Directions of Test

Test Name	2016 Bull CAT 13	Total Questions	100	Total Time	180 Mins

Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking
Verbal Ability	34	1:0(h:m)	3	1/3
DI & 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

Workhouses have long assumed a central place in studies on the poor laws. While we know that the majority of relief claimants were actually given outdoor relief in money or in kind from the parish pay-table, welfare historians have shown that many individuals entered workhouses during moments of both short and long-term need. This dynamic has a long history. The Elizabethan poor laws permitted parishes to find accommodation for 'poor impotent people' in addition to the requirement to 'set to work' their poor. Some cities had obtained their own 'Local Acts' which contained specific legislation designed for the specific welfare needs of that locale. Central to these Acts was the workhouse. The first Local Act was passed in 1696 for the Civic Incorporation of Bristol.

Born in Staffordshire, Gilbert was a chief land agent to Lord Gower and a keen poor law reformer. Through his work, he developed an immense political, legal, commercial and industrial knowledge which enabled the Gower estate to become one of the most prosperous in England. Gilbert's concern for the poor may have stemmed out of his role as agent, which had allowed him to take onboard the role of paymaster for a charity of naval officers' widows. As Marshall noted, Gilbert thought old parish workhouses were 'dens of horror'. Such workhouses were too uncomfortable for those who were in poverty due to no fault of their own and places where the young were susceptible to 'Habits of Virtue and Vice' learnt from 'bad characters'. For the sake of both the poor and the rates, Gilbert thought that workhouses should be reformed to promote industrious behavior.

These ideas culminated in a new bill and the subsequent Act of 1782 which enabled parishes to provide a workhouse solely for the accommodation of the vulnerable. Although such residents were, as Gilbert put it, 'not able to maintain themselves by their Labor' outside of the workhouse they were still to 'be employed in doing as much Work as they can' within the workhouse. Work was therefore a part of everyday life within a Gilbert's Act workhouse. The able-bodied were only to be offered temporary shelter and instead were to be found employment and provided with outdoor relief. Those who refused such work (the 'idle') were to endure 'hard Labor in the Houses of Correction'.

How was such a workhouse to be established and managed? Gilbert wanted to allow parishes to unite together so that they could combine their resources and provide a well built and maintained workhouse. According to Steve King, Gilbert's Act was the first real breach of the Old Poor Law principle 'local problem - local treatment'. Yet, any 'Parish, Town, or Township' was also permitted to implement the law alone, and hence concerns over poverty did not always transcend parish boundaries. Gilbert's Act workhouses were to be managed in a different way compared to the older parish workhouses. Gilbert believed that the poor laws had been 'unhappily' executed 'through the misconduct of overseers'. Such officers, he claimed 'gratify themselves and their Favorites, and to neglect the more deserving Objects'. This dim view of overseers was shared by many others at the time.

excerpted from 'Welfare of the vulnerable' by Samantha Shave

What question would you like to ask the author after reading the passage?

A) What motivated Gilbert to reform workhouses? B) Why was there no amendment in the act for a near century?
C) What steps were proposed by Gilbert to regulate the misconduct of overseers?
D) Was it justified on part of Gilbert to use the harsh term like 'dens of horror' for old parish workhouses?

Question No. : 2

What does the term 'poor impotent people' imply contextually?

A) Those poor people who have been ostracized for opposing the hegemony of elite
B) Those unfortunate people who have been pushed into penury due to their impotence
C) Those poor people of the lowest strata who are unable to support themselves financially
D) Rich people who overindulged in acts of debauchery

Question No. : 3

Which among the following is not true as per the passage?

A) Multi-disciplinary knowledge gained by Gilbert was a key factor for Gower state's growth
B) Gilbert was opposed to the idea of nepotism highly prevalent in the work houses
C) Tough corrective measures were required to reform the workhouse and inculcate sense of hard work
D) The first Local Act was passed in late sixteenth century

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

Question No. : 4

How do cultural beliefs and values, often dictated by male members of the society, contribute to and / or create a context in which human reproductive capacities and the child bearing and rearing are highly prized or left unquestioned? Certain forms of birth control may be religiously prohibited or considered by some cultures to signify collusion with upper classes or imperialists. The history of birth control movement in the USA and the UK, and its powerful opposition (whose influence is manifested now in opposition to sex education in US schools) is indicative of how cultural norms and mores can have great effects on the distribution and acceptance of birth control methods, even in "developed" countries. Presumptions about the value of the traditional nuclear family, such as the belief that it is the only or best child-rearing option for human bonding unit, lie beneath much reproductive behavior and the attempts to understand or change it. Any theory which purports to offer understandings of and alternatives to problems resulting from a large, high-impact human population must seriously examine the social and ecological value of family units.

Because of the intersections of the oppression of women and of all human physical 'nature,' females are often alienated from their own bodily functions and processes. In industrial societies, where gynecology and other allopathic medicines have replaced more holistic medical models, somatic alienation is augmented by epistemic alienation from ancient wisdom about human bodies, and particularly female bodies and health care. This alienation and lack of knowledge puts the power over women's bodies into the hands of professionals and feeds non-professionals' ignorance about birth control as well as non-heterosexual options. Such purposeful ignorance enabled a long, global history of women being offered unsafe, impractical and disempowering birth control methods and health care. Of course, women's health and sexuality has also been a primary site for exercising patriarchal and racist political power.

Finally, in societies which create mystique and taboo around sexuality, active heterosexuality is constructed as a way to become adult, to prevent boredom, or to rebel against authority. Heterosexual intercourse is often conceptually separated from its likely consequence: pregnancy. The talk of population reduction must occur in the context of discussions on the many aspects of human reproduction, *inter alia,* heterosexuality and heterosexism.

Excerpted from 'ecological feminism' by Christine Cuomo

According to the passage, what lies behind unworkable methods of birth control offered to women in the past?

A) The control of women's body in the hands of professionals.
B) The control of women's body in the hands of professionals and the lack of awareness on the part of non-professionals.
C) The lack of awareness on the part of non-professionals.

D) The control of women's body in the hands of purposely ignorant non-professionals.

Question No. : 5

Which of the following is **CORRECT** about the overall theme of the passage?

A) The passage is a critical analysis of the history of birth control in developed nations.
B) The passage tries to address the problem of why women lack the power to shape their own destinies.
C) The passage represents an attempt to understand the social and ecological value of family units.
D) The reading selection tries to explore the question of how certain human capacities owe their origin to cultural belief systems.

Question No. : 6

The author uses the word "developed" in the first paragraph to indicate which of the following?

A) That he is happy with the title given to the USA and the UK.
B) That he is unhappy with the apparent idiocy of opposition to sex education in the USA and the UK
C) That he is satisfied with the title being used correctly to describe the true status of the USA and the UK.
D) That he is unhappy with the apparent paradox between the title and the status of acceptance of birth control methods in the USA and the UK.

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

Question No. : 7

The plain man finds himself in a world of physical things and of minds, and it seems to him that his experience directly testifies to the existence of both. This means that the things of which he has experience appear to belong to two distinct classes. It does not mean, of course, that he has only two kinds of experiences. The phenomena which are revealed to us are indefinitely varied; all physical phenomena are not just alike, and all mental phenomena are not just alike.

Nevertheless, amid all the bewildering variety that forces itself upon our attention, there stands out one broad distinction, that of the physical and the mental. It is a distinction that the man who has done no reading in the philosophers is scarcely tempted to obliterate; to him the world consists of two kinds of things widely different from each other; minds are not material things and material things are not minds. We are justified in regarding this as the opinion of the plain man even when we recognize that, in his endeavor to make clear to himself what he means by minds, he sometimes speaks as though he were talking about something material or semi-material.

