized' values we've invented.

#### Q.16

With reference to the passage consider the following assumptions:

- I. Human nature itself provides definite insight of good and bad.
- II. Our views regarding what God wants us to do are similar.
- III. We are not bound by a single universal morality.
- IV. Innate values are insufficient to live in large societies.

Which of these assumptions is / are invalid?

1  I and II only

2  III and IV only

3  IV only

4  I, II and III



**Solution:**

**Correct Answer : 4**

**Your Answer : 4**

**Genre: Philosophy**

**Word Count# 405**

**Bookmark**

**Answer key/Solution**

Option 1 is incorrect because statements I and II are not the only invalid assumptions. Option 2 is not correct because statement III is invalid but IV is not. Statement IV is valid because as per the passage, innate values helped us to cope with life when we lived in small bands, but to live in large stable societies we need to follow the values we have invented. Option 3 is incorrect because assumption IV is validated by the passage as just discussed. Option 4 is the correct answer because statements I, II and III are not validated by the passage.

Assumption I is not valid because as per the passage, '*The problem with human nature as a basis for universal morality is that it lacks normative import, that is, this doesn't itself provide us with any definitive view of good and bad.*' which is not supporting the given assumption.

Assumption II is not valid because as per the passage, '*there is no consensus among believers about what god or the gods want us to do.*' which contradicts the given assumption.

Assumption III is invalid because as per the passage, '*Objectivism holds that there is one true morality binding upon all of us* '. This view does not support the given assumption.

**FeedBack**

**Direction for questions (16-20): Read the given passage and answer the questions that follow.**

The hypothesis that moral judgments are emotionally based can explain why they vary across cultures and resist transformation through reasoning, but this is not enough to prove that moral relativism is true. An argument for relativism must also show that there is no basis for morality beyond the emotions with which we have been conditioned. The relativists must provide reasons for thinking that objectivist theories of morality fail.

Objectivism holds that there is one true morality binding upon all of us. To defend such a view, the objectivist must offer a theory of where morality comes from, such that it can be universal in this way. There are three main options: Morality could come from a benevolent god; it could come from human nature (for example, we could have evolved an innate set of moral values); or it could come from rational principles that all rational people must recognize, like the rules of logic and arithmetic. Much ink has been spilled defending each of these possibilities, and it would be impossible here to offer a critical review of all ethical theories. Instead, let's consider some simple reasons for pessimism. The problem with divine commands as a cure for relativism is that there is no consensus among believers about what God or the gods want us to do. Even when there are holy scriptures containing lists of divine commands, there are disagreements about interpretation: Does "Thou shalt not kill?" cover enemies? Does it cover animals? Does it make one culpable for manslaughter and self-defense? Does it prohibit suicide? The philosophical challenge of proving that a god exists is already hard; figuring out who that god is and what values are divinely sanctioned is vastly harder.

The problem with human nature as a basis for universal morality is that it lacks normative import, that is, this doesn't itself provide us with any definitive view of good and bad. Suppose we have some innate moral values. Why should we abide by them? Non-human primates often kill, steal, and rape without getting punished by members of their troops. Perhaps our innate values promote those kinds of behaviors as well. Does it follow that we shouldn't punish them? Certainly not. If we have innate values – which are open to debate – they evolved to help us cope with life as hunter-gatherers in small competitive bands. To live in large stable societies, we are better off following the 'civilized' values we've invented.

#### Q.17

**Which of the following objectivist theories about the origin of morality is not discussed in the passage?**

- 1  Morality comes from a set of common principles which people must recognize and follow.
- 2  Morality comes from God.
- 3  Morality is based on human nature.
- 4  Morality is linked to human relations.

**Solution:****Correct Answer : 1****Your Answer : 1****Genre: Philosophy****Word Count# 405** **Bookmark** **Answer key/Solution**

Option 2 is not correct because the demerits of the concept of morality coming from God are discussed in the third paragraph of the passage. Option 3 is incorrect because the effects of human nature on morality are discussed in the last paragraph of the passage. Option 4 is incorrect because '*Morality is linked to human relations*' is not an objectivist theory. Option 1 is the correct answer because the merits or demerits of this objectivist theory are not discussed anywhere in the passage.

**FeedBack**

**Direction for questions (16-20): Read the given passage and answer the questions that follow.**

The hypothesis that moral judgments are emotionally based can explain why they vary across cultures and resist transformation through reasoning, but this is not enough to prove that moral relativism is true. An argument for relativism must also show that there is no basis for morality beyond the emotions with which we have been conditioned. The relativists must provide reasons for thinking that objectivist theories of morality fail.

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#### Q.18

If the theory of Relativists were true, then which of the following can be inferred from the passage?

- 1  Moral judgments will remain same in different cultures.
- 2  Emotions will be disregarded when explaining moral values.
- 3  There can be more than one set of moral values for us.
- 4  Innate values are outdated in modern and large societies.



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

Option 1 is incorrect because as per the passage, it is the theory of objectivists which says that there is only one set of moral values and hence the given statement is contradicted. Option 2 is not the correct option because according to the passage, in the theory of relativists, moral values and judgments change according to emotions and hence emotions are integral to moral values. Thus, this also cannot be inferred. Option 4 is not correct because according to the passage, the given statement has no link with the relativists' theory. Option 3 is the correct choice because the theory propounded by relativists suggests that moral values will change according to emotions and cultures as is suggested by the following line in the passage '*The hypothesis that moral judgments are emotionally based can explain why they vary across cultures*' This is also suggested by the given statement and hence it can be inferred.

 **Bookmark** **Answer key/Solution****FeedBack**

**Direction for questions (16-20): Read the given passage and answer the questions that follow.**

The hypothesis that moral judgments are emotionally based can explain why they vary across cultures and resist transformation through reasoning, but this is not enough to prove that moral relativism is true. An argument for relativism must also show that there is no basis for morality beyond the emotions with which we have been conditioned. The relativists must provide reasons for thinking that objectivist theories of morality fail.

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#### Q.19

All the following cannot be inferred from the passage EXCEPT:

- 1  Human beings do not have innate values.
- 2  Objectivism is the belief that certain things, especially moral truths, exist independently of human knowledge or perception of them.
- 3  Relativists feel that objectivist theories of morality do not pass the test of universality.
- 4  Objectivists have offered theories of where morality comes from.



**Solution:****Correct Answer : 3****Your Answer : 3****Genre: Philosophy****Word Count# 405** **Bookmark** **Answer key/Solution**

**Options 1, 2 and 4 cannot be inferred from the passage but option 3 can be inferred.**

 **FeedBack**

**Direction for questions (16-20): Read the given passage and answer the questions that follow.**

The hypothesis that moral judgments are emotionally based can explain why they vary across cultures and resist transformation through reasoning, but this is not enough to prove that moral relativism is true. An argument for relativism must also show that there is no basis for morality beyond the emotions with which we have been conditioned. The relativists must provide reasons for thinking that objectivist theories of morality fail.

Objectivism holds that there is one true morality binding upon all of us. To defend such a view, the objectivist must offer a theory of where morality comes from, such that it can be universal in this way. There are three main options: Morality could come from a benevolent god; it could come from human nature (for example, we could have evolved an innate set of moral values); or it could come from rational principles that all rational people must recognize, like the rules of logic and arithmetic. Much ink has been spilled defending each of these possibilities, and it would be impossible here to offer a critical review of all ethical theories. Instead, let's consider some simple reasons for pessimism. The problem with divine commands as a cure for relativism is that there is no consensus among believers about what God or the gods want us to do. Even when there are holy scriptures containing lists of divine commands, there are disagreements about interpretation: Does "Thou shalt not kill?" cover enemies? Does it cover animals? Does it make one culpable for manslaughter and self-defense? Does it prohibit suicide? The philosophical challenge of proving that a god exists is already hard; figuring out who that god is and what values are divinely sanctioned is vastly harder.

The problem with human nature as a basis for universal morality is that it lacks normative import, that is, this doesn't itself provide us with any definitive view of good and bad. Suppose we have some innate moral values. Why should we abide by them? Non-human primates often kill, steal, and rape without getting punished by members of their troops. Perhaps our innate values promote those kinds of behaviors as well. Does it follow that we shouldn't punish them? Certainly not. If we have innate values – which are open to debate – they evolved to help us cope with life as hunter-gatherers in small competitive bands. To live in large stable societies, we are better off following the 'civilized' values we've invented.

**Q.20**

The tone of the author can be best described as:

1  Analytical

2  Cynical

3  Critical

4  Amused



**Solution:**

**Correct Answer : 1**

**Your Answer : 1**

**Genre: Philosophy**

**Word Count# 405**

**Bookmark**

**Answer key/Solution**

The author is clearly analyzing the merits and demerits of two opposing perspectives. Thus, option 1 is correct. There is nothing in the passage to suggest a critical, cynical or amused attitude.

**FeedBack**

**Direction for questions (21-24): Read the given passage and answer the questions that follow.**

Grief, in humans at least, is a reaction to the permanent severing of a strong social or family bond. Although chimpanzees, baboons, and elephants are thought to experience the complex emotion, scientists don't yet know enough about it in other animals. There are dozens of photos and YouTube videos of grief like behavior in dolphins: Some mothers have been seen carrying their dead infants in their mouths or on their backs for a week or longer, even as the body decomposes; a couple of adult males have also been seen holding dead calves in their mouths.

In a new study, cetacean biologist Giovanni Bearzi of Dolphin Biology and Conservation in Pordenone, Italy, and his colleagues at other institutions analyzed 78 scientific reports from 1970 to 2016 of these kinds of displays—which they labeled “postmortem-attentive behavior.” They found that just 20 of 88 cetacean (dolphin and whale) species engage in them. Of those, most were dolphins from the *Sousa* and *Tursiops* genera. Just one was a baleen whale—a humpback.

The scientists also found a correlation between grief like displays and the cetaceans' brain size and complexity; dolphins, which live in more structured social groups, generally have larger, more complex brains than baleen whales do. Though the correlation might simply

reflect the fact that most studies focused on dolphins, it still suggests grief like behavior may evolve only in animals with large, complex brains and societies, the researchers report this month in Zoology.

But is it possible for researchers to prove that any of the dolphins or whales are actually grieving? Jane Goodall and others have largely proved that chimpanzees grieve by collecting detailed accounts of death events. For instance, one young chimpanzee unable to cope with the death of his mother in Tanzania's Gombe Stream National Park grew lethargic, refused food left by researchers, fell sick, and died 1 month later. Other scientists have identified grief in female baboons by analyzing their stress hormone levels before and after losing a close companion or infant.

But no such detailed records exist for cetaceans. So Bearzi and his colleagues say that, no matter what we may think these animals are feeling, the question of grief—and of their understanding of death—remains open.

"They are being appropriately cautious," says Lori Marino, a marine mammal biologist at The Kimmela Center for Animal Advocacy in Kanab, Utah, who has studied cetacean neurology and self-awareness. Richard Connor, a cetacean biologist at the University of Massachusetts in Dartmouth, calls the study "interesting," but adds that, from an evolutionary standpoint, "there's no reason to think grief would be restricted to humans."

The next steps may prove challenging. Bearzi and his colleagues say that when other scientists find dolphins and whales with their dead, they should put hydrophones in the water to record their calls and use drones to collect blowhole spray to analyze their hormones later. "Besides filming and observing, I didn't know what to do as a scientist," Bearzi says. "Maybe [additional] data will give us a better understanding about what is in their minds and if they feel grief. The bottom line now is: We do not know."

#### Q.21

It can inferred from the passage that:

- 1  cetaceans do not actually grieve as they have no understanding of death.
- 2  bereavement is correlated to large, complex brains and societies.
- 3  among marine mammals only dolphins exhibit complex emotions.
- 4  none other than humans exhibit highly sophisticated cognitive skills and complex emotions.

x

**Solution:****Correct Answer : 2****Your Answer : 4****Genre: Science****Word Count# 524** **Bookmark** **Answer key/Solution**

Refer to the line: *The scientists also found a correlation between grief like displays and the cetaceans' brain size and complexity.* This makes option 2 the correct answer. The other options are factually incorrect.

**FeedBack****Q.22****According to the passage, all of the following are true EXCEPT:**

- 1  It has been conclusively proved that chimpanzees do grieve the death of loved ones.
- 2  Chimpanzees grieve by collecting detailed accounts of death events.
- 3  Scientists should film and observe dolphins and whales to understand whether they feel grief.
- 4  Scientists have found proof of 'postmortem-attention behavior' in some cetaceans.

**X****Solution:****Correct Answer : 1****Your Answer : 3****Genre: Science****Word Count# 524** **Bookmark** **Answer key/Solution**

All the options except option 1 can be identified from the passage. The passage states that "*Jane Goodall and others have largely proved that chimpanzees grieve by collecting detailed accounts of death events.*" Thus, we cannot say that the same has been conclusively proven.

**FeedBack****Q.23****As a researcher, Bearzi's words in the closing sentences of the passage depict his:**

- 1  sense of uncertainty and caution.

- 2  despair and confusion.
- 3  helplessness and hope.
- 4  sense of inadequacy and fortitude.

**Solution:****Correct Answer : 1****Your Answer : 1****Genre: Science****Word Count# 524**
**Bookmark**
**Answer key/Solution**

Refer to the closing lines of the passage: “*Besides filming and observing, I didn’t know what to do as a scientist,*” Bearzi says. “*Maybe [additional] data will give us a better understanding about what is in their minds and if they feel grief. The bottom line now is: We do not know.*”

Option 1 is the right answer as uncertainty and a sense of caution are reflected, in that order, in Bearzi’s words.

**FeedBack**
**Q.24**

Our current understanding of postmortem attentive behavior in cetaceans is challenged by all of the following except:

- 1  absence of detailed recordings
- 2  incomplete descriptions
- 3  lack of information on the physiology and neural processes underlying the observed behaviors.
- 4  a lack of interest in the subject

**Solution:****Correct Answer : 4****Genre: Science**
**Bookmark**
**Answer key/Solution**
**Word Count# 524**

**Option 4 is the right answer as all the other options can be inferred from the passage.**

**FeedBack**

**Q.25**

**Direction for question (25):** The four sentences (labelled 1,2,3,4) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper sequence of order of the sentences and key in this sequence of four numbers as your answer:

1. The exit poll, conducted by the research firm Ipsos, projected that Law and Justice won 43.6% of the votes.
2. That would translate into 239 seats, a majority in the 460-seat lower house of parliament.
3. It appeared, according to an exit poll, to have secured a comfortable majority in parliament to govern for four more years.
4. Poland's conservative governing Law and Justice party won the most votes in Sunday's election in the deeply divided nation.

**Solution:**

**Correct Answer : 4312**

**Your Answer : 4312**

4 is the opening sentence as it tells about elections in Poland.

Sentence 4 will be followed by 3 as the 'it' in 3 refers to the Law and Justice party. 1 and 2 are a mandatory pair as the percentage of votes is translated into seats in 2.

**Bookmark**

**Answer key/Solution**

**FeedBack**

**Q.26**

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

Facebook has agreed to pay \$40 million to advertisers who said it inflated the amount of time its users watched videos. The San Jose Mercury News says the California-based social media giant denied any wrongdoing in a lawsuit settlement. The settlement notice was filed Friday by the plaintiffs in Oakland federal court. Advertisers sued Facebook in 2016 over user metrics that supposedly measured the average length of time consumers spent viewing posted video ads. The lawsuit said that the time was inflated by up to 900 percent and that helped convince advertisers to buy Facebook's video advertising services. Facebook publicly acknowledged an error in the formula. The company denied allegations that its engineers knew about problems for more than a year and did nothing.

1  Facebook has been accused of wrongdoing by advertisers.

2  Though it denied allegations of willful wrongdoing, Facebook has settled the advertiser lawsuit filed over inflated video views.

3  Facebook has acknowledged an error in the formula used to calculate user metrics.

4  Facebook has been duping advertisers to buy Facebook's video advertising services.



**Solution:**

**Correct Answer : 2**

**Your Answer : 2**

Option 2 best summarizes the passage. Options 1, 3 and 4 are too narrow in scope and address only limited aspects of the passage.

**FeedBack**

**Bookmark**

**Answer key/Solution**

**Q.27**

**Direction for question (27):** 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. Rescue crews in Japan dug through mudslides and searched near swollen rivers Monday.
2. They looked for those missing from a typhoon that left as many as 36 dead and caused serious damage in central and northern Japan.
3. This region is referred to as the Northwestern Pacific Basin, and is the most active tropical cyclone basin on Earth, accounting for almost one-third of the world's annual tropical cyclones.
4. Kyodo News service, assembling information from a wide network, counted 36 deaths caused by the typhoon with 16 people missing. The official count from the Fire and Disaster Management Agency was 19 dead and 13 missing.
5. Typhoon Hagibis unleashed torrents of rain and strong winds Saturday that left thousands of homes on Japan's main island flooded, damaged or without power.



**Solution:**

**Correct Answer : 3**

**Your Answer : 3**

Sentences 1, 2, 4, 5 talk about typhoon Hagibis and the death and destruction it has caused. Sentence 3 is the odd one out as it speaks of a region impacted by cyclones.

**FeedBack**

**Bookmark**

**Answer key/Solution**

**Q.28**

**Direction for question (28):** The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. Jennie Taylor walks through the moonlit cemetery, past gray tombstones, faded bouquets and left-behind remembrances until she comes to her husband's grave.
2. She kneels in the damp grass and begins to cry.
3. Tomorrow will be their 16th wedding anniversary, her first without him.
4. Nearly a year has passed since Brent was killed in Afghanistan on his fourth combat deployment.

**X**

**Solution:**

**Correct Answer : 1423**

**Your Answer : 4312**

1 is the obvious opening sentence. It will be followed by 4 as it gives the husband's name and tells us how he died. This is followed by 2. 3 gives the reason why she begins to cry.

**FeedBack**

 **Bookmark**

 **Answer key/Solution**

**Q.29**

**Direction for question (29):** The four sentences (labelled 1, 2, 3, and 4) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentences and key in this sequence of four numbers as your answer.

