

**Directions of Test**

<b>Test Name</b>	2016 Bull CAT 03	<b>Total Questions</b>	100	<b>Total Time</b>	180 Mins
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Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking
Verbal Ability	34	1:0(h:m)	3	1/3
DI & Logical Reasoning	32	1:0(h:m)	3	1/3
Quantitative Ability	34	1:0(h:m)	3	1/3

**Section : Verbal Ability**

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 1**

The primary conception of force is associated with the muscular sensation felt when we make an effort to cause or prevent the motion of matter. Similar effects on the motion of matter can be caused by non-living agency, and these also are regarded as due to forces. As is well known, the scientific measure of a force is the momentum that it communicates to a body in given time. There is nothing very abstract about a force transmitted by material contact; modern physics shows that the momentum is communicated by a process of molecular bombardment. We can visualise the mechanism, and see the molecules carrying the motion in small parcels across the boundary into the body that is being acted on. Force is no mysterious agency; it is merely a convenient summary of this flow of motion, which we can trace continuously if we take the trouble. It is true that the difficulties are only set back a stage, and the exact mode by which the momentum is redistributed during a molecular collision is not yet understood; but, so far as it goes, this analysis gives a clear idea of the transmission of motion by ordinary forces.

But even in elementary mechanics an important natural force appears, which does not seem to operate in this manner. Gravitation is not resolvable into a succession of molecular blows. A massive body, such as the earth, seems to be surrounded by a field of latent force, ready, if another body enters the field, to become active, and transmit motion. One usually thinks of this influence as existing in the space round the earth even when there is no test-body to be affected, and in a rather vague way it is suspected to be some state of strain or other condition of an unperceived medium.

Although gravitation has been recognised for thousands of years, and its laws were formulated with sufficient accuracy for almost all purposes more than 200 years ago, it cannot be said that much progress has been made in explaining the nature or mechanism of this influence. It is said that more than 200 theories of gravitation have been put forward; but the most plausible of these have all had the defect that they lead nowhere and admit of no experimental test. Many of them would nowadays be dismissed as too materialistic for our taste---filling space with the hum of machinery---a procedure curiously popular in the nineteenth century. Few would survive the recent discovery that gravitation acts not only on the molecules of matter, but on the undulations of light.

The nature of gravitation has seemed very mysterious, yet it is a remarkable fact that in a limited region it is possible to create an artificial field of force which imitates a natural gravitational field so exactly that, so far as experiments have yet gone, no one can tell the difference. Those who seek for an explanation of gravitation naturally aim to find a model which will reproduce its effects; but no one before Einstein seems to have thought of finding the clue in these artificial fields, familiar as they are. When a lift starts to move upwards the occupants feel a characteristic sensation, which is actually identical with a sensation of increased weight.

According to the information given in the passage

- I. it is possible to replicate the force of gravitation.
- II. the understanding of force is not esoteric in nature.
- III. momentum and force are connected to one another.

- A) I & II   B) II & III   C) I & III   D) All of above

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 2**

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According to the author of the passage:

- A) many ancient theories of gravitation depended upon too much machinery
- B) many ancient theories of gravitation were too materialistic
- C) many theories of gravitation depend on too much machinery without any consequence
- D) many theories of gravitation that failed in the 19th century were too obscure to use machinery

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 3**

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It can be inferred from the passage:

- A) that gravitation is an open and shut book
- B) that gravitation is too abstruse to be fathomed
- C) that gravitation still demands extensive thought
- D) that gravitation has not been accorded the status it deserves

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 4**

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The tone of the author of the passage can be said to be:

- A) chiefly descriptive merged with optimism
- B) generally factual though mixed with occasional analysis
- C) significantly conjectural, though at times accompanied with an air of superiority

D) primarily explanatory, though exhibiting slight reservations at times

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 5**

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According to the information given in the passage:

- I. Gravitation was discovered about 200 years ago.
- II. Laws of gravitation were known for thousands of years.
- III. Significant progress has not been made in explaining gravitation.

A) only II    B) only III    C) only II and III    D) I, II and III

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 6**

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In the given passage, the author is trying to:

- A) identify different forces and how they operate    B) discern and discuss the nature of gravitation  
C) delineate how gravitation operates on bodies    D) identify the core components of gravitation

***DIRECTIONS for the question :*** Read the passage and answer the question based on it.

**Question No. : 7**

I suppose there is no man in his sober senses who seriously believes that no other mind than his own exists. There is, to be sure, an imaginary being more or less discussed by those interested in philosophy, a creature called the Solipsist, who is credited with this doctrine. But men do not become solipsists, though they certainly say things now and then that other men think logically lead to some such unnatural view of things; and more rarely they say things that sound as if the speaker, in some moods, at least, might actually harbor such a view.

Thus, the philosopher Fichte (1762-1814) talks in certain of his writings as though he believed himself to be the universe, and his words cause Jean Paul Richter, the inimitable, to break out in his characteristic way: "The very worst of it all is the lazy, aimless, aristocratic, insular life that a god must lead; he has no one to go with. If I am not to sit still for all time and eternity, if I let myself down as well as I can and make myself finite, that I may have something in the way of society, still I have, like petty princes, only my own creatures to echo my words. . . . Every being, even the highest Being, wishes something to love and to honor. But the Fichtean doctrine that I am my own body-maker leaves me with nothing whatever--with not so much as the beggar's dog or the prisoner's spider. . . . Truly I wish that there were men, and that I were one of them. . . . If there exists, as I very much fear, no one but myself, unlucky dog that I am, then there is no one at such a pass as I."

Just how much Fichte's words meant to the man who wrote them may be a matter for dispute. Certainly no one has shown a greater moral earnestness or a greater regard for his fellowmen than this philosopher, and we must not hastily accuse any one of being a solipsist. But that to certain men, and, indeed, to many men, there have come thoughts that have seemed to point in this direction--that not a few have had doubts as to their ability to prove the existence of other minds--this we must admit. It appears somewhat easier for a man to have doubts upon this subject when he has fallen into the idealistic error of regarding the material world, which seems to be revealed to him, as nothing else than his "ideas" or "sensations" or "impressions." If we will draw the whole "telephone exchange" into the clerk, there seems little reason for not including all the subscribers as well. If other men's bodies are my sensations, may not other men's minds be my imaginings? But doubts may be felt also by those who are willing to admit a real external world. How do we know that our inference to the existence of other minds is a justifiable inference? Can there be such a thing as verification in this field?

For we must remember that no man is directly conscious of any mind except his own. Men cannot exhibit their minds to their neighbors as they exhibit their wigs. However close may seem to us to be our intercourse with those about us, do we ever attain to anything more than our ideas of the contents of their minds? We do not experience these contents; we picture them, we represent them by certain proxies. To be sure, we believe that the originals exist, but can we be quite sure of it? Can there be a proof of this right to make the leap from one consciousness to another? We seem to assume that we can make it, and then we make it again and again; but suppose, after all, that there were nothing there. Could we ever find out our error? And in a field where it is impossible to prove error, must it not be equally impossible to prove truth?

The main idea of the passage is:

- A) to use reasoning to prove that Fichte was right in his views with respect to the unitary nature of self
- B) to highlight the logical blunders committed by Fichte in discussing the self
- C) to raise concerns on the thesis that the self is all that exists
- D) to raise doubts and highlight contrary viewpoints of the topic of the existence of the self alone

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 8**

I suppose there is no man in his sober senses who seriously believes that no other mind than his own exists. There is, to be sure, an imaginary being more or less discussed by those interested in philosophy, a creature called the Solipsist, who is credited with this doctrine. But men do not become solipsists, though they certainly say things now and then that other men think logically lead to some such unnatural view of things; and more rarely they say things that sound as if the speaker, in some moods, at least, might actually harbor such a view.

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In the passage, the word 'inimitable' means

- A) rustic
- B) unrivaled
- C) choleric
- D) irate

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 9**

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According to the information provided in the passage, a 'Solipsist' is someone who believes:

- A) that it is not possible for the rational mind to prove the existence of self
- B) in the limited precepts of life
- C) that the self is all that you know to exist
- D) that multiple minds actually unify to become one

***DIRECTIONS for the question :*** Read the passage and answer the question based on it.

**Question No. : 10**

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bodies are my sensations, may not other men's minds be my imaginings? But doubts may be felt also by those who are willing to admit a real external world. How do we know that our inference to the existence of other minds is a justifiable inference? Can there be such a thing as verification in this field?

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The author of the passage exhibits which of the following in the last paragraph of the passage?

- A) a hint of malice    B) an element of opacity    C) a suggestion of perplexity    D) a modicum of frustration

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 11**

I suppose there is no man in his sober senses who seriously believes that no other mind than his own exists. There is, to be sure, an imaginary being more or less discussed by those interested in philosophy, a creature called the Solipsist, who is credited with this doctrine. But men do not become solipsists, though they certainly say things now and then that other men think logically lead to some such unnatural view of things; and more rarely they say things that sound as if the speaker, in some moods, at least, might actually harbor such a view.

Thus, the philosopher Fichte (1762-1814) talks in certain of his writings as though he believed himself to be the universe, and his words cause Jean Paul Richter, the inimitable, to break out in his characteristic way: "The very worst of it all is the lazy, aimless, aristocratic, insular life that a god must lead; he has no one to go with. If I am not to sit still for all time and eternity, if I let myself down as well as I can and make myself finite, that I may have something in the way of society, still I have, like petty princes, only my own creatures to echo my words. . . . Every being, even the highest Being, wishes something to love and to honor. But the Fichtean doctrine that I am my own body-maker leaves me with nothing whatever--with not so much as the beggar's dog or the prisoner's spider. . . . Truly I wish that there were men, and that I were one of them. . . . If there exists, as I very much fear, no one but myself, unlucky dog that I am, then there is no one at such a pass as I."

Just how much Fichte's words meant to the man who wrote them may be a matter for dispute. Certainly no one has shown a greater moral earnestness or a greater regard for his fellowmen than this philosopher, and we must not hastily accuse any one of being a solipsist. But that to certain men, and, indeed, to many men, there have come thoughts that have seemed to point in this direction--that not a few have had doubts as to their ability to prove the existence of other minds--this we must admit. It appears somewhat easier for a man to have doubts upon this subject when he has fallen into the idealistic error of regarding the material world, which seems to be revealed to him, as nothing else than his "ideas" or "sensations" or "impressions." If we will draw the whole "telephone exchange" into the clerk, there seems little reason for not including all the subscribers as well. If other men's bodies are my sensations, may not other men's minds be my imaginings? But doubts may be felt also by those who are willing to admit a real external world. How do we know that our inference to the existence of other minds is a justifiable inference? Can there be such a thing as verification in this field?

For we must remember that no man is directly conscious of any mind except his own. Men cannot exhibit their minds to their neighbors as they exhibit their wigs. However close may seem to us to be our intercourse with those about us, do we ever attain to anything more than our ideas of the contents of their minds? We do not experience these contents; we picture them, we represent them by certain proxies. To be sure, we believe that the originals exist, but can we be quite sure of it? Can there be a proof of this right to make the leap from one consciousness to another? We seem to assume that we can make it, and then we make it again and again; but suppose, after all, that there were nothing there. Could we ever find out our error? And in a field where it is impossible to prove error, must it not be equally impossible to prove truth?

According to the information given in the passage, Jean Paul Richter's would agree with the statements:

- I. Fichtean doctrine does not account for the social existence of man.
- II. Human beings crave for emotions born out of social interactions.
- III. Men exist only relative to one another.



- A) I & II   B) II & III   C) I & III   D) All of the above

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 12**

I suppose there is no man in his sober senses who seriously believes that no other mind than his own exists. There is, to be sure, an imaginary being more or less discussed by those interested in philosophy, a creature called the Solipsist, who is credited with this doctrine. But men do not become solipsists, though they certainly say things now and then that other men think logically lead to some such unnatural view of things; and more rarely they say things that sound as if the speaker, in some moods, at least, might actually harbor such a view.

Thus, the philosopher Fichte (1762-1814) talks in certain of his writings as though he believed himself to be the universe, and his words cause Jean Paul Richter, the inimitable, to break out in his characteristic way: "The very worst of it all is the lazy, aimless, aristocratic, insular life that a god must lead; he has no one to go with. If I am not to sit still for all time and eternity, if I let myself down as well as I can and make myself finite, that I may have something in the way of society, still I have, like petty princes, only my own creatures to echo my words. . . . Every being, even the highest Being, wishes something to love and to honor. But the Fichtean doctrine that I am my own body-maker leaves me with nothing whatever--with not so much as the beggar's dog or the prisoner's spider. . . . Truly I wish that there were men, and that I were one of them. . . . If there exists, as I very much fear, no one but myself, unlucky dog that I am, then there is no one at such a pass as I."

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According to the author of the passage:

- A) Fichte was a rigid believer in the existence of a society driven by self-motivated individuals
- B) Fichte was a fierce advocate of the thought that no other mind than his own exists
- C) Fichte may or may not have been a strong believer of the thought that no other mind than his own exists
- D) None of the above

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 13**

Most books on English imply in one way or another that our language is superior to all others. In *The English Language*, Robert Burchfield writes: 'As a source of intellectual power and entertainment the whole range of prose writing in English is probably unequalled anywhere else in the world.' I would like to think he's right, but I can't help wondering if Mr. Burchfield would have made the same sweeping assertion had he been born Russian or German or Chinese. There is no reliable way of measuring the quality or efficiency of any language. Yet there are one or two small ways in which English has a demonstrable edge over other languages. For one thing its pronouns are largely, and mercifully, uninflected. In German, if you wish to say you, you must choose

between seven words: du, dich, dir, Sie, Ihnen, ihr, and euch. This can cause immense social anxiety. The composer Richard Strauss and his librettist, Hugo von Hofmannsthal, were partners for twenty-five years and apparently adored each other and yet never quite found the nerve to address each other as anything but the stiff Sie. In English we avoid these problems by relying on just one form: you.

In some languages, questions of familiarity can become quite agonizing. A Korean has to choose between one of six verb suffixes to accord with the status of the person addressed. A speaker of Japanese must equally wend his way through a series of linguistic levels appropriate to the social position of the participants. When he says thank you he must choose between a range of meanings running from the perfunctory *arigato* ("thanks") to the decidedly more humble *makotoni go shinsetsu de gozaimasu*, which means "what you have done or proposed to do is a truly and genuinely kind and generous deed." Above all, English is mercifully free of gender. Anyone who spent much of his or her adolescence miserably trying to remember whether it is "la plume" or "le plume" will appreciate just what a pointless burden, masculine and feminine nouns are to any language. In this regard English is a godsend to students everywhere. Not only have we discarded problems of gender with definite and indefinite articles, we have often discarded the articles themselves. We say in English, "It's time to go to bed," where in most other European languages they must say, "It's *the time* to go to *the* bed." We possess countless examples of pithy phrases—"life is short," "between heaven and earth," "to go to work"—which in other languages require articles.

English also has a commendable tendency toward conciseness, in contrast to many languages. German is full of jaw-crunching words like *Wirtschaftstreuhandgesellschaft* (business trust company), *Bundesbahnangestelltenwitwe* (a widow of a federal railway employee), and *Kriegsgefangenenentschädigungsgesetz* (a law pertaining to war reparations), while in Holland companies commonly have names of forty letters or more, such as Douwe Egberts Koninlijke Tabaksfabriek-Koffiebranderijen-Theehandel Naamloze Vennootschap (literally Douwe Egberts Royal Tobacco Factory- Coffee Roasters-Tea Traders Incorporated). English, in happy contrast, favors crisp truncations: IBM, laser, NATO. Against this, however, there is an occasional tendency in English, particularly in academic and political circles, to resort to waffle and jargon. At a conference of sociologists in America in 1977, love was defined as "the cognitive-affective state characterized by intrusive and obsessive fantasizing concerning reciprocity of amorous feelings by the object of the amoration." That is jargon—the practice of never calling a spade a spade when you might instead call it a manual earth-restructuring implement—and it is one of the great curses of modern English. But perhaps the single most notable characteristic of English—for better and worse—is its deceptive complexity. Nothing in English is ever quite what it seems. Take the simple word *what*. We use it every day—indeed, every few sentences. But imagine trying to explain to a foreigner what *what* means. It takes the *Oxford English Dictionary* five pages and almost 15,000 words to manage the task. As native speakers, we seldom stop to think just how complicated and illogical English is. Every day we use countless words and expressions without thinking about them—often without having the faintest idea what they really describe or signify.

According to the author of the passage:

- A) English is a language that does not easily give in to manipulation and its structure maintains its form under most use-cases.
- B) English is a language of extremes, with jargon and simplicity coexisting and flourishing.
- C) English, by virtue of being a simpleton's method of communication, is inherently uncomplicated.
- D) There is more to English than meets the eye and its assumed simplicity is not something you can take for granted.

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

#### **Question No. : 14**

Most books on English imply in one way or another that our language is superior to all others. In *The English Language*, Robert Burchfield writes: 'As a source of intellectual power and entertainment the whole range of prose writing in English is probably unequalled anywhere else in the world.' I would like to think he's right, but I can't help wondering if Mr. Burchfield would have made the same sweeping assertion had he been born Russian or German or Chinese. There is no reliable way of measuring the quality or efficiency of any language. Yet there are one or two small ways in which English has a demonstrable edge over other languages. For one thing its pronouns are largely, and mercifully, uninflected. In German, if you wish to say you, you must choose between seven words: du, dich, dir, Sie, Ihnen, ihr, and euch. This can cause immense social anxiety. The composer Richard Strauss and his librettist, Hugo von Hofmannsthal, were partners for twenty-five years and apparently adored each other and yet never quite found the nerve to address each other as anything but the stiff Sie. In English we avoid these problems by relying on just one form: you.

In some languages, questions of familiarity can become quite agonizing. A Korean has to choose between one of six verb suffixes to accord with the status of the person addressed. A speaker of Japanese must equally wend his way through a series of linguistic levels appropriate to the social position of the participants. When he says thank you he must choose between a range of meanings running from the perfunctory *arigato* ("thanks") to the decidedly more humble *makotoni go shinsetsu de gozaimasu*, which

means "what you have done or proposed to do is a truly and genuinely kind and generous deed." Above all, English is mercifully free of gender. Anyone who spent much of his or her adolescence miserably trying to remember whether it is "la plume" or "le plume" will appreciate just what a pointless burden, masculine and feminine nouns are to any language. In this regard English is a godsend to students everywhere. Not only have we discarded problems of gender with definite and indefinite articles, we have often discarded the articles themselves. We say in English, "It's time to go to bed," where in most other European languages they must say, "It's *the time* to go to *the* bed." We possess countless examples of pithy phrases—"life is short," "between heaven and earth," "to go to work"—which in other languages require articles.

English also has a commendable tendency toward conciseness, in contrast to many languages. German is full of jaw-crunching words like *Wirtschaftstreuhandgesellschaft* (business trust company), *Bundesbahnangestelltenwitwe* (a widow of a federal railway employee), and *Kriegsgefangenenentschädigungsgesetz* (a law pertaining to war reparations), while in Holland companies commonly have names of forty letters or more, such as Douwe Egberts Koninlijke Tabaksfabriek-Koffiebranderijen-Theehandel Naamloze Vennootschap (literally Douwe Egberts Royal Tobacco Factory- Coffee Roasters-Tea Traders Incorporated). English, in happy contrast, favors crisp truncations: IBM, laser, NATO. Against this, however, there is an occasional tendency in English, particularly in academic and political circles, to resort to waffle and jargon. At a conference of sociologists in America in 1977, love was defined as "the cognitive-affective state characterized by intrusive and obsessive fantasizing concerning reciprocity of amorous feelings by the object of the amoration." That is jargon—the practice of never calling a spade a spade when you might instead call it a manual earth-restructuring implement—and it is one of the great curses of modern English. But perhaps the single most notable characteristic of English—for better and worse—is its deceptive complexity. Nothing in English is ever quite what it seems. Take the simple word *what*. We use it every day—indeed, every few sentences. But imagine trying to explain to a foreigner what "what" means. It takes the *Oxford English Dictionary* five pages and almost 15,000 words to manage the task. As native speakers, we seldom stop to think just how complicated and illogical English is. Every day we use countless words and expressions without thinking about them—often without having the faintest idea what they really describe or signify.

The author of the passage used the example of the word "love" in order to showcase:

- A) The incoherent use of pidgin in English.    B) The complicated use of disparate terminology in English.  
C) The use of vague terminology in English that is difficult for others to understand    D) All of the above

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 15**

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In some languages, questions of familiarity can become quite agonizing. A Korean has to choose between one of six verb suffixes to accord with the status of the person addressed. A speaker of Japanese must equally wend his way through a series of linguistic levels appropriate to the social position of the participants. When he says thank you he must choose between a range of meanings running from the perfunctory *arigato* ("thanks") to the decidedly more humble *makotoni go shinsetsu de gozaimasu*, which means "what you have done or proposed to do is a truly and genuinely kind and generous deed." Above all, English is mercifully free of gender. Anyone who spent much of his or her adolescence miserably trying to remember whether it is "la plume" or "le plume" will appreciate just what a pointless burden, masculine and feminine nouns are to any language. In this regard English is a godsend to students everywhere. Not only have we discarded problems of gender with definite and indefinite articles, we have often discarded the articles themselves. We say in English, "It's time to go to bed," where in most other European languages they must say, "It's *the time* to go to *the* bed." We possess countless examples of pithy phrases—"life is short," "between heaven and earth," "to go to work"—which in other languages require articles.

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commonly have names of forty letters or more, such as Douwe Egberts Koninlijke Tabaksfabriek-Koffiebranderijen-Theehandel Naamloze Vennootschap (literally Douwe Egberts Royal Tobacco Factory- Coffee Roasters-Tea Traders Incorporated). English, in happy contrast, favors crisp truncations: IBM, laser, NATO. Against this, however, there is an occasional tendency in English, particularly in academic and political circles, to resort to waffle and jargon. At a conference of sociologists in America in 1977, love was defined as "the cognitive-affective state characterized by intrusive and obsessive fantasizing concerning reciprocity of amorous feelings by the object of the amoration." That is jargon—the practice of never calling a spade a spade when you might instead call it a manual earth-restructuring implement—and it is one of the great curses of modern English. But perhaps the single most notable characteristic of English—for better and worse—is its deceptive complexity. Nothing in English is ever quite what it seems. Take the simple word *what*. We use it every day—indeed, every few sentences. But imagine trying to explain to a foreigner what *what* means. It takes the *Oxford English Dictionary* five pages and almost 15,000 words to manage the task. As native speakers, we seldom stop to think just how complicated and illogical English is. Every day we use countless words and expressions without thinking about them—often without having the faintest idea what they really describe or signify.