Now, the materialist allows these two classes to run together; so does the idealist. The one says that everything is matter; the other, that everything is mind. It would be foolish to maintain that nothing can be said for either doctrine, for men of ability have embraced each. But one may at least say that both seem to be refuted by our common experience of the world, an experience which, so far as it is permitted to testify at all, lifts up its voice in favor of Dualism.

Dualism is sometimes defined as the doctrine that there are in the world two kinds of substances, matter and mind, which are different in kind and should be kept distinct. There are dualists who prefer to avoid the use of the word substance, and to say that the world of our experiences consists of physical phenomena and of mental phenomena, and that these two classes of facts should be kept separate. The dualist may maintain that we have a direct knowledge of matter and of mind, and he may content himself with such a statement, doing little to make clear what we mean by matter and by mind. In this case, his position is little different from that of the plain man who does not attempt to philosophize.

On the other hand, the dualist may attempt to make clear, through philosophical reflection, what we mean by the matter and mind which experience seems to give us. He may conclude:—

(1) That he must hold that we perceive directly only physical and mental phenomena, but are justified in inferring that, since the phenomena are different, there must be two kinds of underlying substances to which the phenomena are referred. Thus, he may distinguish between the two substances and their manifestations, as some monists distinguish between the one substance and its manifestations.

(2) Or he may conclude that it is futile to search for substances or realities of any sort behind phenomena, arguing that such realities are never revealed in experience, and that no sound reason for their assumption can be adduced. In this case, he may try

to make plain what mind and matter are, by simply analyzing our experiences of mind and matter and coming to a clearer comprehension of their nature.

It can be inferred from the passage that some dualists avoid the term 'substance' as

A) the term lacks any special meaning B) the term does not sound as good as phenomenon
C) the term implies the presence of something physical D) the term is incomplete in nature

Question No. : 8

The author of the passage:

A) provides a detailed explanation for dualist views in the passage
B) highlights in the passage how the mind and the matter exist
C) supplies a conjecture in the passage that deals with the existence of mind and matter
D) introduces the subject of dualism with various viewpoints on the topic

Question No. : 9

The author of the passage implies that:

A) the materialists and idealists have resounding views B) the materialists and idealists have analogous views
C) the materialists and idealists have disparate views D) the materialists and idealists have disagreeable views

Question No. : 10

The author is most likely to agree with the statement:

A) most mental phenomena are similar in nature. B) the idealist and materialist cannot be bound by a common thread.
C) as luck would have it, the plain man ends up doing what he was avoiding when it comes to the subject of mind and matter.
D) the plain man and the dualist are basically same in all their ways.

Question No. : 11

It can be inferred from the passage that:

A) mind and matter are absolutely distinct.
B) it cannot be taken for granted that dualists will be able to provide proof for their viewpoints.
C) the plain mind cannot understand the subjects of the mind and the matter. D) none of the above .

Question No. : 12

According to the author of the passage:

A) some dualists identify two underlying substances leading to physical and mental phenomena.
B) some dualists do not search for any underlying substance and rather just focus on experiences of mind and matter.
C) both a and b D) None of the above

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

Question No. : 13

The starting point for appreciating that there is a distinctive part of our psychology for morality is seeing how moral judgments differ from other kinds of opinions we have on how people ought to behave. Moralization is a psychological state that can be turned on and off like a switch, and when it is on, a distinctive mind-set commandeers our thinking. This is the mind-set that makes us deem actions immoral ("killing is wrong"), rather than merely disagreeable ("I hate brussels sprouts"), unfashionable ("bell-bottoms are out") or imprudent ("don't scratch mosquito bites"). The first hallmark of moralization is that the rules it invokes are felt to be universal. Prohibitions of rape and murder, for example, are felt not to be matters of local custom but to be universally and objectively warranted. One can easily say, "I don't like brussels sprouts, but I don't care if you eat them," but no one would say, "I don't like killing, but I don't care if you murder someone." The other hallmark is that people feel that those who commit immoral acts deserve to be punished. Not only is it allowable to inflict pain on a person who has broken a moral rule; it is wrong not to, to "let them get away with it." People are thus untroubled in inviting divine retribution or the power of the state to

harm other people they deem immoral. Bertrand Russell wrote, "The infliction of cruelty with a good conscience is a delight to moralists — that is why they invented hell."

We all know what it feels like when the moralization switch flips inside us — the righteous glow, the burning dudgeon, the drive to recruit others to the cause. The psychologist Paul Rozin has studied the toggle switch by comparing two kinds of people who engage in the same behavior but with different switch settings. Health vegetarians avoid meat for practical reasons, like lowering cholesterol and avoiding toxins. Moral vegetarians avoid meat for ethical reasons: to avoid complicity in the suffering of animals. By investigating their feelings about meat-eating, Rozin showed that the moral motive sets off a cascade of opinions. Moral vegetarians are more likely to treat meat as a contaminant — they refuse, for example, to eat a bowl of soup into which a drop of beef broth has fallen. They are more likely to think that other people ought to be vegetarians, and are more likely to imbue their dietary habits with other virtues, like believing that meat avoidance makes people less aggressive and bestial.

Much of our recent social history, including the culture wars between liberals and conservatives, consists of the moralization or amoralization of particular kinds of behavior. Even when people agree that an outcome is desirable, they may disagree on whether it should be treated as a matter of preference and prudence or as a matter of sin and virtue. Rozin notes, for example, that smoking has lately been moralized. Until recently, it was understood that some people didn't enjoy smoking or avoided it because it was hazardous to their health. But with the discovery of the harmful effects of secondhand smoke, smoking is now treated as immoral. Smokers are ostracized; images of people smoking are censored; and entities touched by smoke are felt to be contaminated (so hotels have not only nonsmoking rooms but nonsmoking floors). The desire for retribution has been visited on tobacco companies, who have been slapped with staggering "punitive damages."

At the same time, many behaviors have been amoralized, switched from moral failings to lifestyle choices. They include divorce, illegitimacy, being a working mother, marijuana use and homosexuality. Many afflictions have been reassigned from payback for bad choices to unlucky misfortunes. There used to be people called "bums" and "tramps"; today they are "homeless." This wave of amoralization has led the cultural right to lament that morality itself is under assault, as we see in the group that anointed itself the Moral Majority. In fact there seems to be a Law of Conservation of Moralization, so that as old behaviors are taken out of the moralized column, new ones are added to it.

Passage Source: New York Times (Article name: A moral instinct by Steven Pinker)

Suggest a suitable title for the passage.

A) The Psyche of Morals B) Moral Judgments & Behavior C) The Moralization Switch D) Wave of amoralization

Question No. : 14

Keeping the viewpoint of the moralist illustrated in the passage, which of the following statements is true?

A) If one smokes a cigarette in public place, one should be punished for the same.
B) If one smokes a cigarette personally, one should not be punished as it is not immoral to smoke
C) People are homeless not because they are punished for their past actions but for the fact that they are unlucky.
D) Avoidance of meat makes people healthy by lowering cholesterol and also makes people less aggressive and bestial.

Question No. : 15

Which out of the following can be inferred from the passage?

A) When the moralization switch flips inside of us, we feel a sense of contentment.
B) The code of moralization sees the adage, 'an eye for eye', as morally acceptable.
C) The increasing amoralization of many behaviors has meant that moralists have been under pressure to create new behaviors that can be added to the list.
D) The code of moralization is dictated by situations, and needs adaptation according to the situation.

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

Question No. : 16

The humanities transmit, through time and across cultures, diverse expressions of the human condition, allowing us to contextualize, illuminate, and pass on an essential legacy of culture, history and heritage.