1. Somehow, the sedition junkie has become, in the eyes of the endangered dissenters, the official spokesman of what Mark Twain would have called 'lyncherdom'.
2. When a group of writers and filmmakers wrote to the Prime Minister asking for his intervention to stop religious lynching, someone from the second world described it as an act of sedition.
3. What was on display was the same mindset that saw the nation collapsing under the weight of a book, written by a Rushdie or a Doniger or some other blasphemer, or a film.
4. It was an act of stupidity from a devotee of the sacred nation.

**X**

**Solution:****Correct Answer : 2431****Your Answer : 3241**

**Sentence 2** is the opening sentence. This will be followed by **4** as the 'act of stupidity' refers to sentence 2. This will be followed by **3.** **1** is the closing sentence.

**Bookmark****Answer key/Solution****FeedBack****Q.30**

**Direction for question (30):** The passage given below is followed by four summaries. Choose the option that best captures the author's position.

'CORPUSCULAR.' THE word loops in my inner ear. I am standing in front of *Heart (Machine)*, a 60-by-36-inch oil on canvas by Anjum Singh dating 2016, two years after she received her cancer diagnosis. Back then, she never intended for her bodily affliction to become the focus of her practice. In fact, the morning after her first surgery, her close artist friend Sheila Makhijani warned her against allowing the disease into her studio. "Now when you go back, don't start painting about cancer," Singh recounts Makhijani's voice cautioning against potential cliché. "I said, 'Are you mad? Of course not!'" And yet, when Singh returned to her studio, she found herself unable to wrestle with the city's infrastructure or urban ecology, issues that otherwise provided fodder. "I used to always work on a very large scale. I realized then that I just wanted to be closed, in-wards, intimate. That's how I started the paper works."

- 1  Anjum used her illness as a metaphor to showcase the struggles of urban life.
- 2  Anjum Singh's illness influenced her art even though she did not intend it to do so.
- 3  Anjum Singh's illness changed her perspective, like it has done for several artists.
- 4  An artist's struggle to balance her personal and world view.

**Solution:****Correct Answer : 2****Your Answer : 2**

Anjum did not use her illness as a metaphor nor did she struggle to balance her perspectives. It was an unconscious influence that impacted her work. Hence, option 2 is accurate. Option 3 is beyond the scope of the passage.

**Bookmark****Answer key/Solution****FeedBack**

**Q.31**

**Direction for question (31): 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. Undersecretary of Defense for Policy, John Rood, is in Warsaw, Poland this week to discuss a proposed base, which would boost the Pentagon's presence along Russia's western border.
2. The negotiations take place as Washington's and Moscow's militaries already face off in close proximity at several flashpoints in places like Syria and across eastern Europe.
3. The U.S. currently maintains about 4,000 troops in Poland on a rotational basis, including an armored brigade combat team.
4. The deployment started after Moscow's annexation of Crimea in 2014 as part of a North Atlantic Treaty Organization (NATO) mission to establish a bulwark against Russian aggression on the alliance's eastern flank.
5. NATO (the North Atlantic Treaty Organization) is an international alliance that consists of 29 member states from North America and Europe. It was established at the signing of the North Atlantic Treaty on 4 April 1949.



**Solution:**

**Correct Answer : 5**

**Your Answer : 5**

**Sentences 1-4 talk about negotiations and military presence of American and Russian troops along Russia's western border.**

**Sentence 5 is the odd one out as it describes what NATO is.**

**FeedBack**

**Bookmark**

**Answer key/Solution**

**Q.32**

**Direction 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. Choose its number as your answer and key it in.

1. The U.S. has suspended a tariff increase to 30% from 25% on at least \$250 billion in Chinese goods that was set to take effect on Tuesday.
2. "While the negotiations do appear to have produced a fundamental understanding on the key issues and the broader benefits of friendly relations, the Champagne should probably be kept on ice, at least until the two presidents put pen to paper," wrote China Daily.
3. China Daily is the official Chinese state-owned English newspaper.
4. The number of newspapers in China has increased from 4 in 1968 to more than 2,200 today.
5. Chinese state media warned the U.S. over the weekend to "avoid backpedaling" on the partial trade agreement, and expressed caution about the initial phase of the deal which President Donald Trump called "very substantial."

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

The other four sentences talk about US-China tariff and trade status. The quote from China Daily and its relevance as the state-owned paper make 2 and 3 a mandatory pair. Sentence 4 talks about the number of newspapers in China.

**FeedBack****Bookmark****Answer key/Solution****Q.33**

**Direction for question (33):** The passage given below is followed by four summaries. Choose the option that best captures the author's position.

What does someone's life look like from the inside and the outside, roiling contradictions, fleeting emotions and all? Just ask his chi. In Chigozie Obioma's *An Orchestra of Minorities*, a chronicle of a tragedy is retold through the protagonist's chi, or guardian spirit that inhabits every person according to the Igbo belief system. When Obioma's novel opens, a chi is keenly petitioning a group of other-worldly beings making a case for his host Chinonso, a young poultry farmer from Umuahia in south eastern Nigeria. Chinonso appears to have committed some dastardly act whose details are not fully clear, but his chi is narrating events and extenuating circumstances he hopes will excuse him. Stretched over 500 pages and infused throughout with incantations, repetitions and circular segues, the narrative heaves under the weight of what it sets out to do.

- 1  A person's chi can tell how his/her life looks from the inside.
- 2  A chi, or guardian spirit inhabits every person according to the Igbo belief system.
- 3  *An Orchestra of Minorities* is a heavy narrative.
- 4  Chigozie Obioma's *An Orchestra of Minorities*, chronicles the tragedy of Chinonso through his chi.

**Solution:**

**Correct Answer : 4**

**Options 1, 2 and 3 are narrow in scope. Option 4 best summarizes the passage.**

**FeedBack**

 **Bookmark**

 **Answer key/Solution**

**Q.34**

**Direction for question (34): The four sentences (labelled 1,2,3,4) given in this question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a number. Decide on the proper sequence of order of the sentences and key in this sequence of four numbers as your answer:**

1. In the morning of 8 July 1910 VD Savarkar jumped through a ship's porthole into the Mediterranean Sea.
2. Savarkar was on the way to India in shackles after extradition proceedings in London, when, a little after 6.30 am that morning, he asked to use the toilet.
3. Even as two constables kept watch at the door, their prisoner managed to wiggle out of the narrow window, swimming swiftly to the quay at Marseilles harbor.
4. Just as quickly, though, he was apprehended and marched back to his cell—the vessel sailed off, and the Indian revolutionary's attempt to escape was confirmed, ultimately, as a sensational flop.

**x**

**Solution:**

**Correct Answer : 1234**

**Your Answer : 1324**

**Sentence 1 is the perfect opening sentence as it begins the sequence of the narrative. 2 and 3 are a mandatory pair as 'watch at the door' is for the toilet door. 4 is the closing sentence.**

 **Bookmark**

 **Answer key/Solution**

**FeedBack**

## Sec 2

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

A, B, C, and D are four athletes who participated in each of four different races -100 m, 200 m, 400 m and 800 m - during an annual Athletics Meet at the 2019 CL Olympics. Each athlete belonged to a different department among Phi Lab, Technology, Operations, and Marketing, in no particular order. None of the four athletes finished at the same position in more than two of the four races. In each race, the four athletes were given ranks 1, 2, 3 and 4 according to the positions at which they finished in the race i.e., the one who completed the race first is ranked 1 and the one who completed the race just after the first person is ranked 2 and so on. No two athletes finished at the same position in any single race.

It is also known that:

- (i) The athlete from Operations finished at the same position in the 100 m race and the 200 m race as well as in the 400 m race and the 800 m race.
- (ii) In the 400 m race, C finished fourth while D finished second.
- (iii) In the 100 m race, B finished third and the athlete from Marketing finished first.
- Interestingly, in the 200 m race, B finished first and the athlete from Marketing finished third.
- (iv) In the 800 m race, B and C finished third and fourth respectively.
- (v) In the 800 m race, A and C interchanged the positions at which they had finished in the 200 m race.
- (vi) The athlete from Phi Lab did not finish first in any of the four races.

### Q.35

The athlete with the second highest sum of ranks in the four races, is

1  A

2  B

3  C

4  D

X

**Solution:****Correct Answer : 3****Your Answer : 2****Bookmark****Answer key/Solution**

After filling up the given data in a table, it can be concluded from statement (iv) and (v) that C could not have finished first, third or fourth in 200 m race. Therefore, it must have finished second and so D and A must have finished third and fourth respectively in 200 m race.

Now, B must have finished first in 400 m race as it couldn't have finished at the same position in more than two races.

From statement (i), the athlete from Operations must be C and it must have finished second in 100 m race.

Further analysis leads to the final tables as below.

Department	Phi Lab	Technology	Operations	Marketing
Athlete	A	B	C	D

Race	Rank			
	1	2	3	4
100 m	D	C	B	A
200 m	B	C	D	A
400 m	B	D	A	C
800 m	D	A	B	C

The sum of the ranks of C was the second highest and was equal to 12.

**FeedBack**

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

A, B, C, and D are four athletes who participated in each of four different races -100 m, 200 m, 400 m and 800 m - during an annual Athletics Meet at the 2019 CL Olympics. Each athlete belonged to a different department among Phi Lab, Technology, Operations, and Marketing, in no particular order. None of the four athletes finished at the same position in more than two of the four races. In each race, the four athletes were given ranks 1, 2, 3 and 4 according to the positions at which they finished in the race i.e., the one who completed the race first is ranked 1 and the one who completed the race just after the first person is ranked 2 and so on. No two athletes finished at the same position in any single race.

**It is also known that:**

- (i) The athlete from Operations finished at the same position in the 100 m race and the 200 m race as well as in the 400 m race and the 800 m race.
- (ii) In the 400 m race, C finished fourth while D finished second.
- (iii) In the 100 m race, B finished third and the athlete from Marketing finished first.
- (iv) Interestingly, in the 200 m race, B finished first and the athlete from Marketing finished third.
- (v) In the 800 m race, B and C finished third and fourth respectively.
- (vi) In the 800 m race, A and C interchanged the positions at which they had finished in the 200 m race.
- (vii) The athlete from Phi Lab did not finish first in any of the four races.

**Q.36**

**The departments that C and D belong to, respectively are**

- 1  **Marketing and Phi Lab**
- 2  **Operations and Marketing**
- 3  **Phi Lab and Operations**
- 4  **Cannot be determined**

**Solution:**

**Correct Answer : 2**

 **Bookmark**

 **Answer key/Solution**

After filling up the given data in a table, it can be concluded from statement (iv) and (v) that C could not have finished first, third or fourth in 200 m race. Therefore, it must have finished second and so D and A must have finished third and fourth respectively in 200 m race.

Now, B must have finished first in 400 m race as it couldn't have finished at the same position in more than two races.

From statement (i), the athlete from Operations must be C and it must have finished second in 100 m race.

Further analysis leads to the final tables as below.

Department	Phi Lab	Technology	Operations	Marketing
Athlete	A	B	C	D

Race	Rank			
	1	2	3	4
100 m	D	C	B	A
200 m	B	C	D	A
400 m	B	D	A	C
800 m	D	A	B	C

C and D belongs to Operations and Marketing departments respectively.

**FeedBack**

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

A, B, C, and D are four athletes who participated in each of four different races -100 m, 200 m, 400 m and 800 m - during an annual Athletics Meet at the 2019 CL Olympics. Each athlete belonged to a different department among Phi Lab, Technology, Operations, and Marketing, in no particular order. None of the four athletes finished at the same position in more than two of the four races. In each race, the four athletes were given ranks 1, 2, 3 and 4 according to the positions at which they finished in the race i.e., the one who completed the race first is ranked 1 and the one who completed the race just after the first person is ranked 2 and so on. No two athletes finished at the same position in any single race.

It is also known that:

- (i) The athlete from Operations finished at the same position in the 100 m race and the 200 m race as well as in the 400 m race and the 800 m race.
- (ii) In the 400 m race, C finished fourth while D finished second.
- (iii) In the 100 m race, B finished third and the athlete from Marketing finished first.
- Interestingly, in the 200 m race, B finished first and the athlete from Marketing finished third.
- (iv) In the 800 m race, B and C finished third and fourth respectively.
- (v) In the 800 m race, A and C interchanged the positions at which they had finished in the 200 m race.
- (vi) The athlete from Phi Lab did not finish first in any of the four races.

### Q.37

The athlete from which department finished third in the 400 m race?

1  Phi Lab

2  Marketing

3  Technology

4  Either Phi Lab or Operations

**Solution:****Correct Answer : 1****Your Answer : 4****Bookmark****Answer key/Solution**

After filling up the given data in a table, it can be concluded from statement (iv) and (v) that C could not have finished first, third or fourth in 200 m race. Therefore, it must have finished second and so D and A must have finished third and fourth respectively in 200 m race.

Now, B must have finished first in 400 m race as it couldn't have finished at the same position in more than two races.

From statement (i), the athlete from Operations must be C and it must have finished second in 100 m race.

Further analysis leads to the final tables as below.

Department	Phi Lab	Technology	Operations	Marketing
Athlete	A	B	C	D

Race	Rank			
	1	2	3	4
100 m	D	C	B	A
200 m	B	C	D	A
400 m	B	D	A	C
800 m	D	A	B	C

A from Phi Lab department finished third in the 400 m race.

**FeedBack**

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

A, B, C, and D are four athletes who participated in each of four different races -100 m, 200 m, 400 m and 800 m - during an annual Athletics Meet at the 2019 CL Olympics. Each athlete belonged to a different department among Phi Lab, Technology, Operations, and Marketing, in no particular order. None of the four athletes finished at the same position in more than two of the four races. In each race, the four athletes were given ranks 1, 2, 3 and 4 according to the positions at which they finished in the race i.e., the one who completed the race first is ranked 1 and the one who completed the race just after the first person is ranked 2 and so on. No two athletes finished at the same position in any single race.

It is also known that:

- (i) The athlete from Operations finished at the same position in the 100 m race and the 200 m race as well as in the 400 m race and the 800 m race.
- (ii) In the 400 m race, C finished fourth while D finished second.
- (iii) In the 100 m race, B finished third and the athlete from Marketing finished first.
- (iv) Interestingly, in the 200 m race, B finished first and the athlete from Marketing finished third.
- (v) In the 800 m race, B and C finished third and fourth respectively.
- (vi) In the 800 m race, A and C interchanged the positions at which they had finished in the 200 m race.
- (vii) The athlete from Phi Lab did not finish first in any of the four races.

**Q.38**

If the athlete with the lowest sum of ranks in the four races won the trophy, which athlete won the trophy?

1  A

2  B

3  C

4  D

**Solution:**

**Correct Answer : 4**

 **Bookmark**

 **Answer key/Solution**

After filling up the given data in a table, it can be concluded from statement (iv) and (v) that C could not have finished first, third or fourth in 200 m race. Therefore, it must have finished second and so D and A must have finished third and fourth respectively in 200 m race.

Now, B must have finished first in 400 m race as it couldn't have finished at the same position in more than two races.

From statement (i), the athlete from Operations must be C and it must have finished second in 100 m race.

Further analysis leads to the final tables as below.

Department	Phi Lab	Technology	Operations	Marketing
Athlete	A	B	C	D

Race	Rank			
	1	2	3	4
100 m	D	C	B	A
200 m	B	C	D	A
400 m	B	D	A	C
800 m	D	A	B	C

The sum of the ranks of D was the lowest and was equal to 7. Hence, D must have won the trophy.

**FeedBack**

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

Seven persons – Neha, Richa, Bholu, Ishu, Chhotu, Raju, and Prem purchase Gold coins on the occasion of Dhanteras from stores among – Kalpana Jewellers, Tanisha Jewellers, Zevar Vatika, Senko, PS Jewellers, Hi-Design Jewellers and Sohan Lal Jewellers - not necessarily in that order. The weight (in gm) of Gold coins purchased by them was always an integer upto 10. Also, each person purchases exactly 1 gold coin and exactly 1 gold coin is purchased from each store.

Additional information know to us is:

- I. The person who had purchased Gold coin from Zevar Vatika was neither Bholu nor Ishu.
- II. Richa purchased Gold coin from PS Jewellers and Chhotu from Hi-Design Jewellers and the difference between the weight of Gold coins purchased by them was 3 gm.
- III. Gold coin purchased from Kalpana Jewellers was of minimum weight and that from Senko was of the maximum weight which was also an even number.
- IV. Weight of Gold coin purchased from Tanisha Jewellers was more than that from Zevar Vatika but less than that from Sohan Lal Jewellers.
- V. The weight of Gold coin purchased by Neha was one-third of that purchased by Raju, which in turn was 2 gm more than that purchased by Prem. Weight (in gm) of coins purchased by four out of seven of them was an odd number.

### Q.39

Total weight (in gm) of gold coins purchased was

1  44

2  45

3  47

4  50



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

From statement I;

Possible weight of gold coins purchased by Prem, Raju and Neha:

Case	Prem	Raju	Neha	Remarks
I	1 gm	3 gm	1 gm	Not possible
II	4 gm	6 gm	2 gm	Not possible, because there should be one more even numbered weight. (Statement-III)
III	7 gm	9 gm	3 gm	Possible

[Note: Case II is not possible as maximum weight is an even number and 2/4/6 cannot be maximum weight. So, an additional even numbered weight coin should be there which contradicts the instruction, "weight of coins purchased by four persons was an odd number"]

Now, we may also conclude that gold coin purchased of maximum weight was of 10 gm.

From statement II and III; we can conclude that the weight of gold coins purchased by Richa and Chhotu was 5 gm and 8 gm in any order.

Some further analysis leads to the following table:

Person	Store	Weight of Gold coin (in gm)
Prem	Tanisha Jewellers	7
Raju	Sohan Lal Jewellers	9
Neha	Zevar Vatika	3
Bholu/ Ishu	Senko	10
Richa	PS Jewellers	8/5
Chhotu	Hi-Design Jewellers	5/8
Ishu/ Bholu	Kalpana Jewellers	2

Total weight = 44 gm.