The author of the passage will agree with which of the following statements:

- I. The users of a particular language are prone to extol their own language.
- II. The easy and simplified use of pronouns in English gives it a distinct advantage over other languages.
- III. The English language is thankfully free of the third gender, which leads to uncomplicated use of the language.

A) I & II   B) II & III   C) I & III   D) All of the above

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 16**

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The author sees the succinctness of English as

- A) as a bane when used in conjunction with other languages.    B) as a boon when used in conjunction with other languages.  
C) as a bane in juxtaposition to other languages.    D) as a boon in juxtaposition to other languages.

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 17**

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The tone of the author of the passage can be said to be:

- A) Expounding    B) Carping    C) Critical    D) Denunciatory

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 18**

Most books on English imply in one way or another that our language is superior to all others. In *The English Language*, Robert Burchfield writes: 'As a source of intellectual power and entertainment the whole range of prose writing in English is probably unequalled anywhere else in the world.' I would like to think he's right, but I can't help wondering if Mr. Burchfield would have made the same sweeping assertion had he been born Russian or German or Chinese. There is no reliable way of measuring the quality or efficiency of any language. Yet there are one or two small ways in which English has a demonstrable edge over other languages. For one thing its pronouns are largely, and mercifully, uninflected. In German, if you wish to say you, you must choose between seven words: *du, dich, dir, Sie, Ihnen, ihr, and euch*. This can cause immense social anxiety. The composer Richard Strauss and his librettist, Hugo von Hofmannsthal, were partners for twenty-five years and apparently adored each other and yet never quite found the nerve to address each other as anything but the stiff *Sie*. In English we avoid these problems by relying on just one form: *you*.

In some languages, questions of familiarity can become quite agonizing. A Korean has to choose between one of six verb suffixes to accord with the status of the person addressed. A speaker of Japanese must equally wend his way through a series of linguistic levels appropriate to the social position of the participants. When he says thank you he must choose between a range of meanings running from the perfunctory *arigato* ("thanks") to the decidedly more humble *makotoni go shinsetsu de gozaimasu*, which means "what you have done or proposed to do is a truly and genuinely kind and generous deed." Above all, English is mercifully free of gender. Anyone who spent much of his or her adolescence miserably trying to remember whether it is "la plume" or "le plume" will appreciate just what a pointless burden, masculine and feminine nouns are to any language. In this regard English is a godsend to students everywhere. Not only have we discarded problems of gender with definite and indefinite articles, we have often discarded the articles themselves. We say in English, "It's time to go to bed," where in most other European languages they must say, "It's *the time* to go to *the* bed." We possess countless examples of pithy phrases—"life is short," "between heaven and earth," "to go to work"—which in other languages require articles.

English also has a commendable tendency toward conciseness, in contrast to many languages. German is full of jaw-crunching words like *Wirtschaftstreuhandgesellschaft* (business trust company), *Bundesbahngestelltenwitwe* (a widow of a federal railway employee), and *Kriegsgefangenenentschädigungsgesetz* (a law pertaining to war reparations), while in Holland companies commonly have names of forty letters or more, such as *Douwe Egberts Koninlijke Tabaksfabriek-Koffiebranderijen-Theehandel Naamloze Vennootschap* (literally *Douwe Egberts Royal Tobacco Factory- Coffee Roasters-Tea Traders Incorporated*). English, in happy contrast, favors crisp truncations: *IBM, laser, NATO*. Against this, however, there is an occasional tendency in English, particularly in academic and political circles, to resort to waffle and jargon. At a conference of sociologists in America in 1977, love was defined as "the cognitive-affective state characterized by intrusive and obsessive fantasizing concerning reciprocity of amorous feelings by the object of the amoration." That is jargon—the practice of never calling a spade a spade when you might instead call it a manual earth-restructuring implement—and it is one of the great curses of modern English. But perhaps the single most notable characteristic of English is its deceptive complexity. Nothing in English is ever quite what it seems. Take the simple word *what*. We use it every day—indeed, every few sentences. But imagine trying to explain to a foreigner what *what* means. It takes the *Oxford English Dictionary* five pages and almost 15,000 words to manage the task. As native speakers, we seldom stop to think just how complicated and illogical English is. Every day we use countless words and expressions without thinking about them—often without having the faintest idea what they really describe or signify.

The author of the passage can be said to be:

- A) Demarcating lexical boundaries    B) Highlighting semantic preferences    C) Outlining vernacular influences  
D) Comparing linguistic expediency

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 19**

There are built-in reasons why India's economic growth has not and will not trickle down any time soon. Most of the growth is taking place in the IT-enabled services sector which requires the kind of cultural capital that is not readily available to the masses. Manufacturing makes up only 16 percent of India's GDP, in contrast to 35 % for China. This sector is experiencing a relatively jobless growth due to growing automation and the recent economic downturn. India has also witnessed a massive land-grab by the private sector, aided and abetted by the state in the name of development—a process that has been dubbed "developmental terrorism".

The poor suffer not only from direct dispossession but from neglect and cutbacks in public sector employment. The vast majority eke out a living in the unorganized, or informal, sector. Government's own data shows that 86 percent of India's labor force

was in the unorganized sector, either self-employed or working for wages. The vast army of informal workers has no welfare floor below which they are not allowed to fall, and no exploitation ceiling beyond which they cannot be squeezed. Their relationship with the employers is not regulated by legal contracts but by traditions, enforced by religion and custom.

In the informal economy, the adverse effects of neo-liberalism are felt in an inverse proportion to one's standing in the socio-economic order; those who are lowest in the scale – the Dalits and the Muslims – are the most badly hit. Yet, influential voices are emerging that celebrate market reforms as liberating for Dalits. They call for democratizing capitalism by enabling Dalits to enter the market economy via an American-style affirmative action in the corporate sector. Proponents point to the rising levels of consumption and wages among the Dalits as a result of the tightening of labour markets in some parts of the country as evidence that capitalism is breaking the back of the caste system.

There is only one problem with this vision: it is a fairy tale. In India, capitalism is not dissolving the existing caste relations but rather using them to maintain a vast army of workers. While there might be some local tightening of labour markets, the fact remains that "being a Scheduled Caste" makes a person twice as likely to be a casual labourer in agriculture, and poor.

In many ways Muslims in India are faring much worse than even the Dalits. They are largely self-employed – only 13 percent of the entire Muslim population has salaried jobs. The recent Sachar committee report found that globalization has hit the Muslim worker harder than other communities. Many of the traditional occupations of Muslims in industries such as silk, weaving, leather and garment making have been hurt by cheaper imports from China.

To sum up: the rising tide is not lifting all boats!

*Extract from "The God Market" by Meera Nanda*

As used in the first paragraph, what does the term cultural capital mean?

- A) Experts in scientific fields
- B) Technical knowledge and language skills
- C) Higher education
- D) People from specific cultures and backgrounds

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 20**

There are built-in reasons why India's economic growth has not and will not "trickle down" any time soon. Most of the growth is taking place in the IT-enabled services sector which requires the kind of cultural capital that is not readily available to the masses. Manufacturing makes up only 16 percent of India's GDP, in contrast to 35 % for China. This sector is experiencing a relatively jobless growth due to growing automation and the recent economic downturn. India has also witnessed a massive land-grab by the private sector, aided and abetted by the state in the name of development – a process that has been dubbed "developmental terrorism".

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worker harder than other communities. Many of the traditional occupations of Muslims in industries such as silk, weaving, leather and garment making have been hurt by cheaper imports from China.

To sum up: the rising tide is not lifting all boats!

*Extract from "The God Market" by Meera Nanda*

Referring to the last line of the passage, what measures need to be adopted to lift the boat of the backward castes?

- A) Levy extra taxes on imported goods and incentives to local produce
- B) Make the tax base of the country more broad so that more money can be spent on the poor
- C) An option would be to reduce the cutbacks in the public sector
- D) Make sure that the proportion of people in each sector represents their proportion in the country

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 21**

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To sum up: the rising tide is not lifting all boats!

*Extract from "The God Market" by Meera Nanda*

What data in the passage can be used to refute the argument that the Muslims are not faring well in India?

- A) Muslims are largely self-employed only 13 percent of the entire Muslim population has salaried jobs
- B) The adverse effects are felt in inverse proportion to one's standing in the society
- C) The American Style of affirmative action is lifting the condition of those in the lower strata of society
- D) Data is inadequate to refute the argument

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.



**Question No. : 22**

In most people's minds, yawning is that slow, exaggerated mouth opening with the long, deep inhalation of air, followed by a briefer exhalation is the most obvious sign of sleepiness. It is a common behaviour shared by many animals, including not only our pet dogs and cats but also, crocodiles, snakes, birds, and even some fish. It is certainly true that sleepy people tend to yawn more than wide-awake people. It is also true that people who say they are bored by what is happening at the moment will tend to yawn more frequently. However, whether yawning is a sign that you are getting ready for sleep or that you are successfully fighting off sleep is not known.

Unfortunately, yawns don't just indicate sleepiness. In some animals, yawning is a sign of stress. When a dog-trainer sees a dog yawning in a dog obedience class, it is usually a sign that the animal is under a good deal of pressure. Perhaps the handler is pushing too hard or moving too fast for the dog to feel in control of the situation. A moment or two of play and then turning to another activity is usually enough to banish yawning for quite a while.

Yawning can also be a sign of stress in humans. Once, when observing airborne troops about to take their first parachute jump, I noticed that several of the soldiers were sitting in the plane and yawning. It was 10 A.M., just after a coffee break, and I doubted that they were tired; I knew for a fact that they were far too nervous to be bored. When I asked about this, the officer in charge laughed and said it was really quite a common behaviour, especially on the first jump.

There is also a social aspect to yawning. Psychologists have placed actors in crowded rooms and auditoriums and had them deliberately yawn. Within moments, there is usually an increase in yawning by everyone else in the room. Similarly, people who watch films or videos of others yawning are more likely to yawn. Even just reading about yawning tends to stimulate people to yawn.

The truth of the matter is that we really don't know what purpose yawning serves. Scientists originally thought that the purpose of yawning was to increase the amount of oxygen in the blood or to release some accumulated carbon dioxide. We now know that this is not true, since increasing the concentration of carbon dioxide in the air seems not to increase the likelihood of yawning.

Since yawning seems to be associated with a lot more than the need for sleep, we obviously have to find some other measure of sleepiness. Some researchers have simply tried to ask people how sleepy they feel at any time using some sort of self-rating scale. There are, however, problems with getting people to make these types of judgments. Sometimes people simply lie to the researchers when asked about how sleepy they are. This occurs because in many areas of society admitting that one is fatigued and sleepy is considered a mark of weakness or lack of ambition and drive. In other instances, people may admit they need four cups of coffee to make it through the morning, but it may never occur to them that this might be due to the fact that they are so sleepy that they need stimulation from caffeine to be able to do their required tasks. For these reasons, many researchers have developed an alternate method to determine how sleepy a person is. It is based upon a simple definition of sleep need: The greater your sleep need, or the sleepier you are, the faster you will fall asleep if given the opportunity to do so.

What is the primary purpose of the passage?

- A) To refute the claim that yawning increases the amount of oxygen in the blood
- B) To challenge the assertion that yawning indicates stress and boredom
- C) To determine whether yawning is an effective measure of sleepiness
- D) To illustrate that yawns are signs of something more than just sleepiness

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**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 23**

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At the beginning of the last paragraph the author tries to

- A) Deviate from the topic under discussion
- B) Evaluate the findings in the earlier paragraphs
- C) Accepts a drawback to an approach mentioned in the previous paragraph
- D) Brings the discussion back to a problem mentioned earlier in the passage

**DIRECTIONS for the question :** Read the passage and answer the question based on it.

**Question No. : 24**

In most people's minds, yawning " that slow, exaggerated mouth opening with the long, deep inhalation of air, followed by a briefer exhalation " is the most obvious sign of sleepiness. It is a common behaviour shared by many animals, including not only our pet dogs and cats but also, crocodiles, snakes, birds, and even some fish. It is certainly true that sleepy people tend to yawn more than wide-awake people. It is also true that people who say they are bored by what is happening at the moment will tend to yawn more frequently. However, whether yawning is a sign that you are getting ready for sleep or that you are successfully fighting off sleep is not known.

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The author uses all of the following to put forth his views, except

- A) An anecdote   B) Illustration   C) Comparison   D) Understatement

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**DIRECTIONS for the question:** 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 sentence and key in this sequence of four numbers as your answer.

**Question No. : 25**

1. It is all too easy to underestimate the role played by the humble index, and its more elaborate variants, in the history of human knowledge.
2. There is a terrific book to be written on the history of alphabetical order, for example, which is sketched out here by Lynch in an all too tantalizing three pages.
3. In his delightful new history, subtitled The reference shelf from ancient Babylon to Wikipedia, Jack Lynch neatly defines the "reference work" as a text designed for users rather than readers: plenty of people read Herodotus straight through (and so should you), but no one has ever read Powell's Lexicon from cover to cover.
4. Concordances are among the simplest life forms in the rich and complex phylum of reference works "dictionaries, encyclopedias, atlases and so forth.

- A) 4312   B)   C)   D)

**DIRECTIONS for question:** Four sentences related to a topic are given below. Three 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.

**Question No. : 26**

1. This moment of anticipation is like the calm that settles after all hopes have died.
2. On the level of historical insight and political thought there prevails an ill-defined, general agreement that the essential structure of all civilisations is at breaking point.
3. Two world wars in one generation, separated by an uninterrupted chain of local wars and revolutions, followed by no peace treaty for the vanquished and no respite for the victor, have ended in the anticipation of a third world war between the two remaining world powers.
4. We no longer hope for an eventual restoration of the old world order with all its traditions, or for the reintegration of the masses of five continents who have been thrown into a chaos produced by the violence of wars and revolutions and the growing decay of all that has still been spared.

- A) 2   B)   C)   D)

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**DIRECTIONS for question:** Four sentences related to a topic are given below. Three 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.

**Question No. : 27**

1. But to read or listen to his speeches today is disconcerting: how could anyone have taken seriously such stogy bellowing and preposterous ideas?
2. The discovery of this gift of rhetoric, and the techniques to intensify its impact, set Hitler on his way.
3. What we are missing now is not only the desperation and paranoia which his early audiences brought with them into the beer cellar or the stadium, but the tricks of Hitler's trade.
4. Hitler had an excellent voice, and his harsh "Austrian" (actually Lower Bavarian) accent seems to have given North Germans an impression of sincerity rather than provincial uncouthness.

A) 2 B) C) D)

**DIRECTIONS for question:** Four sentences related to a topic are given below. Three 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.

**Question No. : 28**

1. As the theorist Walter J Ong pointed out in *Orality and Literacy: Technologizing the Word* (1982), it is difficult, perhaps even impossible, now to imagine how differently language would have been experienced in a culture of "primary orality".
2. A poet, somewhere in Siberia, or the Balkans, or West Africa, some time in the past 60,000 years, recites thousands of memorised lines in the course of an evening.
3. The bard is not concerned with originality, but with intonation and delivery: he or she is perfectly attuned to the circumstances of the day, and to the mood and expectations of his or her listeners.
4. The lines are packed with fixed epithets and clichés.

A) 1 B) C) D)

**DIRECTIONS for question:** Four sentences related to a topic are given below. Three 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.

**Question No. : 29**

1. Those changes in sensibility and consciousness never correspond exactly with changes in technology, and many aspects of today's digital world were already taking shape before the age of the personal computer and the smartphone.
2. But the digital revolution suddenly increased the rate and scale of change in almost everyone's lives.
3. Every technological revolution coincides with changes in what it means to be a human being, in the kinds of psychological borders that divide the inner life from the world outside.
4. Virginia Woolf's serious joke that "œon or about December 1910 human character changed" was a hundred years premature.

A) 4 B) C) D)

**DIRECTIONS for the question:** Identify the most appropriate summary for the paragraph and write the key for most appropriate option.

**Question No. : 30**

Young people today are very reluctant to assume that anything is certain, and this reluctance is revealed in their language. In any matter where there might be disagreement, they will put a question mark at the end of the sentence. And to reinforce the posture of neutrality they will insert words that function as disclaimers, among which the favourite is "like". You might be adamant that the Earth is spherical, but they will suggest instead that the Earth is, "like, spherical". Whence came this ubiquitous hesitation? As I understand the matter, it has much to do with the new ideology of non-discrimination. Modern education aims to be "inclusive", and that means not sounding too certain about anything in case you make people who don't share your beliefs feel uncomfortable. Indeed, even calling them "beliefs" is slightly suspect. The correct word is "opinions".

1. Having beliefs and expressing them noticeably is no longer supported and the contagion is spreading.
2. Having beliefs and expressing them unreservedly is no longer endured and the infectivity is spreading.
3. Having beliefs and expressing them liberally is no longer appreciated and the contagion is spreading.
4. Having beliefs and expressing them generously is no longer permitted and the contamination is spreading.

A) 3 B) C) D)

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

**Question No. : 31**

1. Without the distribution and manufacturing efficiencies of the modern age, without the toll-free numbers and express delivery and bar codes and scanners and, above all, computer, the choices would not be multiplying like this.
2. Everywhere you turn, someone is offering advice on things like which of the thousands of mutual funds to buy.
3. Consumer psychologists say this sea of choices is driving us bonkers.
4. Or the right MBA program from among hundreds of business schools.
5. Superior performance in this competitive world is all about mastering business basics.

A) 24315 B) C) D)

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

**Question No. : 32**

1. A large majority of these school dropouts have limited access to vocational training or any form of skill development program as there are just about 2.5 to 3 million seats for such education.
2. For instance, hardly 5% of 20-24 year olds of our workforce has received any form of vocational training compared to 60-80% in developed countries.
3. The level of educated among the existing workforce is low and on the other hand the educated without professional skills is high.
4. Thus, in view of the working age population which is expected to grow by more than 47 million by 2020, equipping this ever-growing workforce with appropriate skills and knowledge and harnessing their potential as human capital is the need of the hour.
5. Significantly, while 200 million students enrol for primary education, only 20 million are able to finish class 12.

A) 32514 B) C) D)

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

**Question No. : 33**

1. Prokaryotic sex, on the other hand, is infrequent and inefficient.
2. The creative process of natural selection works by preserving favorable genetic variants from an extensive pool.
3. Major evolutionary change cannot occur unless organisms maintain a large store of genetic variability.
4. Sex can provide variation on this scale, but efficient sexual reproduction requires the packaging of genetic material into discrete units.
5. Thus, in eukaryotes, sex cells have half the chromosomes of normal body cells and when two cells join to produce an offspring, the original amount of genetic material is restored.

A) 32451 B) C) D)

**DIRECTIONS for question:** Four sentences related to a topic are given below. Three 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.

**Question No. : 34**

1. Medieval alchemists hunted in vain for the rejuvenating Philosophers' Stone; industrial-age quacks got rich off their patent elixirs
2. Most religions offer an attenuated version of immortality in which some fuzzily defined soul endures even after the body has

died

3. Many explanations have been offered and discarded to explain the power of dieting

4. For as long as people have been growing old, theyâ€™ve been wishing they didnâ€™t have to

A) 3 B) C) D)

### Section : DI & Logical Reasoning

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

#### Question No. : 35

A school prefect has been assigned the task of completing the details of 12 students of the school who are going to participate in some inter school competitions at the state level. Some information about these students is shown in the table given below. The students participate in different activities and have been allotted different groups (called houses) for their activities.

It is known that 3 students have been selected from each group.

There are four floors in the school with classes on each floor given as:

First floor: Classes 3<sup>rd</sup>, 2<sup>nd</sup>, 1<sup>st</sup>

Second floor: Classes 6<sup>th</sup>, 5<sup>th</sup>, 4<sup>th</sup>

Third floor: Classes 9<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>

Fourth floor: Classes 12<sup>th</sup>, 11<sup>th</sup>, 10<sup>th</sup>

Student	Group	Sport	Cultural	Floor
R	-	TABLE TENNIS	-	THIRD
O	JOY	BASKET BALL	-	SECOND
X	-	-	DEBATE	SECOND
N	-	FOOTBALL	THEATRE	FIRST
T	-	BASKET BALL	THEATRE	THIRD
M	-	-	DEBATE	FOURTH
P	JOY	HOCKEY	-	SECOND
U	-	FOOTBALL	CHOIR	FIRST
Q	-	TABLE TENNIS	THEATRE	THIRD
Y	-	BASKET BALL	-	FOURTH
W	LOVE	HOCKEY	DEBATE	THIRD
V	PEACE	FOOTBALL	DANCE	FIRST

#### Additional Information:

- The two table tennis players have consecutive classes on the third floor. They participate in dance and theatre.
- Both students from 6<sup>th</sup> class are in debate group.
- Another student from eighth is in Joy house and participates in theatre. Maximum participation is from 8<sup>th</sup> class.
- All three hockey players are in the debate team which has four members.
- Students from the first floor do not participate in debate.
- The 8<sup>th</sup> class student who plays basketball is in Joy house.
- Out of the four football players no one has a class on the third or fourth floor. The football player on the second floor is in 6<sup>th</sup> class.
- Two of the basketball players participate in dance, while one is in 4<sup>th</sup> class the other is in 12<sup>th</sup> class.
- There are no students from three consecutive classes.
- The only student from seventh is in purity house and participates in dance.

k. Two of the hockey players are in love house.

l. The student from peace house who plays football is in 1<sup>st</sup> class. The other football players are in purity house or love house.

m. The only student for choir is in love house.

Among the following which students are in class 8<sup>th</sup>?

A) Q, R, W    B) R, T, Q    C) W, Q, T    D) Can't be determined

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 36**

A school prefect has been assigned the task of completing the details of 12 students of the school who are going to participate in some inter school competitions at the state level. Some information about these students is shown in the table given below. The students participate in different activities and have been allotted different groups (called houses) for their activities.

It is known that 3 students have been selected from each group.