I believe that social media poses a grave threat to the humanities because it lacks the depth, nuance and permanence that make genuine, meaningful interactions about the human condition possible. Everything that social media communication represents- immediacy, impermanence, collectivism- is contrary and harmful to the thoughtfulness, permanence and individualistic experiences necessary to humanities discourse. Social media is creating a hive mind, a group think that devalues the human condition in favor of the immediate, the marketable and the shallow. In social media, there is no difference between us and others; we look the same, we talk the same, we fill the same space. The real purpose of social media is to gauge measure and ultimately control the behavior of the crowd for marketing purposes. And as social media, and its values of pliable, identifiable collectives based on mutual interests, migrates from the Web to become more ubiquitous in our everyday lives--try attending a movie or buying a meal, the reductionist conversation that it engenders comes with it.

The first negative impact that social media has on the humanities is a multiple-choice format and physical structure that allows only for a very limited, narrow type of communication. There is no room for individual creativity or representation. Humanities also require background and context to impart ideas but social media is an equivalency and framework vacuum that decontextualizes and trivializes information in a way that renders it nearly meaningless. The brevity of communication through social media precludes explanation and circumstance. Within social media, all information is equally important. There are no little or big facts; all data is expressed in compact bites of equal weight. The inability to separate the trivial from the significant leaves us unable to glean consequential substance from what we are saying to each other: the very purpose of the humanities. Lastly, social media creates and archives no history. The humanities are about expanding, describing, understanding and transmitting through the generations, the human condition. The purpose of social media is to understand ever larger groups of people at the expense of the individual. Humanities is exactly the opposite: understanding the individual for the sake of the masses.

As human beings, our only real method of connection is through authentic communication. Studies show that only 7% of communication is based on the written or verbal word. A whopping 93% is based on nonverbal body language. This is where social media gets dicey. Every relevant metric shows that we are interacting at breakneck speed and frequency through social media. But are we really communicating? With 93% of our communication context stripped away, we are now attempting to forge relationships and make decisions based on phrases, Abbreviations, Snippets, Emoticons, and which may or may not be accurate representations of the truth. In an ironic twist, social media has the potential to make us less social; a surrogate for the real thing. For it to be a truly effective communication vehicle, all parties bear a responsibility to be genuine, accurate, and not allow it to replace human contact altogether. In the workplace, the use of electronic communication has overtaken face-to-face and voice-to-voice communication by a wide margin. With these two trends at play, leaders must consider the impact on business relationships and the ability to effectively collaborate, build trust, and create employee engagement and loyalty.

Passage Source: Valley Advocate (Article name: Social Media Flaws and the Humanities)

Which of the following best captures the essence of the passage?

A) There is no room for individual creativity or representation; options for expression and interpretation are restricted to the choices circumscribed by the gatekeeper that goes by the name of 'Social Media'.
B) We are losing cultural vocabulary, history and context because of social media, regardless of its intended use, as it evolves to invade more and more of our lives and thus, we have fewer tools and craftspeople to create, share and understand the humanities.
C) Social media is creating a situation where we are unable to separate the trivial from the significant which leaves us unable to glean consequential substance from what we are saying to each other.
D) The purpose of social media is to understand ever larger groups of people at the expense of the individual and Humanities stands for exactly the opposite.

Question No. : 17

The author adopts all of the following approaches towards Social media except:

A) Trenchant criticism B) Strenuous examining C) Harshly judgmental D) Severely disapproving

Question No. : 18

What does the author mean by 'reductionist conversation'?

A) Conversations on social media are geared too much towards pseudo marketing interests.
B) Conversations on social media revolve around mutual interests that are easily identifiable in collective groups.
C) Conversations in the real world are being reduced to short bursts as social media infiltrates our life in an ever increasing fashion.

D) Conversations in the social world are based on reduced sentiments, and these leads to talks that are high on both word usage and ideas.

Question No. : 19

Which of the following can be inferred from the lines 'This is where social media gets dicey'?

A) Awash in technology, anyone can hide behind the text, the e-mail, the Facebook post or the tweet, projecting any image he wants and creating an illusion of his choosing; and shredded of non-verbal cues, his audience is none the wiser.
B) This new communication preference is one of the "generational gaps" plaguing organizations as Boomers try to manage to a new set of expectations and norms in their younger employees, and vice versa.
C) Conflicts explode over a tone of an e-mail, or that all-important cc: list. When someone writes a text in all capital letters, does it mean they're yelling?
D) On the flip side, does a smiley face or an acknowledgement of agreement really mean they're bought in and aligned? Conclusions are drawn on frighteningly little information.

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

Question No. : 20

When most people think of LSD, the image that comes to mind is hallucinating hippies at Woodstock, but the drug's original use was psychotherapeutic. As early as the 1960s, researchers showed that LSD reduces depression, anxiety and pain in patients with advanced cancer, and recent years have seen a resurgence of interest in the drug's beneficial effects. In 2016, a study from Imperial College London showed that LSD could increase levels of optimism and openness for extended periods of time.

The LSD story goes back to Albert Hofmann, a Swiss chemist who first synthesised the compound in 1938. Hofmann accidentally discovered its hallucinogenic effects after ingesting 250 µg (a very large dose!) before his evening commute home. Being the good scientist that he was, he recorded a detailed account of his experience in his notebook. His initial, paranoia-filled reaction was followed the next day by a blissful experience, in which 'everything glistened, and sparkled in a fresh light'.

It was this final, uplifting insight that the researchers at Imperial set out to re-explore in rigorous fashion, starting with 20 participants recruited by word-of-mouth. These subjects were all over the age of 21, had no history of psychiatric illness, and reported at least one previous experience with a hallucinogen like magic mushrooms or LSD – the last requirement implemented to minimise adverse responses to the drug. Each subject visited the testing centre twice: once to receive LSD (75 µg lower than the dose taken by recreational users) and once to receive a placebo, though the order in which these individuals received the LSD was random.

Much like Hofmann himself, test subjects reported feeling the effect of the LSD as quickly as ten minutes after the infusion, with the experience lasting for nearly eight hours in all. Several hours into the dosing, they were asked to answer a series of questions regarding their psychological wellbeing. Shortly after taking the drug, participants who received LSD reported an increase in psychosis-like symptoms, including visual hallucinations, spiritual experiences and paranoia. It was an outcome the researchers had expected. But interestingly, those given LSD were more likely to feel positive, and even 'blissful' emotions, as opposed to the negative and 'anxious' feelings sometimes associated with psychedelic drugs. What was even more striking was that two weeks after taking LSD, these individuals reported increased optimism and openness, making them more creative and curious, as compared with those who received the placebo.

How can a drug that creates a temporary psychosis lead to such pronounced long-term optimism? This is a mostly unanswered question, but researchers think it has something to do with the serotonin 2A receptor (5-HT2AR). This receptor is expressed all over the brain, particularly in regions associated with cognitive functions and social interactions. Stimulation of this receptor has been directly linked to cognitive flexibility, enhanced imagination and creative thinking. Disorders associated with variants of the 5-HT2AR include schizophrenia, depression, obsessive-compulsive disorder and attention deficit hyperactivity disorder – in other words, a panoply of psychiatric illness. It turns out that LSD functions by binding to and stimulating 5-HT2AR in the cerebral cortex, which is thought to regulate an enzyme called phospholipase C, and eventually leads to psychoactive effects. In fact, blockage of this receptor has been linked to a remediation of the hallucinatory effects of LSD in rats.

The precise biology behind LSD's transformational potential remains a mystery. But researchers at Imperial suggest that once LSD binds to the receptor, it's possible that the initial 'blast' of stimulation results in more intense, acute psychotic-like symptoms, whereas the longer-term effects produce a 'loosening' of network dynamics, and a general increase in optimism and wellbeing.