**FeedBack**

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

Seven persons – Neha, Richa, Bholu, Ishu, Chhotu, Raju, and Prem purchase Gold coins on the occasion of Dhanteras from stores among – Kalpana Jewellers, Tanisha Jewellers, Zevar Vatika, Senko, PS Jewellers, Hi-Design Jewellers and Sohan Lal Jewellers - not necessarily in that order. The weight (in gm) of Gold coins purchased by them was always an integer upto 10. Also, each person purchases exactly 1 gold coin and exactly 1 gold coin is purchased from each store.

Additional information know to us is:

- I. The person who had purchased Gold coin from Zevar Vatika was neither Bholu nor Ishu.
- II. Richa purchased Gold coin from PS Jewellers and Chhotu from Hi-Design Jewellers and the difference between the weight of Gold coins purchased by them was 3 gm.
- III. Gold coin purchased from Kalpana Jewellers was of minimum weight and that from Senko was of the maximum weight which was also an even number.
- IV. Weight of Gold coin purchased from Tanisha Jewellers was more than that from Zevar Vatika but less than that from Sohan Lal Jewellers.
- V. The weight of Gold coin purchased by Neha was one-third of that purchased by Raju, which in turn was 2 gm more than that purchased by Prem. Weight (in gm) of coins purchased by four out of seven of them was an odd number.

#### Q.40

Prem had purchased gold coin from

1  Sohan Lal Jewellers

2  Zevar Vatika

3  Senko

4  Tanisha Jewellers



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

From statement I;

Possible weight of gold coins purchased by Prem, Raju and Neha:

Case	Prem	Raju	Neha	Remarks
I	1 gm	3 gm	1 gm	Not possible
II	4 gm	6 gm	2 gm	Not possible, because there should be one more even numbered weight. (Statement-III)
III	7 gm	9 gm	3 gm	Possible

[Note: Case II is not possible as maximum weight is an even number and 2/4/6 cannot be maximum weight. So, an additional even numbered weight coin should be there which contradicts the instruction, "weight of coins purchased by four persons was an odd number"]

Now, we may also conclude that gold coin purchased of maximum weight was of 10 gm.

From statement II and III; we can conclude that the weight of gold coins purchased by Richa and Chhotu was 5 gm and 8 gm in any order.

Some further analysis leads to the following table:

Person	Store	Weight of Gold coin (in gm)
Prem	Tanisha Jewellers	7
Raju	Sohan Lal Jewellers	9
Neha	Zevar Vatika	3
Bholu/ Ishu	Senko	10
Richa	PS Jewellers	8/5
Chhotu	Hi-Design Jewellers	5/8
Ishu/ Bholu	Kalpana Jewellers	2

Prem had purchased gold coin from Tanisha Jewellers

**FeedBack**

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

Seven persons – Neha, Richa, Bholu, Ishu, Chhotu, Raju, and Prem purchase Gold coins on the occasion of Dhanteras from stores among – Kalpana Jewellers, Tanisha Jewellers, Zevar Vatika, Senko, PS Jewellers, Hi-Design Jewellers and Sohan Lal Jewellers - not necessarily in that order. The weight (in gm) of Gold coins purchased by them was always an integer upto 10. Also, each person purchases exactly 1 gold coin and exactly 1 gold coin is purchased from each store.

Additional information know to us is:

- I. The person who had purchased Gold coin from Zevar Vatika was neither Bholu nor Ishu.
- II. Richa purchased Gold coin from PS Jewellers and Chhotu from Hi-Design Jewellers and the difference between the weight of Gold coins purchased by them was 3 gm.
- III. Gold coin purchased from Kalpana Jewellers was of minimum weight and that from Senko was of the maximum weight which was also an even number.
- IV. Weight of Gold coin purchased from Tanisha Jewellers was more than that from Zevar Vatika but less than that from Sohan Lal Jewellers.
- V. The weight of Gold coin purchased by Neha was one-third of that purchased by Raju, which in turn was 2 gm more than that purchased by Prem. Weight (in gm) of coins purchased by four out of seven of them was an odd number.

#### Q.41

Which of the following statements may be true?

- I. Bholu had purchased gold coin of maximum weight.
- II. Neha had purchased from Senko.
- III. Richa had purchased gold coin having weight more than that purchased by Prem.

1  I and II

2  II and III

3  I and III

4  I, II, and III



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

From statement I;

Possible weight of gold coins purchased by Prem, Raju and Neha:

Case	Prem	Raju	Neha	Remarks
I	1 gm	3 gm	1 gm	Not possible
II	4 gm	6 gm	2 gm	Not possible, because there should be one more even numbered weight. (Statement-III)
III	7 gm	9 gm	3 gm	Possible

[Note: Case II is not possible as maximum weight is an even number and 2/4/6 cannot be maximum weight. So, an additional even numbered weight coin should be there which contradicts the instruction, "weight of coins purchased by four persons was an odd number"]

Now, we may also conclude that gold coin purchased of maximum weight was of 10 gm.

From statement II and III; we can conclude that the weight of gold coins purchased by Richa and Chhotu was 5 gm and 8 gm in any order.

Some further analysis leads to the following table:

Person	Store	Weight of Gold coin (in gm)
Prem	Tanisha Jewellers	7
Raju	Sohan Lal Jewellers	9
Neha	Zevar Vatika	3
Bholu/ Ishu	Senko	10
Richa	PS Jewellers	8/5
Chhotu	Hi-Design Jewellers	5/8
Ishu/ Bholu	Kalpana Jewellers	2

Statement I and III may be true

**FeedBack**

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

Seven persons – Neha, Richa, Bholu, Ishu, Chhotu, Raju, and Prem purchase Gold coins on the occasion of Dhanteras from stores among – Kalpana Jewellers, Tanisha Jewellers, Zevar Vatika, Senko, PS Jewellers, Hi-Design Jewellers and Sohan Lal Jewellers - not necessarily in that order. The weight (in gm) of Gold coins purchased by them was always an integer upto 10. Also, each person purchases exactly 1 gold coin and exactly 1 gold coin is purchased from each store.

Additional information know to us is:

- I. The person who had purchased Gold coin from Zevar Vatika was neither Bholu nor Ishu.
- II. Richa purchased Gold coin from PS Jewellers and Chhotu from Hi-Design Jewellers and the difference between the weight of Gold coins purchased by them was 3 gm.
- III. Gold coin purchased from Kalpana Jewellers was of minimum weight and that from Senko was of the maximum weight which was also an even number.
- IV. Weight of Gold coin purchased from Tanisha Jewellers was more than that from Zevar Vatika but less than that from Sohan Lal Jewellers.
- V. The weight of Gold coin purchased by Neha was one-third of that purchased by Raju, which in turn was 2 gm more than that purchased by Prem. Weight (in gm) of coins purchased by four out of seven of them was an odd number.

#### Q.42

Which of the following statements, if given, can uniquely determine the (Person, Store, Weight of gold coin purchased) by all seven of them?

- I. The weight of gold coin purchased by each of Bholu and Prem was more than that purchased by Chhotu.
- II. The weight of gold coin purchased by Richa was more than that by each of Chhotu and Bholu.

1  Only I

2  Only II

3  Both I and II together

4  Either I or II



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

From statement I;

Possible weight of gold coins purchased by Prem, Raju and Neha:

Case	Prem	Raju	Neha	Remarks
I	1 gm	3 gm	1 gm	Not possible
II	4 gm	6 gm	2 gm	Not possible, because there should be one more even numbered weight. (Statement-III)
III	7 gm	9 gm	3 gm	Possible

[Note: Case II is not possible as maximum weight is an even number and 2/4/6 cannot be maximum weight. So, an additional even numbered weight coin should be there which contradicts the instruction, "weight of coins purchased by four persons was an odd number"]

Now, we may also conclude that gold coin purchased of maximum weight was of 10 gm.

From statement II and III; we can conclude that the weight of gold coins purchased by Richa and Chhotu was 5 gm and 8 gm in any order.

Some further analysis leads to the following table:

Person	Store	Weight of Gold coin (in gm)
Prem	Tanisha Jewellers	7
Raju	Sohan Lal Jewellers	9
Neha	Zevar Vatika	3
Bholu/ Ishu	Senko	10
Richa	PS Jewellers	8/5
Chhotu	Hi-Design Jewellers	5/8
Ishu/ Bholu	Kalpana Jewellers	2

Either statement I or II may determine correct combination of (person, store, weight of gold coin purchased.)

[FeedBack](#)

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

**Seven friends - Arun, Bimal, Chandan, Deepak, Eshan, Faizan, and Gaurav - work in three different sectors i.e., Government Sector (GS), Semi-Government Sector (SGS) and Private Sector (PS) in any order and earn monthly Rs. 25k, 30k, 35k, 40k and 45k not necessarily in that order. Only one friend has an income of Rs. 25k.**

**The additional information is as below:-**

- (I) One of the friends working in GS has the same income as that of a friend working in SGS and another friend working in GS has the same income as that of a friend working in PS.
- (II) The sum of income of friends working in SGS is equal to that of friends working in PS.
- (III) Bimal and Eshan work in GS and earn monthly Rs. 40k and Rs. 25k respectively.
- (IV) The friend(s) who work(s) in SGS cannot have maximum income.
- (V) The income of Gaurav, who doesn't belong to PS, is more than that of Arun, Deepak, and Chandan. Faizan works in PS.

**Q.43**

If Gaurav earns the highest income, then he works in

1  SGS

2  PS

3  GS

4  Either (1) or (2)



**Solution:**

**Correct Answer : 3**

**Your Answer : 3**

**Bookmark**

**Answer key/Solution**

From statement II; we can conclude that there must be 2 friends working in SGS and PS each. Only possible combination satisfying statement II is that friends having income 35k and 40k work in SGS and friends having income 30k and 45k work in PS. (It is given that only one friend earn 25k and he works in Government Sector.) From statement IV, the friend having income 45k cannot work in SGS. We can tabulate the information given and conclusion as below:-

Income Sector \ Sector	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	
Semi-Government	x		✓	✓	x
Private	x	✓			✓

From statement V, it is given that the income of Gaurav is more than each of Arun, Deepak and Chandan and he doesn't belong to PS. So, we may conclude that Gaurav must be working in GS with income of 45k. (Gaurav cannot work in SGS as per statement IV). It may also be conclude that the income of Faizan is 45k who works in PS.

The Table is as below:-

Table 1

Income Sector \ Sector	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	Gaurav
Semi-Government			Arun / Chandan / Deepak	Arun / Chandan / Deepak	
Private		Arun / Chandan / Deepak			Faizan

Another case is also possible.

Table 2:

Income Sector \ Sector	25 k	30 k	35 k	40 k	45 k
Government	Eshan	Arun		Bimal	
Semi-Government			Deepak	Gaurav	Faizan
Private		Chandan			

From table 1, Gaurav works in Government Sector.

**Feedback**

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

**Seven friends - Arun, Bimal, Chandan, Deepak, Eshan, Faizan, and Gaurav - work in three different sectors i.e., Government Sector (GS), Semi-Government Sector (SGS) and Private Sector (PS) in any order and earn monthly Rs. 25k, 30k, 35k, 40k and 45k not necessarily in that order. Only one friend has an income of Rs. 25k.**

**The additional information is as below:-**

- (I) One of the friends working in GS has the same income as that of a friend working in SGS and another friend working in GS has the same income as that of a friend working in PS.
- (II) The sum of income of friends working in SGS is equal to that of friends working in PS.
- (III) Bimal and Eshan work in GS and earn monthly Rs. 40k and Rs. 25k respectively.
- (IV) The friend(s) who work(s) in SGS cannot have maximum income.
- (V) The income of Gaurav, who doesn't belong to PS, is more than that of Arun, Deepak, and Chandan. Faizan works in PS.

#### **Q.44**

**If Deepak works in PS, then**

- 1  Either Arun or Chandan works in SGS.
- 2  Both Arun and Chandan work in SGS.
- 3  Arun's income is less than that of Chandan.
- 4  Arun's income is more than that of Chandan.



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

From statement II; we can conclude that there must be 2 friends working in SGS and PS each. Only possible combination satisfying statement II is that friends having income 35k and 40k work in SGS and friends having income 30k and 45k work in PS. (It is given that only one friend earn 25k and he works in Government Sector.) From statement IV, the friend having income 45k cannot work in SGS. We can tabulate the information given and conclusion as below:-

Income Sector \	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	
Semi-Government	x		✓	✓	x
Private	x	✓			✓

From statement V, it is given that the income of Gaurav is more than each of Arun, Deepak and Chandan and he doesn't belong to PS. So, we may conclude that Gaurav must be working in GS with income of 45k. (Gaurav cannot work in SGS as per statement IV). It may also be conclude that the income of Faizan is 45k who works in PS.

The Table is as below:-

Table 1

Income Sector \	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	Gaurav
Semi-Government			Arun/ Chandan/ Deepak	Arun / Chandan/ Deepak	
Private		Arun/ Chandan/ Deepak			Faizan

Another case is also possible.

Table 2:

Income Sector \	25 k	30 k	35 k	40 k	45 k
Government	Eshan	Arun		Bimal	
Semi-Government			Deepak	Gaurav	Faizan
Private		Chandan			

From table 1, If Deepak works in PS, then both Arun and Chandan work in Semi-Government Sector.

FeedBack

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

**Seven friends - Arun, Bimal, Chandan, Deepak, Eshan, Faizan, and Gaurav - work in three different sectors i.e., Government Sector (GS), Semi-Government Sector (SGS) and Private Sector (PS) in any order and earn monthly Rs. 25k, 30k, 35k, 40k and 45k not necessarily in that order. Only one friend has an income of Rs. 25k.**

**The additional information is as below:-**

- (I) One of the friends working in GS has the same income as that of a friend working in SGS and another friend working in GS has the same income as that of a friend working in PS.
- (II) The sum of income of friends working in SGS is equal to that of friends working in PS.
- (III) Bimal and Eshan work in GS and earn monthly Rs. 40k and Rs. 25k respectively.
- (IV) The friend(s) who work(s) in SGS cannot have maximum income.
- (V) The income of Gaurav, who doesn't belong to PS, is more than that of Arun, Deepak, and Chandan. Faizan works in PS.

#### **Q.45**

**The income of Faizan is Rs. \_\_\_\_\_ k.**

**X**

**Solution:**

**Correct Answer : 45**

**Your Answer : 25**

 **Bookmark**

 **Answer key/Solution**

From statement II; we can conclude that there must be 2 friends working in SGS and PS each. Only possible combination satisfying statement II is that friends having income 35k and 40k work in SGS and friends having income 30k and 45k work in PS. (It is given that only one friend earn 25k and he works in Government Sector.) From statement IV, the friend having income 45k cannot work in SGS. We can tabulate the information given and conclusion as below:-

Income Sector \	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	
Semi-Government	x		✓	✓	x
Private	x	✓			✓

From statement V, it is given that the income of Gaurav is more than each of Arun, Deepak and Chandan and he doesn't belong to PS. So, we may conclude that Gaurav must be working in GS with income of 45k. (Gaurav cannot work in SGS as per statement IV). It may also be conclude that the income of Faizan is 45k who works in PS.

The Table is as below:-

Table 1

Income Sector \	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	Gaurav
Semi-Government			Arun / Chandan / Deepak	Arun / Chandan / Deepak	
Private		Arun / Chandan / Deepak			Faizan

Another case is also possible.

Table 2:

Income Sector \	25 k	30 k	35 k	40 k	45 k
Government	Eshan	Arun		Bimal	
Semi-Government			Deepak	Gaurav	Faizan
Private		Chandan			

The income of Faizan is Rs. 45k.

Feedback

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

**Seven friends - Arun, Bimal, Chandan, Deepak, Eshan, Faizan, and Gaurav - work in three different sectors i.e., Government Sector (GS), Semi-Government Sector (SGS) and Private Sector (PS) in any order and earn monthly Rs. 25k, 30k, 35k, 40k and 45k not necessarily in that order. Only one friend has an income of Rs. 25k.**

**The additional information is as below:-**

- (I) One of the friends working in GS has the same income as that of a friend working in SGS and another friend working in GS has the same income as that of a friend working in PS.
- (II) The sum of income of friends working in SGS is equal to that of friends working in PS.
- (III) Bimal and Eshan work in GS and earn monthly Rs. 40k and Rs. 25k respectively.
- (IV) The friend(s) who work(s) in SGS cannot have maximum income.
- (V) The income of Gaurav, who doesn't belong to PS, is more than that of Arun, Deepak, and Chandan. Faizan works in PS.

**Q.46**

**How many of the following statements may be true?**

- (I) Both Bimal and Chandan have an income of Rs. 40k each.
- (II) Both Gaurav and Faizan have an income of Rs. 45k each.
- (III) Income of Arun is more than that of Deepak.

**Enter '0' if none of the statements can be true.**



**Solution:**

**Correct Answer : 3**

**Your Answer : 3**

**Bookmark**

**Answer key/Solution**

From statement II; we can conclude that there must be 2 friends working in SGS and PS each. Only possible combination satisfying statement II is that friends having income 35k and 40k work in SGS and friends having income 30k and 45k work in PS. (It is given that only one friend earn 25k and he works in Government Sector.) From statement IV, the friend having income 45k cannot work in SGS. We can tabulate the information given and conclusion as below:-

Income Sector \\\	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	
Semi-Government	x		✓	✓	x
Private	x	✓			✓

From statement V, it is given that the income of Gaurav is more than each of Arun, Deepak and Chandan and he doesn't belong to PS. So, we may conclude that Gaurav must be working in GS with income of 45k. (Gaurav cannot work in SGS as per statement IV). It may also be conclude that the income of Faizan is 45k who works in PS.

The Table is as below:-

Table 1

Income Sector \\\	25 k	30 k	35 k	40 k	45 k
Government	Eshan			Bimal	Gaurav
Semi-Government			Arun/ Chandan / Deepak	Arun / Chandan / Deepak	
Private		Arun/ Chandan / Deepak			Faizan

Another case is also possible.