There are four floors in the school with classes on each floor given as:

First floor: Classes 3<sup>rd</sup>, 2<sup>nd</sup>, 1<sup>st</sup>

Second floor: Classes 6<sup>th</sup>, 5<sup>th</sup>, 4<sup>th</sup>

Third floor: Classes 9<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>

Fourth floor: Classes 12<sup>th</sup>, 11<sup>th</sup>, 10<sup>th</sup>

Student	Group	Sport	Cultural	Floor
R	-	TABLE TENNIS	-	THIRD
O	JOY	BASKET BALL	-	SECOND
X	-	-	DEBATE	SECOND
N	-	FOOTBALL	THEATRE	FIRST
T	-	BASKET BALL	THEATRE	THIRD
M	-	-	DEBATE	FOURTH
P	JOY	HOCKEY	-	SECOND
U	-	FOOTBALL	CHOIR	FIRST
Q	-	TABLE TENNIS	THEATRE	THIRD
Y	-	BASKET BALL	-	FOURTH
W	LOVE	HOCKEY	DEBATE	THIRD
V	PEACE	FOOTBALL	DANCE	FIRST

**Additional Information:**

a. The two table tennis players have consecutive classes on the third floor. They participate in dance and theatre.

b. Both students from 6<sup>th</sup> class are in debate group.

c. Another student from eighth is in Joy house and participates in theatre. Maximum participation is from 8<sup>th</sup> class.

d. All three hockey players are in the debate team which has four members.

e. Students from the first floor do not participate in debate.

f. The 8<sup>th</sup> class student who plays basketball is in Joy house.

g. Out of the four football players no one has a class on the third or fourth floor. The football player on the second floor is in 6<sup>th</sup> class.

h. Two of the basketball players participate in dance, while one is in 4<sup>th</sup> class the other is in 12<sup>th</sup> class.

i. There are no students from three consecutive classes.

j. The only student from seventh is in purity house and participates in dance.

k. Two of the hockey players are in love house.

l. The student from peace house who plays football is in 1<sup>st</sup> class. The other football players are in purity house or love house.  
 m. The only student for choir is in love house.

Which are the three consecutive classes from which there are no participating students?

- A) 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>    B) 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>    C) 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>    D) 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 37**

A school prefect has been assigned the task of completing the details of 12 students of the school who are going to participate in some inter school competitions at the state level. Some information about these students is shown in the table given below. The students participate in different activities and have been allotted different groups (called houses) for their activities.

It is known that 3 students have been selected from each group.  
 There are four floors in the school with classes on each floor given as:

- First floor: Classes 3<sup>rd</sup>, 2<sup>nd</sup>, 1<sup>st</sup>  
 Second floor: Classes 6<sup>th</sup>, 5<sup>th</sup>, 4<sup>th</sup>  
 Third floor: Classes 9<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>  
 Fourth floor: Classes 12<sup>th</sup>, 11<sup>th</sup>, 10<sup>th</sup>

Student	Group	Sport	Cultural	Floor
R	-	TABLE TENNIS	-	THIRD
O	JOY	BASKET BALL	-	SECOND
X	-	-	DEBATE	SECOND
N	-	FOOTBALL	THEATRE	FIRST
T	-	BASKET BALL	THEATRE	THIRD
M	-	-	DEBATE	FOURTH
P	JOY	HOCKEY	-	SECOND
U	-	FOOTBALL	CHOIR	FIRST
Q	-	TABLE TENNIS	THEATRE	THIRD
Y	-	BASKET BALL	-	FOURTH
W	LOVE	HOCKEY	DEBATE	THIRD
V	PEACE	FOOTBALL	DANCE	FIRST

**Additional Information:**

- The two table tennis players have consecutive classes on the third floor. They participate in dance and theatre.
- Both students from 6<sup>th</sup> class are in debate group.
- Another student from eighth is in Joy house and participates in theatre. Maximum participation is from 8<sup>th</sup> class.
- All three hockey players are in the debate team which has four members.
- Students from the first floor do not participate in debate.
- The 8<sup>th</sup> class student who plays basketball is in Joy house.
- Out of the four football players no one has a class on the third or fourth floor. The football player on the second floor is in 6<sup>th</sup> class.
- Two of the basketball players participate in dance, while one is in 4<sup>th</sup> class the other is in 12<sup>th</sup> class.
- There are no students from three consecutive classes.
- The only student from seventh is in purity house and participates in dance.
- Two of the hockey players are in love house.
- The student from peace house who plays football is in 1<sup>st</sup> class. The other football players are in purity house or love house.



m. The only student for choir is in love house.

Student Y is in which house and participates in which cultural activity?

A) Love, dance B) Joy, theatre C) Purity, theatre D) Peace, dance

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 38**

A school prefect has been assigned the task of completing the details of 12 students of the school who are going to participate in some inter school competitions at the state level. Some information about these students is shown in the table given below. The students participate in different activities and have been allotted different groups (called houses) for their activities.

It is known that 3 students have been selected from each group.  
There are four floors in the school with classes on each floor given as:

First floor: Classes 3<sup>rd</sup>, 2<sup>nd</sup>, 1<sup>st</sup>

Second floor: Classes 6<sup>th</sup>, 5<sup>th</sup>, 4<sup>th</sup>

Third floor: Classes 9<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>

Fourth floor: Classes 12<sup>th</sup>, 11<sup>th</sup>, 10<sup>th</sup>

Student	Group	Sport	Cultural	Floor
R	-	TABLE TENNIS	-	THIRD
O	JOY	BASKET BALL	-	SECOND
X	-	-	DEBATE	SECOND
N	-	FOOTBALL	THEATRE	FIRST
T	-	BASKET BALL	THEATRE	THIRD
M	-	-	DEBATE	FOURTH
P	JOY	HOCKEY	-	SECOND
U	-	FOOTBALL	CHOIR	FIRST
Q	-	TABLE TENNIS	THEATRE	THIRD
Y	-	BASKET BALL	-	FOURTH
W	LOVE	HOCKEY	DEBATE	THIRD
V	PEACE	FOOTBALL	DANCE	FIRST

**Additional Information:**

- a. The two table tennis players have consecutive classes on the third floor. They participate in dance and theatre.
- b. Both students from 6<sup>th</sup> class are in debate group.
- c. Another student from eighth is in Joy house and participates in theatre. Maximum participation is from 8<sup>th</sup> class.
- d. All three hockey players are in the debate team which has four members.
- e. Students from the first floor do not participate in debate.
- f. The 8<sup>th</sup> class student who plays basketball is in Joy house.
- g. Out of the four football players no one has a class on the third or fourth floor. The football player on the second floor is in 6<sup>th</sup> class.
- h. Two of the basketball players participate in dance, while one is in 4<sup>th</sup> class the other is in 12<sup>th</sup> class.
- i. There are no students from three consecutive classes.
- j. The only student from seventh is in purity house and participates in dance.
- k. Two of the hockey players are in love house.
- l. The student from peace house who plays football is in 1<sup>st</sup> class. The other football players are in purity house or love house.
- m. The only student for choir is in love house.

Which of the following students are in peace house?

A) R, X, V   B) Q, Y, V   C) M, Y, V   D) N, T, V

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 39**

Table A shows the number of hits scored by leading male actors of the Bollywood film industry in the past 5 years. Table B gives data on who were leading ladies in each of these hit films. The data for the four established actresses is given separately, while the hits of all the other heroines are clubbed under the head "Others".

Table A	Year				
	Actors	2000	2001	2002	2003
SRK	1	0	2	1	1
VO	1	2	0	0	1
AK	0	0	1	1	0
HR	0	1	1	0	1
SK	1	0	1	0	1

Table B	Year				
	Actresses	2000	2001	2002	2003
AR	2	0	1	0	1
RM	1	1	0	1	0
PZ	0	1	1	1	0
MD	0	1	0	0	1
OTHERS	0	0	3	0	2

**Note:**

AR and SK have vowed never to work together in a film. Also PZ has not yet worked with VO. Among the four established actresses, AK only works with RM. All of SRK's hits in the past 5 years have been with only two actresses. VO only works with established actresses.

In 2002, SRK's two hits have been with

A) AR & PZ   B) AR & others   C) PZ & others   D) RM & MD

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 40**

Table A shows the number of hits scored by leading male actors of the Bollywood film industry in the past 5 years. Table B gives data on who were leading ladies in each of these hit films. The data for the four established actresses is given separately, while the hits of all the other heroines are clubbed under the head "Others".

Table A	Year				
	Actors	2000	2001	2002	2003
SRK	1	0	2	1	1

VO	1	2	0	0	1
AK	0	0	1	1	0
HR	0	1	1	0	1
SK	1	0	1	0	1

Table B	Year				
	Actresses	2000	2001	2002	2003
AR	2	0	1	0	1
RM	1	1	0	1	0
PZ	0	1	1	1	0
MD	0	1	0	0	1
OTHERS	0	0	3	0	2

**Note:**

AR and SK have vowed never to work together in a film. Also PZ has not yet worked with VO.

Among the four established actresses, AK only works with RM.

All of SRK's hits in the past 5 years have been with only two actresses.

VO only works with established actresses.

MD's two hits in the past 5 years have been with

A) VO and SK   B) VO only   C) VO and SRK   D) VO and HR

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 41**

Table A shows the number of hits scored by leading male actors of the Bollywood film industry in the past 5 years. Table B gives data on who were leading ladies in each of these hit films. The data for the four established actresses is given separately, while the hits of all the other heroines are clubbed under the head "Others".

Table A	Year				
	Actors	2000	2001	2002	2003
SRK	1	0	2	1	1
VO	1	2	0	0	1
AK	0	0	1	1	0
HR	0	1	1	0	1
SK	1	0	1	0	1

Table B	Year				
	Actresses	2000	2001	2002	2003
AR	2	0	1	0	1
RM	1	1	0	1	0
PZ	0	1	1	1	0

MD	0	1	0	0	1
OTHERS	0	0	3	0	2

**Note:**

AR and SK have vowed never to work together in a film. Also PZ has not yet worked with VO. Among the four established actresses, AK only works with RM. All of SRK's hits in the past 5 years have been with only two actresses. VO only works with established actresses.

HR's hits have been with

- A) RM & AR   B) RM & PZ   C) Others & PZ   D) MD & AR

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 42**

Table A shows the number of hits scored by leading male actors of the Bollywood film industry in the past 5 years. Table B gives data on who were leading ladies in each of these hit films. The data for the four established actresses is given separately, while the hits of all the other heroines are clubbed under the head "Others".

Table A	Year				
	Actors	2000	2001	2002	2003
SRK	1	0	2	1	1
VO	1	2	0	0	1
AK	0	0	1	1	0
HR	0	1	1	0	1
SK	1	0	1	0	1

Table B	Year				
	Actresses	2000	2001	2002	2003
AR	2	0	1	0	1
RM	1	1	0	1	0
PZ	0	1	1	1	0
MD	0	1	0	0	1
OTHERS	0	0	3	0	2

**Note:**

AR and SK have vowed never to work together in a film. Also PZ has not yet worked with VO. Among the four established actresses, AK only works with RM. All of SRK's hits in the past 5 years have been with only two actresses. VO only works with established actresses.

Which actor/actors had the highest number of hits with "other" actresses?

- A) AK   B) HR   C) HR & SK   D) SK

**Question No. : 43**

**DIRECTIONS for the question:** Refer to the following information and answer the question given below.

5 girls, Tanushree, Amisha, Raveena, Preeti and Nandita, are sitting in the first row in a mathematics class. Each girl has a favourite chocolate bar (Dairy Milk, Perk, Bournville, Kit Kat and Crackle), a favourite colour (green, lilac, pink, blue and purple), a pet (cat, horse, puppy, rabbit and parrot), a favourite sport (swimming, badminton, horse riding, tennis and hockey), and would like to holiday at a certain place (Singapore, Maldives, Hong Kong, Canada and Australia). The teacher, sitting in the last row provides additional information about the positions of the girls and about what they like.

Tanushree likes Bournville.

The girl who owns the cat likes swimming.

Amisha eats Dairy Milk.

Raveena is on immediate right of Preeti.

Nandita is the first girl on the left.

The first girl on the right likes swimming.

The girl who eats Perk owns a horse.

The girl in the middle eats Dairy Milk.

Raveena likes green.

The girl who wants to go to Singapore sits next to the girl who sits in the middle.

The girl who wants to go to Maldives likes lilac.

The girl who likes Bournville sits next to the girl who wants to go to Hong Kong.

The girl who likes pink wants to go to Hong Kong.

The girl who sits first on the left likes lilac.

The girl who likes blue owns the puppy.

The girl who likes badminton sits next to the girl who has the cat.

The girl on the right of the girl who likes tennis likes horse riding.

The girl next to the girl who likes Perk likes Kit Kat.

The girl who likes purple wants to go to Canada.

The girl who likes Crackle owns the rabbit.

The girl who likes badminton sits next to the girl who plays hockey.

Raveena wants to go to Australia

The girl who likes \_\_\_\_\_ owns the parrot.

A) lilac B) purple C) hockey D) horse riding

#### **Question No. : 44**

**DIRECTIONS for the question:** Refer to the following information and answer the question given below.

5 girls, Tanushree, Amisha, Raveena, Preeti and Nandita, are sitting in the first row in a mathematics class. Each girl has a favourite chocolate bar (Dairy Milk, Perk, Bournville, Kit Kat and Crackle), a favourite colour (green, lilac, pink, blue and purple), a pet (cat, horse, puppy, rabbit and parrot), a favourite sport (swimming, badminton, horse riding, tennis and hockey), and would like to holiday at a certain place (Singapore, Maldives, Hong Kong, Canada and Australia). The teacher, sitting in the last row provides additional information about the positions of the girls and about what they like.

Tanushree likes Bournville.

The girl who owns the cat likes swimming.

Amisha eats Dairy Milk.

Raveena is on immediate right of Preeti.

Nandita is the first girl on the left.

The first girl on the right likes swimming.

The girl who eats Perk owns a horse.

The girl in the middle eats Dairy Milk.

Raveena likes green.

The girl who wants to go to Singapore sits next to the girl who sits in the middle.

The girl who wants to go to Maldives likes lilac.

The girl who likes Bournville sits next to the girl who wants to go to Hong Kong.

The girl who likes pink wants to go to Hong Kong.

The girl who sits first on the left likes lilac.

The girl who likes blue owns the puppy.

The girl who likes badminton sits next to the girl who has the cat.  
The girl on the right of the girl who likes tennis likes horse riding.  
The girl next to the girl who likes Perk likes Kit Kat.  
The girl who likes purple wants to go to Canada.  
The girl who likes Crackle owns the rabbit.  
The girl who likes badminton sits next to the girl who plays hockey.  
Raveena wants to go to Australia

The girl who wants to holiday in Singapore \_\_\_\_\_.

A) likes Bournville   B) likes tennis   C) likes purple   D) owns the cat

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**Question No. : 45**

**DIRECTIONS for the question:** Refer to the following information and answer the question given below.

5 girls, Tanushree, Amisha, Raveena, Preeti and Nandita, are sitting in the first row in a mathematics class. Each girl has a favourite chocolate bar (Dairy Milk, Perk, Bournville, Kit Kat and Crackle), a favourite colour (green, lilac, pink, blue and purple), a pet (cat, horse, puppy, rabbit and parrot), a favourite sport (swimming, badminton, horse riding, tennis and hockey), and would like to holiday at a certain place (Singapore, Maldives, Hong Kong, Canada and Australia). The teacher, sitting in the last row provides additional information about the positions of the girls and about what they like.

Tanushree likes Bournville.  
The girl who owns the cat likes swimming.  
Amisha eats Dairy Milk.  
Raveena is on immediate right of Preeti.  
Nandita is the first girl on the left.  
The first girl on the right likes swimming.  
The girl who eats Perk owns a horse.  
The girl in the middle eats Dairy Milk.  
Raveena likes green.  
The girl who wants to go to Singapore sits next to the girl who sits in the middle.  
The girl who wants to go to Maldives likes lilac.  
The girl who likes Bournville sits next to the girl who wants to go to Hong Kong.  
The girl who likes pink wants to go to Hong Kong.  
The girl who sits first on the left likes lilac.  
The girl who likes blue owns the puppy.  
The girl who likes badminton sits next to the girl who has the cat.  
The girl on the right of the girl who likes tennis likes horse riding.  
The girl next to the girl who likes Perk likes Kit Kat.  
The girl who likes purple wants to go to Canada.  
The girl who likes Crackle owns the rabbit.  
The girl who likes badminton sits next to the girl who plays hockey.  
Raveena wants to go to Australia

The girl who likes horse riding sits next to the girl who \_\_\_\_\_.

A) likes Dairy Milk   B) likes badminton   C) likes green   D) owns the horse

**Question No. : 46**

**DIRECTIONS for the question:** Refer to the following information and answer the question given below.

5 girls, Tanushree, Amisha, Raveena, Preeti and Nandita, are sitting in the first row in a mathematics class. Each girl has a favourite chocolate bar (Dairy Milk, Perk, Bournville, Kit Kat and Crackle), a favourite colour (green, lilac, pink, blue and purple), a pet (cat, horse, puppy, rabbit and parrot), a favourite sport (swimming, badminton, horse riding, tennis and hockey), and would like to holiday at a certain place (Singapore, Maldives, Hong Kong, Canada and Australia). The teacher, sitting in the last row provides additional information about the positions of the girls and about what they like.

Tanushree likes Bournville.  
 The girl who owns the cat likes swimming.  
 Amisha eats Dairy Milk.  
 Raveena is on immediate right of Preeti.  
 Nandita is the first girl on the left.  
 The first girl on the right likes swimming.  
 The girl who eats Perk owns a horse.  
 The girl in the middle eats Dairy Milk.  
 Raveena likes green.  
 The girl who wants to go to Singapore sits next to the girl who sits in the middle.  
 The girl who wants to go to Maldives likes lilac.  
 The girl who likes Bournville sits next to the girl who wants to go to Hong Kong.  
 The girl who likes pink wants to go to Hong Kong.  
 The girl who sits first on the left likes lilac.  
 The girl who likes blue owns the puppy.  
 The girl who likes badminton sits next to the girl who has the cat.  
 The girl on the right of the girl who likes tennis likes horse riding.  
 The girl next to the girl who likes Perk likes Kit Kat.  
 The girl who likes purple wants to go to Canada.  
 The girl who likes Crackle owns the rabbit.  
 The girl who likes badminton sits next to the girl who plays hockey.  
 Raveena wants to go to Australia

Which of the following statements are not true?

- I. Amisha owns the parrot.    II. Nandita likes Crackle.  
 III. Preeti owns the puppy.    IV. Raveena like Perk.

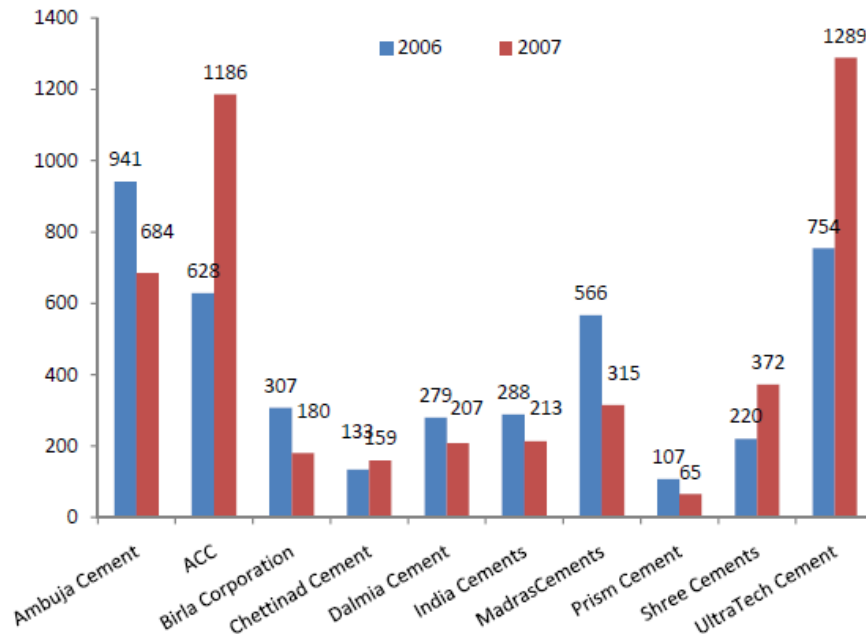
- A) I and II    B) I, II and III    C) III and IV    D) II, III and IV

**Question No. : 47**

**DIRECTIONS for the question:** Analyse the graph/s given below and answer the question that follows.

The table below shows the Revenue and Net Profit for different companies in 2006 and 2007 while the bar graph shows the amount of taxes paid by these companies over the two years. Gross profit is calculated as Revenue less Operating Costs and 30% of Gross Profit is deducted as Taxes to arrive at Net Profit. All values are in Rs. Crore.

	2006		2007	
	Revenue	Net Profit	Revenue	Net Profit
<b>Ambuja Cements</b>	6274	2196	5704	1597
<b>ACC</b>	5984	1466	7189	2768
<b>Birla Corporation</b>	2049	717	1996	419
<b>Chettinad Cement</b>	1110	311	1322	370
<b>Dalmia Cement</b>	1692	651	1973	483
<b>India Cements</b>	3839	672	3554	498
<b>Madras Cements</b>	2905	1322	2335	736
<b>Prism Cement</b>	1021	250	722	152
<b>Shree Cements</b>	2440	512	3097	867
<b>UltraTech Cement</b>	6286	1760	7160	3007
<b>Total</b>	<b>33600</b>	<b>9858</b>	<b>35052</b>	<b>10897</b>



For which of the following companies was the total Operating Cost for the two years greater than 70% of the total revenue for the two years?