No one is suggesting that you illegally consume LSD to increase long-term optimism, but the study raises important questions. Could LSD one day be used to treat maladies such as major depressive disorder? Would the short-term psychological discomfort of giving an individual therapeutic LSD be worth the potential long-term benefits? Would the positive effects of LSD persist longer than two weeks? What is the physiological cascade that begins with LSD binding to 5-HT2AR activation and ends with psychological effects such as increased optimism? Is there a way to synthesise a compound that would take advantage of the beneficial aspects of LSD, while minimising the negative effects? There's only one way to find out – more scientific experiments!

The author of the passage:

A) strongly recommends the medicinal use of LSD B) highlights the importance of psychedelic drugs
C) implores for greater research in the field of LSD medicinal use D) mildly exposes the risks associated with LSD use

Question No. : 21

According to the author of the passage:

A) the effects of LSD are ephemeral B) the impact of LSD may only be temporary C) the upshots of LSD can be significant
D) the consequences of LSD are fatal

Question No. : 22

The attitude of the author of the passage can be labelled as:

A) speculative and opinionated B) allegorical and factual C) inquisitive and analytical D) realistic and logical

Question No. : 23

As per the information given in the passage, identify the statements that are correct:

I. The 5-HT2AR receptor has a direct impact on certain mental illnesses.
II. LSD can help in the generation of the 5-HT2AR receptor.
III. Scientists have mapped out how LSD biologically impacts the brain.
IV. The use of LSD for curative purposes has research backing it and deems further thought.

A) I & II B) I & IV C) II & III D) III & IV

Question No. : 24

Which one of the following is a suitable profession for the author of the passage?

A) memoir writer B) journalist C) pharmacist D) neuroscientist

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

Question No. : 25

It is often thought that science has shown that there is no such thing as free will. If all things are bound by the same impersonal cosmic laws, then (the story goes) our paths are no freer than those of rocks tumbling down a hill. But this is wrong. Science is giving us a very powerful and clear way to understand freedom of the will. We have just been looking for it in the wrong place. Instead of using an electron microscope or a brain-scanner, we should go to the zoo. There we will find animals using a wide range of skills that give them options for what to do – skills that we share. These abilities have evolved through natural selection because they are essential for survival: animals need to weigh different factors, explore available options, pursue new alternatives when old strategies don't work. Together these abilities give all animals, including humans, an entirely natural free will, one that we need precisely because we are not rocks. We are complex organisms actively pursuing our interests in a changing environment.

1. we are forever tethered to the idea that the free will does not exist but one look at the world of animals helps us understand what free will is and how does it apply in our world.
2. the idea of free will, though pertinent, does not find conclusive evidence in science and it is only the world of animals that provides us with clues to understand this mystery.
3. the idea of free will, despite the tools made available by science, has not been explored in the right manner and through the

example of animals, we can understand the topic in a much better way.
4. the world of science has come up short in explaining the concept of free will and it is only through the pragmatic world of animals that we can understand how free will works in humans.

A) 3 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. : 26

We think that happiness is something that individuals find for themselves: the key is to work hard for a good life, and to face adversity with defiance. This 'rugged individualism' might fit the American ethos, but it is at odds with a growing body of empirical research that shows that some kinds of societies produce a great deal more satisfaction with life than others. Happiness, in other words, is more social than psychological. If so, then the obvious step, as Albert Einstein put it, is to 'ask ourselves how the structure of society and the cultural attitude of man should be changed in order to make human life as satisfying as possible'. Economists, political scientists and other social scientists in the growing field of the political economy of wellbeing, or 'happiness economics', are using empirical rather than speculative methods to better understand what makes for satisfying lives. Happiness economics is not to be confused with 'positive psychology', which approaches happiness as a matter of individual attitudes. In contrast, scholars of 'happiness economics' maintain that, in the aggregate, a satisfying life is rooted in objective conditions, such that the economic, political and social aspects of societies are strong predictors of individual happiness.

1. Happiness is driven and attained by happy individuals.
2. Happiness is the factor of social conditions and not individual effort alone.
3. Happiness is a factor of peaceful economic and social life.
4. Happiness is created by prosperity, economic well-being and political stability.

A) 2 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. : 27

1. The primitive man, unable to understand his being, much less the unity of all life, felt himself absolutely dependent on blind, hidden forces ever ready to mock and taunt him.
2. Again and again, the same recurrent theme -- man is nothing, the powers are everything i.e. man can bask in all the glories of the earth, but he must not become conscious of himself, an idea echoed by the State, society, and moral laws.
3. Out of that attitude grew the religious concepts of man as a mere speck of dust dependent on superior powers so high, which can only be appeased by complete surrender.
4. All the early sagas rest on that idea, which continues to be the leitmotif of the biblical tales dealing with the relation of man to God, to the State, to society.
5. The explanation of the storm raging within the individual, and between him and his surroundings, is not far to seek.

A) 51342 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. : 28

1. We shall find, if I am not mistaken, that there are no facts which refute the hypothesis of mental continuity, and that, on the other hand, this hypothesis affords a useful test of suggested theories as to the nature of mind.
2. In attempting to understand the elements out of which mental phenomena are compounded, it is of the greatest importance to remember that from the protozoa to man, there is nowhere a very wide gap either structurally or behaviorally.
3. It is highly probable that there is also nowhere a very wide mental gap.
4. But the hypothesis of continuity in mental development is clearly preferable, if no psychological facts make it impossible.
5. It is, of course, possible that there may have been, at certain evolutionary stages, elements which were nascent from an

analytical standpoint, exercised little influence on behavior and were not characterized by very marked structural correlatives.

A) 23541 B) C) D)

DIRECTIONS for the question: *The five sentences (labelled 1,2,3,4 and 5) given in this question, when properly sequenced, from a coherent paragraph. Arrange them in the correct order.*

Question No. : 29

1. It seems doubtful that sugar-free Milanos will save us, but, maybe a new way of thinking among food researchers can.
2. The question of what to eat, when viewed through the lens of diet books and magazine weight-loss tips, can look frivolous, but in reality the stakes are high : we are raising the first generation of Americans likely to have shorter lives than their parents.
3. "For decades we've been asking the wrong question," says Gardner, associate professor of medicine at Stanford's Prevention Research Center. "It's not 'What's the best diet?' It's 'What's the best diet for each unique person?' "
4. By 2030, experts predict, obesity could be the norm, which means that the toddler squirming around in Hanover's shopping cart-who by this time had put tooth marks in the foil seal of one of the yogurt cups- is more likely than not to be obese by the time he turns 19.
5. Nutrition researcher Christopher Gardner thinks our present confusion has a lot to do with an assumption that scientists made early on: There is a single healthy diet that's right for everyone.

A) 24153 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. : 30

1. Individuals may be said to be autonomous if their actions are truly their own, if they may be said to possess moral liberty.
2. The term 'autonomy', from the Greek roots 'autos' and 'nomos' [self + law] refers to the right or capacity of individuals to govern themselves.
3. The possession of autonomy of the will is also a cornerstone of Kant's ethical theory, in which one of the necessary conditions is that of moral agency.
4. The necessity of this moral liberty is made clear in the work of many philosophers, in that of Jean-Jacques Rousseau, for example, in whose Social Contract are discussed what Rousseau sees as the centrally important relationships between what he terms the general will, liberty, equality and fraternity.