Table 2:

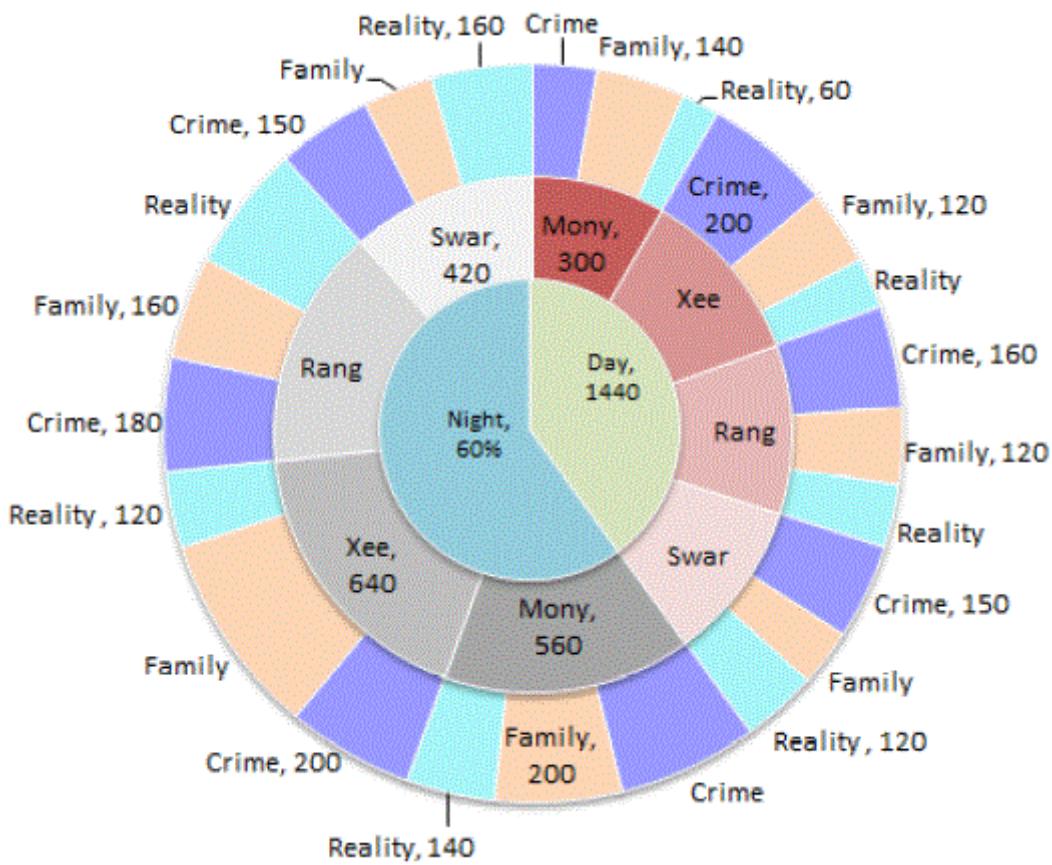
Income Sector \\\	25 k	30 k	35 k	40 k	45 k
Government	Eshan	Arun		Bimal	
Semi-Government			Deepak	Gaurav	Faizan
Private		Chandan			

All three statements may be true.

**FeedBack**

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

The multi-layered pie-chart below shows the TV viewing patterns of the people living in a residential colony, during day time and night time. The innermost layer shows day time and night time viewership. The middle-layer shows channel-wise viewership (either the number of viewers or the percentage is given, in some cases these figures are not given next to the channel). The outer layer shows the genre of the programs preferred, with each label showing the type of programs watched along with the number of people watching it. For some genres, the number of viewers are not given in the chart. The number of persons watching Reality TV on Mony, Xee, Rang and Swar respectively during day time are in arithmetic progression. (It is assumed that these are the only channels aired in the colony and that there are only three genres of programs that are telecast. Also no people who watch the TV in day time watch at night and vice-versa.)



**Q.47**

What percentage of all Xee TV viewers prefer programs of the Family genre?

- 1  50.5%
- 2  42.3%
- 3  32.3%
- 4  45%

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

The number of persons watching Reality TV on Mony and Swar during day time are 60 and 120 respectively. Let the number of persons watching Reality TV on Xee and Rang during day time be x and y respectively. As per given condition, 60, x, y, 120 are in arithmetic progression.

$\therefore$  The value of x and y must be 80 and 100 respectively.

Now, number of persons watching Xee TV during day time =  $200 + 120 + 80 = 400$

Similarly, number of persons watching Rang TV during day time =  $160 + 120 + 100 = 380$

Number of persons watching Swar TV during day time = (Total number of viewers during day time) – (Sum of number of persons watching TV on Mony, Xee and Rang during day time)

$$= 1440 - (300 + 400 + 380) = 360$$

Now, number of viewers watching Family TV on Swar channel during day time =  $360 - (150 + 120) = 90$

Now, it is given that, the number of persons watching TV at night is 60%

$\therefore$  Number of persons watching TV during day time must be 40% which is also equal to 1440

$$\therefore \frac{40}{100} \times \text{total number of viewers} = 1440$$

$\therefore$  Total number of viewers = 3600

$$\text{Total number of persons watching TV at night} = \frac{60}{100} \times 3600 = 2160$$

Total number of persons watching TV at night = Sum of number of persons watching TV on Swar, Rang, Xee and Mony Chanel during night

$$\therefore \text{Number of persons watching Rang TV during night} = 2160 - (420 + 640 + 560) = 540$$

$$\text{Number of persons watching family programs on Swar TV during night} = 420 - (150 + 160) = 110.$$

$$\text{Number of persons watching Reality programs on Rang TV during night} = 540 - (180 + 160) = 200$$

$$\text{Number of persons watching Family programs on Xee TV during night} = 640 - (120 + 200) = 320$$

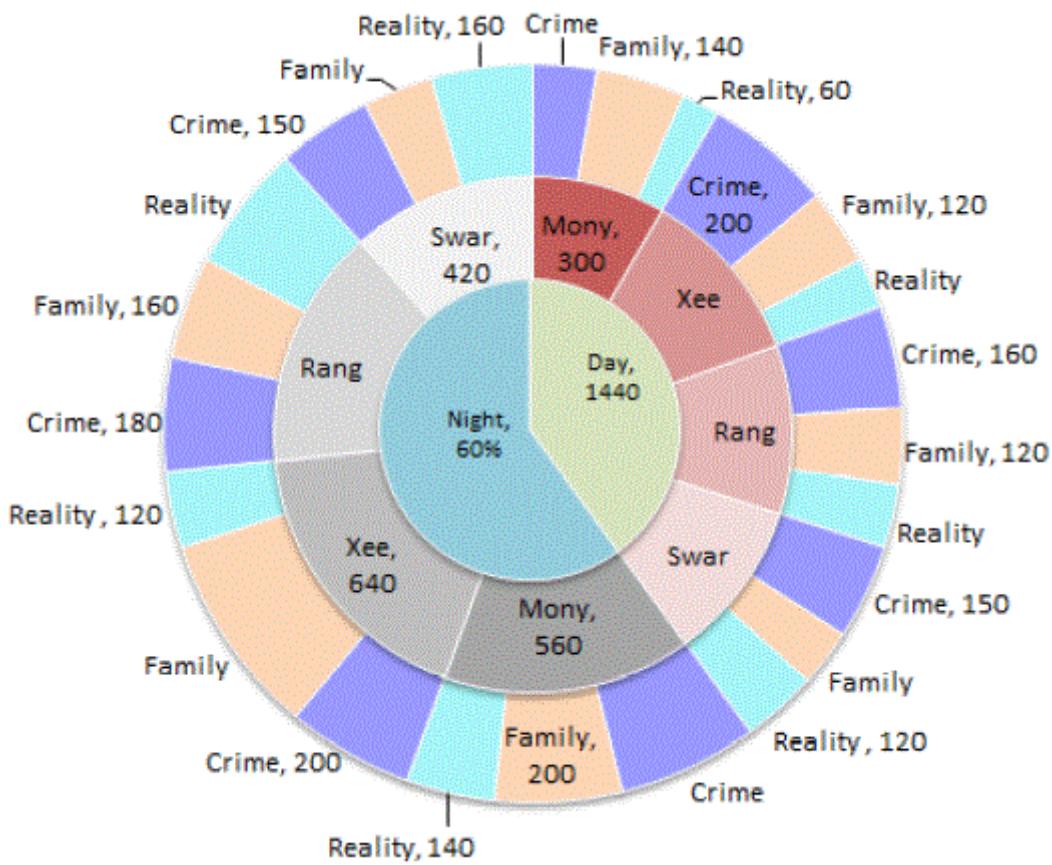
$$\text{Number of persons watching Crime programs on Mony TV during night} = 560 - (140 + 200) = 220.$$

$$\text{Required percentage} = \frac{120 + 320}{400 + 640} \times 100 = 42.30\%$$

 **FeedBack**

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

The multi-layered pie-chart below shows the TV viewing patterns of the people living in a residential colony, during day time and night time. The innermost layer shows day time and night time viewership. The middle-layer shows channel-wise viewership (either the number of viewers or the percentage is given, in some cases these figures are not given next to the channel). The outer layer shows the genre of the programs preferred, with each label showing the type of programs watched along with the number of people watching it. For some genres, the number of viewers are not given in the chart. The number of persons watching Reality TV on Mony, Xee, Rang and Swar respectively during day time are in arithmetic progression. (It is assumed that these are the only channels aired in the colony and that there are only three genres of programs that are telecast. Also no people who watch the TV in day time watch at night and vice-versa.)



**Q.48**

What is the ratio of the total number of people watching programs of the Crime genre to that of those watching programs of the Reality genre respectively?

- 1  68 : 49
- 2  65 : 48
- 3  68 : 47
- 4  49 : 65

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

The number of persons watching Reality TV on Mony and Swar during day time are 60 and 120 respectively. Let the number of persons watching Reality TV on Xee and Rang during day time be x and y respectively. As per given condition, 60, x, y, 120 are in arithmetic progression.

$\therefore$  The value of x and y must be 80 and 100 respectively.

Now, number of persons watching Xee TV during day time =  $200 + 120 + 80 = 400$

Similarly, number of persons watching Rang TV during day time =  $160 + 120 + 100 = 380$

Number of persons watching Swar TV during day time = (Total number of viewers during day time) – (Sum of number of persons watching TV on Mony, Xee and Rang during day time)

$$= 1440 - (300 + 400 + 380) = 360$$

Now, number of viewers watching Family TV on Swar channel during day time =  $360 - (150 + 120) = 90$

Now, it is given that, the number of persons watching TV at night is 60%

$\therefore$  Number of persons watching TV during day time must be 40% which is also equal to 1440

$$\therefore \frac{40}{100} \times \text{total number of viewers} = 1440$$

$\therefore$  Total number of viewers = 3600

$$\text{Total number of persons watching TV at night} = \frac{60}{100} \times 3600 = 2160$$

Total number of persons watching TV at night = Sum of number of persons watching TV on Swar, Rang, Xee and Mony Chanel during night

$$\therefore \text{Number of persons watching Rang TV during night} = 2160 - (420 + 640 + 560) = 540$$

$$\text{Number of persons watching family programs on Swar TV during night} = 420 - (150 + 160) = 110.$$

$$\text{Number of persons watching Reality programs on Rang TV during night} = 540 - (180 + 160) = 200$$

$$\text{Number of persons watching Family programs on Xee TV during night} = 640 - (120 + 200) = 320$$

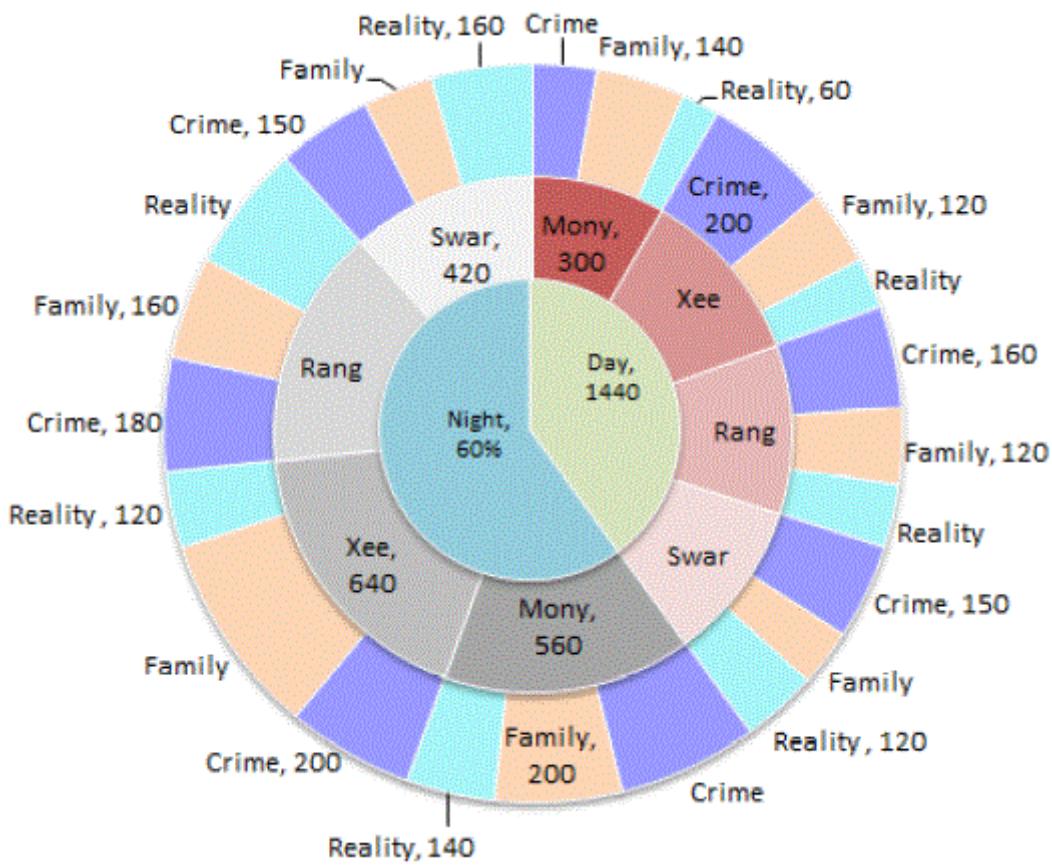
$$\text{Number of persons watching Crime programs on Mony TV during night} = 560 - (140 + 200) = 220.$$

$$\text{Required ratio} = \frac{(100 + 200 + 160 + 150 + 220 + 200 + 180 + 150)}{(60 + 80 + 100 + 120 + 140 + 120 + 200 + 160)} = \frac{68}{49}$$

 **FeedBack**

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

The multi-layered pie-chart below shows the TV viewing patterns of the people living in a residential colony, during day time and night time. The innermost layer shows day time and night time viewership. The middle-layer shows channel-wise viewership (either the number of viewers or the percentage is given, in some cases these figures are not given next to the channel). The outer layer shows the genre of the programs preferred, with each label showing the type of programs watched along with the number of people watching it. For some genres, the number of viewers are not given in the chart. The number of persons watching Reality TV on Mony, Xee, Rang and Swar respectively during day time are in arithmetic progression. (It is assumed that these are the only channels aired in the colony and that there are only three genres of programs that are telecast. Also no people who watch the TV in day time watch at night and vice-versa.)



**Q.49**

What is the absolute difference between the total viewership of Rang TV during night and day?

- 1  250
- 2  120
- 3  160
- 4  110

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

The number of persons watching Reality TV on Mony and Swar during day time are 60 and 120 respectively. Let the number of persons watching Reality TV on Xee and Rang during day time be  $x$  and  $y$  respectively. As per given condition, 60,  $x$ ,  $y$ , 120 are in arithmetic progression.

$\therefore$  The value of  $x$  and  $y$  must be 80 and 100 respectively.