- A) Birla Corporation    B) India Cement    C) UltraTech Cement    D) Chettinad Cement

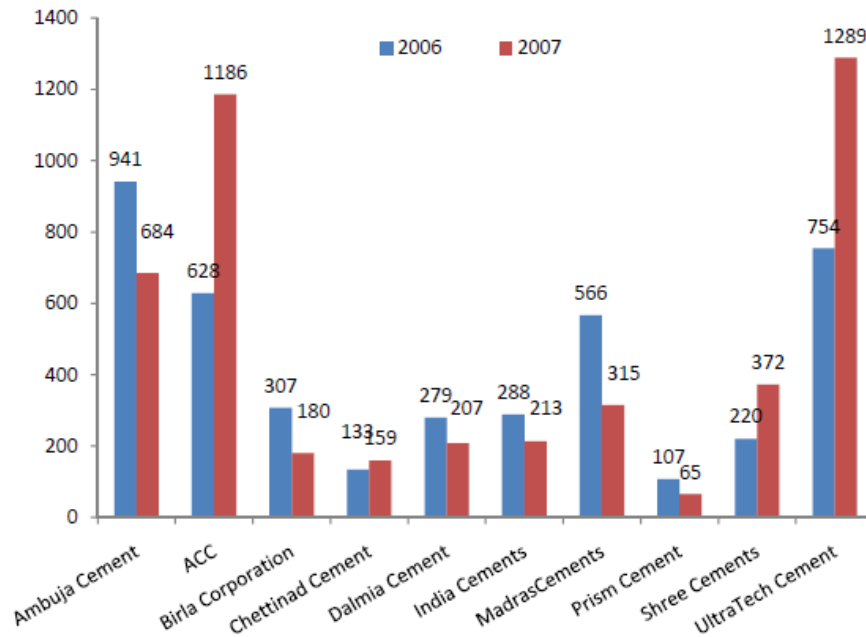
**DIRECTIONS for the question:** Analyse the graph/s given below and answer the question that follows.

**Question No. : 48**

The table below shows the Revenue and Net Profit for different companies in 2006 and 2007 while the bar graph shows the amount of taxes paid by these companies over the two years. Gross profit is calculated as Revenue less Operating Costs and 30% of Gross Profit is deducted as Taxes to arrive at Net Profit. All values are in Rs. Crore.

	2006		2007	
	Revenue	Net Profit	Revenue	Net Profit
<b>Ambuja Cements</b>	6274	2196	5704	1597
<b>ACC</b>	5984	1466	7189	2768
<b>Birla Corporation</b>	2049	717	1996	419
<b>Chettinad Cement</b>	1110	311	1322	370
<b>Dalmia Cement</b>	1692	651	1973	483
<b>India Cements</b>	3839	672	3554	498
<b>Madras Cements</b>	2905	1322	2335	736
<b>Prism Cement</b>	1021	250	722	152
<b>Shree Cements</b>	2440	512	3097	867
<b>UltraTech Cement</b>	6286	1760	7160	3007
<b>Total</b>	<b>33600</b>	<b>9858</b>	<b>35052</b>	<b>10897</b>





For all the companies together, the total Gross Profit over the two years was approximately what percent of the total Revenue over the two years? (in percentage, the nearest integer)

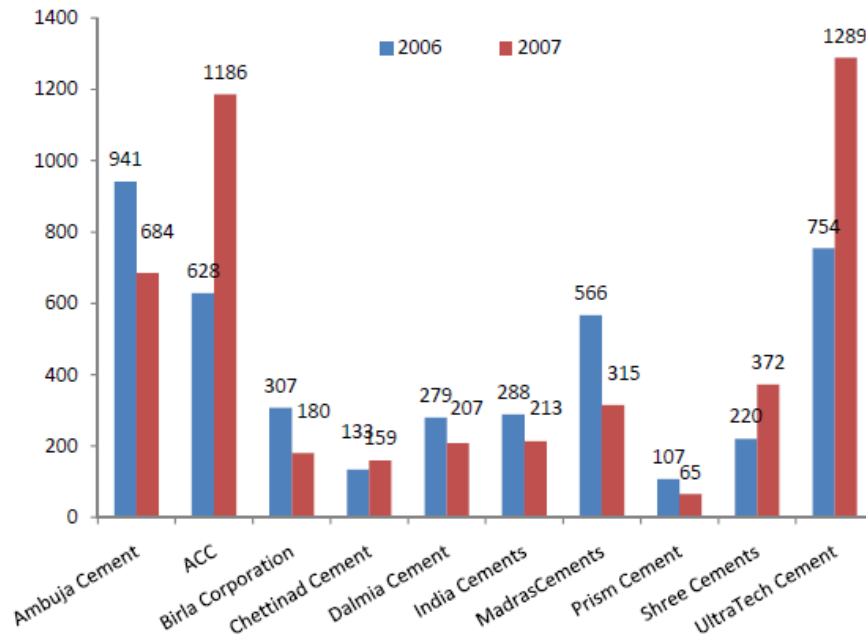
- A) 43 B) C) D)

**DIRECTIONS for the question:** Analyse the graph/s given below and answer the question that follows.

**Question No. : 49**

The table below shows the Revenue and Net Profit for different companies in 2006 and 2007 while the bar graph shows the amount of taxes paid by these companies over the two years. Gross profit is calculated as Revenue less Operating Costs and 30% of Gross Profit is deducted as Taxes to arrive at Net Profit. All values are in Rs. Crore.

	2006		2007	
	Revenue	Net Profit	Revenue	Net Profit
<b>Ambuja Cements</b>	6274	2196	5704	1597
<b>ACC</b>	5984	1466	7189	2768
<b>Birla Corporation</b>	2049	717	1996	419
<b>Chettinad Cement</b>	1110	311	1322	370
<b>Dalmia Cement</b>	1692	651	1973	483
<b>India Cements</b>	3839	672	3554	498
<b>Madras Cements</b>	2905	1322	2335	736
<b>Prism Cement</b>	1021	250	722	152
<b>Shree Cements</b>	2440	512	3097	867
<b>UltraTech Cement</b>	6286	1760	7160	3007
<b>Total</b>	<b>33600</b>	<b>9858</b>	<b>35052</b>	<b>10897</b>



For how many companies did the Revenue increase from 2006 to 2007 but the Operating Cost decreased from 2006 to 2007? (in numerical value)

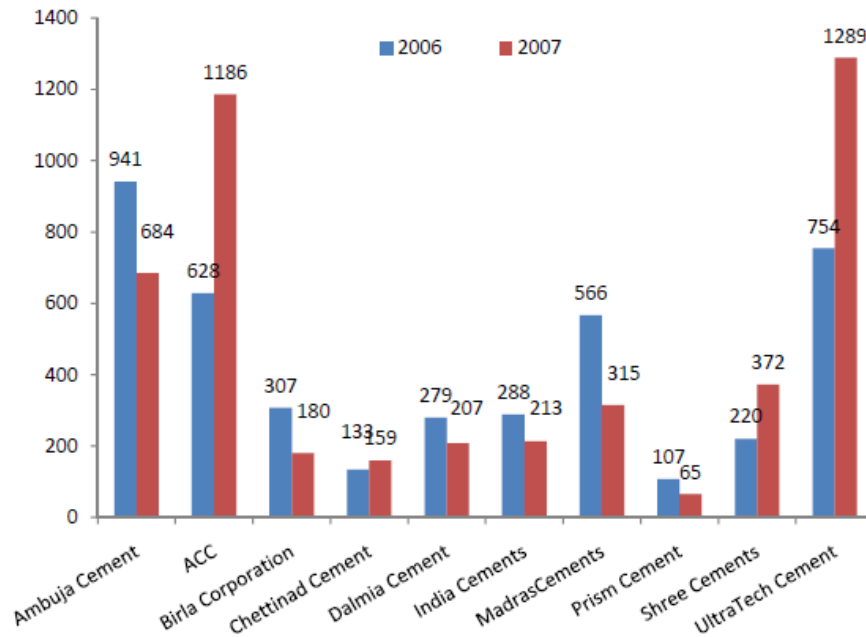
- A) 2 B) C) D)

**Question No. : 50**

**DIRECTIONS for the question:** Analyse the graph/s given below and answer the question that follows.

The table below shows the Revenue and Net Profit for different companies in 2006 and 2007 while the bar graph shows the amount of taxes paid by these companies over the two years. Gross profit is calculated as Revenue less Operating Costs and 30% of Gross Profit is deducted as Taxes to arrive at Net Profit. All values are in Rs. Crore.

	2006		2007	
	Revenue	Net Profit	Revenue	Net Profit
<b>Ambuja Cements</b>	6274	2196	5704	1597
<b>ACC</b>	5984	1466	7189	2768
<b>Birla Corporation</b>	2049	717	1996	419
<b>Chettinad Cement</b>	1110	311	1322	370
<b>Dalmia Cement</b>	1692	651	1973	483
<b>India Cements</b>	3839	672	3554	498
<b>Madras Cements</b>	2905	1322	2335	736
<b>Prism Cement</b>	1021	250	722	152
<b>Shree Cements</b>	2440	512	3097	867
<b>UltraTech Cement</b>	6286	1760	7160	3007
<b>Total</b>	<b>33600</b>	<b>9858</b>	<b>35052</b>	<b>10897</b>



For which of the following companies did the amount of Taxes paid decrease from 2006 to 2007, but the Revenue increased from 2006 to 2007?

- A) Ambuja Cement    B) Dalmia Cement    C) India Cement    D) Shree Cement

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 51**

Seven boys are made to stand in a row in order of their increasing heights (shortest boy first). Their names are Arjun, Balvinder, Chaman, Diljeet, Deepak, Farhaan, Gopal (not in that order). Following statements give information about their positions in the row.

- Balvinder is the tallest boy.
- Farhaan is exactly between Arjun and Diljeet.
- There are exactly three boys between Diljeet and Gopal.
- Chaman comes right after Balvinder in height.

According to the information given, how many arrangements are possible? (in numerical value)

- A) 2    B)    C)    D)

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 52**

Seven boys are made to stand in a row in order of their increasing heights (shortest boy first). Their names are Arjun, Balvinder, Chaman, Diljeet, Deepak, Farhaan, Gopal (not in that order). Following statements give information about their positions in the row.

- Balvinder is the tallest boy.
- Farhaan is exactly between Arjun and Diljeet.
- There are exactly three boys between Diljeet and Gopal.
- Chaman comes right after Balvinder in height.

How many boys take the same position in the row in all the possible arrangements? (in numerical value)

- A) 3    B)    C)    D)

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 53**

Seven boys are made to stand in a row in order of their increasing heights (shortest boy first). Their names are Arjun, Balvinder, Chaman, Diljeet, Deepak, Farhaan, Gopal (not in that order). Following statements give information about their positions in the row.

1. Balvinder is the tallest boy.
2. Farhaan is exactly between Arjun and Diljeet.
3. There are exactly three boys between Diljeet and Gopal.
4. Chaman comes right after Balvinder in height.

If it is given that Farhaan is taller than Deepak, then who is the shortest boy?

- A) Chaman   B) Deepak   C) Gopal   D) Cannot be determined

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 54**

The following table provides the profile of the batch of passing out of cadets of IMA Dehradun 2014.

Gender						
Male	Female	Total				
294	66	360				
Age (in years)						
19-22	23-25	25	Total			
230	120	10	360			
Passing degree						
Arts	Commerce	Science	Engineering (Non IIT)	Engineering (IIT)	Total	
54	86	54	104	62	360	
NCC work credits(in months)						
0	<12	12-23	24-35	36-48	>48	Total
176	46	42	66	26	4	360

If all but 18 girls have no *NCC work credits*, then the boys with no *NCC work credits* form what percentage of the total student? (in percentage, round off to the 2nd place of decimal)

- A) 35.56   B)   C)   D)

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 55**

The following table provides the profile of the batch of passing out of cadets of IMA Dehradun 2014.

Gender
--------

Male	Female	Total				
294	66	360				
Age (in years)						
19-22	23-25	25	Total			
230	120	10	360			
Passing degree						
Arts	Commerce	Science	Engineering (Non IIT)	Engineering (IIT)	Total	
54	86	54	104	62	360	
NCC work credits(in months)						
0	<12	12-23	24-35	36-48	>48	Total
176	46	42	66	26	4	360

If all the commerce and the arts graduates in the batch opt for commando course, then what percentage of the batch comprises of cadets who opt for commando course?

- A) 38.88%   B) 38.5%   C) 33.33%   D) Can't be determined

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 56**

The following table provides the profile of the batch of passing out of cadets of IMA Dehradun 2014.

Gender						
Male	Female	Total				
294	66	360				
Age (in years)						
19-22	23-25	25	Total			
230	120	10	360			
Passing degree						
Arts	Commerce	Science	Engineering (Non IIT)	Engineering (IIT)	Total	
54	86	54	104	62	360	
NCC work credits(in months)						
0	<12	12-23	24-35	36-48	>48	Total
176	46	42	66	26	4	360

If all the cadets with NCC work credits of 3 years or more are engineering graduates and more than 23 years of age and all of them except 8 are from the IITs, then what is the ratio of the number of engineering graduates who are IITians to engineering graduates who are non IITians among the students with less than 3 years of NCC work credits?

- A) 11:4   B) 5:12   C) 11:24   D) Can't be determined

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 57**

The following table provides the profile of the batch of passing out of cadets of IMA Dehradun 2014.

<b>Gender</b>						
<b>Male</b>	<b>Female</b>	<b>Total</b>				
294	66	360				
<b>Age (in years)</b>						
19-22	23-25	25	Total			
230	120	10	360			
<b>Passing degree</b>						
Arts	Commerce	Science	<b>Engineering (Non IIT)</b>	<b>Engineering (IIT)</b>	<b>Total</b>	
54	86	54	104	62	360	
<b>NCC work credits(in months)</b>						
0	<12	12-23	24-35	36-48	>48	<b>Total</b>
176	46	42	66	26	4	360

If all those with a non-engineering background are less than 23 years of age then what percentage of those who are less than 23 years of age are engineers? (in percentage, round off to the 2nd place of decimal)

- A) 15.65    B)    C)    D)

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 58**

The following table provides the profile of the batch of passing out of cadets of IMA Dehradun 2014.

<b>Gender</b>						
<b>Male</b>	<b>Female</b>	<b>Total</b>				
294	66	360				
<b>Age (in years)</b>						
19-22	23-25	25	Total			
230	120	10	360			
<b>Passing degree</b>						
Arts	Commerce	Science	<b>Engineering (Non IIT)</b>	<b>Engineering (IIT)</b>	<b>Total</b>	
54	86	54	104	62	360	
<b>NCC work credits(in months)</b>						
0	<12	12-23	24-35	36-48	>48	<b>Total</b>
176	46	42	66	26	4	360

The batch of 2015 has 21.2% more girls than the previous batch and 10% of the girls of this batch are with an Engineering (IIT) background, while 20% of the total girls of this batch are with an Engineering (non IIT) background, what is the ratio of the number of girls who are non engineers to the total strength of the batch?

- A) 11:28    B) 13:47    C) 14:91    D) Can't be determined

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 59**

In order to gain full course credit for her tour of a foreign city, Sue must visit exactly seven famous points of interest - a factory, a garden, the harbour, a library, a museum, a palace and a theatre. Any tour plan that Sue devises will allow her to keep to her timetable and is thus acceptable, except that she must plan her tour to conform to the following conditions.

- The factory must be one of the first three points visited.
- The harbour must be visited immediately before the garden.
- The library can be neither the first nor the last point visited.
- The museum must be either the first or the last point visited.
- The palace must be one of the last three points visited.

Sue begins her tour with a visit to the harbour. Which of the following could be the fourth point of interest she would visit on the tour?

- A) the factory   B) the garden   C) the library   D) the museum

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 60**

In order to gain full course credit for her tour of a foreign city, Sue must visit exactly seven famous points of interest - a factory, a garden, the harbour, a library, a museum, a palace and a theatre. Any tour plan that Sue devises will allow her to keep to her timetable and is thus acceptable, except that she must plan her tour to conform to the following conditions.

- The factory must be one of the first three points visited.
- The harbour must be visited immediately before the garden.
- The library can be neither the first nor the last point visited.
- The museum must be either the first or the last point visited.
- The palace must be one of the last three points visited.

If Sue visits exactly one point of interest between her visits to the factory and the palace, then that point must be either the

- A) garden or the harbour   B) Library or the theatre   C) harbour or the museum   D) Library or the museum

**DIRECTION for the question:** The question is followed by two statements I and II. Mark the answer as:

**Question No. : 61**

The sum of four distinct positive integers W, X, Y and Z is 14. What is the product of W & Y, if it is given that  $W > Z$ ?

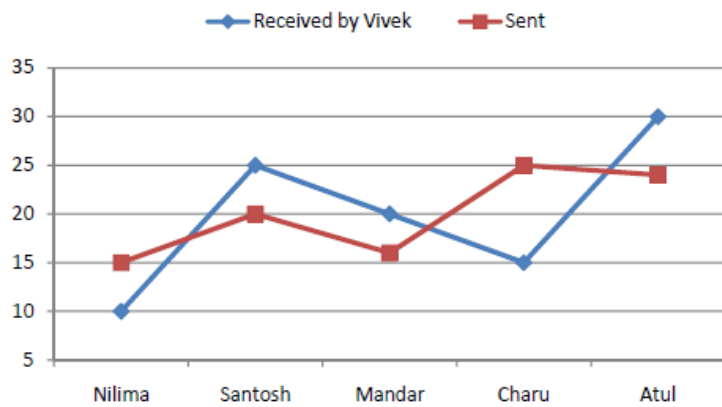
- I. The product of W and Z is 6.
- II. The average of X and Z is 5.

- A) if the question can be answered using only one of the given two statements.
- B) if the question can be answered using either statement I alone or statement II alone.
- C) if the question can be answered using both the statements together, but cannot be answered using any one statement alone
- D) if the question cannot be answered even by using both the statements together

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 62**

Vivek, Nilima, Santosh, Mandar, Charu and Atul have subscribed to an SMS pack offered by a cellular operator. The following graph shows the percent break-up of the 3000 messages received by Vivek from Nilima, Santosh, Mandar, Charu and Atul. The graph also shows the percent break-up of the total of S messages sent by Nilima, Santosh, Mandar, Charu and Atul.



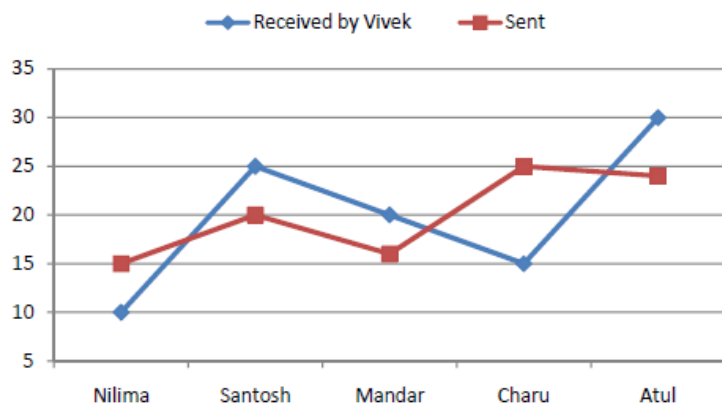
What is the minimum possible value of S?

- A) 1900   B) 1500   C) 3800   D) 3750

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 63**

Vivek, Nilima, Santosh, Mandar, Charu and Atul have subscribed to an SMS pack offered by a cellular operator. The following graph shows the percent break-up of the 3000 messages received by Vivek from Nilima, Santosh, Mandar, Charu and Atul. The graph also shows the percent break-up of the total of S messages sent by Nilima, Santosh, Mandar, Charu and Atul.



Who among the following has sent the least percentage of his/her messages to Vivek?

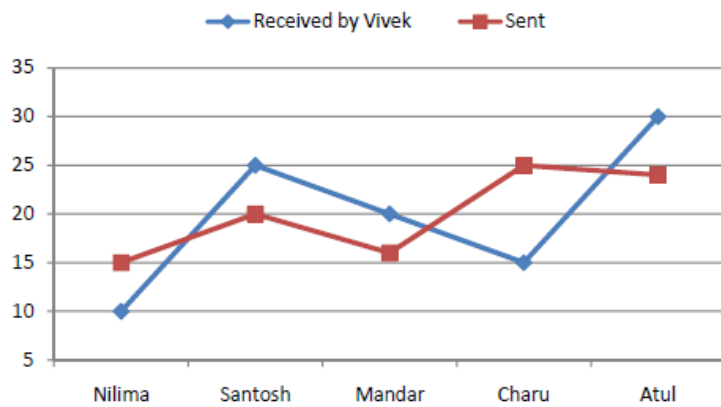
- A) Nilima   B) Charu   C) Santosh   D) Atul

**DIRECTIONS for the question:** Go through the graph and the information given below and answer the question that follows.

**Question No. : 64**



Vivek, Nilima, Santosh, Mandar, Charu and Atul have subscribed to an SMS pack offered by a cellular operator. The following graph shows the percent break-up of the 3000 messages received by Vivek from Nilima, Santosh, Mandar, Charu and Atul. The graph also shows the percent break-up of the total of S messages sent by Nilima, Santosh, Mandar, Charu and Atul.



If Nilima has sent at least 25% of her messages to Vivek and Charu has sent at most 40% of her messages to Vivek, what is the maximum possible number of persons who have sent at least 80% of their messages to Vivek? (in numerical value)

- A) 3   B)   C)   D)

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 65**

7 friends, Abhi, Beena, Chetan, Dinesh, Farhan, Khushi and Rahim were standing in a queue of 17 people to buy tickets to a movie. Amongst the friends, Rahim was the first to reach the theatre, but was third in the queue. Khushi was the last among the friends to reach the theatre and there are two people between her and Farhan. Abhi and Beena came together by bike and are standing together in the queue behind Dinesh but ahead of Farhan. There are 11 people in the queue between Rahim and Khushi and 6 people between Farhan and Dinesh.

What is Farhan's position in the queue?

- A) 10<sup>th</sup>   B) 14<sup>th</sup>   C) 12<sup>th</sup>   D) 11<sup>th</sup>

**DIRECTIONS for the question:** Read the information given below and answer the question that follows.

**Question No. : 66**

7 friends, Abhi, Beena, Chetan, Dinesh, Farhan, Khushi and Rahim were standing in a queue of 17 people to buy tickets to a movie. Amongst the friends, Rahim was the first to reach the theatre, but was third in the queue. Khushi was the last among the friends to reach the theatre and there are two people between her and Farhan. Abhi and Beena came together by bike and are standing together in the queue behind Dinesh but ahead of Farhan. There are 11 people in the queue between Rahim and Khushi and 6 people between Farhan and Dinesh.

If Farhan and Dinesh interchange positions, how many people will there be between Farhan and Khushi? (in numerical value)

- A) 9   B)   C)   D)

**Section : Quantitative Ability**

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 67**

If  $A_1, A_2, A_3, \dots, A_{100}$  are all natural numbers, not necessarily distinct, such that  $A_1^2 = A_2^2 + A_3^2 + A_4^2 + \dots + A_{100}^2$ , then at least how many of them are divisible by 3? (in numerical value)

- A) 1   B)   C)   D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 68**

What is the radius (in cm) of the biggest possible circle that can be inscribed in a sector of radius 10 cm and a central angle of  $120^\circ$ ?