A) 3 B) C) D)

DIRECTION for the question: *The six sentences (labelled 1,2,3,4,5 and 6) 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 six numbers as your answer.*

Question No. : 31

1 I tend to match a person's years to events in the world, a man of 20, say, who died in the years of war, or a person who lived a long life, or a short one.
2. My rabbi, Jacob Rosner, once observed that the real meaning in an epitaph is not the years of birth and death at all, but the space in between them, sometimes noted in a hyphen, sometimes just blank.
3. Epitaphs, even spare ones, can tell us a lot, and elicit all kinds of responses.
4. In the minimalist version, the cemetery becomes a kind of directory.
5. 'Grandfather' elicits no feeling in me, but 'grandchild' intimates great sadness, and I wonder what someone might have died from and if their premature death really was the only legacy they left behind.
6. Those are the years in which a person made choices that shaped their life.

A) 341526 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. : 32

1. The real power of these technical means lay not in the techniques and technologies themselves but in the disposition of those who used them, in their unshakable confidence that there were in principle "no mysterious, incalculable forces" they could not calculate and control.
2. Such a technical rationality had replaced the "magical means" premodern people had used to placate gods and spirits.dence that there were in principle "no mysterious, incalculable forces" they could not calculate and control.
3. Having conquered everything else, the calculating machines of modernity are now coming for our books.
4. When Max Weber suggested in 1917 that the world had been disenchanted, he meant that modernity was best understood by the expansion of "technical means" that controlled "all things through calculation."

A) 3 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. : 33

1. It is not clear why Brooks thinks readers should take counseling on depth and otherworldly merits from someone who, as he puts it himself, has "a natural disposition toward shallowness" and has achieved worldly success working as a "narcissistic blowhard."
2. He instructed that the "highest rung on the ladder of understanding" could be reached by the cultivated self, not grasped through crowd-sourced speculations.
3. In a spring 2014 New York Times editorial, he maintained that the "stairway to wisdom" did not snake through big data, but rather through the precious singularity of the soul.
4. David Brooks is ever on the move—stepping, climbing, and ambling—towards wisdom.

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. : 34

1. With the emergence of the novel in the early modern era, the risks posed by reading to the state of mind of the reader became a regular source of apprehension.
2. Critics of the novel claimed that its readers risked losing touch with reality and consequently became vulnerable to serious mental illness.
3. The English essayist Samuel Johnson asserted that the realism of fiction, in particular its tendency to deal with the issues of everyday life, had insidious consequences.
4. The triggering of dysfunctional imitative behaviour constituted a particular risk to the virtue of women.

A) 3 B) C) D)

Section : DI & Reasoning

Question No. : 35

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

The table shows the major media availability in various states belonging to West zone and South zone.

Major media Availability in various states – West & South Zone.

	No. of	No. of

State	No. of cinemas		TV sets licensed (000)	Radio sets licensed (000)	Newspaper Circulation (000)
	Permanent	Moving			
Gujarat	678	100	185	608	798
Madhya Pradesh	28	2	5	10	10
Maharashtra	107	14	32	120	18
Tamil Nadu	161	5	200	561	379
Andhra Pradesh	173	69	321	190	303
Karnataka	73	-	431	1112	1410
Kerala	32	-	28	95	43

For these 2 zones the media reach is described as follows:

Each radio is listened to by 4 people.
Each TV is seen by 6 people.
Each newspaper circulated is read by 5 people.

There is no overlap i.e. a person who sees TV does not listen to the radio or read any newspaper circulation and so on. Exclude the cinema medium in this case. What is the approximate reach in Madhya Pradesh as a percentage of the reach in Maharashtra?

A) 16% B) 18% C) 12% D) 13%

Question No. : 36

If the number of radio sets in Karnataka increased by 10%, and the number of TV sets in Tamil Nadu increased by 25%, then find the total number of TV sets as a percentage of the total number of radio sets in the given zones ? (Write the answer key)

1. 25% 2. 35% 3. 55% 4. 45%

A) 4 B) C) D)

Question No. : 37

Which are the states in which the number of licensed radio sets is higher than newspaper circulation?

A) Karnataka, Kerala, Tamil Nadu B) Tamil Nadu, Kerala, Maharashtra, Madhya Pradesh C) Tamil Nadu, Maharashtra, Kerala
D) Tamil Nadu, Madhya Pradesh, Maharashtra

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

Question No. : 38

Eight students-P through W- are sitting around a circular table. Each of them studies exactly one subject among Hindi, English and Sanskrit. Each subject is studied by at least two students and no two students who study the same subject sit either adjacent to or opposite each other.

Further, it is known that
(i) P does not study Hindi and V, who studies English, is to the right of R.
(ii) Q is opposite R, who studies Hindi, and adjacent to S, who also studies Hindi,
(iii) T is to the right of P and U is to the right of Q.

The person who is sitting opposite W studies

A) English B) Hindi C) Sanskrit D) Cannot be determined

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

Question No. : 39

Eight students-P through W- are sitting around a circular table. Each of them studies exactly one subject among Hindi, English and Sanskrit. Each subject is studied by at least two students and no two students who study the same subject sit either adjacent to or opposite each other.

Further, it is known that
(i) P does not study Hindi and V, who studies English, is to the right of R.
(ii) Q is opposite R, who studies Hindi, and adjacent to S, who also studies Hindi,
(iii) T is to the right of P and U is to the right of Q.

Which of the following statements is definitely true?

A) If Q studies English, then P studies Sanskrit. B) If U studies Hindi, then Q studies English
C) If U studies Sanskrit, then W studies English. D) If Q studies Sanskrit, then U studies Hindi.

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

Question No. : 40

Eight students-P through W- are sitting around a circular table. Each of them studies exactly one subject among Hindi, English and Sanskrit. Each subject is studied by at least two students and no two students who study the same subject sit either adjacent to or opposite each other.

Further, it is known that
(i) P does not study Hindi and V, who studies English, is to the right of R.
(ii) Q is opposite R, who studies Hindi, and adjacent to S, who also studies Hindi,
(iii) T is to the right of P and U is to the right of Q.

The person who is sitting opposite to T is

A) U B) S C) P D) W

DIRECTIONS for the question: *Study the table/s given below and answer the question that follows.*

Question No. : 41

The following tables give the distribution of students, according to region, during each of the five phases of the selection process of a premier management institute, for a particular year. The five phases held, in that order, are: Applying for the exam, Appearing for the Exam, Qualifying for GDs. Qualifying for Interviews and Selection for the Course.

Region wise distribution of students in each phase of selection

Phase of selection	**Region**						
	Northern region	**Western region**	**Central region**	**Southern region**	**South-Central region**	**East-Central region**	**Eastern region**
Applied for the Exam	18%	15%	11%	23%	9%	10%	14%

Appeared for the Exam	16%	14%	8%	21%	11%	13%	17%
Qualified for GDs	13%	17%	12%	14%	15%	21%	8%
Qualified for Interviews	10%	15%	17%	8%	20%	16%	14%
Selected for the Course	19%	7%	10%	16%	13%	23%	12%

Total No. of students in each phase of selection

Applied for the exam	Appeared for the exam	Qualified for the GDs	Qualified for Interviews	Selected for the course
47600	38700	6900	1300	300

I. The number of students who were selected for the course from the East-Central region as a percentage of those who qualified for GDs from that region is higher than the corresponding figure for any other region.
II. The ratio of the number of students who applied for the exam from the Southern region to that of those who appeared for the exam from the Central region is more than 3.

A) Only statement I is true. B) Only statement II is true C) Both statements I and II are true.
D) Neither statement I nor statement II is true.

Question No. : 42

I. The number of students from the Central region who appeared for the exam but were not selected for the course is less than the corresponding figure for any other region.
II. In any of the given five phases, the number of students from the Western region is more than the number of students from at least two of the other regions.