Now, number of persons watching Xee TV during day time =  $200 + 120 + 80 = 400$

Similarly, number of persons watching Rang TV during day time =  $160 + 120 + 100 = 380$

Number of persons watching Swar TV during day time = (Total number of viewers during day time) – (Sum of number of persons watching TV on Mony, Xee and Rang during day time)

$$= 1440 - (300 + 400 + 380) = 360$$

Now, number of viewers watching Family TV on Swar channel during day time =  $360 - (150 + 120) = 90$

Now, it is given that, the number of persons watching TV at night is 60%

$\therefore$  Number of persons watching TV during day time must be 40% which is also equal to 1440

$$\therefore \frac{40}{100} \times \text{total number of viewers} = 1440$$

$\therefore$  Total number of viewers = 3600

$$\text{Total number of persons watching TV at night} = \frac{60}{100} \times 3600 = 2160$$

Total number of persons watching TV at night = Sum of number of persons watching TV on Swar, Rang, Xee and Mony Chanel during night

$$\therefore \text{Number of persons watching Rang TV during night} = 2160 - (420 + 640 + 560) = 540$$

$$\text{Number of persons watching family programs on Swar TV during night} = 420 - (150 + 160) = 110.$$

$$\text{Number of persons watching Reality programs on Rang TV during night} = 540 - (180 + 160) = 200$$

$$\text{Number of persons watching Family programs on Xee TV during night} = 640 - (120 + 200) = 320$$

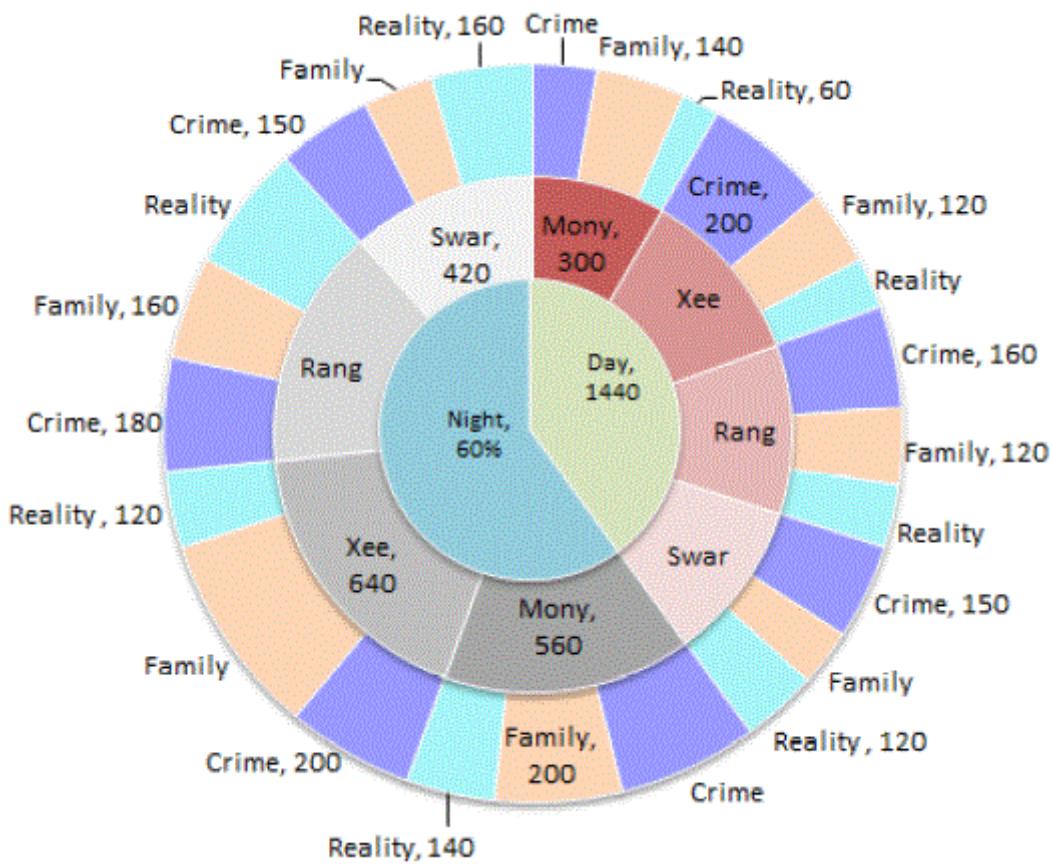
$$\text{Number of persons watching Crime programs on Mony TV during night} = 560 - (140 + 200) = 220.$$

Required absolute difference =  $540 - 380 = 160$

 **FeedBack**

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

The multi-layered pie-chart below shows the TV viewing patterns of the people living in a residential colony, during day time and night time. The innermost layer shows day time and night time viewership. The middle-layer shows channel-wise viewership (either the number of viewers or the percentage is given, in some cases these figures are not given next to the channel). The outer layer shows the genre of the programs preferred, with each label showing the type of programs watched along with the number of people watching it. For some genres, the number of viewers are not given in the chart. The number of persons watching Reality TV on Mony, Xee, Rang and Swar respectively during day time are in arithmetic progression. (It is assumed that these are the only channels aired in the colony and that there are only three genres of programs that are telecast. Also no people who watch the TV in day time watch at night and vice-versa.)



**Q.50**

The viewership of family genre programs on Mony TV is what percentage more or less than the viewership of the same genre programs on Swar TV?

- 1  35 % more
- 2  70 % less
- 3  140 % more
- 4  70 % more

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

The number of persons watching Reality TV on Mony and Swar during day time are 60 and 120 respectively. Let the number of persons watching Reality TV on Xee and Rang during day time be x and y respectively. As per given condition, 60, x, y, 120 are in arithmetic progression.

$\therefore$  The value of x and y must be 80 and 100 respectively.

Now, number of persons watching Xee TV during day time =  $200 + 120 + 80 = 400$

Similarly, number of persons watching Rang TV during day time =  $160 + 120 + 100 = 380$

Number of persons watching Swar TV during day time = (Total number of viewers during day time) – (Sum of number of persons watching TV on Mony, Xee and Rang during day time)

$$= 1440 - (300 + 400 + 380) = 360$$

Now, number of viewers watching Family TV on Swar channel during day time =  $360 - (150 + 120) = 90$

Now, it is given that, the number of persons watching TV at night is 60%

$\therefore$  Number of persons watching TV during day time must be 40% which is also equal to 1440

$$\therefore \frac{40}{100} \times \text{total number of viewers} = 1440$$

$\therefore$  Total number of viewers = 3600

$$\text{Total number of persons watching TV at night} = \frac{60}{100} \times 3600 = 2160$$

Total number of persons watching TV at night = Sum of number of persons watching TV on Swar, Rang, Xee and Mony Chanel during night

$$\therefore \text{Number of persons watching Rang TV during night} = 2160 - (420 + 640 + 560) = 540$$

$$\text{Number of persons watching family programs on Swar TV during night} = 420 - (150 + 160) = 110.$$

$$\text{Number of persons watching Reality programs on Rang TV during night} = 540 - (180 + 160) = 200$$

$$\text{Number of persons watching Family programs on Xee TV during night} = 640 - (120 + 200) = 320$$

$$\text{Number of persons watching Crime programs on Mony TV during night} = 560 - (140 + 200) = 220.$$

$$\text{Required percentage} = \frac{(140 + 200) - (90 + 110)}{(90 + 110)} \times 100 = 70\% \text{ more}$$

**FeedBack**

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

In the figure shown below, there are four line segments - 1, 2, 3 and 4 named as RA, SB, TC, and UD respectively. The lengths of the line segments are 39m, 25m, 27m, and 49m respectively.

R \_\_\_\_\_ A (Line-1)

S \_\_\_\_\_ B (Line -2)

T \_\_\_\_\_ C (Line -3)

U \_\_\_\_\_ D (Line -4)

Six people - Tabia, Tabby, Travis, Troy, Timothy, and Trevor - are standing in line-1, RA. All of them are facing North, with distance between any two consecutive people being 7 m. Tabia is standing at the left end i.e., at point R, of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy.

Similarly, six people - Jade, Jennifer, Joshua, John, Julia, and Joseph - are standing in line-4, UD. All of them are facing South, with distance between any two consecutive people being 9 m. Joshua is standing at the 3rd position from the right end. Julia is an immediate neighbor of Joshua. Two people are standing between Julia and Joseph. More than three people stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbors.

\* Point S and Point T will be taken as the left ends of the row in line SB and line TC.

#### Q.51

If in line-1 RA, if people stand at the distance of multiples of 9 m instead of 7 m, in the same order, and the rest of them move to the next line i.e., line-2 SB, and stand from the left end in same order. And, if in line-4 UD, if people stand at the distance of multiples of 11 m in the same order and rest of them move to line-3 TC, starting from the left end in the same order, then how many people are standing in line-2 and line-3 taken together?

**Solution:**

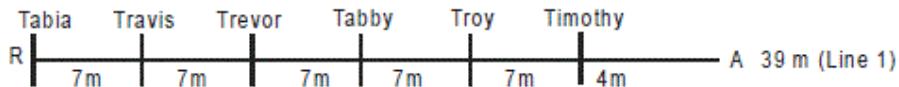
**Correct Answer : 2**

 **Bookmark**

 **Answer key/Solution**

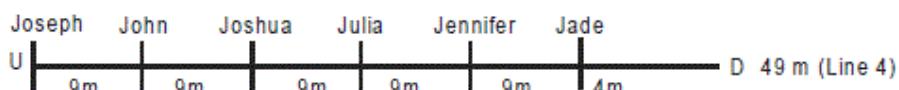
**Step I:** As given in the diagram that there is a line-1 RA and six people Tabia, Tabby, Travis, Troy, Timothy and Trevor are standing in line 1-RA. All of them are facing north. With distance between them increasing in multiples of 7 from the left end. In this arrangement the distance between two persons standing next to each other is seven whereas from first person standing at left end the distance will be in multiple of 7. And as the total length of the line is 39m and five persons are standing in the line at a distance of multiple of 7 so it will be 35m, remaining distance will be  $39 - 35 = 4\text{m}$  from the right end.

**Step II:** Now, let us start with the sitting arrangement of line 1-RA. Tabia is standing at the left end of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy. So, the final arrangement of line1-RA is—

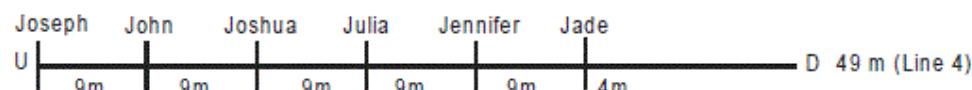
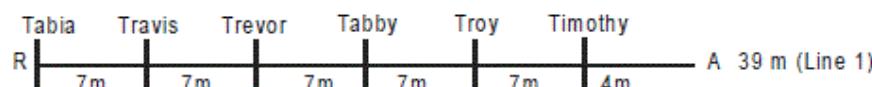


**Step IV:** Similarly, six people Jade, Jennifer, Joshua, John, Julia and Joseph are standing in line-4 UD. All of them are facing south with distance between them increasing in multiples of 9 from the end.

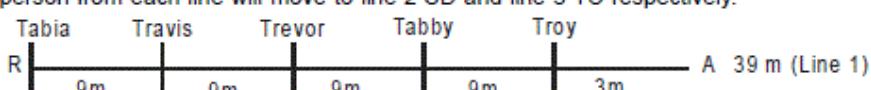
**Step V:** Joshua is standing is at 3rd position from the right end. Julia is an immediate neighbor Of Joshua. Two people are standing between Julia and Joseph. More than three persons stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbours.



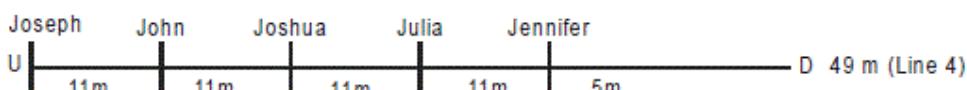
Now, final solution is –



As only five people can stand in both lines RA and UD at a distance in multiples of 9m and 11m respectively, so one person from each line will move to line 2-SD and line 3-TC respectively.



Jade



FeedBack

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

In the figure shown below, there are four line segments - 1, 2, 3 and 4 named as RA, SB, TC, and UD respectively. The lengths of the line segments are 39m, 25m, 27m, and 49m respectively.

R \_\_\_\_\_ A (Line-1)

S \_\_\_\_\_ B (Line -2)

T \_\_\_\_\_ C (Line -3)

U \_\_\_\_\_ D (Line -4)

Six people - Tabia, Tabby, Travis, Troy, Timothy, and Trevor - are standing in line-1, RA. All of them are facing North, with distance between any two consecutive people being 7 m. Tabia is standing at the left end i.e., at point R, of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy.

Similarly, six people - Jade, Jennifer, Joshua, John, Julia, and Joseph - are standing in line-4, UD. All of them are facing South, with distance between any two consecutive people being 9 m. Joshua is standing at the 3rd position from the right end. Julia is an immediate neighbor of Joshua. Two people are standing between Julia and Joseph. More than three people stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbors.

\* Point S and Point T will be taken as the left ends of the row in line SB and line TC.

#### Q.52

If in line-4 UD, if people stand in multiples of 13 m, in the same order and the rest of them move to line-3 TC, and stands from the left end i.e., T in the same order, then the distance between Jade and point C is

1  14 m

2  12 m

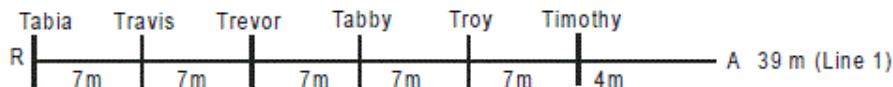
3  11 m

4  20 m

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

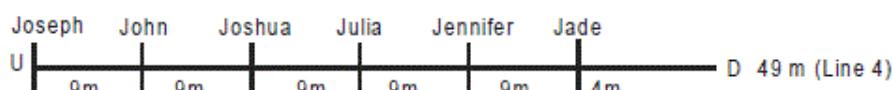
**Step I:** As given in the diagram that there is a line-1 RA and six people Tabia, Tabby, Travis, Troy, Timothy and Trevor are standing in line 1-RA. All of them are facing north. With distance between them increasing in multiples of 7 from the left end. In this arrangement the distance between two persons standing next to each other is seven whereas from first person standing at left end the distance will be in multiple of 7. And as the total length of the line is 39m and five persons are standing in the line at a distance of multiple of 7 so it will be 35m, remaining distance will be  $39 - 35 = 4$ m from the right end.

**Step II:** Now, let us start with the sitting arrangement of line 1-RA. Tabia is standing at the left end of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy. So, the final arrangement of line1-RA is—

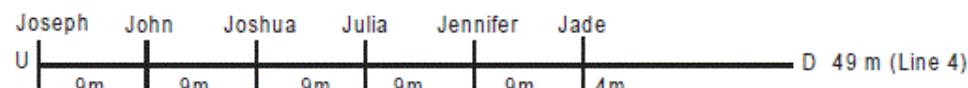
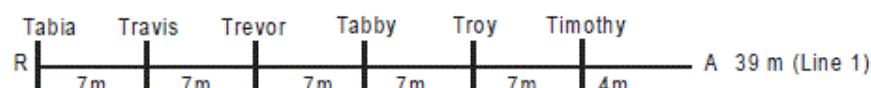


**Step IV:** Similarly, six people Jade, Jennifer, Joshua, John, Julia and Joseph are standing in line-4 UD. All of them are facing south with distance between them increasing in multiples of 9 from the end.

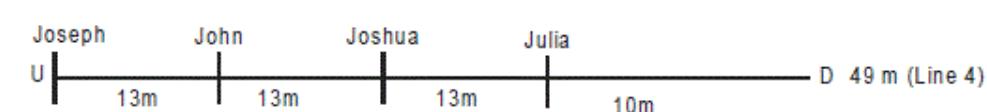
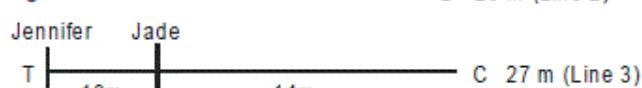
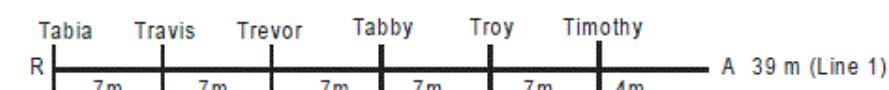
**Step V:** Joshua is standing is at 3rd position from the right end. Julia is an immediate neighbor Of Joshua. Two people are standing between Julia and Joseph. More than three persons stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbours.



Now, final solution is –



As only four people can stand in line 4 - UD at a distance in multiples of 13m, so two people from line 4-UD will move to line 3-TC respectively.


**FeedBack**

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

In the figure shown below, there are four line segments - 1, 2, 3 and 4 named as RA, SB, TC, and UD respectively. The lengths of the line segments are 39m, 25m, 27m, and 49m respectively.

R \_\_\_\_\_ A (Line-1)

S \_\_\_\_\_ B (Line -2)

T \_\_\_\_\_ C (Line -3)

U \_\_\_\_\_ D (Line -4)

Six people - Tabia, Tabby, Travis, Troy, Timothy, and Trevor - are standing in line-1, RA. All of them are facing North, with distance between any two consecutive people being 7 m. Tabia is standing at the left end i.e., at point R, of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy.

Similarly, six people - Jade, Jennifer, Joshua, John, Julia, and Joseph - are standing in line-4, UD. All of them are facing South, with distance between any two consecutive people being 9 m. Joshua is standing at the 3rd position from the right end. Julia is an immediate neighbor of Joshua. Two people are standing between Julia and Joseph. More than three people stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbors.

\* Point S and Point T will be taken as the left ends of the row in line SB and line TC.

### Q.53

Suppose line-1, RA, is joined to line-2, SB, using a new line AS, to form a new straight line RB in such a way that the distance between point A and S is 5m. If the distance between the consecutive people standing in line-1, RA, is made 12 m after joining with line SB, then how far (in meters) is Tabby from point B?

**Solution:**

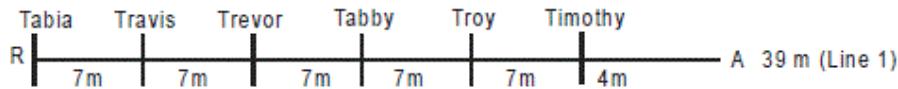
**Correct Answer : 33**

 **Bookmark**

 **Answer key/Solution**

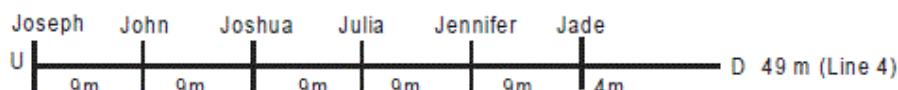
**Step I:** As given in the diagram that there is a line-1 RA and six people Tabia, Tabby, Travis, Troy, Timothy and Trevor are standing in line 1-RA. All of them are facing north. With distance between them increasing in multiples of 7 from the left end. In this arrangement the distance between two persons standing next to each other is seven whereas from first person standing at left end the distance will be in multiple of 7. And as the total length of the line is 39m and five persons are standing in the line at a distance of multiple of 7 so it will be 35m, remaining distance will be  $39 - 35 = 4\text{m}$  from the right end.

**Step II:** Now, let us start with the sitting arrangement of line 1-RA. Tabia is standing at the left end of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy. So, the final arrangement of line1-RA is—

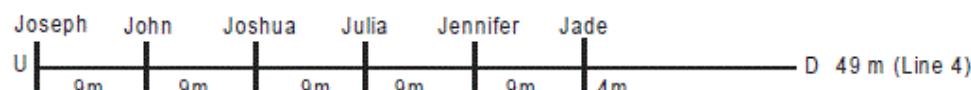
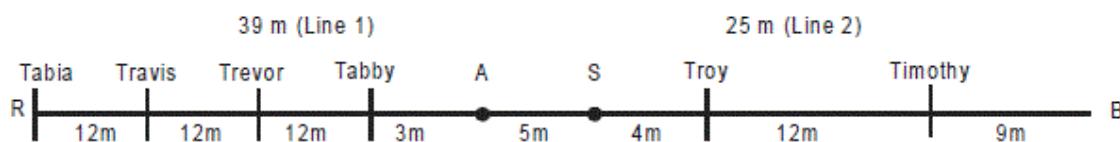
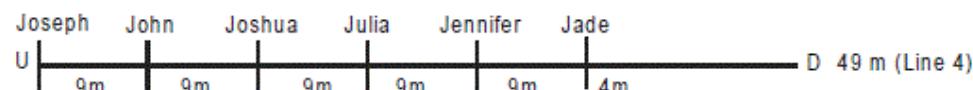
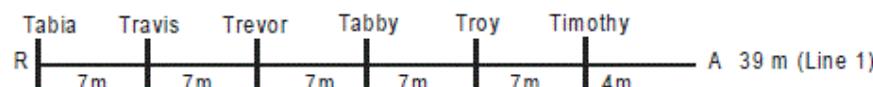


**Step IV:** Similarly, six people Jade, Jennifer, Joshua, John, Julia and Joseph are standing in line-4 UD. All of them are facing south with distance between them increasing in multiples of 9 from the end.