- A)  $10(\sqrt{3}-9)$    B)  $\frac{20}{\sqrt{3}}(\sqrt{3}-1)$    C)  $10(2\sqrt{3}-3)$    D) 5

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 69**

If  $x$  and  $y$  are integers such that  $0 < x \leq 200$  and  $0 < y \leq 200$ , what is the number of possible solutions of  $4x = 5y + 6$ ? (in numerical value)

- A) 40   B)   C)   D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 70**

If  $2a^2 + 17b^2 + 8c^2 - 6ab - 20bc = 0$  and  $abc \neq 0$ , then what is the value of  $\frac{a+b-c}{a+b+c}$ ?

- A)  $2/3$    B)  $1/3$    C)  $3/4$    D) Cannot be determined

**DIRECTIONS for the question:** Answer the question independently of any other question.

**Question No. : 71**

The arithmetic mean of 3 numbers is  $x$ . It falls by 2 if one of the numbers is excluded. It is also known that this number is the largest of the 3. Given that all the numbers are positive integers, what is the maximum value that the middle number can take?

- A)  $2x - 5$    B)  $2x - 4$    C)  $x + 4$    D) Insufficient data

**DIRECTIONS for the question:** Answer the question independently of any other question.

**Question No. : 72**

For all real values of  $x$ ,  $\min[f(x)]$  is defined as the minimum value of  $f(x)$ , where  $f(x) = 2x^2 + 3x + 4$  and  $\max[g(x)]$  is defined as the maximum value of  $g(x)$ , where  $g(x) = 5 - x^2$ . What is the value of  $\min[f(x)] - \max[g(x)]$ ?

- A)  $-3/2$    B)  $-17/8$    C)  $-1$    D) Insufficient Data

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 73**

The distance between towns A and B is 555 km. An aeroplane took off from town A towards town B at a constant speed of 105 kmph. After some time, the tailwind picked up and the remaining part of the journey was flown at a constant speed of 115 kmph. If the entire journey took 5 hours, for how long did the aeroplane fly at 105 kmph? (in hours)

A) 2 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 74**

$p, q, r$  and  $s$  are positive real numbers such that  $p + q + r + s = x$ , where ' $x$ ' is a constant. Find the maximum value of  $(x - p)(x - q)(x - r)(x - s)$ ?

A)  $(x^4 - pqrs)/64$  B)  $81x^4/256$  C)  $27x^3/512$  D)  $9x^4/4$

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 75**

The first term of a sequence is 1 and the second term is 5. From the third term onwards, each term is the average of all the preceding terms. What is the difference between the 30<sup>th</sup> and 25<sup>th</sup> terms of this sequence? (in numerical value)

A) 0 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 76**

A shopkeeper bought an article for Rs.1000 and marked its price as Rs.2160. He gave three successive discounts of  $a\%$ ,  $b\%$  and  $c\%$ , where  $a + b + c = 50$ . If he made a profit of  $x\%$  finally, how many of the following ranges contain values which are NOT possible values of  $x$ ? (in numerical value)

- (i)  $6 < x < 10$
- (ii)  $14 < x < 20$
- (iii)  $20 < x < 24$
- (iv)  $25 < x < 26$

A) 2 B) C) D)

**DIRECTIONS for the question:** Answer the question independently of any other question.

**Question No. : 77**

A goldsmith has  $n$  gold coins of weights 10 gm, 20 gm, 30 gm, ...,  $10n$  gm ( $n = 1, 2, 3, \dots$ ). While locking up his store at night, he locks up the gold coins in three different safes such that the first safe holds the gold coins weighing 10 gm, 40 gm, 70 gm and so on, the second safe holds the gold coins weighing 20 gm, 50 gm, 80 gm and so on and the third safe holds the rest of the gold coins. The goldsmith realises that the average weights of the gold coins in exactly two of the three safes were the same as the weight of one of the gold coins in the respective safes and the average weight of the gold coins in the other safe was different from any of the gold coins in that safe. Which of the following could be the total number of gold coins?

A) 113 B) 90 C) 82 D) 99

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 78**

What is the remainder when  $30^{40}$  is divided by 17? (in numerical value)

A) 1 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 79**

10-digit positive integers are formed by using the digits 2 and 3 so that the integer has at least one 2 and one 3 and no two 3s come together. How many of these integers are divisible by 3? (in numerical value)

- A) 45   B)   C)   D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 80**

The Rajdhani Express and the Shatabdi Express are travelling towards each other at speeds of 54 kmph and 72 kmph respectively. Ram is sitting at the tail end of the Rajdhani Express which is 340 m long and Shyam is sitting at the front end of the Shatabdi express which is 500 m long. When the two trains start to cross each other, Ram starts running towards the front end of the Rajdhani Express at a speed of 2 m/s and Shyam starts running towards the tail end of the Shatabdi Express at a speed of 3 m/s. After how much time will Ram and Shyam be at the same point? (in seconds)

- A) 10   B)   C)   D)

**DIRECTIONS for the question:** Answer the question independently of any other question.

**Question No. : 81**

Rahul and Vijay are standing on adjacent sides of a rectangular field at points P and Q respectively. The points P and Q divide the length and breadth in the ratio 3 : 1 and 2 : 1 respectively. Rahul is standing at point P on the length of the field so that he is at the shortest possible distance from the common vertex and Vijay is at point Q on the breadth so that he is at the largest possible distance from the common vertex. If PQ is 100 m, and the sides of the field are integers, what is the area of the field?

- A) 27,555 m<sup>2</sup>   B) 25,980 m<sup>2</sup>   C) 28,800 m<sup>2</sup>   D) Insufficient data

**DIRECTIONS for the question:** Answer the question independently of any other question.

**Question No. : 82**

If  $x$  is a real number such that  $x \neq \pm 1$  and  $\frac{(x^3 - 3x^2 + 4)}{(x^2 - 1)} \geq x + 5$ , what is the maximum value of  $x$ ?

- A) 9/8   B) 10/9   C) -1   D) 0

**DIRECTIONS for the question:** Answer the following question as per the best of your judgment.

**Question No. : 83**

A fruit seller sells an apple, an orange, a mango and a peach at loss of 10%, loss of 40%, profit of 20% and profit of 50% respectively. Let the loss made on an apple and an orange together be as much as in amount as the profit made on a mango and a peach together. Suppose you have the money to buy one apple and four oranges. But instead you buy five peaches. How many mangoes can you buy with the rest of the money?

- A) 1   B) 2   C) 4   D) Can't say

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 84**

Find the number of two-digit numbers [where neither digit is zero] whose product of the digits is a perfect square? (in numerical value)

- A) 17   B)   C)   D)

**DIRECTIONS for the question:** Answer the following question as per the best of your judgment.

**Question No. : 85**

Ashok has some 5 rupee and some 2 rupee coins. He finds that he cannot choose a set of coins out of his collection whose total value is Rs. 21. However, he can choose a set of coins whose total value is Rs. 65. Which of these statements could be true?

- A) Ashok has only one 5 rupee coin    B) Ashok has only five 2 rupee coins    C) Ashok has only one 2 rupee coin  
D) Ashok has only seven 5 rupee coins

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 86**

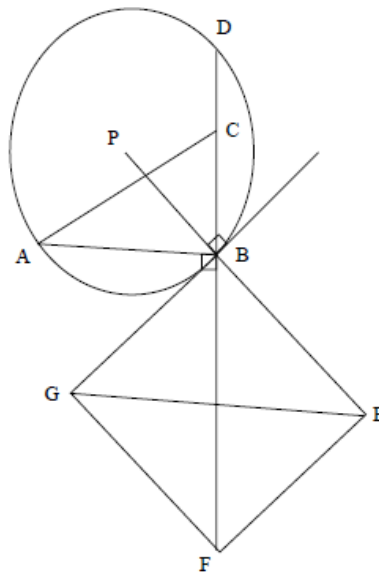
The daily wages of Kalu and Bawa and also of Bawa and Lalit are in the ratio 2 : 3 each. A third of Lalit's wages exceeds half of Kalu's wages by Rs. 80. Each of them spends the same amount of money and their savings are in the ratio 1 : 9 : 21. What is their combined expenditure? (in Rs.)

- A) 900    B)    C)    D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 87**

In the given figure, the circle is of unit radius and P is its centre. BGFE is a square. FB is extended to meet the circle at point D.



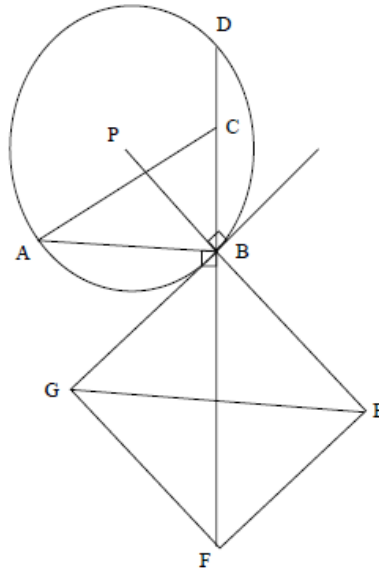
What is the length of BF?

- A)  $2\sqrt{2}$     B)  $\sqrt{2}$     C) 2    D) Cannot be determined

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 88**

In the given figure, the circle is of unit radius and P is its centre. BGFE is a square. FB is extended to meet the circle at point D.



If  $\angle ACB = 67.5^\circ$  then what is the ratio of BC and CD?

- A)  $\sqrt{2}$  B) 1 C)  $1/\sqrt{2}$  D) 2

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 89**

Rahim has Rs. 4,096 with him and he places bets 6 times. Each time he places a bet, he stakes one-fourth of the total money that he has at the time of placing the bet. If he wins the bet, he gets back the sum of money he had staked and wins a sum equal to the money he had staked and if he loses the bet, he loses the sum of money he had bet. If the probability of winning a bet is 0.5 and it is known that Rahim wins 3 bets and loses 3 of them, find the money left with Rahim at the end of all the bets.

- A) Rs. 3,375 B) Rs. 721 C) Rs. 3072 D) Cannot be determined

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 90**

The XY-plane is marked on the ground in preparation for a sack race. The participants start from point P(0, 2) and finish the race at point Q(10, 3). In hopping from P to Q, the participants must touch the X-axis exactly once. What point on the X-axis should a participant touch so that the total distance travelled is the least?

- A) (4, 0) B) (6, 0) C) (3, 0) D) (5, 0)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 91**

In how many ways can 68068 be written as the difference of two squares (Only integral values to be taken)? (in numerical value)

- A) 8 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 92**

For real number  $p$ , the maximum value of the expression  $\frac{p^2 - 14p + 9}{p^2 - 2p + 3}$  is (in numerical value)

A) 4 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 93**

The letters M, N, O, P, Q, R and S, not necessarily in that order, stand for seven consecutive integers from 1 to 10. S is 4 less than O, P is greater than M, Q is the middle term and M is as much less than Q as N is greater than S. If P has only one integer below it, then the value of (R - S) will be: (in numerical value)

A) 2 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 94**

C is a circle with centre at (-1, 1). If C just touches another circle  $x^2 + 4x + y^2 - 6y - 3 = 0$  at exactly one point, what is the radius of C?

A)  $4 - \sqrt{5}$  B) 4 C)  $2\sqrt{3}$  D)  $\sqrt{7} + 4$

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 95**

A trader mixes three varieties of sugar costing Rs 34.50 / kg, Rs 36.50 / kg and Rs 41.2 / kg. He sells the mixture for Rs 46.20 / kg and gains 22.22%. In what ratio did he mix the three varieties of sugar respectively?

A) 1 : 2 : 3 B) 5 : 3 : 6 C) 2 : 4 : 5 D) 34 : 13 : 33

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 96**

A vessel is full of a mixture of petrol and kerosene in the ratio 7 : 5. 9 litres of this mixture is taken out and replaced with kerosene. The ratio of petrol to kerosene in the vessel is now 7 : 9. What is the volume of the vessel? (in litres)

A) 36 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 97**

From a solid iron right circular cone of base radius 2 cm, a hemisphere of diameter 2 cm and centre coinciding with the centre of the base is scooped out. The resultant object is then dropped into a right circular cylinder of inner diameter 6 cm and height 10 cm. Water is then poured into the cylinder to fill it up to the brim. If the height of the cone is 5 cm, what is the volume of the water poured into the cylinder?

A)  $80\pi \text{ cm}^3$  B)  $250\pi/3 \text{ cm}^3$  C)  $270\pi/4 \text{ cm}^3$  D)  $84\pi \text{ cm}^3$

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 98**

The interest on a certain sum for 2 years is Rs. 1700 and for 3 years is Rs. 2712.50. If interest is compounded annually, what is the rate of interest?

A) 7.5 % p.a. B) 12.5 % p.a. C) 15 % p.a. D) 17.5 % p.a.

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**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 99**

The population of a bacteria culture increases by 10% per hour for the first two hours and then decreases by 10% per hour for the next one hour. After that, the population increases by 5% per hour for the next two hours. If the initial population of the culture was 400,000, what will be the population at the end of 5 hours? (in numerical value)

A) 480249 B) C) D)

**DIRECTIONS for the question:** Solve the following question and mark the best possible option.

**Question No. : 100**

On a certain day, Vijay works at  $\frac{11}{8}$ <sup>th</sup> of his usual rate of doing work and completes a work 33 minutes earlier than the usual time required. Had Vijay worked at  $\frac{5}{9}$ <sup>th</sup> of his usual rate of doing work, then the time taken by him to complete the work would have been how much more than the usual time required?

A) 48.8 minutes B) 96.8 minutes C) 88 minutes D) None of these

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**QNo:- 1 ,Correct Answer:- D**

**Explanation:-**

Statement I can be derived from the lines: *The nature of gravitation has seemed very mysterious, yet it is a remarkable fact that in a limited region it is possible to create an artificial field of force which imitates a natural gravitational field so exactly that, so far as experiments have yet gone, no one can tell the difference.*

Statement II can be derived from the lines: *Force is no mysterious agency.*

Statement III can be derived from the lines: *As is well known, the scientific measure of a force is the momentum that it communicates to a body in given time.*

**QNo:- 2 ,Correct Answer:- C**

**Explanation:-**

Refer to the lines: *It is said that more than 200 theories of gravitation have been put forward; but the most plausible of these have all had the **defect that they lead nowhere and admit of no experimental test. Many of them would nowadays be dismissed as too materialistic for our taste**---filling space with the hum of machinery---a procedure curiously popular in the nineteenth century. **Few would survive the recent discovery** that gravitation acts not only on the molecules of matter, but on the undulations of light.*

The lines above help us identify option c as the correct answer.

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**QNo:- 3 ,Correct Answer:- C**

**Explanation:-**

The author of the passage clearly states that gravitation has not been clearly understood and this implies that there is still work that needs to be done with respect to gravitation. Keeping this in mind, option c is the apt answer in the given case. None of the other options find representation in the passage.

**QNo:- 4 ,Correct Answer:- D**



**Explanation:-**

In the given case, the author of the passage is explaining forces and gravitation and the work done in the field. Also, he displays a slight disappointment that the true nature of gravitation has not been fathomed. This sentiment finds best reflection in option d. None of the other options are completely accurate and commit some error or the other.

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**QNo:- 5 ,Correct Answer:- B****Explanation:-**

This is an easy question and the answer can be directly found from the lines: Although gravitation has been recognised for thousands of years, and its laws were formulated with sufficient accuracy for almost all purposes more than 200 years ago, it cannot be said that much progress has been made in explaining the nature or mechanism of this influence.

**QNo:- 6 ,Correct Answer:- B****Explanation:-**

In this case, the author of the passage is concerned with gravitation and gravitation is the main subject of the passage. This helps us rule out option a. Out of the other options, option b is the best one as it is the most generic in nature and it encapsulates the central ideas of the passage. Options c and d are incorrect as these are the things that have not been found till now and are being searched for.

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**QNo:- 7 ,Correct Answer:- D****Explanation:-**

In this case, options c and d are the close ones. The first two options are ruled out as the passage has a broader purpose rather than discussing just Fichte. Now coming to options c and d, the difference between these two options is a minor one. In fact, if you look closely, option d contains option c and also an extra point. The author does raise doubts about the existence of the self alone but then he also goes to highlight contrary viewpoints to these doubts. This makes option d the correct answer in the given case.

**QNo:- 8 ,Correct Answer:- B****Explanation:-**

Inimitable means 'Defying imitation; matchless'.

The meanings of the options are as follows:

Rustic: Characteristic of rural life

Unrivaled: Eminent beyond or above comparison

Choleric: Easily moved to anger

Irate: Feeling or showing extreme anger

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**QNo:- 9 ,Correct Answer:- C****Explanation:-**

Refer to the lines: I suppose there is no man in his sober senses who seriously believes that no other mind than his own exists.

There is, to be sure, an imaginary being more or less discussed by those interested in philosophy, a creature called the Solipsist, who is credited with this doctrine.

The lines clearly indicate that a Solipsist is someone who believes no other mind than his own exists. Later in the passage, the mind is referred to as the self. This makes option 3 the correct answer in the given case.

**QNo:- 10 ,Correct Answer:- C**

**Explanation:-**

In the last paragraph of the passage, the author raises concerns with regards to one's views of others and whether these can be certain or not. He displays a certain sense of confusion and perplexity in his views. This lack of clarity finds best reflection in option c.

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**QNo:- 11 ,Correct Answer:- A****Explanation:-**

Statement I can be derived from the lines: But the Fichtean doctrine that I am my own body-maker leaves me with nothing whatever--with not so much as the beggar's dog or the prisoner's spider.

Statement II can be derived from the lines: Every being, even the highest Being, wishes something to love and to honor.

Statement III is not mentioned in the passage and is too far-fetched a derivation in this case.

**QNo:- 12 ,Correct Answer:- C****Explanation:-**

The author of the passage clearly exhibits doubts with respects to Fichte's viewpoints and whether Fichte himself believed strongly in these views. Refer to the lines: Just how much Fichte's words meant to the man who wrote them may be a matter for dispute.

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**QNo:- 13 ,Correct Answer:- D****Explanation:-**

The answer to this question can be derived from the lines: But perhaps the single most notable characteristic of English is its deceptive complexity. Nothing in English is ever quite what it seems. Take the simple word what. We use it every day indeed, every few sentences.

Options 1 and 2 are not mentioned in the passage.

Option 3 is just one side of the given argument presented by the author of the passage

**QNo:- 14 ,Correct Answer:- C****Explanation:-**

Refer to the lines: Against this, however, there is an occasional tendency in English, particularly in academic and political circles, to resort to waffle and jargon. At a conference of sociologists in America in 1977, love was defined as "the cognitive-affective state characterized by intrusive and obsessive fantasizing concerning reciprocity of amorous feelings by the object of the amoration."

That is jargon is "the practice of never calling a spade a spade when you might instead call it a manual earth-restructuring implement" and it is one of the great curses of modern English.

The word waffle means: Vague and lengthy writing or talk.

The word jargon means: special words or expressions used by a profession or group that are difficult for others to understand.

In this case, option 3 combines the meanings of these two words and provides us the correct answer.

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**QNo:- 15 ,Correct Answer:- A****Explanation:-**

Statement I can be derived from the lines: In *The English Language*, Robert Burchfield writes: 'As a source of intellectual power and entertainment the whole range of prose writing in English is probably unequalled anywhere else in the world.' I would like to think he's right, but I can't help wondering if Mr Burchfield would have made the same sweeping assertion had he been born Russian or German or Chinese.

Statement II can be derived from the lines: For one thing its pronouns are largely, and mercifully, uninflected.

Statement III is incorrect. Refer to the lines: Above all, English is mercifully free of gender.

Statement III is clearly incorrect in the given context.

**QNo:- 16 ,Correct Answer:- D**

**Explanation:-**

The first thing is that the author views the succinct nature of English as a positive. This rules out options 1 and 3. Also, he is comparing English with other languages and not talking about using English in conjunction with other languages. Juxtaposition means 'the act of positioning close together (or side by side), generally for comparison'.

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**QNo:- 17 ,Correct Answer:- A**

**Explanation:-**

Let us understand the meanings of the options in order to identify the correct answer:

1. Expounding: explanatory; present and explain (a theory or idea) in detail.
2. carping: persistent petty and unjustified criticism
3. critical: marked by a tendency to find and call attention to errors and flaws
4. denunciatory: containing warning of punishment

We can clearly see that option 1 is the best answer in the given case.

**QNo:- 18 ,Correct Answer:- D**

**Explanation:-**

In this case, you need to possess a strong vocabulary in order to understand the meanings of the options. Let's explore these one by one:

Lexicon: A language user's knowledge of words

Semantics: The study of language meaning

Vernacular: Being or characteristic of or appropriate to everyday language

Linguistic: Consisting of or related to language

Expediency: The quality of being suited to the end in view

Combining the last two meanings, we can see that option 4 is the best answer in the given case.

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**QNo:- 19 ,Correct Answer:- B**

**Explanation:-**

The author is talking about the IT enabled services and hence is talking about technical knowledge and language (English) skills. These skills are not found readily among the masses. Higher education and experts in scientific fields are very general answers.

**QNo:- 20 ,Correct Answer:- C**

**Explanation:-**

The passage states that the poor are exploited by both the government and the private sector. As most of the poor are in the private sector, it is difficult to monitor the extent of their exploitation and even if known it is difficult to put restrictions on them as there are no legal contracts between the poor labourer and the employer. If cutbacks in the public sector are reduced, more jobs would be generated and this would lead to the upliftment of the backward castes as there is reservation for backward castes in PSUs. Hence option 3 is correct. Levying taxes on imported goods cannot generate jobs or improve the condition of the poor. Hence option 1 is incorrect. There is no mention of option 2. Option 4 is impossible as we have so many religions and so many castes.

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**QNo:- 21 ,Correct Answer:- A**

**Explanation:-**

Government's own data shows that 86 percent of India's labor force was in the unorganized sector, either self-employed or working for wages. So only 14 percent of total Indian population is salaried – not very different from the figure for the Muslims (which is 13 percent). Option 2 will support the fact that the Muslims are not faring well. There is a call for democratizing capitalism, which means it has yet not been implemented. Hence option 3 is incorrect.