A) Only statement I is true B) Only statement II is true C) Both statements I and II are true
D) Neither statement I nor statement II is true

Question No. : 43

I. The ratio of the number of students who qualified for GDs from the Southern region to the number of students who qualified for interviews from the East- Central region is more than 6.2.
II. The number of students from the Southern region who qualified for GDs but did not qualify for interviews is more than the corresponding figure for any other region.

A) Only statement I is true B) Only statement II is true C) Both statements I and II are true
D) Neither statement I nor statement II is true

***DIRECTIONS for the question**: The question given below is followed by two statements A and B. Solve the question and mark*
Question No. : 44

In a family, Kamla, her brother, her daughter and her son live. They play a game of cards. Is Kamla the best player?

A. The worst player's twin and the best player are of the opposite sex.
B. The worst player and the best player are of the same age

A) if either statement alone is sufficient to answer the question
B) if any one statement alone is sufficient to answer the question, but the other statement alone is not,
C) if both statements together are required to answer the question, and

D) if even both statements together are not sufficient to answer the question.

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

Question No. : 45

In a Management school there were 70 students. Out of which 43 took marketing, 28 took finance, 18 took human resource, 20 took finance and Marketing, 12 marketing and human resource and 8 human resource and finance. 16 took only marketing.

What percent of students did not take any of the options?

A) 22.86% B) 23.75% C) 29.23% D) None of these

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

Question No. : 46

In a Management school there were 70 students. Out of which 43 took marketing, 28 took finance, 18 took human resource, 20 took finance and Marketing, 12 marketing and human resource and 8 human resource and finance. 16 took only marketing.

What is the ratio of students, who took human resource only to those who did not take any of the options?

A) 1:6 B) 3:16 C) 18:3 D) None of these

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

Question No. : 47

In a Management school there were 70 students. Out of which 43 took marketing, 28 took finance, 18 took human resource, 20 took finance and Marketing, 12 marketing and human resource and 8 human resource and finance. 16 took only marketing.

What percent of students took all the three options approximately?

A) 14.14% B) 8.23% C) 19.2% D) None of these

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

Question No. : 48

Seven persons - A through G - each a different professional among lawyer, doctor, professor accountant, scientist, engineer and consultant, live in a building, with each person occupying one different floor, from the first floor to the seventh floor. The following information is known about them

(i) The accountant lives on a floor above the fourth floor, on which the engineer lives and B is not the accountant,
(ii) The lawyer does not live on a floor above the floor on which the doctor lives,
(iii) A, the professor, lives on a floor immediately above the floor on which the lawyer lives and C is not the doctor,
(iv) F, the scientist, lives on a floor above the floor on which B, who is neither the consultant nor the doctor, lives,
(v) G lives exactly two floors below E and the scientist lives exactly three floors above the lawyer.

Which of the following statements is definitely true?

A) E lives on the seventh floor. B) E is the accountant. C) C is the accountant D) The consultant lives on the first floor.

Question No. : 49

Which of the following two statements, if true, will be sufficient to uniquely determine the professions of all the seven people?
(i) E is the doctor (ii) D is the consultant

A) (i) alone B) (ii) alone C) Both (i) and (ii) together D) Both the statements together are also not sufficient

Question No. : 50

Who among the following is the Engineer?

A) B B) D C) E D) G

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

Question No. : 51

Eight teams, A, B, C, D, W, X, Y and Z, participated in the recently concluded cricket premier league. The eight teams were divided into 2 pools, pool A containing teams A, B, C and D and pool B containing teams W, X, Y and Z. A total of 15 matches were played in the tournament. Each match was made up of 20 overs. None of the 15 matches played in the tournament ended in a draw. The winner was awarded 2 points and the loser was awarded zero points. The tournament was divided into 3 phases – League Round, Semi-Finals and Final.

In the League Round each team in a particular pool played against every other team in the same pool. The top 2 teams according to points in each pool advanced to the Semi-Finals. In the Semi-Finals, the top team in pool A plays against the second team in pool B and the top team in pool B plays against the second team in Pool A. In case teams in a pool are tied on the basis of points, then the team with the higher net run rate (NRR) is ranked above the team with the lower NRR. For example, if team A wins its first match by 30 runs, its NRR is calculated as 30/20= 1.5 and if it lost its second match by 10 runs, then its NRR after the second match is calculated as (30 – 10)/40 = 0.5.

The NRR is calculated for each team after every match. For the teams that do not advance to next rounds, their NRR for the tournament is the same as their NRR after their last match. The table below gives partial information about the NRRs of the teams in the league round.

	Pool A				Pool B		
	NRR after __ match				NRR after __ match		
Team	**1st**	**2nd**	**3rd**	**Team**	**1st**	**2nd**	**3rd**
A	0.65		0.9	**W**	–6.5	–5.425	–5.05
B		–1.575		**X**	4.3		2.066
C	2.05	0.075	–0.266	**Y**		4.45	
D		0.625	0.816	**Z**		0.025	0.75

Which of the following represents the matches played in the Semi-Finals?

A) A v/s X and Y v/s D B) A v/s Y and X v/s Z C) B v/s Z and C v/s W D) A v/s D and B v/s Y

Question No. : 52

What is the difference between the highest and the lowest NRR after the League Round?

A) 2.35 B) 4.784 C) 7.283 D) 3.683

Question No. : 53

What is the difference between the highest and lowest number of runs by which any of the League Round matches was won? (in numerical value)

A) 117 B) C) D)

Question No. : 54

Which of the following statements is true?

A) A won against B in the first match by 41 runs
B) Y won one of its League Round matches by the least possible number of runs and still qualified for the Semi-Finals
C) Two of the League Round Matches were won by a margin of 86 runs each
D) B had the lowest NRR at the end of the League Round

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

Question No. : 55

Table A gives percentage distribution of the viewers at different time slots based on the channels that they watch. Table B gives the costs (in Rs.) per minute that the channels charge for airing the advertisements at different time slots.

Table-A

Time Slot	Channel						
	P	Q	R	S	T	U	V
Prime time	26	15	8	22	9	15	5
Morning	8	12	19	15	6	25	15
Late night	7	16	14	5	28	13	17

Table-B

Time Slot	Channel						
	P	Q	R	S	T	U	V
Prime time	10000	12000	5000	8000	4000	4000	3000
Morning	8000	6000	14000	5000	6000	12000	5000
Late night	5000	3000	10000	2000	10000	8000	8000

At any time slot, the channels with the lowest ratio of cost (in Rs.000's) to percentage of viewers watching the channel in that time slot, is considered to be the best option. Assume that the total number of viewers at each of the slots is the same.

At prime time, among the following combinations, which combination of channels put together is the best option?

A) P+R B) P+S C) T+U+V D) S+U

Question No. : 56

If prime time and morning slots should be taken as a package i.e., if one slot is booked for prime time then one slot should be booked during morning hours also and vice versa, then which of the following channels would be the best option to advertise?

A) S B) U C) P D) T

Question No. : 57

If the slots in channels Q and R should be taken as a package, i.e., if one slot is booked in channel Q, one slot should be booked in channel R also in the same three slots and vice versa, then the best time slot to book these two channels is

A) Prime time B) Late night C) Morning D) None of these

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

Question No. : 58

A family consists of ten members - A, B, C, D, E, F, G, H, I and J - and is spread across three generations. It is further known that

(i) I is the only son of H who is the only daughter of F.
(ii) there are three couples in the family and only one unmarried member in the second generation,
(iii) C is the grandson of A and one of his parents, B, is the sister-in-law of E, whose daughter is G.

How many male members are there in the family? (in numerical value)

A) 6 B) C) D)

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

Question No. : 59

A family consists of ten members - A, B, C, D, E, F, G, H, I and J - and is spread across three generations. It is further known that

(i) I is the only son of H who is the only daughter of F.
(ii) there are three couples in the family and only one unmarried member in the second generation,
(iii) C is the grandson of A and one of his parents, B, is the sister-in-law of E, whose daughter is G.