**Step V:** Joshua is standing is at 3rd position from the right end. Julia is an immediate neighbor Of Joshua. Two people are standing between Julia and Joseph. More than three persons stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbours.



Now, final solution is –



Feedback

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

In the figure shown below, there are four line segments - 1, 2, 3 and 4 named as RA, SB, TC, and UD respectively. The lengths of the line segments are 39m, 25m, 27m, and 49m respectively.

R \_\_\_\_\_ A (Line-1)

S \_\_\_\_\_ B (Line -2)

T \_\_\_\_\_ C (Line -3)

U \_\_\_\_\_ D (Line -4)

Six people - Tabia, Tabby, Travis, Troy, Timothy, and Trevor - are standing in line-1, RA. All of them are facing North, with distance between any two consecutive people being 7 m. Tabia is standing at the left end i.e., at point R, of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy.

Similarly, six people - Jade, Jennifer, Joshua, John, Julia, and Joseph - are standing in line-4, UD. All of them are facing South, with distance between any two consecutive people being 9 m. Joshua is standing at the 3rd position from the right end. Julia is an immediate neighbor of Joshua. Two people are standing between Julia and Joseph. More than three people stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbors.

\* Point S and Point T will be taken as the left ends of the row in line SB and line TC.

#### Q.54

If in line-1, RA, distance between any two consecutive people is 9 m, in the same order, and rest of them move to line-2, SB, in the same order, then who will be standing in line-2, SB?

1  Troy

2  Trevor

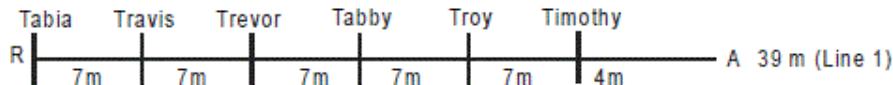
3  Tabby and Trevor

4  None of these

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

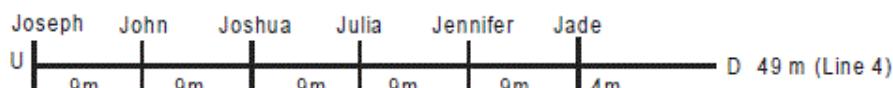
**Step I:** As given in the diagram that there is a line-1 RA and six people Tabia, Tabby, Travis, Troy, Timothy and Trevor are standing in line 1-RA. All of them are facing north. With distance between them increasing in multiples of 7 from the left end. In this arrangement the distance between two persons standing next to each other is seven whereas from first person standing at left end the distance will be in multiple of 7. And as the total length of the line is 39m and five persons are standing in the line at a distance of multiple of 7 so it will be 35m, remaining distance will be  $39 - 35 = 4$ m from the right end.

**Step II:** Now, let us start with the sitting arrangement of line 1-RA. Tabia is standing at the left end of the line. Two persons are standing between Tabia and Tabby. Travis stands second to the left of Tabby. Trevor is an immediate neighbor of Travis. Only one person stands between Trevor and Troy. So, the final arrangement of line1-RA is—

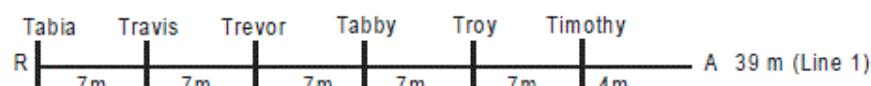


**Step IV:** Similarly, six people Jade, Jennifer, Joshua, John, Julia and Joseph are standing in line-4 UD. All of them are facing south with distance between them increasing in multiples of 9 from the end.

**Step V:** Joshua is standing is at 3rd position from the right end. Julia is an immediate neighbor Of Joshua. Two people are standing between Julia and Joseph. More than three persons stand between Joseph and Jade. John stands to the immediate left of Joseph. Jennifer and Julia are immediate neighbours.

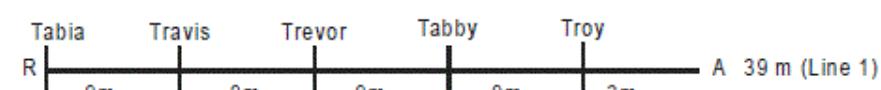
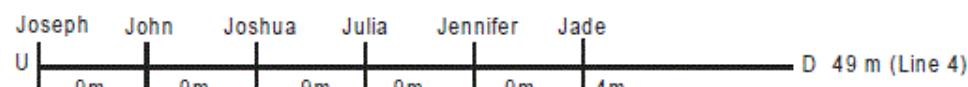


Now, final solution is –



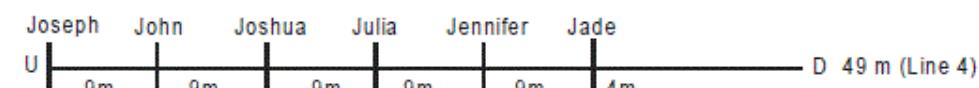
S ————— B 25 m (Line 2)

T ————— C 27 m (Line 3)



Timothy  
S ————— B 25 m (Line 2)

T ————— C 27 m (Line 3)



**FeedBack**

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

The numeric lock system, on a bag, contains four wheels, each wheel can be rotated in a way such that any digit from 0 to 9 may appear on it. One rotation of the wheel will either increase or decrease the number by just one place from where the wheel is currently positioned. To unlock the bag a password is fixed. The password has four digits with the following conditions.

- (i) The password is an odd number whereas the sum of the digits of the password is even.
- (ii) Sum of the first two digits of the password is less than that of its last two digits.

[Note:- 0000 is not a valid password.]

#### Q.55

Ram, a thief, not aware of the two conditions - (i) and (ii)- given above overhears the owner of the bag saying that the password is a multiple of 11 with its sum of digits not being greater than 7. If Ram is clever enough, then what could be the highest possible password he must have entered to check?

**Solution:**

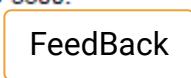
**Correct Answer : 3300**

 **Bookmark**

 **Answer key/Solution**

Let abcd is the password, then Ram, a thief, knows that

$a + b + c + d \leq 7$  and abcd is a multiple of 11 in that case the highest possible password he must have entered to check is 3300.

 **FeedBack**

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

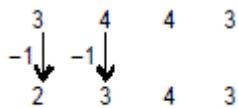
The numeric lock system, on a bag, contains four wheels, each wheel can be rotated in a way such that any digit from 0 to 9 may appear on it. One rotation of the wheel will either increase or decrease the number by just one place from where the wheel is currently positioned. To unlock the bag a password is fixed. The password has four digits with the following conditions.

- (i) The password is an odd number whereas the sum of the digits of the password is even.
- (ii) Sum of the first two digits of the password is less than that of its last two digits.

[Note:- 0000 is not a valid password.]

#### Q.56

If the numeric lock currently shows the number 3443, then the minimum number of rotations that can possibly unlock the bag with a valid password while adhering to the given conditions is

**Solution:****Correct Answer : 2**

i.e., 2 rotations.

**FeedBack****Bookmark****Answer key/Solution**

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

The numeric lock system, on a bag, contains four wheels, each wheel can be rotated in a way such that any digit from 0 to 9 may appear on it. One rotation of the wheel will either increase or decrease the number by just one place from where the wheel is currently positioned. To unlock the bag a password is fixed. The password has four digits with the following conditions.

- (i) The password is an odd number whereas the sum of the digits of the password is even.
- (ii) Sum of the first two digits of the password is less than that of its last two digits.

[Note:- 0000 is not a valid password.]

**Q.57**

A person unlocks the bag which has a password '5245', by making four rotations, one rotation of each wheel. How many possible values could appear on the lock system before the bag unlocks?

**Solution:****Correct Answer : 16****Bookmark****Answer key/Solution**

Case I:- 5245 was generated by increasing all four digits of existing number. There is only 1 possibility in this case.

Case II:- 3 digits increased by 1 and 1 digit decreased by 1 possibilities –  ${}^4C_3 = 4$

Case III:- 2 digits increased and 2 digits decreased =  ${}^4C_2 = 6$

Case IV:- 1 digit increased and 3 digits decreased =  ${}^4C_3 = 4$

Case V:- All four digits decreased by 1 = 1.

Total possibilities =  $1 + 4 + 6 + 4 + 1 = 16$ .

**FeedBack**

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

The numeric lock system, on a bag, contains four wheels, each wheel can be rotated in a way such that any digit from 0 to 9 may appear on it. One rotation of the wheel will either increase or decrease the number by just one place from where the wheel is currently positioned. To unlock the bag a password is fixed. The password has four digits with the following conditions.

- (i) The password is an odd number whereas the sum of the digits of the password is even.
- (ii) Sum of the first two digits of the password is less than that of its last two digits.

[Note:- 0000 is not a valid password.]

### Q.58

If the first three digits of the fixed password are the same, then how many such passwords are possible?

1  8

2  10

3  12

4  None of these

**Solution:**

**Correct Answer : 2**

Password may be one of the following numbers:-

1. 1113
2. 1115
3. 1117
4. 1119
5. 3335
6. 3337
7. 3339
8. 5557
9. 5559
10. 7779

 **Bookmark**

 **Answer key/Solution**

**FeedBack**

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

At a Machinery Tools Production Center, five out of the eight procedure sets A, B, C, D, E, F, G and H are to be operated daily. On any day, except for the first day of a month, only three of the procedure sets must be the ones that were operated on the previous day. The operating procedure must also satisfy the following conditions:

- (i) If procedure 'A' is to be operated on a day, 'G' cannot be operated on that day.
- (ii) If 'B' is to be operated on a day, 'E' must be one of the procedures to be operated after 'B'.
- (iii) If 'C' is to be operated on a day, 'G' must be one of the procedures to be operated after 'C'.
- (iv) The last procedure to be operated on any day must be either 'D' or 'F'.

**Q.59**

**Which of the following is true of any day's valid procedure set operation?**

- 1  'A' cannot be operated at third place
- 2  'B' cannot be operated at third place
- 3  'C' cannot be operated at fourth place
- 4  'F' cannot be operated at fourth place

**Solution:**

**Correct Answer : 3**

C cannot be operated at fourth place because if C is to be operated on any day G must be operated on that day after C and either D or F must be operated at last. So C can be operated only at first, second or third place.

 **Bookmark**

 **Answer key/Solution**

**FeedBack**

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

At a Machinery Tools Production Center, five out of the eight procedure sets A, B, C, D, E, F, G and H are to be operated daily. On any day, except for the first day of a month, only three of the procedure sets must be the ones that were operated on the previous day. The operating procedure must also satisfy the following conditions:

- (i) If procedure 'A' is to be operated on a day, 'G' cannot be operated on that day.
- (ii) If 'B' is to be operated on a day, 'E' must be one of the procedures to be operated after 'B'.
- (iii) If 'C' is to be operated on a day, 'G' must be one of the procedures to be operated after 'C'.
- (iv) The last procedure to be operated on any day must be either 'D' or 'F'.

**Q.60**

If the procedure sets 'C' and 'H' are to be operated on the first day, which of the following could be the other procedure sets on that day?

1  B, E, G

2  E, D, G

3  B, D, G

4  E, D, F

**Solution:**

**Correct Answer : 2**

Option (1) and (3) have B as one of the procedure and if C is to be operated then G and one from D or F must be operated making list as C, H, G, one from D and F and one any other procedure but with B, E must be operated. In option (4), G is not mentioned.

 **Bookmark**

 **Answer key/Solution**

**FeedBack**

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

At a Machinery Tools Production Center, five out of the eight procedure sets A, B, C, D, E, F, G, and H are to be operated daily. On any day, except for the first day of a month, only three of the procedure sets must be the ones that were operated on the previous day. The operating procedure must also satisfy the following conditions:

- (i) If procedure 'A' is to be operated on a day, 'G' cannot be operated on that day.
- (ii) If 'B' is to be operated on a day, 'E' must be one of the procedures to be operated after 'B'.
- (iii) If 'C' is to be operated on a day, 'G' must be one of the procedures to be operated after 'C'.
- (iv) The last procedure to be operated on any day must be either 'D' or 'F'.

**Q.61**

If the procedure sets operated on a day is A, B, H, E, and F, then each of the following options could be the next day's procedure set except

1  B, C, G, E, F

2  B, E, G, H, D

3  H, C, G, E, F

4  H, E, D, A, F

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

**Option (4) could not be the set of procedures because A, H, E and F four procedure sets are repeated from the previous day.**

 **Bookmark**
 **Answer key/Solution**
FeedBack

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

**At a Machinery Tools Production Center, five out of the eight procedure sets A, B, C, D, E, F, G and H are to be operated daily. On any day, except for the first day of a month, only three of the procedure sets must be the ones that were operated on the previous day. The operating procedure must also satisfy the following conditions:**

- (i) If procedure 'A' is to be operated on a day, 'G' cannot be operated on that day.
- (ii) If 'B' is to be operated on a day, 'E' must be one of the procedures to be operated after 'B'.
- (iii) If 'C' is to be operated on a day, 'G' must be one of the procedures to be operated after 'C'.
- (iv) The last procedure to be operated on any day must be either 'D' or 'F'.

**Q.62**

If 'C' is operated at third place in a sequence, which of the following procedure cannot be operated at the second place in that sequence?

1  B2  D3  E4  F**Solution:****Correct Answer : 1**

B cannot be operated at second place because if C is operated at third place then fourth and fifth place programs must be G and one from D and F respectively. And if B is to be operated then E must be operated after B.

 **Bookmark**
 **Answer key/Solution**
FeedBack

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

At the end of the first semester of MBA students of 'IIMA', a teacher recorded the performance of all students on the basis of their overall performance in academics and physical activities, on a piece of paper using ink pen. All these students then, were categorized under three categories i.e., Average, Good and Excellent. But somehow a glass of water fell on the paper and the only information left with the teacher is as shown below:

	Average	Good	Excellent	Total
Male			12	
Female				36
<b>Total</b>		33		

However the teacher had some clues about the number of students in these categories:

- (i) Half the students were either excellent or good.
- (ii) 40% of all the students were females.
- (iii) One-third of the males students were average.

**Q.63**

**How many female students were excellent?**

**Solution:**

**Correct Answer : 0**

 **Bookmark**

 **Answer key/Solution**

From Clue No. (iii),

40% of the total students are female

$$40\% = 36$$

$$100\% = 90$$

	Average	Good	Excellent	Total
Male	18	24	12	54
Female	27	9	0	36
<b>Total</b>	45	33	12	90

Half of the students are either good or excellent means that total of (good + excellent) students = 45

Therefore, Number of excellent students = 12

$$\frac{1}{3} \text{ of male students} = \text{average male students} = 18$$

There were 0 female students who were excellent.

**FeedBack**

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

At the end of the first semester of MBA students of 'IIMA', a teacher recorded the performance of all students on the basis of their overall performance in academics and physical activities, on a piece of paper using ink pen. All these students then, were categorized under three categories i.e., Average, Good and Excellent. But somehow a glass of water fell on the paper and the only information left with the teacher is as shown below:

	Average	Good	Excellent	Total
Male			12	
Female				36
<b>Total</b>		33		

However the teacher had some clues about the number of students in these categories:

- (i) Half the students were either excellent or good.
- (ii) 40% of all the students were females.
- (iii) One-third of the males students were average.

**Q.64**

What proportion of good students were male?

1  0.73

2  0.27

3  0.40

4  0.24



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

From Clue No. (iii),

40% of the total students are female

40% = 36

100% = 90

	Average	Good	Excellent	Total
Male	18	24	12	54
Female	27	9	0	36
Total	45	33	12	90

Half of the students are either good or excellent means that total of (good + excellent) students = 45

Therefore, Number of excellent students = 12

 $\frac{1}{3}$  of male students = average male students = 18

Proportion of good students that were male = 0.73

**FeedBack**

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

At the end of the first semester of MBA students of 'IIMA', a teacher recorded the performance of all students on the basis of their overall performance in academics and physical activities, on a piece of paper using ink pen. All these students then, were categorized under three categories i.e., Average, Good and Excellent. But somehow a glass of water fell on the paper and the only information left with the teacher is as shown below:

	Average	Good	Excellent	Total
Male			12	
Female				36
Total		33		

However the teacher had some clues about the number of students in these categories:

- (i) Half the students were either excellent or good.
- (ii) 40% of all the students were females.
- (iii) One-third of the males students were average.

**Q.65****How many male students were good?**

**Solution:****Correct Answer : 24****Your Answer : 6****Bookmark****Answer key/Solution**

From Clue No. (iii),

40% of the total students are female

40% = 36

100% = 90

	Average	Good	Excellent	Total
Male	18	24	12	54
Female	27	9	0	36
Total	45	33	12	90

Half of the students are either good or excellent means that total of (good + excellent) students = 45

Therefore, Number of excellent students = 12

 $\frac{1}{3}$  of male students = average male students = 18

24 male students were good.

**FeedBack**

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

At the end of the first semester of MBA students of 'IIMA', a teacher recorded the performance of all students on the basis of their overall performance in academics and physical activities, on a piece of paper using ink pen. All these students then, were categorized under three categories i.e., Average, Good and Excellent. But somehow a glass of water fell on the paper and the only information left with the teacher is as shown below:

	Average	Good	Excellent	Total
Male			12	
Female				36
Total		33		

However the teacher had some clues about the number of students in these categories:

- (i) Half the students were either excellent or good.
- (ii) 40% of all the students were females.
- (iii) One-third of the males students were average.