**QNo:- 22 ,Correct Answer:- C**

**Explanation:-**

The author starts the passage saying that most people feel that yawning is the most obvious example of sleepiness. Then he goes on to say that boredom and stress also induce yawns. In the last paragraph, he states that since yawning is associated with a lot more things than denoting sleep, we need to find some other measure of sleepiness. He also concludes the passage stating that some researchers have developed an alternate method of determining how sleepy a person is. Though option is true it is not the primary purpose of the passage. Option 2 is incorrect because the author states that yawning indicates much more than sleepiness, it indicates boredom and stress too.

**QNo:- 23 ,Correct Answer:- D**

**Explanation:-**

The author is not evaluating the earlier paragraphs. He is in a way summarising the findings and then taking the discussion forward. Hence option 2 is incorrect. Option 1 is incorrect as the author is continuing on the topic of yawning. Drawback is stated and concluded in second last paragraph itself therefore, option 3 is also rejected.

**QNo:- 24 ,Correct Answer:- D**

**Explanation:-**

Anecdote : A short and amusing or interesting story about a real incident or person. The anecdote is the incident of the soldiers who are to take their first parachute jump. Illustration is material used to clarify or explain – dog training and people in crowded places. (dogs yawn when stressed. People yawn in crowded places because of the social aspect – the power of suggestion). Comparison is between animals and human beings – both yawn. So it is clear that he is not making an understatement by trying to find out the reasons behind 'yawning' from different perspectives.

**QNo:- 25 ,Correct Answer:- 4312**

**Explanation:-**

In this case, statement 4 introduces the subject of the jumbled paragraph, concordances (lists of all the words appearing in a given text) in reference works. Statement 3 then takes this forward by illustrating the use of reference works. Statement 1 then further explains what role can be played by reference works and then statement 2 completes the given sequence of information.

**QNo:- 26 ,Correct Answer:- 2**

**Explanation:-**

In this case, statement 3 provides the general introduction for the given subject. Statement 1 is linked to statement 3 by the keyword 'anticipation'. Statement 4 is linked with statement 1 and this can be established by the common reference to the word 'hope'. Statement 2 is the odd one out here. It is tough to identify statement 2 on the first go as the statement is about the same subject. In this case, you need to be on the lookout for connectors between two statements in order to identify the connected set of statements.

**QNo:- 27 ,Correct Answer:- 2**

**Explanation:-**

This is an easy question. Statement 4 introduces the context, of the possible reasons of Hitler's popularity with the masses. Statement 1 then introduces a contradiction and statement 3 provides an explanation for the same. The subject of statement 2 does not find mention in the given context.

**QNo:- 28 ,Correct Answer:- 1****Explanation:-**

In the given question, statement 1 is the odd one out. It clearly does not fit with the specific context and content provided by the set 2-4-3. This set is completely focused on providing a specific example for the given situation and statement 1 focuses on the general context for the same. Considering the same, we can clearly see that it is the misfit sentence in the given case.

**QNo:- 29 ,Correct Answer:- 4****Explanation:-**

In the given context, statements 3-1-2 form a set of connected statements. These statements provide a generic introduction to the given subject and highlight the given context. Statement 4 does not fit in the given scheme of things as it talks about a specific quote of a specific person which fits a specific context. Clearly this information is missing in the given context and this makes statement 4 the odd one out.

**QNo:- 30 ,Correct Answer:- 3****Explanation:-**

This is a tricky question where you need to pick out the subtle language differences in order to identify the correct answer. The paragraph makes it clear that people are reluctant to express their views freely and in an attempt to be inclusive, there is a hesitation that has spread. Remember, is not a question of something being permitted or supported. The key issue here is that people have taken up a certain way of expressing their feelings as they feel it is the right way to do so. Considering this, 'appreciation' is the best fit here (and not words such as supported, endured or permitted, which are too strong).

**QNo:- 31 ,Correct Answer:- 24315****Explanation:-**

This sea of choices™ of 3 refers to the mutual funds (2) and MBA programs (4) giving us the sequence 243. From the choices would not multiply like this™, we can infer that 1 will follow 243. 5 provides a prescription to survive in this competitive world. Hence the final sequence is 24315.

**QNo:- 32 ,Correct Answer:- 32514****Explanation:-**

4 is evidently the conclusion of the passage. The large majority of school dropouts™ of 1 is derived from of the 200m primary enrolments only 20m complete class 12 of 5. Similarly, hardly 5% of 20-24 year olds™ of 2 is an explanation to statement 3. Of the pairs, 32 and 51, 32 logically precedes 51 giving us 32514.

**QNo:- 33 ,Correct Answer:- 32451****Explanation:-**

The paragraph talks about evolutionary change, organisms and genetic material. 3 introduces the idea first. 1 will follow 5, as first we talk of eukaryotes and then on the other hand on prokaryotic sex. The this in 4 refers to the idea mentioned in 2.

**QNo:- 34 ,Correct Answer:- 3**

**Explanation:-**

The paragraph talks about growing old and what are the things that people have been doing to counter that.

- 1 talks about rejuvenation i.e. getting young again
- 2 talks about immortality
- 3 talks of dieting which is not what the paragraph addresses
- 4 talks about people not wanting to grow old

**QNo:- 35 ,Correct Answer:- C**

**Explanation:-**

According to the information given:

- 1. The students are from classes "12<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>, 6<sup>th</sup>, 4<sup>th</sup> and 1<sup>st</sup>."
  - 2. According to information (i), the three possible consecutive classes are 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup>.
  - 3. So the student M on the fourth floor must be from 12<sup>th</sup>.
  - 4. As there are three students on the first floor, namely, N, U, V and only V has been identified as being in 1<sup>st</sup> class, it is difficult to say from which class the students on the first floor are from.
  - 5. According to information b, c, h and above deductions, it can be ascertained that there are two students in 12<sup>th</sup>, one student in 7<sup>th</sup>, two students in 6<sup>th</sup>, one student in 4<sup>th</sup>, three students on first floor, one of whom is certainly in 1<sup>st</sup>. The remaining 3 students are from 8<sup>th</sup>.
  - 6. As 3 students have been selected from each group, there must be only 4 houses.
  - 7. According to information j, m and l: R, X and N are in purity house.
  - 8. O, T and P are in Joy house; M, W and U are in love house; Q, Y and V are in peace house.
- Thus, the table can be completed as:

Condition	Student	Group	Sport	Cultural	Class	Floor
a, j	R	PURITY	Table Tennis	Dance	Seventh	Third
h	O	JOY	Basket Ball	Dance	Forth	Second
g, l, b	X	PURITY	Football	Debate	Sixth	Second
l	N	PURITY	Football	Theatre	1st/2nd/3rd	First
c	T	JOY	Basket Ball	Theatre	Eighth	Third
d	M	LOVE	Hockey	Debate	Twelfth	Fourth
d, b	P	JOY	Hockey	Debate	Sixth	Second
m	U	LOVE	Football	Choir	1st/2nd/3rd	First
	Q	PEACE	Table Tennis	Theatre	Eighth	Third
h	Y	PEACE	Basket Ball	Dance	Twelfth	Fourth
d	W	LOVE	Hockey	Debate	Eighth	Third
l	V	PEACE	Football	Dance	First	First

Hence W, Q and T are in class 8<sup>th</sup>.

**QNo:- 36 ,Correct Answer:- D**

**Explanation:-**

According to the information given:

- 1. The students are from classes "12<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>, 6<sup>th</sup>, 4<sup>th</sup> and 1<sup>st</sup>."

2. According to information (i), the three possible consecutive classes are 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup>.
  3. So the student M on the fourth floor must be from 12<sup>th</sup>.
  4. As there are three students on the first floor, namely, N, U, V and only V has been identified as being in 1<sup>st</sup> class, it is difficult to say from which class the students on the first floor are from.
  5. According to information b, c, h and above deductions, it can be ascertained that there are two students in 12<sup>th</sup>, one student in 7<sup>th</sup>, two students in 6<sup>th</sup>, one student in 4<sup>th</sup>, three students on first floor, one of whom is certainly in 1<sup>st</sup>. The remaining 3 students are from 8<sup>th</sup>.
  6. As 3 students have been selected from each group, there must be only 4 houses.
  7. According to information j, m and l: R, X and N are in purity house.
  8. O, T and P are in Joy house; M, W and U are in love house; Q, Y and V are in peace house.
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c	T	JOY	Basket Ball	Theatre	Eighth	Third
d	M	LOVE	Hockey	Debate	Twelfth	Fourth
d, b	P	JOY	Hockey	Debate	Sixth	Second
m	U	LOVE	Football	Choir	1st/2nd/3rd	First
a	Q	PEACE	Table Tennis	Theatre	Eighth	Third
h	Y	PEACE	Basket Ball	Dance	Twelfth	Fourth
d	W	LOVE	Hockey	Debate	Eighth	Third
l	V	PEACE	Football	Dance	First	First

Hence students from 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> did not participate.

**QNo:- 37 ,Correct Answer:- D**

**Explanation:-**

According to the information given:

1. The students are from classes " 12<sup>th</sup>, 8<sup>th</sup>, 7<sup>th</sup>, 6<sup>th</sup>, 4<sup>th</sup> and 1<sup>st</sup>.
  2. According to information (i), the three possible consecutive classes are 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup>.
  3. So the student M on the fourth floor must be from 12<sup>th</sup>.
  4. As there are three students on the first floor, namely, N, U, V and only V has been identified as being in 1<sup>st</sup> class, it is difficult to say from which class the students on the first floor are from.
  5. According to information b, c, h and above deductions, it can be ascertained that there are two students in 12<sup>th</sup>, one student in 7<sup>th</sup>, two students in 6<sup>th</sup>, one student in 4<sup>th</sup>, three students on first floor, one of whom is certainly in 1<sup>st</sup>. The remaining 3 students are from 8<sup>th</sup>.
  6. As 3 students have been selected from each group, there must be only 4 houses.
  7. According to information j, m and l: R, X and N are in purity house.
  8. O, T and P are in Joy house; M, W and U are in love house; Q, Y and V are in peace house.
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l	N	PURITY	Football	Theatre	1st/2nd/3rd	First
c	T	JOY	Basket Ball	Theatre	Eighth	Third
d	M	LOVE	Hockey	Debate	Twelfth	Fourth
d, b	P	JOY	Hockey	Debate	Sixth	Second
m	U	LOVE	Football	Choir	1st/2nd/3rd	First
a	Q	PEACE	Table Tennis	Theatre	Eighth	Third
h	Y	PEACE	Basket Ball	Dance	Twelfth	Fourth
d	W	LOVE	Hockey	Debate	Eighth	Third
l	V	PEACE	Football	Dance	First	First

Student Y is from Peace house and participates in Dance.

**QNo:- 38 ,Correct Answer:- B**

**Explanation:-**

According to the information given:

1. The students are from classes  $12^{th}$ ,  $8^{th}$ ,  $7^{th}$ ,  $6^{th}$ ,  $4^{th}$  and  $1^{st}$ .
  2. According to information (i), the three possible consecutive classes are  $9^{th}$ ,  $10^{th}$  and  $11^{th}$ .
  3. So the student M on the fourth floor must be from  $12^{th}$ .
  4. As there are three students on the first floor, namely, N, U, V and only V has been identified as being in  $1^{st}$  class, it is difficult to say from which class the students on the first floor are from.
  5. According to information b, c, h and above deductions, it can be ascertained that there are two students in  $12^{th}$ , one student in  $7^{th}$ , two students in  $6^{th}$ , one student in  $4^{th}$ , three students on first floor, one of whom is certainly in  $1^{st}$ . The remaining 3 students are from  $8^{th}$ .
  6. As 3 students have been selected from each group, there must be only 4 houses.
  7. According to information j, m and l: R, X and N are in purity house.
  8. O, T and P are in Joy house; M, W and U are in love house; Q, Y and V are in peace house.
- Thus, the table can be completed as:

Condition	Student	Group	Sport	Cultural	Class	Floor
a, j	R	PURITY	Table Tennis	Dance	Seventh	Third
h	O	JOY	Basket Ball	Dance	Forth	Second
g, l, b	X	PURITY	Football	Debate	Sixth	Second
l	N	PURITY	Football	Theatre	1st/2nd/3rd	First
c	T	JOY	Basket Ball	Theatre	Eighth	Third
d	M	LOVE	Hockey	Debate	Twelfth	Fourth
d, b	P	JOY	Hockey	Debate	Sixth	Second
m	U	LOVE	Football	Choir	1st/2nd/3rd	First
a	Q	PEACE	Table Tennis	Theatre	Eighth	Third
h	Y	PEACE	Basket Ball	Dance	Twelfth	Fourth
d	W	LOVE	Hockey	Debate	Eighth	Third
l	V	PEACE	Football	Dance	First	First

Hence Q, Y and V are in peace house.



**QNo:- 39 ,Correct Answer:- A**

**Explanation:-**

If AK only works with RM, then 2003 hit of AK is with RM.

Hence SRK in 2003 combined with PZ to give a hit. If AR and SK do not work together, then AR's two hits in 2000 are with SRK and VO.

Hence SK's hit in 2000 is with RM.

SRK has had hits with PZ and AR in 2003 and 2000 respectively. So SRK's hits in 2002 are with PZ and AR. Also SRK's in 2004 is with AR. VO's 2004 hit is with MD.

As VO has had 2 hits in 2001, at least one of them is with MD. Given that PZ has not worked with VO, then VO's 2nd hit in 2001 is with RM. Hence in 2001, PZ has a hit with HR. So in 2002, SRK's two hits are with PZ and AR.

	2000	2001	2002	2003	2004
SRK	AR	-	AR+PZ	PZ	AR
VO	AR	RM+MD	-	-	MD
AK	-	-	Others	RM	-
HR	-	PZ	Others	-	Others
SK	RM	-	Others	-	Others

Hence 1<sup>st</sup> option.

**QNo:- 40 ,Correct Answer:- B**

**Explanation:-**

If AK only works with RM, then 2003 hit of AK is with RM.

Hence SRK in 2003 combined with PZ to give a hit. If AR and SK do not work together, then AR's two hits in 2000 are with SRK and VO.

Hence SK's hit in 2000 is with RM.

SRK has had hits with PZ and AR in 2003 and 2000 respectively. So SRK's hits in 2002 are with PZ and AR. Also SRK's in 2004 is with AR. VO's 2004 hit is with MD.

As VO has had 2 hits in 2001, at least one of them is with MD. Given that PZ has not worked with VO, then VO's 2nd hit in 2001 is with RM. Hence in 2001, PZ has a hit with HR. So MD's both hits have been with VO.

	2000	2001	2002	2003	2004
SRK	AR	-	AR+PZ	PZ	AR
VO	AR	RM+MD	-	-	MD
AK	-	-	Others	RM	-
HR	-	PZ	Others	-	Others
SK	RM	-	Others	-	Others

Hence option 2.

**QNo:- 41 ,Correct Answer:- C**

**Explanation:-**

If AK only works with RM, then 2003 hit of AK is with RM.

Hence SRK in 2003 combined with PZ to give a hit. If AR and SK do not work together, then AR's two hits in 2000 are with SRK and VO.

Hence SK's hit in 2000 is with RM.

SRK has had hits with PZ and AR in 2003 and 2000 respectively. So SRK's hits in 2002 are with PZ and AR. Also SRK's in 2004 is with AR. VO's 2004 hit is with MD.

As VO has had 2 hits in 2001, at least one of them is with MD. Given that PZ has not worked with VO, then VO's 2nd hit in 2001 is with RM. Hence in 2001, PZ has a hit with HR. So HR's hits have been with PZ in 2001 and others in 2002 and 2004.

	2000	2001	2002	2003	2004
SRK	AR	-	AR+PZ	PZ	AR
VO	AR	RM+MD	-	-	MD
AK	-	-	Others	RM	-
HR	-	PZ	Others	-	Others
SK	RM	-	Others	-	Others

Hence 3.

**QNo:- 42 ,Correct Answer:- C**

**Explanation:-**

If AK only works with RM, then 2003 hit of AK is with RM.

Hence SRK in 2003 combined with PZ to give a hit. If AR and SK do not work together, then AR's two hits in 2000 are with SRK and VO.

Hence SK's hit in 2000 is with RM.

SRK has had hits with PZ and AR in 2003 and 2000 respectively. So SRK's hits in 2002 are with PZ and AR. Also SRK's in 2004 is with AR. VO's 2004 hit is with MD.

As VO has had 2 hits in 2001, at least one of them is with MD. Given that PZ has not worked with VO, then VO's 2nd hit in 2001 is with RM. Hence in 2001, PZ has a hit with HR. The 2 hits of others in 2004 are with HR and SK, and the three hits in 2002 are with AK, HR and SK.

	2000	2001	2002	2003	2004
SRK	AR	-	AR+PZ	PZ	AR
VO	AR	RM+MD	-	-	MD
AK	-	-	Others	RM	-
HR	-	PZ	Others	-	Others
SK	RM	-	Others	-	Others

Hence both HR and SK have had 2 hits with others. Hence 3.

**QNo:- 43 ,Correct Answer:- C**

**Explanation:-**

Suppose the seats are numbered 1 to 5 from left to right. Nandita sits at 1, she likes lilac and wants to go to Maldives.

The person who like swimming and owns the cat sits at 5. Since the girl who owns the cat is at 5, the girl who likes badminton must be at 4. Since the girl who likes hockey sits next to the girl who likes badminton, we can conclude that Amisha, who eats Dairy Milk and likes hockey, sits at 3. Raveena is on the right of Preeti. So Raveena, who wants to go to Australia and likes green, must be at 5 and Preeti must be at 4. Now, Tanushree, who like the Bournville must be at 2 and the girl who wants to go to Hong Kong and likes pink must be at 3. Since the girl on the right of the girl who likes horse riding likes tennis, Nandita must like tennis and Tanushree must like horse riding. Since the girls who like Perk and Kit Kat are next to each other, Nandita must like the Crackle and she owns the rabbit. Since the girl who likes Perk owns a horse, she must be Preeti and Raveena must like Kit Kat. So the girl who likes blue and owns the puppy must be Tanushree. Since the girl who likes purple wants to go to Canada, she must be Preeti, and therefore Tanushree wants to go to Singapore and Amisha owns the parrot. The correct order is as follows:

Seat 1: Nandita eats Crackle, likes lilac, owns the rabbit, plays tennis and wants to holiday in Maldives.  
Seat 2: Tanushree eats Bournville, likes blue, owns the puppy, likes horse riding and wants to holiday in Singapore.

Seat 3: Amisha eats Dairy Milk, likes pink, owns the parrot, plays hockey and wants to holiday in Hong Kong.

Seat 4: Preeti eats Perk, likes purple, owns the horse, plays badminton and wants to holiday in Canada.

Seat 5: Raveena eats Kit Kat, likes Green, owns the cat, likes swimming and wants to holiday in Australia. The girl who owns the parrot likes hockey.

**QNo:- 44 ,Correct Answer:- A**

**Explanation:-**

Suppose the seats are numbered 1 to 5 from left to right. Nandita sits at 1, she likes lilac and wants to go to Maldives.

The person who like swimming and owns the cat sits at 5. Since the girl who owns the cat is at 5, the girl who likes badminton must be at 4. Since the girl who likes hockey sits next to the girl who likes badminton, we can conclude that Amisha, who eats Dairy Milk and likes hockey, sits at 3. Raveena is on the right of Preeti. So Raveena, who wants to go to Australia and likes green, must be at 5 and Preeti must be at 4. Now, Tanushree, who like the Bournville must be at 2 and the girl who wants to go to Hong Kong and likes pink must be at 3. Since the girl on the right of the girl who likes horse riding likes tennis, Nandita must like tennis and Tanushree must like horse riding. Since the girls who like Perk and Kit Kat are next to each other, Nandita must like the Crackle and she owns the rabbit. Since the girl who likes Perk owns a horse, she must be Preeti and Raveena must like Kit Kat. So the girl who likes blue and owns the puppy must be Tanushree. Since the girl who likes purple wants to go to Canada, she must be Preeti, and therefore Tanushree wants to go to Singapore and Amisha owns the parrot.

The correct order is as follows:

Seat 1: Nandita eats Crackle, likes lilac, owns the rabbit, plays tennis and wants to holiday in Maldives.

Seat 2: Tanushree eats Bournville, likes blue, owns the puppy, likes horse riding and wants to holiday in Singapore.

Seat 3: Amisha eats Dairy Milk, likes pink, owns the parrot, plays hockey and wants to holiday in Hong Kong.

Seat 4: Preeti eats Perk, likes purple, owns the horse, plays badminton and wants to holiday in Canada.

Seat 5: Raveena eats Kit Kat, likes Green, owns the cat, likes swimming and wants to holiday in Australia. The girl who wants to holiday in Singapore likes Bournville.

**QNo:- 45 ,Correct Answer:- A**

**Explanation:-**

Suppose the seats are numbered 1 to 5 from left to right. Nandita sits at 1, she likes lilac and wants to go to Maldives.

The person who like swimming and owns the cat sits at 5. Since the girl who owns the cat is at 5, the girl who likes badminton must be at 4. Since the girl who likes hockey sits next to the girl who likes badminton, we can conclude that Amisha, who eats Dairy Milk and likes hockey, sits at 3. Raveena is on the right of Preeti. So Raveena, who wants to go to Australia and likes green, must be at 5 and Preeti must be at 4. Now, Tanushree, who like the Bournville must be at 2 and the girl who wants to go to Hong Kong and likes pink must be at 3. Since the girl on the right of the girl who likes horse riding likes tennis, Nandita must like tennis and Tanushree must like horse riding. Since the girls who like Perk and Kit Kat are next to each other, Nandita must like the Crackle and she owns the rabbit. Since the girl who likes Perk owns a horse, she must be Preeti and Raveena must like Kit Kat. So the girl who likes blue and owns the puppy must be Tanushree. Since the girl who likes purple wants to go to Canada, she must be Preeti, and therefore Tanushree wants to go to Singapore and Amisha owns the parrot.

The correct order is as follows:

Seat 1: Nandita eats Crackle, likes lilac, owns the rabbit, plays tennis and wants to holiday in Maldives.

Seat 2: Tanushree eats Bournville, likes blue, owns the puppy, likes horse riding and wants to holiday in Singapore.

Seat 3: Amisha eats Dairy Milk, likes pink, owns the parrot, plays hockey and wants to holiday in Hong Kong.