If it is given that D is H's brother, then who is the unmarried person in the second generation?

A) D B) J C) E D) Cannot be determined

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

Question No. : 60

A family consists of ten members - A, B, C, D, E, F, G, H, I and J - and is spread across three generations. It is further known that

(i) I is the only son of H who is the only daughter of F.
(ii) there are three couples in the family and only one unmarried member in the second generation,
(iii) C is the grandson of A and one of his parents, B, is the sister-in-law of E, whose daughter is G.

How is J related to I ? (write the correct option)

1. Father 2. Aunt 3. Cousin 4. Uncle

A) 4 B) C) D)

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

Question No. : 61

Five officers ~ Arjun, Bheem, Chandrakant, Drona and Eshwar -are the heads of five departments of the armed forces - Espionage, Finance, Operations, Artillery and Logistics - not necessarily in the same order. No officer heads more than one department and each department is headed by only one officer. Each of the five officers got a different number of medals among 1 to 5. Each department is located at a different distance among 6, 7, 8, 9 and 10 km in a straight line from the Military Head Quarters (HQ), not necessarily in the same order.

(i) The farthest department from the HQ is not headed by the officer who got the least number of medals.
(ii) Bheem does not head the Finance or the Artillery department and he got only one medal.
(iii)The officer who got the highest number of medals heads Operations department, which is at a distance of 9 km from the HQ.
(iv) At least two officers got less number of medals than Arjun and at least three officers got less number of medals than Chandrakant.
(v) Drona got three medals and the department headed by Chandrakant is 2 km away from the department headed by the officer

with four medals.
(vi) The Espionage department is at a distance of 7 km from HQ and the department headed by Drona is at a distance of 6 km and it is not Artillery department.

Who got five medals? (write the correct option)

1. Arjun 2. Eshwar
3. Chandrakant 4. Bheem

A) 3 B) C) D)

Question No. : 62

Who heads the Finance department? (write the correct option)

1. Eshwar 2. Drona
3. Arjun 4. Chandrakant

A) 2 B) C) D)

Question No. : 63

How far is the Logistics department from the HQ? (in km)

A) 8 B) C) D)

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

Question No. : 64

In a locality there are five buildings - A. B, C, D and E. All of them are of different heights. The tallest building has five floors, the next tallest has four floors. and so on, till the shortest which has only one floor.

Further it is known that:
(i) The sum of the number of floors in A and E is equal to the sum of the number of floors in C and D.
(ii) C is not the tallest building and A is not the shortest building.
(iii) C is taller than A and D is taller than B.

Which building is the shortest?

A) B B) A C) E D) Either B or A

Question No. : 65

If D is taller than C, then for how many of the following pairs of buildings is the sum of floors a perfect square? (in numerical value)
i. B and A ii. D and E iii. C and B

A) 2 B) C) D)

Question No. : 66

If D is taller than C, then which of the following is true?

A) If the buildings, from left to right, are in the ascending order of their heights, then no two buildings whose names are consecutive alphabets are adjacent to each other.
B) The sum of the number of floors in C and A is equal to the number of floors in E.
C) The sum of the number of floors in D and E is a prime number D) B is not shorter than C.

Section : Quantitative Ability

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

Question No. : 67

A can walk from P to Q and back in 40 minutes, whereas B can walk from Q to P and back in 60 minutes. If A and B start towards each other from P and Q respectively at 10:00 a.m., when will they meet?

A) 10:16 a.m. B) 10:09 a.m. C) 10:12 a.m. D) 10:10 a.m.

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

Question No. : 68

If, for positive integer x, $f(x) = 1+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+...+\frac{1}{2^x-1}$, which of the following is true?

A) $f(100) \leq 100$ B) $f(100) > 100$ C) $f(1000) \geq 100$ D) $f(200) \geq 200$

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

Question No. : 69

A man had a certain amount with him. He spent 20% of that to buy an article and 5% of the remaining on transport. Then he gifted Rs. 120. If he is left with Rs. 1,400, the amount he spent on transport is

A) Rs. 95 B) Rs. 80 C) Rs. 76 D) Rs. 61

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

Question No. : 70

There are two series of numbers in geometric progression, each having the same number of terms, such that the fourth term and the sixth term of the first series are equal to the second term and the third term of the second series respectively. If the last term of the second series is 64 times the last term of the first series and the fifth term of the first series is eight times the second term of the first series, then find the number of terms present in each of the series. (in numerical value)

A) 6 B) C) D)

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

Question No. : 71

If rice cost Rs 39 per kg, 8 men can be fed for 5 ½ days at a certain cost. If the price of rice reduces by Rs 6 per kg, how many men can be fed for 4 days at the same cost? (in numerical value)

A) 13 B) C) D)

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

Question No. : 72

The point C(4, c) lies on the perpendicular bisector of the line joining A(1, 2) and B(2, 4). What is the value of c?

A) 7 B) 7/4 C) –7 D) 5/4

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

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

Question No. : 73

The number of zeros at the end of N! and M! are 62 and 49 respectively. Find the maximum difference between the values of N and M. (in numerical value)

A) 54 B) C) D)

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

Question No. : 74

On an a moving horizontal surface, a rat running at 20 m/s is chasing an insect crawling at 5 m/s. The surface, rat and insect are all moving in the same direction. If 75 meters is the distance between the rat and the insect at the moment, the rat starts chasing the insect, and the surface is moving at 25 m/s, then how much time (in seconds) will it take for the rat to catch the insect? (in numerical value)

A) 5 B) C) D)

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

Question No. : 75

If six straight lines and five circles intersect each other, then the maximum possible number of distinct points of intersection is (in numerical value)

A) 95 B) C) D)

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

Question No. : 76

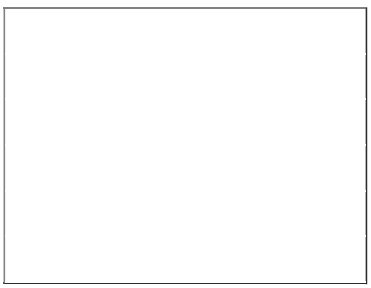
The difference between the compound interest and simple interest for the amount Rs. 5, 000 in 2 years is Rs. 32. The Rate of interest is

A) 5% B) 8% C) 10% D) 12%

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

Question No. : 77

The square grid shown above comprises 36 small unit squares, each of side 1 cm. How many rectangles which are not squares can be observed in the grid shown? (in numerical value)



A) 350 B) C) D)

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

Question No. : 78

In a school fete, a participant arranged a total of 1000 balls, of four types, in a long straight line. If he first placed one green ball, then two red balls, three blue balls, four yellow balls, five green balls, six red balls, seven blue balls, eight yellow balls and so on (with green balls followed by red balls followed by blue balls followed by yellow balls) up to 1000 balls, what was the position of the 100^{th} red ball? (in numerical value)

A) 437 B) C) D)

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

Question No. : 79

Milk solution A contains 10% milk and milk solution B contains 9 litres of milk. When the two solutions are mixed, the resultant mixture contains 12% milk. If the volume of solution B is one-third the volume of solution A, what is the combined volume of the resultant mixture?

A) 200 litres B) $\frac{400}{3}$ Litres C) 400 litres D) $\frac{200}{3}$ Litres

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

Question No. : 80

In an examination, a candidate wrote seven papers all having equal maximum possible marks. If the marks he secured in these seven papers are in the ratio 4 : 5 : 6 : 7 : 8: 9: 10, and the average of his highest and lowest scores is 60%, find the number of papers in which he scored not less than 75%. (in numerical value)

A) 2 B) C) D)

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

Question No. : 81

Three friends A, B and C start running on a circular garden of circumference 1500 m with speeds 100 m/min, 200 m/min and 150 m/min respectively. A starts running towards the right from the starting point, whereas B & C start running towards the left from the starting point. After what time will all the three meet?