**Q.66****Among average students, what is the ratio of males to females?**1  1:32  2:3

3  3:24  None of these**Solution:****Correct Answer : 2****Your Answer : 2** **Bookmark** **Answer key/Solution**

From Clue No. (iii),  
 40% of the total students are female  
 $40\% = 36$   
 $100\% = 90$

	Average	Good	Excellent	Total
Male	18	24	12	54
Female	27	9	0	36
Total	45	33	12	90

Half of the students are either good or excellent means that total of (good + excellent) students = 45  
 Therefore, Number of excellent students = 12

$\frac{1}{3}$  of male students = average male students = 18

Among average students, ratio of males to females is 2:3.

**FeedBack****Sec 3****Q.67**

An entrepreneur started a business of selling juices with Rs.1,00,000. He invested 15% of this amount in buying machines. Forty percent of the initial amount went in the rent of the flat every month. After 2 months, he earned a revenue of Rs.45,000 and he invested 50% of the amount with him in the expansion of his business. Find the final amount (in Rs.) with the entrepreneur.



**Solution:****Correct Answer : 25000****Your Answer : 25000** **Bookmark** **Answer key/Solution**

Initial amount = Rs. 1,00,000

$$\text{In buying machines, he invested} = \frac{15}{100} \times 100000 = \text{Rs. } 15,000$$

$$\text{Rent per month} = \frac{40}{100} \times 100000 = \text{Rs. } 40,000$$

$$\therefore \text{Rent for 2 months} = 40000 \times 2 = \text{Rs. } 80,000$$

$$\text{So, after two months, the amount he had} = 100000 - (15000 + 80000) = \text{Rs. } 5,000$$

Also, he earned a revenue of Rs. 45,000.

$\therefore$  Amount with him now = Rs. 50,000.

$$\text{The amount he invested in the expansion of his business} = \frac{50}{100} \times 50000 = \text{Rs. } 25,000.$$

$$\text{Hence, the final amount with the entrepreneur} = 50000 - 25000 = \text{Rs. } 25,000.$$

**FeedBack**
**Q.68**

A car was running at a speed of 20 m/s and had an initial petrol quantity of 20 litres. After driving for a while the quantity of petrol reduced to 5 litres. Find the total time for which the car ran if its mileage is 14 km per litre.

1  2 hr 55 mins

2  3 hr 15 mins

3  3 hr 30 mins

4  2 hr 45 mins

**Solution:****Correct Answer : 1****Your Answer : 1**

Total consumed petrol =  $20 - 5 = 15$  litres.

Total distance covered =  $15 \text{ l} \times 14 \text{ km/l} = 210 \text{ km}$ .

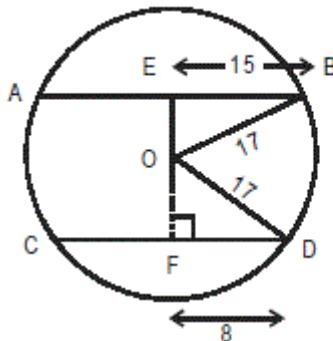
$$\text{Speed of car} = 20 \text{ m/s} = 20 \times \frac{18}{5} = 72 \text{ km/hr.}$$

$$\text{Time taken} = \frac{\text{Distance}}{\text{speed}} = \frac{210}{72} = 2 \text{ hours } 55 \text{ minutes.}$$

**Bookmark** **Answer key/Solution**
**FeedBack**

**Q.69**

What is the maximum possible distance (in cm) between two parallel chords of lengths 30 cm and 16 cm in a circle of radius 17 cm?

**Solution:****Correct Answer : 23****Your Answer : 23****Bookmark****Answer key/Solution**In  $\triangle OEB$ ,

$$OE^2 = OB^2 - EB^2 \quad \{8, 15 \text{ and } 17 \text{ are Pythagorean triplets}\}$$

$$\Rightarrow OE = 8 \text{ cm}$$

In  $\triangle OFD$ ,

$$OF^2 = OD^2 - FD^2$$

$$\Rightarrow OF = 15 \text{ cm.}$$

$$\text{Required distance} = OE + OF = 8 + 15 = 23 \text{ cm.}$$

**FeedBack****Q.70**

If  $Ax^4 + 2x^2 - 2$  and  $2x^4 - 3x + A$  are divided by  $x - 2$ , they leave the same remainder. What is the value of A?

1  3/82  8/33  4/34  5/3

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

The remainders are :

$$R_1 = f(2) = 16A + 8 - 2 = 16A + 6$$

$$R_2 = f(2) = 32 - 6 + A = 26 + A$$

Since  $R_1 = R_2$ , then we have,

$$16A + 6 = 26 + A$$

$$\Rightarrow 15A = 20$$

$$\Rightarrow A = 4/3.$$

**Bookmark****Answer key/Solution****FeedBack****Q.71**

If m and n be the roots of the quadratic equation  $x^2 + (a - 3)x - 4a - 3 = 0$ , then what is the minimum value of  $m^2 + n^2$ ?

1  102  123  134  14**Solution:****Correct Answer : 4** $x^2 + (a - 3)x - 4a - 3 = 0$ , the roots of the equation are m and n.So,  $m + n = -(a - 3)$  and  $mn = -4a - 3$ 

$$\text{Now, } m^2 + n^2 = (m + n)^2 - 2mn = (a - 3)^2 - 2(-4a - 3) = a^2 - 6a + 9 + 8a + 6$$

$$m^2 + n^2 = a^2 + 2a + 15$$

Now,  $a^2 + 2a + 15$  can be written as,

$$(a^2 + 2a + 1) + 14$$

$$\Rightarrow (a + 1)^2 + 14$$

∴ Clearly, the minimum value of  $m^2 + n^2$  will be 14 when  $a = -1$ .**Bookmark****Answer key/Solution****FeedBack****Q.72**

Ankuran is a sweetshop owner who sells sweets packed in different types of boxes - A and B. He planned to sell a minimum of 185 rasgullas and 111 gulabjamuns packing them in these two type of boxes, in a day. In each box A, he packs 6 rasgullas and 4 gulabjamuns, whereas in each box B he packs 9 rasgullas and 5 gulabjamuns. He sells box A for Rs. 22 each and box B for Rs. 40 each. What could be the least amount (in Rupees) earned by him by selling the boxes?

1  752

2  **800**

3  **824**

4  **682**

**Solution:**

**Correct Answer : 4**

 **Bookmark**

 **Answer key/Solution**

To sell a minimum of 185 rasgullas and 111 gulabjamuns, Ankuran has to sell a minimum of 31 boxes of type A, or 23 boxes of type B, or some other combination of the two types. But since the total amount realized has to be minimum, and the price of type A boxes is less than that of type B boxes the minimum amount be achieved if only boxes of type A are sold. Hence, if he sells boxes only of type A, he will realize an amount of  $31 \times 22 = 682$ .

**FeedBack**

### Q.73

**A pipe with a circular cross-section area whose radius is 7 cm, takes 4 hours to fill a tank. How long will it take a pipe with a square cross-section of side 8 cm to fill the same tank if the speed of water flow through a pipe is always the same?**

1  **8 hours 42 minutes**

2  **8 hours 50 minutes 30 seconds**

3  **9 hours 16 minutes 30 seconds**

4  **9 hours 37 minutes 30 seconds**

**Solution:**

**Correct Answer : 4**

 **Bookmark**

 **Answer key/Solution**

Let cross section of first and second pipe be  $c_1$  and  $c_2$  respectively and time taken be  $t_1$  and  $t_2$  respectively.

$$c_1 t_1 = c_2 t_2$$

$$\Rightarrow \pi(7)^2 \times 4 \text{ hour} = (8)^2 \times t_2$$

$$\Rightarrow \frac{22}{7} \times 7 \times 7 \times 4 = 8 \times 8 \times t_2$$

$$\Rightarrow t_2 = \frac{77}{8} \text{ hour} = 9 \text{ hours } 37 \text{ min } 30 \text{ seconds}$$

**FeedBack**

**Q.74**

**What is the area (in cm<sup>2</sup>) of a right-angled triangle with inradius 4 cm and circumradius 14 cm?**

**Solution:****Correct Answer : 128**

$$\text{Inradius} = r = \frac{a+b-c}{2} = 4 \text{ cm}$$

$$\text{Circumradius} = \frac{c}{2} = 14 \text{ cm}$$

$$\frac{a+b-c}{2} + \frac{c}{2} = \frac{a+b}{2}$$

$$\Rightarrow 4 + 14 = \frac{a+b}{2}$$

$$\Rightarrow a + b = 36.$$

Also,

$$c^2 = a^2 + b^2$$

$$(14 \times 2)^2 = a^2 + b^2$$

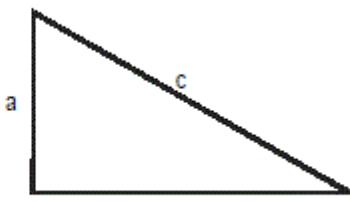
$$\Rightarrow (28)^2 = (a+b)^2 - 2ab$$

$$\Rightarrow 2ab = 36^2 - 28^2$$

$$\Rightarrow 2ab = 512$$

$$\Rightarrow ab = 256.$$

$$\text{Area of right angled triangle} = \frac{ab}{2} = \frac{256}{2} = 128 \text{ cm}^2.$$

**Bookmark****Answer key/Solution****FeedBack****Q.75**

**A sum of Rs. 16,000 invested at 20% p.a. compounded quarterly amounts to Rs. 18,522 in a certain time period. What will Rs. 20,000 amount to in the same time period at 20% simple interest per annum?**

1  **Rs. 21,000**2  **Rs. 25,000**3  **Rs. 24,000**4  **Rs. 23,000**

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

$$\text{New rate becomes } = \frac{20}{4} = 5\%$$

Time will become 4 times of itself.

 **Bookmark**
 **Answer key/Solution**

$$\therefore 18522 = 16000 \left(1 + \frac{5}{100}\right)^{4t}, \text{ where } t \text{ is the time period.}$$

$$\Rightarrow \frac{9261}{8000} = \left(\frac{21}{20}\right)^{4t}$$

$$\Rightarrow \left(\frac{21}{20}\right)^3 = \left(\frac{21}{20}\right)^{4t}$$

$$\Rightarrow 4t = 3$$

$$\Rightarrow t = \frac{3}{4} \text{ years}$$

$$\text{Now, SI} = \frac{P \times t \times r}{100}$$

$$\text{SI} = \frac{20000 \times 3 \times 20}{4 \times 100}$$

$$\text{SI} = \text{Rs. 3,000}$$

$$\text{Amount} = 3,000 + 20,000 = \text{Rs. 23,000.}$$

**Q.76**

$$f(x) = \frac{1}{x} \text{ for all } x > 0; \text{ otherwise, } f(x) = \frac{1}{x-1}$$

It is also known that  $f^n(x) = [f(x)]^n$ ; The value of  $f(1) + f^2(-2) + f^3(4) + f^2(-8) + f^{\frac{1}{4}}(16)$  is

1  equal to 5/3

2  less than 5/3

3  equal to 9/7

4  less than 9/7

**Solution:****Correct Answer : 2**

$$\begin{aligned}
 & f(1) + f^2(-2) + f^3(4) + f^2(-8) + f^4(16) \\
 &= \frac{1}{1} + \left(\frac{1}{-2-1}\right)^2 + \left(\frac{1}{4}\right)^3 + \left(\frac{1}{-8-1}\right)^2 + \left(\frac{1}{16}\right)^4 \\
 &= 1 + \frac{1}{9} + \frac{1}{64} + \frac{1}{81} + \frac{1}{2} \\
 &= 1 + 0.5 + \frac{1}{9} + \frac{1}{64} + \frac{1}{81} \\
 &= 1.5 + 0.1111 + 0.015625 + \frac{1}{81} \\
 &= 1.626725 + \frac{1}{81} < \frac{5}{3}
 \end{aligned}$$

**Bookmark****Answer key/Solution****FeedBack****Q.77****If  $12a + 5 > 7c$  and  $7c + 12 = 2b^2$ ; then**

- 1  a must be less than b  
 2  a must be greater than b  
 3  a is equal to b  
 4  None of the above is necessarily true.

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

$$\begin{array}{ll}
 12a + 5 > 7c & \text{---(i)} \\
 7c + 12 = 2b^2 & \text{---(ii)}
 \end{array}$$

$$\Rightarrow 7c = 2b^2 - 12$$

Putting this value in equation (i);

$$12a + 5 > 2b^2 - 12$$

$$\Rightarrow 12a > 2b^2 - 17$$

We can clearly observe that we can't find an exact relation between a and b.

**Bookmark****Answer key/Solution****FeedBack**

**Q.78**

There are three mixtures such that the first mixture contains water and milk in the ratio 1 : 3, second mixture contains water and honey in the ratio 1 : 4, and third mixture contains water and coffee in the ratio 1 : 5. These three mixtures of milk, honey and coffee, respectively, are further mixed in the proportion 6 : 5 : 4. Then which of the following statement is correct?

- 1 The new mixture has more water than coffee
- 2 The new mixture has more water than honey
- 3 The new mixture has the same amount of milk and honey
- 4 The new mixture has less water than honey or coffee

**Solution:**

**Correct Answer : 4**

In the new mixture:

$$\text{Ratio of milk} = \frac{3}{4} \times \frac{6}{15} = \frac{3}{10}$$

$$\text{Ratio of honey} = \frac{4}{5} \times \frac{5}{15} = \frac{4}{15}$$

$$\text{Ratio of coffee} = \frac{5}{6} \times \frac{4}{15} = \frac{2}{9}$$

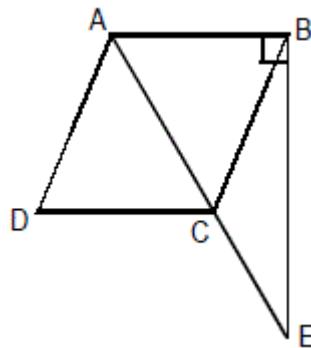
$$\text{Ratio of water} = \frac{1}{4} \times \frac{6}{15} + \frac{1}{5} \times \frac{5}{15} + \frac{1}{6} \times \frac{4}{15} = \frac{1}{10} + \frac{1}{15} + \frac{2}{45} = \frac{19}{90}$$

Hence, the new mixture has less water than honey or coffee.

 **Bookmark**

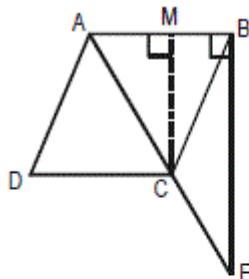
 **Answer key/Solution**

**FeedBack**

**Q.79**

ABCD is a parallelogram where the diagonal AC is extended to point E such that AE = 15 cm and AB is perpendicular to BE. Also, AC : CE = 2 : 1. If the length of AB is 9 cm, then find the length (in cm) of AD.

- 1  $\sqrt{71}$

2   $\sqrt{73}$ 3   $\sqrt{8}$ 4   $8\sqrt{3}$ **x****Solution:****Correct Answer : 2****Your Answer : 3****Bookmark****Answer key/Solution**

$$\therefore AC : CE = 2 : 1$$

$$\therefore AC = \frac{2}{3} AE = \frac{2}{3} \times 15 = 10 \text{ cm}$$

$$\text{and } CE = \frac{1}{3} \times 15 = 5 \text{ cm}$$

Draw a perpendicular line from point C on AB.  
Now,  $\triangle AMC$  and  $\triangle ABE$  are similar triangles.

$$\therefore \frac{AM}{AB} = \frac{AC}{AE}$$

$$\Rightarrow AM = \frac{AC}{AE} \cdot AB = \frac{10}{15} \times 9$$

$$\Rightarrow AM = 6 \text{ cm}$$

$$\therefore MB = 9 - 6 = 3 \text{ cm}$$

$$\text{In } \triangle AMC, AM^2 + MC^2 = AC^2$$

$$\Rightarrow 6^2 + MC^2 = 10^2$$

$$\Rightarrow MC = 8 \text{ cm}$$

Now, in  $\triangle BMC$ ,

$$BC^2 = MB^2 + MC^2$$

$$\Rightarrow BC = \sqrt{(3)^2 + (8)^2}$$

$$\Rightarrow BC = \sqrt{73}$$

$$\therefore AD = BC = \sqrt{73} \text{ cm.}$$

**FeedBack**

**Q.80**

A person bought 30 oranges at a certain price. He sold 40% of these oranges at 15% of their initial price. Half of the remaining oranges were lost and the remaining oranges were bought by a juice maker at a price which is 400% of the initial price of these oranges. What is the final percentage of profit/loss suffered by the person?



**Solution:**

**Correct Answer : 26**

**Your Answer : 26**

Let the cost price of 30 oranges be Rs. 100 each.  
Then, SP of  $(0.4 \times 30) = 12$  oranges is Rs. 15 each.

SP of  $\left(\frac{30 - 12}{2} = \right) 9$  oranges is Rs. 0 as they were lost.

SP of remaining 9 oranges is Rs. 400 each.

Total SP =  $(12 \times 15) + (9 \times 0) + (9 \times 400) = \text{Rs. } 3,780$

Total CP =  $30 \times 100 = 3000$ .

$$\text{Profit percentage} = \frac{\text{SP} - \text{CP}}{\text{CP}} \times 100 = \frac{3780 - 3000}{3000} \times 100 = 26\%.$$



**Answer key/Solution**

**FeedBack**

**Q.81**

On each day in a two days magic show, the collection was equal to Rs. 5,000. The ticket for a children was of Rs. 110 and was of Rs. 190 for an adult. If the total number of people attending on each day was different and also the number of children was more than number of adults on each day, then what is the total number of people who attended the show?

1  41

2  32

3  80

4  Cannot be determined



**Solution:****Correct Answer : 3****Your Answer : 4**

Let the number of children and adults in a day be c and a respectively.

$\therefore$  According to the question,

$$110c + 190a = 5000$$

$$\Rightarrow 11c + 19a = 500$$

This linear equation will give three different values of c and a.