Seat 4: Preeti eats Perk, likes purple, owns the horse, plays badminton and wants to holiday in Canada.

Seat 5: Raveena eats Kit Kat, likes Green, owns the cat, likes swimming and wants to holiday in Australia. The girl who likes horse riding sits next to the girl who likes Dairy Milk.

**QNo:- 46 ,Correct Answer:- C**

**Explanation:-**

Suppose the seats are numbered 1 to 5 from left to right. Nandita sits at 1, she likes lilac and wants to go to Maldives.

The person who like swimming and owns the cat sits at 5. Since the girl who owns the cat is at 5, the girl who likes badminton must be at 4. Since the girl who likes hockey sits next to the girl who likes badminton, we can conclude that Amisha, who eats

Dairy Milk and likes hockey, sits at 3. Raveena is on the right of Preeti. So Raveena, who wants to go to Australia and likes green, must be at 5 and Preeti must be at 4. Now, Tanushree, who like the Bournville must be at 2 and the girl who wants to go to Hong Kong and likes pink must be at 3. Since the girl on the right of the girl who likes horse riding likes tennis, Nandita must like tennis and Tanushree must like horse riding. Since the girls who like Perk and Kit Kat are next to each other, Nandita must like the Crackle and she owns the rabbit. Since the girl who likes Perk owns a horse, she must be Preeti and Raveena must like Kit Kat. So the girl who likes blue and owns the puppy must be Tanushree. Since the girl who likes purple wants to go to Canada, she must be Preeti, and therefore Tanushree wants to go to Singapore and Amisha owns the parrot.

The correct order is as follows:

Seat 1: Nandita eats Crackle, likes lilac, owns the rabbit, plays tennis and wants to holiday in Maldives.

Seat 2: Tanushree eats Bournville, likes blue, owns the puppy, likes horse riding and wants to holiday in Singapore.

Seat 3: Amisha eats Dairy Milk, likes pink, owns the parrot, plays hockey and wants to holiday in Hong Kong.

Seat 4: Preeti eats Perk, likes purple, owns the horse, plays badminton and wants to holiday in Canada.

Seat 5: Raveena eats Kit Kat, likes Green, owns the cat, likes swimming and wants to holiday in Australia. From the above analysis we know that Preeti owns the horse and Raveena likes Kit Kat. So statements III and IV are false.

**QNo:- 47 ,Correct Answer:- B**

**Explanation:-**

Since Net Profit = 70% of Gross Profit, Gross Profit can be calculated as  $\text{Net Profit} \times \frac{100}{70}$ . Operating cost can be calculated as  $\text{Revenue} - \text{Gross Profit}$ .

Bir. Corp.:  $\text{GP} = (717 + 419) \times \frac{100}{70} = 1622$ .  $\text{Op. Cost} = (2049 + 1996) - 1622 = 2423$ . The required percentage is  $\frac{2423}{4045} = 60\%$ .

Ind. Cem.:  $\text{GP} = (672 + 498) \times \frac{100}{70} = 1671$ .  $\text{Op. Cost} = (3839 + 3554) - 1671 = 5722$ . The required percentage is  $\frac{5722}{7393} = 77\%$ .

UltTech:  $\text{GP} = (1760 + 3007) \times \frac{100}{70} = 6810$ .  $\text{Op. Cost} = (6286 + 7160) - 6810 = 6636$ . The required percentage is  $\frac{6636}{13446} = 49\%$ .

Chet. Cem.:  $\text{GP} = (311 + 370) \times \frac{100}{70} = 972$ .  $\text{Op. Cost} = (1110 + 1322) - 972 = 1460$ . The required percentage is  $\frac{1460}{2432} = 60\%$ .

It is more than 70% for india cement. Hence second option.

**QNo:- 48 ,Correct Answer:- 43**

**Explanation:-**

Total net profit =  $(9858 + 10897) = 20,755$

Total Gross Profit =  $20755 \times \frac{100}{70} = 29650$ .

Total revenue over the two years =  $(33600 + 35052) = 68,652$

The required percentage is  $(29650 / 68652) * 100 = 43\%$  (approx)

**QNo:- 49 ,Correct Answer:- 2**

**Explanation:-**

The revenues of ACC, Chettinad Cement, Dalmia Cement, Shree Cement and UltraTech Cement increased over the 2 years.

We can calculate the Op. Cost as  $\text{Revenue} \times \frac{100 - \text{Net Profit}}{70}$ .

ACC:  $\text{Op. Cost}^{2006} = 5984 \times \frac{146600}{70} = 3890$ .  $\text{Op. Cost}^{2007} = 7189 \times \frac{276800}{70} = 3235$ .

Chet. Cem.:  $\text{Op. Cost}^{2006} = 1110 \times \frac{31100}{70} = 665$ .  $\text{Op. Cost}^{2007} = 1322 \times \frac{37000}{70} = 793$ .

Dal. Cem.:  $\text{Op. Cost}^{2006} = 1692 \times \frac{65100}{70} = 762$ .  $\text{Op. Cost}^{2007} = 1973 \times \frac{48300}{70} = 1283$ .

Shree Cem.:  $\text{Op. Cost}^{2006} = 2440 \times \frac{51200}{70} = 1708$ .  $\text{Op. Cost}^{2007} = 3097 \times \frac{86700}{70} = 1858$ .

UltTech:  $\text{Op. Cost}^{2006} = 6286 \times \frac{176000}{70} = 3771$ .  $\text{Op. Cost}^{2007} = 7160 \times \frac{300700}{70} = 2864$ .

Thus, only 2 companies, ACC and UltraTech satisfy the given criteria.

**QNo:- 50 ,Correct Answer:- B**

**Explanation:-**

From the table we see that Revenues increased for Dalmia Cement and Shree Cement.

Dalmia.Cement.: Taxesâ€™06 = 279. Taxesâ€™07 = 207.

Shree. Cem.: Taxesâ€™06 = 220. Taxesâ€™07 = 372.

Thus, for Dalmia Cement the taxes decrease and at the same time revenues increase.

**QNo:- 51 ,Correct Answer:- 2**

**Explanation:-**

Considering the given statement is following order , we get, From (1)Balvinder is at 7<sup>th</sup> place. From (4), Diljeet is at 6<sup>th</sup> place. From (3) Diljeet and Gopal must be standing at 1<sup>st</sup> and 5<sup>th</sup> places. From (2), Arjun, Farhaan and Diljeet are standing at 3<sup>rd</sup> ,4<sup>th</sup> and 5<sup>th</sup> places respectively or at 3<sup>rd</sup> ,2<sup>nd</sup> and 1<sup>st</sup> places respectively. Thus, we get two possible arrangements as:

Shortest to Tallest							
	1	2	3	4	5	6	7
1	Dt	F	A	Dk	G	C	B
2	G	Dk	A	F	Dt	C	B

So its clear that two arrangements are possible.

**QNo:- 52 ,Correct Answer:- 3**

**Explanation:-**

Considering the given statement is following order , we get, From (1)Balvinder is at 7<sup>th</sup> place. From (4), Diljeet is at 6<sup>th</sup> place. From (3) Diljeet and Gopal must be standing at 1<sup>st</sup> and 5<sup>th</sup> places. From (2), Arjun, Farhaan and Diljeet are standing at 3<sup>rd</sup> ,4<sup>th</sup> and 5<sup>th</sup> places respectively or at 3<sup>rd</sup> ,2<sup>nd</sup> and 1<sup>st</sup> places respectively. Thus, we get two possible arrangements as:

Shortest to Tallest							
	1	2	3	4	5	6	7
1	Dt	F	A	Dk	G	C	B
2	G	Dk	A	F	Dt	C	B

3 boys, Arjun, Chaman and Balwinder, occupy the same positions in both arrangements.

**QNo:- 53 ,Correct Answer:- C**

**Explanation:-**

Considering the given statement is following order , we get, From (1)Balvinder is at 7<sup>th</sup> place. From (4), Diljeet is at 6<sup>th</sup> place. From (3) Diljeet and Gopal must be standing at 1<sup>st</sup> and 5<sup>th</sup> places. From (2), Arjun, Farhaan and Diljeet are standing at 3<sup>rd</sup> ,4<sup>th</sup> and 5<sup>th</sup> places respectively or at 3<sup>rd</sup> ,2<sup>nd</sup> and 1<sup>st</sup> places respectively. Thus, we get two possible arrangements as:

Shortest to Tallest							
	1	2	3	4	5	6	7
1	Dt	F	A	Dk	G	C	B
2	G	Dk	A	F	Dt	C	B

If Farhan is taller than Deepak, we need to refer to the 2<sup>nd</sup> arrangement, in which Gopal is the shortest boy.

**QNo:- 54 ,Correct Answer:- 35.56**

**Explanation:-**

Total number of girls = 66

Those with NCC work credits = 18

∴ Girls with no NCC work credits = 48 girls

Boys with no NCC work credits = 176-48 = 128

∴ percentage of boys with no NCC work credits =  $\frac{128}{360} \times 100 = 35.5\%$

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**QNo:- 55 ,Correct Answer:- D**

**Explanation:-**

All commerce and arts graduates opt for commando course but nothing is mentioned about others opting for commando course.

**QNo:- 56 ,Correct Answer:- B**

**Explanation:-**

Students with  $\geq 3$  yrs NCC work credits = 26+4 = 30

IITians with  $\geq 3$  yrs NCC work credits = 30-8 = 22

IITians with < 3yrs NCC work credits = 62-22 = 40

Non-IITians with  $\geq 3$  yrs NCC work credits = 8

∴ Non-IITians with <3yrs NCC work credits

= 104- 8 = 96

So required ratio = 40: 96=5:12

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**QNo:- 57 ,Correct Answer:- 15.65**

**Explanation:-**

Non-engineering background = 360-166 = 194

Number of cadets who are <23 yrs of age = 230

Thus, Engineers =  $1 - (194/230) = (36/230) \times 100 = 15.65\%$

**QNo:- 58 ,Correct Answer:- D**

**Explanation:-**

Data regarding strength of boys in the batch of 2015 missing. As a results you cannot estimated the total strength of the batch of 2015 therefore, the answer cannot be determined

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**QNo:- 59 ,Correct Answer:- C**

**Explanation:-**

From the given conditions: The factory must be at point 1 or 2 or 3. The harbour must not be point 7 and garden must not be point 1. The library must be point 2 or 3 or 4 or 5 or 6. The museum must be point 1 or 7. The palace must be the point 5 or 6 or 7. The harbour must be the point visited just before the garden.

If Sue begins her tour at the harbour then the garden must be point 2. So, the factory must be point 3 and the museum must be point 7. The palace must be point 5 or 6. Library or theatre could be the 4th point.

**QNo:- 60 ,Correct Answer:- B**

**Explanation:-**

From the given conditions: The factory must be at point 1 or 2 or 3. The harbour must not be point 7 and garden must not be point 1. The library must be point 2 or 3 or 4 or 5 or 6. The museum must be point 1 or 7. The palace must be the point 5 or 6 or 7. The harbour must be the point visited just before the garden.

1 2 3 4 5 6 7  
F P

Since the harbour must be immediately followed by the garden, so neither the harbour nor the garden will be that point between the factory and the palace. So, options (A) and (C) are eliminated. Since museum must be either point 1 or 7, so option (D) is also eliminated. Hence option (B) is the answer.

**QNo:- 61 ,Correct Answer:- A**

**Explanation:-**

From the given statement we can conclude that  $W + X + Y + Z = 14$ ,  $W > Z$  Using statement I alone, we get  $W \times Z = 6$  The possible values of  $W$  and  $Z$  will be (6, 1) and (3, 2). Thus, no unique value. Using statement II alone, we get  $X + Z = 5 \times 2 = 10$  Hence  $W + Y = 4$ . It is also known that  $W$  and  $Y$  are distinct so the possible values of  $W$  and  $Y$  can be (3, 1) and (1, 3). But (1,3) is not possible as  $W > Z$ . So the product  $WY$  is equal to 3. So the question can be answered using statement II alone. Hence option 1.

**QNo:- 62 ,Correct Answer:- C**

**Explanation:-**

From the given information, we know that Vivek received 10% of 3000 = 300 messages from Nilima. Similarly, we can calculate the number of messages that Vivek received from Santosh, Mandar, Charu and Atul as 750, 600, 450 and 900 respectively. Nilima has sent a total of 15% of  $S$  messages. This must equal at least the number of messages she has sent to Vivek. So,  $0.15S \geq 300 \Rightarrow S \geq 2000$ . Similarly, for Santosh,  $0.2S \geq 750 \Rightarrow S \geq 3750$ , for Mandar,  $0.16S \geq 600 \Rightarrow S \geq 3750$ , for Charu,  $0.25S \geq 450 \Rightarrow S \geq 1800$  and for Atul,  $0.24S \geq 900 \Rightarrow S \geq 3750$ . From this analysis, it seems that the minimum value of  $S$  must be 3750. However, if this were true, then Nilima would have sent  $0.15 \times 3750 = 562.5$  messages. Since this is not possible, the least possible value of  $S$  is 3800.

**QNo:- 63 ,Correct Answer:- B**

**Explanation:-**

Nilima has sent a total of  $0.15S$  messages and of these, 300 messages are sent to Vivek. So, the number of messages sent by Nilima to Vivek as a proportion of the total number of messages sent by her is  $300/0.15S = 2000/S$ . The number of messages sent by Santosh to Vivek as a proportion of the total number of messages sent by him is  $750/0.2S = 3750/S$ . The number of messages sent by Mandar to Vivek as a proportion of the total number of messages sent by him is  $600/0.16S = 3750/S$ . The number of messages sent by Charu to Vivek as a proportion of the total number of messages sent by her is  $450/0.25S = 1800/S$ . The number of messages sent by Atul to Vivek as a proportion of the total number of messages sent by him is  $900/0.24S = 3750/S$ . Since the proportion is the least for Charu, she has sent the least percentage of her messages to Vivek.

**QNo:- 64 ,Correct Answer:- 3**

**Explanation:-**

Charu has definitely not sent more than 80% of her messages to Vivek. Suppose the others send exactly 80% of their messages to Vivek. For

Nilima,  $300 = 0.8\tilde{A} - 0.15S \hat{\text{a}}\text{S} = 2500$ . For Santosh,  $750 = 0.8\tilde{A} - 0.2S \hat{\text{a}}\text{S} = 4687.5$ . For Mandar,  $600 = 0.8\tilde{A} - 0.16S \hat{\text{a}}\text{S} = 4687.5$ .

For Atul,  $900 = 0.8\tilde{A} - 0.24S \hat{\text{a}}\text{S} = 4687.5$ . Since the values of  $S$  are the same for 3 persons, at most 3 of them could have sent more than 80% of their messages to Vivek.

**QNo:- 65 ,Correct Answer:- C**

**Explanation:-**

Rahim is 3<sup>rd</sup> in the queue. Since there are 11 people between Rahim and Khushi, we know that Khushi is  $3 + 11 + 1 = 15^{\text{th}}$  in the queue. Since there are 2 people between Farhan and Khushi, we know that Farhan is 12<sup>th</sup> in the queue. Since there are 6 people between Dinesh and Farhan, we know that Dinesh is 5<sup>th</sup> in the queue. Farhan is 12<sup>th</sup> in the queue.

**QNo:- 66 ,Correct Answer:- 9**

**Explanation:-**

Rahim is 3<sup>rd</sup> in the queue. Since there are 11 people between Rahim and Khushi, we know that Khushi is  $3 + 11 + 1 = 15^{\text{th}}$  in the queue. Since there are 2 people between Farhan and Khushi, we know that Farhan is 12<sup>th</sup> in the queue. Since there are 6 people between Dinesh and Farhan, we know that Dinesh is 5<sup>th</sup> in the queue. If Farhan and Dinesh interchange positions, Farhan will be 5<sup>th</sup> in the queue. So, there will be 9 people between Farhan and Khushi.

**QNo:- 67 ,Correct Answer:- 1**

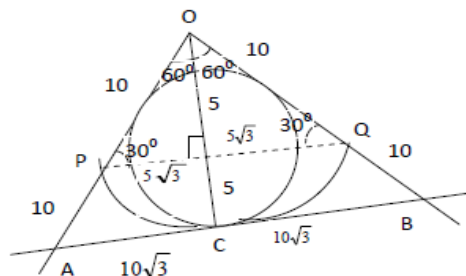
**Explanation:-**

$$A_1^2 = A_2^2 + \hat{\text{a}}\text{€} + A_{100}^2$$

If  $x$  is divisible by 3,  $x^2$  is also divisible by 3. If  $x$  is not divisible by 3,  $x^2$  leaves a remainder of 1, when divided by 3. If none of the numbers in the RHS are divisible by 3, each would leave a remainder of 1 and the RHS would leave the same remainder as 99. i.e. 0 and thus  $A_1$  would have to be divisible by 3. At least one number has to be divisible by 3.

**QNo:- 68 ,Correct Answer:- C**

**Explanation:-**



In the 120<sup>o</sup> sector of radius 10 cm the biggest possible circle is to be drawn. The biggest circle when drawn will touch the two radii and the arc of the sector at its midpoint C. Now draw a tangent at the midpoint of the arc and extend it in either direction and



also extend two radii so as to meet the tangent at A and B. The triangle OAB is similar to the isosceles triangle OPQ. Since the altitude (which is also a median) of the triangle OAB is twice that of OPQ, all the dimensions (lengths) of the triangle OAB will be twice that of OPQ.

Now the radius of the circle required is the inradius of the  $\triangle OAB$  which is twice the inradius of  $\triangle OPQ$ .

$$\text{In radius of } \triangle OAB = \frac{\text{Area}}{\text{Semi Perimeter}} = \frac{\frac{1}{2}OC \times AB}{\frac{20+20+20\sqrt{3}}{2}} = \frac{20\sqrt{3} \times 10}{20(2+\sqrt{3})} = \frac{200\sqrt{3}}{20(2+\sqrt{3})} = 10\sqrt{3}(2-\sqrt{3}) = (20\sqrt{3}-30)$$

#### Alternative Solution

After drawing a basic diagram, it can be observed that the diameter of the circle is slightly less than 10 cm. Hence, the radius must be close to 5 cm. but less than 5 cm. An approximate calculation of the answer choices shows that only choice 3 is possible.

3

**QNo:- 69 ,Correct Answer:- 40**

#### Explanation:-

$4x = 5y + 6 = 5(y + 1) + 1$ . Since  $5(y + 1)$  will always end in 0 or 5, after adding 1, the RHS will end in 1 or 6. Since the LHS is a multiple of 4, the RHS must end in 6. In other words, we need to find  $x$  so that  $4x$  ends in 6 and  $y$  so that  $5y$  ends in 0 or 5. So,  $x = 4, 9, 14, 19, \dots, 199$  and  $y = 2, 6, 10, 14, \dots, 198$ . Values of  $x$  form an AP with  $a = 4$  and  $d = 5$ . Since  $199 = 4 + 5(n - 1) \hat{a} n = 40 \hat{a} x$  can take 40 different values. Similarly, values of  $y$  form an AP with  $a = 2$  and  $d = 4$ . Since  $198 = 2 + 4(n - 1) \hat{a} n = 50 \hat{a} y$  can take 50 different values. Thus,  $(x, y)$  can take 40 different values from  $(4, 2)$  to  $(199, 158)$ .

**QNo:- 70 ,Correct Answer:- B**

#### Explanation:-

$$\text{Given } 2a^2 + 17b^2 + 8c^2 - 6ab - 20bc = 0$$

Now, the above expression, on the L.H.S. resembles the sum of two expressions of the form  $(ma + nb)^2$  and  $(pb + qc)^2$ , where  $m, n, p$  and  $q$  are some constants. By a little trial and error, it can be seen that by multiplying the entire equation with 2, it is possible to easily arrive at a set of  $m, n, p$  and  $q$

$$\therefore 4a^2 + 34b^2 + 16c^2 - 12ab - 40bc = 0$$

$$\Rightarrow (2a - 3b)^2 + (5b - 4c)^2 = 0 \dots (2)$$

$$\Rightarrow a = \frac{3}{2}b \text{ and } c = \frac{5b}{4}$$

(Because the only way equation (2) can be true is if each term on the L.H.S individually, equals zero)

$$\text{Now } \frac{a+b-c}{a+b+c} \text{ can be found as } \frac{\left(\frac{3}{2}b\right) + b - \left(\frac{5}{4}b\right)}{\left(\frac{3}{2}b\right) + b + \left(\frac{5}{4}b\right)} = \frac{6+4-5}{6+4+5} = \frac{5}{15} = \frac{1}{3}$$

**QNo:- 71 ,Correct Answer:- A**

#### Explanation:-

Let the three numbers be  $a, b$  and  $c$ , where  $a$  is the largest of the three.  $a + b + c = 3x$ . Also,  $(b + c)/2 = x - 2 \Rightarrow b + c = 2x - 4$ . For the middle number to take the maximum value, the smallest number has to be 1. So,  $1 + \text{middle} = 2x - 4 \Rightarrow \text{Middle} = 2x - 5$ .

**QNo:- 72 ,Correct Answer:- B**

#### Explanation:-

$$\begin{aligned}
 f(x) &= 2x^2 + 3x + 4 \text{ (Completing the square)} \\
 &= 2(x^2 + 3/2x) + 4 \\
 &= 2(x^2 + 2 \times 3/4x + 9/16) + 4 - 9/8 \\
 &= 2(x + 3/4)^2 + 23/8 \\
 \text{So Min } [f(x)] &= 23/8 \text{ and this occurs at } x + 3/4 = 0 \text{ or } x = -3/4 \\
 g(x) &= 5 - x^2 \\
 &= 5 - \text{perfect square} \\
 &= \text{So, Max } [g(x)] = 5 \text{ when } x^2 = 0 \text{ i.e. at } x = 0 \\
 \text{Thus Min.}[f(x)] - \text{Max.}[g(x)] &= 23/8 - 5 = -17/8.
 \end{aligned}$$

**QNo:- 73 ,Correct Answer:- 2**

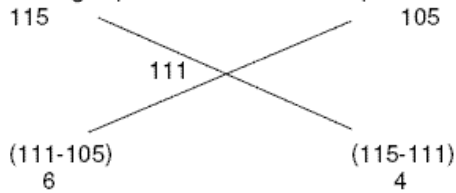
Suppose the distance flown at 105 kmph is  $d$  and the distance flown at 115 kmph is  $(555 - d)$ .

$$\text{So, } \frac{d}{105} + \frac{555-d}{115} = 5.$$

Solving this equation yields  $d = 210$  km.  
Thus the time taken is  $210/105 = 2$  hours.