When  $c = 4$ ,  $a = 24$

$$c = 23, a = 13$$

$$c = 42, a = 2.$$

$\therefore c > a$

$\therefore c = 23, a = 13$  and  $c = 42, a = 2$  will give the required value.

$\therefore$  Number of people in one day =  $23 + 13 = 36$ .

Number of people in another day =  $42 + 2 = 44$ .

$\therefore$  Total number of people who attended the show =  $36 + 44 = 80$ .

 **Bookmark**
 **Answer key/Solution**
FeedBack
**Q.82**

In a box, there are ten tickets, numbered from 1 to 10. In how many ways can three tickets be selected from the box, such that the number on at least one of the three tickets is either odd or prime?

1  100

2  110

3  116

4  122

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

The total number of ways in which he can pick the three tickets =  ${}^{10}C_3 = 120$

The favorable number of ways

=  $120 - \text{number of ways that none of the ticket is numbered with either an odd or prime}$

=  $120 - \text{number of ways that all three tickets are from among 4, 6, 8 and 10}$

=  $120 - {}^4C_3 = 120 - 4 = 116$ .

FeedBack

**Q.83**

Third term of a GP is 500 and the common ratio is  $1/n$ , where  $n$  is a natural number.  $P_i$  is the product of first  $i$  terms of the GP. If  $P_7 > P_8$  and  $P_7 > P_6$ ; then the value of  $n$  is

1  32  43  54  6**Solution:****Correct Answer : 2****Your Answer : 3**

Let the terms of G.P. be as below:

$$500n^2, 500n, 500, \frac{500}{n}, \frac{500}{n^2}, \frac{500}{n^3}, \frac{500}{n^4}, \frac{500}{n^5}, \dots$$

It is given that:  $P_7 > P_8$ 

$$\Rightarrow \frac{(500)^7}{n^7} > \frac{(500)^8}{n^{12}}$$

$$\Rightarrow n^5 > 500 \Rightarrow n = 4, 5, 6, 7, \dots$$

It is also given that  $P_7 > P_6$ 

$$\Rightarrow \left(\frac{500}{n}\right)^7 > \frac{(500)^6}{n^3}$$

$$\Rightarrow n^4 < 500 \Rightarrow n = 1, 2, 3, 4.$$

We can see that the only possible value of  $n$  is 4.
 **Bookmark**
**Answer key/Solution**
**FeedBack**
**Q.84**

There are 24 students in a class whose average marks in a subject is 89 out of 100. If 3 students leave the class, then what is the maximum possible increase in the average marks of the class?



**Solution:****Correct Answer : 11****Your Answer : 11**

Average marks of a student cannot increase beyond 100.  
So, maximum increase in average =  $100 - 89 = 11$ .

**Bookmark****Answer key/Solution****FeedBack****Q.85**

**Cylindrical cans of Protein Powder having radius 3.5 cm and 15 cm height are put in a box of dimension l = 38 cm, b = 23 cm and h = 23 cm. What is the maximum number of cans that can fit in the box?**

**Solution:****Correct Answer : 21****Bookmark****Answer key/Solution**

Diameter of cylindrical cans of protein powder =  $3.5 \times 2 = 7$  cm.  
When cans are placed vertically; height of cans = 15 cm.

$$\text{In this case; number of cans fitted} = \left[ \frac{38}{7} \right] \times \left[ \frac{23}{7} \right] \times \left[ \frac{23}{15} \right]$$

$$= 5 \times 3 \times 1 = 15.$$

Note: [ ] denotes the greatest integer function.

Now,  $(23 - 15)$  i.e. 8 cm is left in height of the box. So, we can place cans horizontally.

$$\text{Maximum number of cans that can be fitted} = \left[ \frac{38}{15} \right] \times \left[ \frac{23}{7} \right] \times \left[ \frac{8}{7} \right]$$

$$= 2 \times 3 \times 1 = 6.$$

$$\text{Total cans} = 15 + 6 = 21.$$

**FeedBack****Q.86**

**How many positive numbers, less than 1000, are possible which can be expressed as  $N = 2^x 3^y 5^z$ , where  $x + y + z = 10$ , such that x, y and z are positive integers?**

**Solution:****Correct Answer : 0**

$$N = 2^x 3^y 5^z \text{ where } x + y + z = 10.$$

$$x, y, z \geq 1 \text{ (positive integer).}$$

The minimum value of N will be when  $x = 8$ ,  $y = 1$  and  $z = 1$ .

$$\begin{aligned} N_{\min} &= 2^8 \times 3^1 \times 5^1 \\ &= 256 \times 15 = 3840 \end{aligned}$$

Therefore, no such number less than 1000 are possible for N.

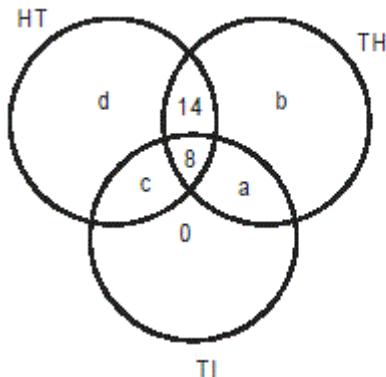
**Bookmark****Answer key/Solution****FeedBack**

**Q.87**

Each of 65 people in a society reads at least one of the three newspapers HT, TH and TI. Eight people read all three newspapers, while 14 read HT and TH, but not TI. Every person who reads TI also reads HT or TH or both. If the number of people reading HT is 5 more than that of the people reading TH, then find the number of people who read HT.

**Solution:**

**Correct Answer : 46**



**Bookmark**

**Answer key/Solution**

$$\begin{aligned} c + d &= a + b + 5 && \dots \text{(i)} \\ a + b + c + d + 22 &= 65 && \dots \text{(ii)} \end{aligned}$$

Using (i),

$$c + d - 5 + c + d + 22 = 65$$

$$\Rightarrow 2(c + d) = 48$$

$$\Rightarrow (c + d) = 24$$

$$\therefore \text{Number of people who read HT} = 24 + 14 + 8 = 46.$$

**FeedBack**

**Q.88**

Two persons Amit and Sumit each can complete a task in 23 days working alone. Amit takes the rest of one day after every 3 days and Sumit takes the rest of one day after every 4 days. If Amit and Sumit start working together, then the work will be completed on

- 1  13th day
- 2  14th day
- 3  15th day
- 4  16th day



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

Suppose the total work done be 23 units. Amit and Sumit, while working alone can complete the task in 23 days. This means that each does 1 unit of work in one day. Now, in the question, it is given that Amit takes rest of one day after every 3 days and Sumit takes rest of one day after 4 days.

∴ In total 12 days, Amit will do 9 units only whereas Sumit will do 10 units of work i.e., total 19 units of work will be done in 12 days.

Now, in the next two days, each will do 2 units of work i.e., on 14th day, the work done by them together =  $19 + 2 + 2 = 23$  units, which is the total work.

Hence, the work will be completed on 14th day.

**FeedBack****Q.89****How many positive integral values of x less than 50 satisfy the inequality  $|x - 5| - 9 > 7$ ?****Solution:****Correct Answer : 34** **Bookmark** **Answer key/Solution**

$$|(x - 5) - 9| > 7$$

$$\Rightarrow |x - 14| > 7$$

$$\Rightarrow x > 14 + 7 \text{ or } x < 14 - 7$$

$$\Rightarrow x > 21 \text{ or } x < 7$$

Total positive integral values of x less than 50 are 22 to 49 and 1 to 6. Total numbers are 34.

**FeedBack****Q.90**

A positive number N is expressed in the form of,  $N = 2^x + 5^y - 11^z$ . Find the number of value/s of N less than 100 for which it is an odd number, such that x, y and z are non-negative integers.

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

$$N = 2^x + 5^y - 11^z$$

As x, y and z are non-negative integers and N is less than 100 and is an odd number so we can put x = y = z = 0 such that

$$N = 2^0 + 5^0 - 11^0 = 1 + 1 - 1 = 1$$

$\therefore N = 1$  is possible.

Now, put x=0, y=1, z=0 , we get N = 5.

Put x = 0, y = 3, z = 2 , we get N = 5.

Put x = 0, y = 2, z = 1, we get N = 15.

Finally on putting x = 0, y = 2 and z = 0 , we get N = 25.

Hence, these 4 values of N are possible.

**FeedBack**
**Q.91**

In a town, there are 2,500 men and 2,500 women. If the number of men increases by 20% and the number of women decreases by 20%, then women as a percentage of men now is

1  20%

2  66.67%

3  25%

4  33.33%

**Solution:****Correct Answer : 2****Your Answer : 2**

Number of men after 20% increase =  $2500 \times 1.2 = 3000$

Number of women after 20% decrease =  $2500 \times 0.8 = 2000$

So, women as a percentage of men =  $\frac{2000}{3000} \times 100 \approx 66.67\%$ .

**Bookmark** **Answer key/Solution**
**FeedBack**

**Q.92**

If  $a = \log x - \log y$ ,  
 $b = \log y^3 - \log x^3$ ,  
 $c = \log x^5 - \log y^5$

then find the value of  $\frac{a+b+c}{ab+bc+ca}$

1   $\frac{7}{13a}$

2   $\frac{5}{13a}$

3   $\frac{-3}{13a}$

4   $\frac{5}{7a}$

**Solution:**

**Correct Answer : 3**

$a = \log x - \log y$   
 $b = 3(\log y - \log x) = -3a$   
 $c = 5(\log x - \log y) = 5a$ .

$$\therefore \frac{a+b+c}{ab+bc+ca} = \frac{a - 3a + 5a}{-3a^2 - 15a^2 + 5a^2} = \frac{3a}{-13a^2} = \frac{-3}{13a}$$

**FeedBack**

**Bookmark**

**Answer key/Solution**

**Q.93**

The average marks obtained by a set of 38 candidates in an exam is 78 where maximum marks is 100. If the pass marks is 35,then what is the maximum number of candidates who could have failed in the exam?

1  9

2  7

3  12

4  14



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

Total marks obtained by 38 candidates =  $38 \times 78 = 2964$ .

Let  $x$  be the number of candidates who failed in the exam.

To maximize the number of failed candidates, each must score 34 and each pass candidate must score 100.

So,  $38 \times 78 = 34 \times x + (38 - x) \times 100$

$$\Rightarrow 34x - 100x = 38 \times (100 - 78)$$

$$\Rightarrow x = \frac{38}{3} = 12.66.$$

Therefore, at most 12 candidates could have failed.

**FeedBack****Q.94**

**500 machines from a factory were being relocated. Each machine requires  $22.5 \text{ m}^3$  space. The height of the new hall is to be kept at 7.5 m, while the surface area of the 4 walls must be 1200 sq.m. Then the length and breadth of the hall are respectively:**

1  40 m and 37.5 m

2  50 m and 30 m

3  60 m and 20 m

4  62 m and 18 m

**Solution:****Correct Answer : 2**

Total volume required for the machines are  $500 \times 22.5 = 11250 \text{ m}^3$

Volume =  $11250 \text{ m}^3$

$$\Rightarrow l \times b \times h = 11250$$

$$\Rightarrow l \times b \times 7.5 = 11250$$

$$\Rightarrow l \times b = 1500 \text{ m}^2 \quad - (i)$$

Surface area of 4 walls =  $2(l + b) \times h = 1200$

$$\Rightarrow 2(l + b) \times 7.5 = 1200$$

$$\Rightarrow l + b = 80 \text{ m}^2 \quad - (ii)$$

From (i) and (ii),  $l = 50 \text{ m}$  and  $b = 30 \text{ m}$ .

**Bookmark****Answer key/Solution****FeedBack****Q.95**

**The ratio of the quantity of fuel consumed by an aeroplane (when travelling the same distance) at 900 km/hr, 750 km/hr and 500 km/hr is 3 : 2 : 1. What will be the ratio of the distances travelled by the aeroplane on 30,000 litres of fuel at 900 km/hr, 40,000 litres of fuel at 750 km/hr and 60,000 litres of fuel at 500 km/hr respectively?**

1  1 : 2 : 32  1 : 3 : 93  2 : 3 : 64  1 : 2 : 6**X****Solution:****Correct Answer :** 4**Your Answer :** 3 **Bookmark** **Answer key/Solution**

Let the quantity of fuel consumed when it travelled with speeds of 900 km/hr, 750 km/hr and 500 km/hr be '3x', '2x' and 'x' litres respectively.

Let the distance covered by the aeroplane travelling at 900 km/hr using '30,000' litres of fuel be 'z' km.

Distance covered by the aeroplane travelling at 750 km/hr using '40,000' litres of fuel =  $2z$  km.

Distance covered by the aeroplane travelling at 500 km/hr using '60,000' litres of fuel =  $6z$  km.

$\therefore$  Required ratio = 1 : 2 : 6.

**FeedBack****Q.96**

If  $f(x + 1) = f(x) - f(x - 1)$  and  $f(0) = 3$ ,  $f(2) = 5$ , then the value of  $f(100)$  is

**Solution:****Correct Answer :** -8

$$f(x) = f(x + 1) + f(x - 1)$$

$$f(1) = f(2) + f(0) = 5 + 3 = 8$$

$$f(2) = f(1) - f(0) = 8 - 3 = 5$$

$$f(3) = f(2) - f(1) = 5 - 8 = -3$$

$$f(4) = f(3) - f(2) = -3 - 5 = -8$$

$$f(5) = f(4) - f(3) = -8 + 3 = -5$$

$$f(6) = f(5) - f(4) = -5 + 8 = 3$$

$$f(7) = f(6) - f(5) = 3 + 5 = 8$$

$$f(8) = f(7) - f(6) = 8 - 3 = 5$$

$$f(9) = f(8) - f(7) = 5 - 8 = -3.$$

$$f(10) = f(9) - f(8) = -3 - 5 = -8$$

$$f(11) = f(10) - f(9) = -8 + 3 = -5$$

$$f(12) = f(11) - f(10) = -5 + 8 = 3.$$

We can see that there is a cycle of [8, 5, -3, -8, -5, 3] or  $f(6 + a) = f(a)$ .

So,  $f(100) = f(16 \times 6 + 4) = f(4) = -8$ .

**Bookmark** **Answer key/Solution****FeedBack****Q.97**

If  $x$  is a real number such that  $\log_5 7 = \log_7(x + 4)$ , then which of the following is true? (Given that  $\log_x a > \log_x b > \log_x c$  when  $a > b > c > 0$  and  $x > 1$ )

1   $x > 50$

2   $3 < x < 45$

3   $0 < x < 3$

4   $45 < x < 50$

### Solution:

**Correct Answer : 2**

$$\begin{aligned}\log_5 7 &= \log_7(x + 4) \\ \log_5 5 < \log_5 7 &< \log_5 25 \\ \text{or } 1 < \log_5 7 &< 2 \\ \text{Therefore, } 1 < \log_7(x + 4) &< 2 \\ \text{or, } 7^1 < x + 4 &< 7^2 \\ \text{or, } 3 < x &< 45.\end{aligned}$$

 **Bookmark**

 **Answer key/Solution**

**FeedBack**

### Q.98

A tank of capacity 100 litres has an inlet and an outlet pipe. It takes 10 minutes to fill the cistern when both pipes are opened together. However if the outflow rate is increased by 25%, the tank never gets filled. Which of the following can be the outflow rate ?

1  35 litres/minute

2  40 litres/minute

3  20 litres/minute

4  25 litres/minute

### Solution:

**Correct Answer : 2**

Let 'a' and 'b' be the rate of flow of inlet and outlet pipes respectively.

Given  $a - b = 10$  litres/min.  $\Rightarrow a = b + 10$

And  $a - 1.25b \leq 0$

$$\Rightarrow b + 10 - 1.25b \leq 0$$

$$\Rightarrow 10 - \frac{b}{4} \leq 0$$

$$\Rightarrow 40 - b \leq 0$$

$$\Rightarrow b \geq 40 \text{ litres/min}$$

So the only correct option is option (2) that is 40 litres/min.

 **Bookmark**

 **Answer key/Solution**

**FeedBack**

**Q.99**

**Kshitija scored marks in four different subjects in the ratio of 4 : 5 : 7 : 9 having equal maximum marks. In all, she scored 50% of the maximum marks in all the four subjects taken together. In how many subjects did she score more than 60% maximum marks?**

**Solution:****Correct Answer : 1****Your Answer : 1**

Let Kshitija's marks in four different subjects be  $4x$ ,  $5x$ ,  $7x$  and  $9x$  respectively.  
 Total marks obtained =  $4x + 5x + 7x + 9x = 25x$  = 50% of total maximum marks.  
 Thus, total maximum marks =  $50x$ .

$$\therefore \text{Maximum marks per subject} = \frac{50x}{4} = 12.5x$$

Now 60% of maximum marks per subject =  $0.6 \times 12.5x = 7.5x$   
 Hence, in one subject, marks is more than  $7.5x$ .


[Answer key/Solution](#)
[FeedBack](#)
**Q.100**

**How many sets of the form  $f(n) = \{n - 4, n - 2, n + 2, n + 4\}$ , where 'n' is a natural number such that  $5 \leq n \leq 50$ , does not contain any multiple of 3?**

1  **14**2  **15**3  **12**4  **13**

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

$f(n) = \{n - 4, n - 2, n + 2, n + 4\}$ , where  $5 \leq n \leq 50$

For  $n = 5$ ,

$f(5) = \{1, 3, 7, 9\}$ , but this set will not be counted as it contains two numbers which are multiples of 3.

For  $n = 6$ ,

$f(6) = \{2, 4, 8, 10\}$ , this does not contain any multiple of 3.

For  $n = 7$ ,  $f(7) = \{3, 5, 9, 11\}$

For  $n = 8$ ,  $f(8) = \{4, 6, 10, 12\}$

For  $n = 9$ ,  $f(9) = \{5, 7, 11, 13\}$ , which again does not contain any number which is a multiple of 3.

So, here we get a pattern i.e., for  $n = 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45$  and 48, we get sets which do not contain multiples of 3.

 **FeedBack**