**Alternatively**

Using Alligation,  
Speed without tailwind = 105 kmph.  
Speed with tailwind = 115 kmph.  
Average speed =  $555/5 = 111$  kmph.



i.e. Ratio of time = 3:2.

**Explanation:-** So, time for which aeroplane flew at 105 kmph =  $5 \times 2/5 = 2$  hrs

**QNo:- 74 ,Correct Answer:- B**

**Explanation:-**

$(x - p)$ ,  $(x - q)$ ,  $(x - r)$  and  $(x - s)$  all are positive numbers.

We know that A.M.  $\geq$  G.M.

$$\text{Or, } \frac{[(x-p) + (x-q) + (x-r) + (x-s)]}{4} \geq [(x-p)(x-q)(x-r)(x-s)]^{1/4}$$

$$\text{Or, } \frac{[4x - (p+q+r+s)]}{4} \geq [(x-p)(x-q)(x-r)(x-s)]^{1/4}$$

$$\text{Or, } \frac{3x}{4} \geq [(x-p)(x-q)(x-r)(x-s)]^{1/4}$$

$$\text{Or, } \left[\frac{3x}{4}\right]^4 \geq [(x-p)(x-q)(x-r)(x-s)]$$

$$\text{Thus, } [(x-p)(x-q)(x-r)(x-s)] \leq \frac{81x^4}{256}.$$

**QNo:- 75 ,Correct Answer:- 0**

**Explanation:-**

The 3<sup>rd</sup> term is  $(1 + 5)/2 = 6/2 = 3$ , the 4<sup>th</sup> term is  $(6 + 3)/3 = 9/3 = 3$ , the 5<sup>th</sup> term is  $(9 + 3)/4 = 12/4 = 3$ .

Since each of the remaining terms is 3, the 25<sup>th</sup> and 30<sup>th</sup> terms are also 3.  
The difference is 0.

**QNo:- 76 ,Correct Answer:- 2**

**Explanation:-**

The 3 successive discounts are a%, b% and c%, where  $a + b + c = 50\%$

The maximum discount(x%), would occur when  $a=50\%$ ,  $b = c = 0\%$

In this case, selling price=1080. Profit% = 8%

The minimum discount would result when  $a=b=c=\frac{50}{3}\%$

$\therefore$  Selling price =  $\left(\frac{5}{6}\right)\left(\frac{5}{6}\right)\left(\frac{5}{6}\right)2160=1250 \Rightarrow$  Profit%=25%

There two cases are represented below.

Minimum Selling Price 1080	Maximum Selling Price 1250
Minimum Profit percentage 8%	Maximum Profit Percentage 25%

Consider the ranges given in the choices:

(i)  $6 < x < 10$  contains values which are not possible for x.

(ii)  $14 < x < 20$  contains only those values which are possible.

(iii)  $20 < x < 24$  contains only those values which are possible

(iv)  $25 < x < 26$  contains values which are not possible for x.

$\hat{a}^{\wedge} 2$  of the ranges contains values which are not possible for x.

**QNo:- 77 ,Correct Answer:- C**

The weights of the coins in the 1<sup>st</sup> safe form the AP 10, 40, 70, ... with  $a = 10$  and  $d = 30$ . The weights of the coins in the 2<sup>nd</sup> safe form the AP 20, 50, 80, ... with  $a = 20$  and  $d = 30$ . The weights of the coins in the 3<sup>rd</sup> safe form the AP 30, 60, 90, ... with  $a = 30$  and  $d = 30$ . If the number of terms in an AP is odd, the average is the middle term and if the number of terms in an AP is even, the average is the average of the middle two terms. So 2 of the safes should have an odd number of coins and the 3<sup>rd</sup> safe should have an even number of coins. Thus the total number of coins will be even. The number of coins in 2 of the 3 safes will be  $2x + 1$  or  $2x - 1$  each and the 3<sup>rd</sup> safe will have  $2x$  coins. So the total number of coins will be  $6x + 2$  or  $6x - 2$ . Now,  $90 = 6 \times 15$  and  $82 = 6 \times 14 - 2$ . The best answer is option 3.

**Explanation:-**

**QNo:- 78 ,Correct Answer:- 1**

**Explanation:-**  $30^{40} = (34 - 4)^{40}$ . When it is divided by 17 remainder will be  $4^{40}$ .

Now,  $4^{40} = 16^{20} = (17 - 1)^{20}$ , which when divided by 17 will give remainder  $(-1)^{20} = 1$ .

**QNo:- 79 ,Correct Answer:- 45**

**Explanation:-** The sum of the digits should add up to a multiple of 3. So, the integer can have nine 2s and one 3 or six 2s and four 3s. In the first case, the nine 2s can be arranged in 1 way and the one 3 can now be arranged in 10 different ways. So there are 10 such integers.

In the second case, let the 3<sup>â€™</sup>s are placed as follows:

$x_1 \underline{3} x_2 \underline{3} x_3 \underline{3} x_4 \underline{3} x_5$

where  $x_1$  is the no. of places before first 3,  $x_2$  is the no. of places between 1<sup>st</sup> & 1<sup>nd</sup> 3 and so on such that

$x_1 + x_2 + x_3 + x_4 + x_5 = 6$  &  $x_1 \hat{a} \% \neq 0, x_2 \hat{a} \% \neq 1, x_3 \hat{a} \% \neq 1, x_4 \hat{a} \% \neq 1, x_5 \hat{a} \% \neq 0$

As the lest value of  $x_2, x_3, x_4$  is 1, so assigning this value we get

$\Rightarrow x_1 + x_2 + x_3 + x_4 + x_5 = 3$  where  $x_i \hat{a} \% \neq 0, i = 1, 2, 3, 4, 5$

^ No. of ways of arranging 3s =  ${}^3 + 5 \hat{\epsilon}{}^1 C_{5-1} = {}^7 C_4 = 35$  & at remaining 6 places, 2s can be placed in 1 way. So total cases here are 35. Thus, in total  $10 + 35 = 45$  integers can be formed.

**QNo:- 80 ,Correct Answer:- 10**

**Explanation:-**

The Rajdhani Express is travelling at 54 kmph = 15 m/s. Since Ram is running in the same direction as the train, his effective speed is  $15 + 2 = 17$  m/s. The Shatabdi Express is travelling at 72 kmph = 20 m/s. Since Shyam is running in the opposite direction as the train, his effective speed is  $3 \hat{\epsilon}{} 20 = \hat{\epsilon}{} 17$  m/s. This means that the trains speed is much more than Shyam's. The two of them are 340 m apart and their relative speed is  $17 \hat{\epsilon}{} ( \hat{\epsilon}{} 17 ) = 34$  m/s. Thus the time required is  $340/34 = 10$  seconds.

**QNo:- 81 ,Correct Answer:- D**

**Explanation:-**

Triangle formed by points P, Q and common vertex is a right triangle with hypotenuse 100. Since the sides of the field are integers, 2y and x take values 60 and 80 respectively, or 80 and 60 respectively, besides that another possible values of 2y and x is 96 and 28. Now as there are different possible lengths and breadths, there will be three different areas of the rectangles. Hence the answer will be data insufficient.

**QNo:- 82 ,Correct Answer:- A**

$$\begin{aligned}
 & x^3 - 3x^2 + 4 \geq (x + 5)(x^2 - 1) \\
 \Rightarrow & \text{Assuming } x^2 - 1 > 0 \text{ ( i.e. } -1 < x < 1 \text{ )} \\
 \Rightarrow & x^3 - 3x^2 + 4 \geq x^3 + 5x^2 - x - 5 \\
 \Rightarrow & 8x^2 - x - 9 \leq 0 \\
 \Rightarrow & (x + 1)(8x - 9) \leq 0. \\
 & \text{Solving this inequality gives } -1 < x \leq 9/8. \\
 & \text{As } (-1 < x < 1), \text{ the maximum value of } x \text{ is } 9/8. \\
 \Rightarrow & \text{Assuming } x^2 - 1 < 0 \text{ ( i.e. } -1 < x < 1 \text{ )} \\
 \Rightarrow & x^3 - 3x^2 + 4 \leq x^3 + 5x^2 - x - 5 \\
 \Rightarrow & 8x^2 - x - 9 \geq 0 \\
 \Rightarrow & (x + 1)(8x - 9) \geq 0. \\
 \Rightarrow & -1 \geq x \geq 9/8. \text{ As } (-1 < x < 1), \text{ it contradicts. Hence maximum value of } x \text{ is } 9/8.
 \end{aligned}$$

**Explanation:-** 9/8.

**QNo:- 83 ,Correct Answer:- D**

**Explanation:-**

Let the cost prices of an apple, an orange, a mango and a peach be w, x, y and z respectively. Then  $0.1w + 0.4x = 0.2y + 0.5z$ ,  $w + 4x = 2y + 5z$ . Now the amount we have =  $0.9w + 0.6 \times 4x$ . Let the required number of mangoes we can buy be n, then  $0.9w + 2.4x = 1.2yn + 1.5z \times 5$ ,  $0.9w + 2.4x = 1.2yn + 1.5(w + 4x - 2y) \Rightarrow (3 - 1.2n)y = 0.6w + 3.6x$ . Therefore, n cannot be determined.

**QNo:- 84 ,Correct Answer:- 17**

**Explanation:-**

Numbers are 11, 22, 33, \_\_\_\_\_, 99, 14, 19, 28, 41, 49, 82, 94, 91.... Hence there are 17 such numbers.

**QNo:- 85 ,Correct Answer:- C**

**Explanation:-**

Since he cannot choose a set of coins out of his collection whose total value is Rs. 21. Therefore number of 2 Rupee coins must be less than or equal to two because if 3 or more 2 Rupee coins are available then we can make a set of coins whose value is 21 by using 3 two Rupee coins and 3 five Rupee coins. Hence 3rd option is the only possible answer.

**QNo:- 86 ,Correct Answer:- 900**

**Explanation:-**

Kalu: Bawa = 2 : 3 and Bawa: Lalit = 2 : 3,  $\Rightarrow$  K : B : L = 4 : 6 : 9. Let the wages be  $4k$ ,  $6k$  and  $9k$ .

Given that  $\frac{1}{3}9k = \frac{1}{2}4k + 80 \Rightarrow k = 80$ .

Wages of K =  $4k = 320$ , B =  $6k = 480$ , L =  $9k = 720$ .

Let  $p$  be the expenditure per head. Now  $(320 - p) : (480 - p) : (720 - p) = 1 : 9 : 21 \Rightarrow \frac{320 - p}{480 - p} = \frac{1}{9}$ .

By solving we get  $p = 300$ . Total Expenditure =  $3 \times 300 = \text{Rs. } 900$ .

**QNo:- 87 ,Correct Answer:- D**

**Explanation:-**

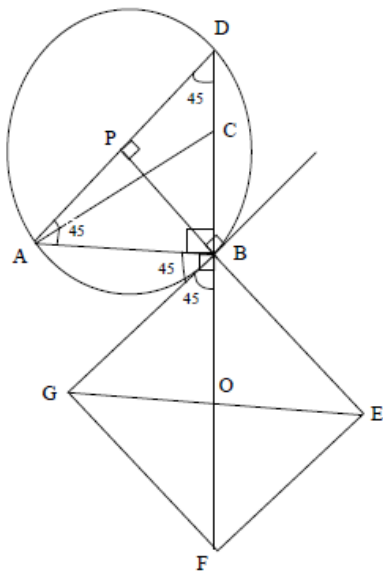
By construction, we can observe the following:

Since,  $\angle ABC = 90^\circ$ , hence, AD is a diameter of length 2 units.

Now, since, BGFE is a square, hence,  $\angle GBO = 45^\circ$

Hence,  $\angle GBA = 45^\circ$

Thus,  $\angle GBA = \angle ADB = 45^\circ$  (Alternate Segment Theorem)



In  $\Delta$ s BDP and BGO,

$$\angle PBD = \angle OBE = \angle GBO$$

$$\angle BPD = \angle BOG$$

Hence, they are similar.

$$PD : OB = BP : OG \Rightarrow OB : OG = PD : PB = 1 : 1$$

But, OB can be of any length. Thus, length of BF can't be determined.

**QNo:- 88 ,Correct Answer:- C**

**Explanation:-**

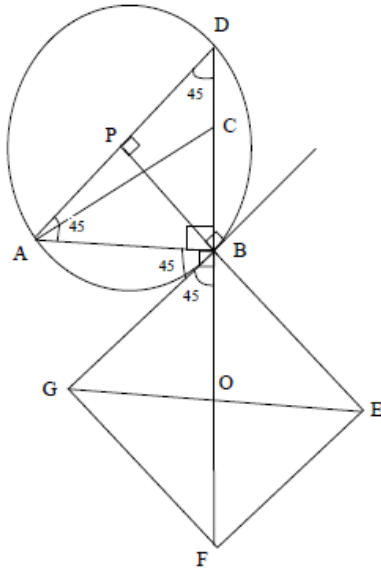
By construction, we can observe the following:

Since,  $\hat{A}BC = 90^\circ$ , hence, AD is a diameter of length 2 units.

Now, since, BGFE is a square, hence,  $\hat{G}BO = 45^\circ$

Hence,  $\hat{G}BA = 45^\circ$

Thus,  $\hat{G}BA = \hat{A}DB = 45^\circ$  (Alternate Segment Theorem)



We have

$$BP/BA = 1/\hat{A}B^2$$

Since  $BP = 1$ , hence  $BA = \hat{A}B^2$  units

$$AD = 2$$

If  $\hat{A}CB = 67.5^\circ$  then  $\hat{A}BAC = 22.5^\circ$  and hence AC is angle bisector of  $\hat{A}BAD$ .

Hence, by angle bisector theorem,  $AB : AD = BC : CD = 1/\hat{A}B^2$ .

**QNo:- 89 ,Correct Answer:- A**

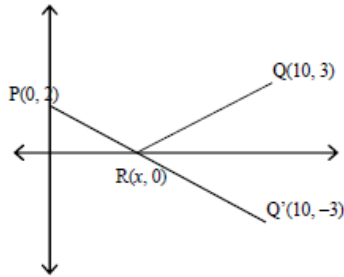
**Explanation:-**

Suppose Rahim has Rs. x initially and he loses a bet, the amount left with him will be Rs. 0.75x. Similarly, if Rahim has Rs. x initially and he wins a bet, the amount now with him will be Rs. 1.25x. Thus, winning or losing only results in multiplying the amount by 1.25 or 0.75. Since he wins thrice, his original amount will be multiplied by 1.25 thrice and since he loses thrice, his original amount will be multiplied by 0.75 thrice. Since multiplication is commutative, the order of winning and losing is not important.

Thus, in any case, final amount left =  $4096 \times 0.75^3 \times 1.25^3 = \text{Rs. } 3,375$ .

**QNo:- 90 ,Correct Answer:- A**

**Explanation:-**



Take the reflection of point Q in the X-axis and call it Q' (10, -3). Let the point at which the student touches x-axis be R. Then, by symmetry,  $RQ = RQ'$  and hence minimizing  $(PR + RQ)$  is same as minimizing  $(PR + RQ')$ . It is evident that for  $(PR + RQ')$  to be minimum, P, R and Q' should be collinear. So  $(x, 0)$  lies on the line joining  $(0, 2)$  and  $(10, -3)$ .

The line PQ' can be represented using the two point line equation as:  $\left[ (y - y_1) = \frac{y_2 - y_1}{x_2 - x_1} (x - x_1) \right]$

$$(y - 2) = \frac{-5}{10}(x) \Rightarrow 5x + 10y = 20 \Rightarrow x + 2y = 4.$$

If the line touches x-axis then y becomes 0. Thus,  $x = 4$  i.e. line touches x-axis at  $(4, 0)$

**QNo:- 91 ,Correct Answer:- 8**

**Explanation:-**

$68068 = 2^2 \cdot 7 \cdot 11 \cdot 13 \cdot 17$ . Let  $68068 = A^2 \cdot B^2 = (A + B)(A - B)$ , where A and B are whole numbers. Since the product is even, at least one of  $(A + B)$  or  $(A - B)$  must be even. To ensure this, both A and B must either be even or odd. Consequently,  $(A + B)$  and  $(A - B)$  are both even  $(A + B) = 2x$  and  $(A - B) = 2y$ . So, x and y are any number of factors from among 7, 11, 13 and 17. These can be chosen in  $2^4 = 16$  ways. If we select factors for x, the remaining factors will be y. A + B will always be greater than A - B. Half of the 16 possibilities will result in  $A + B < A - B$ . So, the actual number of factors will be  $16/2 = 8$ . Alternately, no of ways will be total number of factors of  $(7 \cdot 11 \cdot 13 \cdot 17)$  divided by 2. So answer is 8 ways.

**QNo:- 92 ,Correct Answer:- 4**

**Explanation:-**

$$\text{Let } \frac{p^2 - 14p + 9}{p^2 - 2p + 3} = k. \text{ So, } p^2 - 14p + 9 = kp^2 - 2kp + 3k \Rightarrow p^2(k - 1) + (14 - 2k)p + 3k - 9 = 0.$$

$$\text{Since } p \text{ is real, } \Delta \geq 0 \Rightarrow (14 - 2k)^2 - 4(k - 1)(3k - 9) \geq 0.$$

$$\text{Expanding and simplifying this expressions yields } k^2 + k - 20 \leq 0 \Rightarrow -5 \leq k \leq 4.$$

So the maximum value of the expression is 4.

**QNo:- 93 ,Correct Answer:- 2**

**Explanation:-**

From the given condition:  $S = O \cdot 4$ ,  $P > M$  and Q is the middle term.  $Q \cdot M = N \cdot S$ . We can make the diagram lowest to highest (left to right) 1 2 3 4 5 6 7 M P S Q R N O. So,  $R \cdot S = 2$ .

**QNo:- 94 ,Correct Answer:- A**

**Explanation:-**

We can rewrite the second circle's equation as –

$$(x + 2)^2 + (y - 3)^2 - 13 - 3 = 0$$

$$\text{Or } (x + 2)^2 + (y - 3)^2 = 16$$

So this is a circle with center  $(-2, 3)$  and radius = 4.

Now distance between the center points of the two circles is

$$\sqrt{\{(-1 - (-2))\}^2 + \{(1 - 3)\}^2} = \sqrt{5}$$

So the radius of the first circle will be  $4 - \sqrt{5}$ , since the circles are touching internally.

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**QNo:- 95 ,Correct Answer:- B**

**Explanation:-**

The trader makes of profit of  $2/9^{\text{th}}$  when he sells the mixture for Rs 46.20 / kg.

So the cost of the mixture is  $(46.2 \times 9) / 11 = \text{Rs } 37.80 / \text{kg}$ .

Suppose he mixes  $x, y$  and  $z$  kg of these respectively. Then,  $34.5x + 36.5y + 41.2z = 37.8(x + y + z)$ .

Simplifying this equation, we get  $3.3x + 1.3y = 3.4z$ .

From the answer choices, the only set of values satisfying this equation is  $5 : 3 : 6$ .

**QNo:- 96 ,Correct Answer:- 36**

**Explanation:-**

Suppose the quantities of petrol and kerosene in the vessel are  $7x$  and  $5x$  respectively. The 9 litres of this mixture that is taken out will contain petrol and kerosene in the ratio 7:5. So, the quantity of petrol removed is  $(7/12) \times 9 = 5.25$  and the quantity of kerosene removed is  $(5/12) \times 9 = 3.75$ . Then 9 litres of kerosene is added to the mixture. The quantity of petrol is now  $(7x - 5.25)$  and the quantity of kerosene is  $(5x + 3.75 + 9) = (5x + 12.75)$ . From the given information,  $(7x - 5.25) / (5x + 12.75) = 7/9$ . Solving this equation yields  $x = 3$ . Thus the volume of the vessel is  $7x + 5x = 12x = 36$  litres.

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**QNo:- 97 ,Correct Answer:- D**

**Explanation:-**

The volume of the water can be calculated as the volume of the cylinder less the volume of the conical shape left. After scooping out the hemisphere, the volume of the conical shape is  $\frac{1}{3}\pi \times 4 \times 5 - \frac{2}{3}\pi = 6\pi$ . The volume of the cylinder is  $\pi \times 9 \times 10 = 90\pi$ . So the volume of the water is  $84\pi$ .

**QNo:- 98 ,Correct Answer:- B**

**Explanation:-**

$$\text{After 2 years, the interest is } 1700 = \left[ P \left( 1 + \frac{R}{100} \right)^2 - P \right]$$

$$\text{After 3 years, the interest is } 2712.5 = \left[ P \left( 1 + \frac{R}{100} \right)^3 - P \right]$$

Solving these equations,  $P = 6400$  and  $R = 12.5\%$  p.a.

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**QNo:- 99 ,Correct Answer:- 480249**

**Explanation:-**

1<sup>st</sup> hour: Population increases by 40,000 to become  $400,000 + 40,000 = 440,000$ .

2<sup>nd</sup> hour: Population increases by 44,000 to become  $440,000 + 44,000 = 484,000$ .

3<sup>rd</sup> hour: Population decreases by 48,400 to become  $484,000 - 48,400 = 435,600$ .



4<sup>th</sup> hour: Population increases by 21,780 to become  $435,600 + 21,780 = 457,380$ .

5<sup>th</sup> hour: Population increases by 22,869 to become  $457,380 + 22,869 = 480,249$ .

**QNo:- 100 ,Correct Answer:- B**

**Explanation:-**

Let the normal time taken by Vijay to complete the work be  $t$ .

As Vijay works at  $11/8^{\text{th}}$  of the normal rate, the time required will be  $8/11^{\text{th}}$  of the normal time i.e.  $(7/11)t$

$$t - (8/11)t = 33 \text{ minutes} \Rightarrow t = 121 \text{ minutes}$$

When Vijay works at  $5/9^{\text{th}}$  of the normal rate, the Time required would be  $(9/5)^{\text{th}}$  of the normal time i.e.  $9/5 \times 121 \text{ minutes} = 217.8 \text{ minutes}$ .

Thus Vijay required  $217.8 - 121 = 96.8$  more minutes to complete the work.

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