A) 30 min B) 45 min C) 10 min D) None of these

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

Question No. : 82

A cubical block has an edge of length 24 inches. It is placed on a floor lying on one of its faces such that another adjoining face touches a vertical wall. A 70 inch long ladder is now placed such that its top rests on the wall and its foot rests on the floor. If the ladder just touches an edge of the block and the foot of the ladder is closer to the bottom of the wall than its top is to the floor, find the height at which its top rests. (in inches)

A) 56 B) C) D)

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

Question No. : 83

A man bought goods for Rs. 800 and sold half at a gain of 5%. Find at what % gain, he must sell the remaining so as to gain 20% on the whole ?

A) 25% B) 30% C) 40% D) None of these

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

Question No. : 84

A tank internally measuring 15 cm × 12 cm × 10 cm has 360 cc water in it. Porous bricks are placed in the water until the tank is full up to its brim. Each brick absorbs one tenth of its volume water. How many bricks, of 5 cm × 4 cm × 2 cm, can be put in the tank without spilling over the water? (in numerical value)

A) 40 B) C) D)

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

Question No. : 85

In a locality, there are ten houses in a row. On a particular night a thief planned to steal from three houses of the locality. In how many ways can he plan such that no two of the houses are next to each other? (in numerical value)

A) 56 B) C) D)

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

Question No. : 86

Find the number of digits in 2^{150}. (in numerical value)

A) 46 B) C) D)

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

Question No. : 87

If a function is defined as $h(x, y) = H(x, y) / L(x, y)$ where $H(x, y)$ = HCF of x and y while $L(x, y)$ = LCM of x and y, and $h[1/h(x, y), z] = 1 / 12$. If x, y and z are positive integers such that any 2 of them have HCF = 1, then how many different values of $(x + y + z)$ are possible?

A) 1 B) 3 C) 2 D) More than 3

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

Question No. : 88

Pipes P and Q can fill a cistern in 4 hours and 5 hours respectively while a leak R can empty the cistern in 3 hours. Initially pipe P is opened and then, leak pipe R is opened at the instant when the cistern is exactly half full. Pipe Q is opened at the instant when the cistern is exactly one fourth filled with water. Find the total time taken to fill the complete cistern from the initial moment.

A) 6.83 hours B) 9.42 hours C) 14.33 hours D) 11.42 hours

DIRECTIONS for the question: *Mark the best option:*
Question No. : 89

Murthy, Premjee, Kejriwal and Kumar vishwas met at alumni meet of imperial college. Mr. Virus , the great mathematician who was their mentor was also there. All of them desperately wanted the magic pen of Mr,Virus. Mr. Virus on persuasion agreed to give the pen on the condition that he will ask a question and whosoever give the correct answer will get the pen and if more than one among them gave the correct answer, they will share the pen for equal time. The question was: *If $n > 1$, how many n-digit numbers are there which are even?* The answers of Murthy, Premjee, Kejriwal and Kumar vishwas were $9 \times 10^{n-1}$, 4999999... ($n - 1$) times, $45 \times 10^{n-2}$ and $5 \times 10^{n-1}$ respectively. Incidently only one of them gave the correct answer. Who was he?

A) Murthy B) Premjee C) Kejriwal D) Kumar vishwas

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

Question No. : 90

It is given that a and b are integers such that $b = |a + 1|$ and b is the square of a positive number. How many solutions are possible if $|a| \leq 100$, $b \leq 100$? (in numerical value)

A) 19 B) C) D)

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

Question No. : 91

4-digit positive integers are formed by using the digits 1, 2, 3, 4 and 5 exactly once. If all the numbers formed are multiplied, how many consecutive zeroes will the product end in?

A) 24 B) 39 C) 34 D) 18

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

Question No. : 92

How many triangles with perimeter 27 and all integral sides x, y, z are possible such that $x < y < z$? (in numerical value)

A) 12 B) C) D)

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

Question No. : 93

There is a group of hundred positive integers in some fixed order such that the sum of any 6 consecutive values is the same. If the values of the 12^{th}, 23^{rd}, 34^{th}, 45^{th} and 56^{th} terms are 12, 23, 34, 45 and 56 respectively, then which of the following is definitely true about the sum of the 28^{th} and the 80^{th} terms of the sequence?

A) It is less than 70 B) It is greater than 56 and less than 74 C) It is greater than 80 and less than 95
D) None of the above is true

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

Question No. : 94

$[\log(1)+\log(1+3)+\log(1+3+5)+....\log(1+3+5+....+19)] - 2[\log1+\log2+....\log7] = a + bP + cQ$. If $\log2 = P$ and $\log3 = Q$, then which of the following is a possible value for (a, b, c)? [Assume base 10 for all the log functions.]

A) (2,6,4) B) (1,7,3) C) (2,3,8) D) (1,3,8)

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

Question No. : 95

An equilateral triangle PQR of side 25 cm is divided into 2 parts such that one of them is an equilateral triangle containing one of the vertices of the original triangle and the other remaining part is a trapezium. What is the perimeter of the parallelogram formed when two such trapeziums are placed together? (in cm)

A) 100 B) C) D)

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

Question No. : 96

A number N^2, where N is a natural number, is such that exactly three of its factors are less than N. What is the number of factors of N^3?

A) 8 B) 9 C) 10 D) 11

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

Question No. : 97

The 3 dimensions of a cuboid are increased by *p*%, *q*% and *r*% respectively. Due to this increase, the volume increases by *K*%, where *K* is an integer. How many values of *K* are possible if *p*, *q*, *r* are real numbers and can take any value between 10 to 30 (both inclusive)?

A) 17 B) 86 C) 52 D) None of these

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

Question No. : 98

Texona offers a packet of 4 soaps at the marked price of 3 soaps and on purchasing 14 such packets gives one packet absolutely free. A shopkeeper receives 15 packets of the soaps in the offer and sells each soap at its marked price. What is his net percentage profit?

A) 26% B) 30% C) 35% D) 43%

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

Question No. : 99

A survey revealed that 800 people owned shares of company X, 1000 owned shares of company Y and 600 owned shares of company Z. It was found that 325 people owned shares of companies X and Z and 300 owned shares of companies Y and Z. 150 people owned shares of all three companies. If S represents the total number of people who own shares of any of these 3 companies, then what is the difference between the maximum and minimum value of S?

A) 700 B) 475 C) 825 D) 350

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

Question No. : 100

The ratio of the turnover of two companies, XYZ and ABC is 8 : 7 and the ratio of their expenditures is 19: 16 respectively. Profit is

calculated as the difference between turnover and expenditure. If each of the companies posted a profit of 1250, which of the following is the turnover of XYZ and the expenditure of ABC?

A) 6000 & 4750 B) 6000 & 4000 C) 5250 & 4000 D) 5250 & 4750

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

Explanation:-
Regarding these types of questions one should consider that issues/facts already mentioned in the passage do not entitle to be asked as questions. Refer to last lines of second paragraph" Such workhouses were too uncomfortable for those who were in poverty due to no fault of their own and places ……." Hence option D is ruled out. Also in the second passage line "Gilbert's concern for the poor may have stemmed out of his role as agent. ….." makes option A invalid. As no one was as concerned as Gilbert that's why the Act was named after him, so no such amendments were made hence Option B is wrong. The Obvious questions that stems is what provisions were made under the act to better the plight of workhouses/Parishes

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

Explanation:-
'Impotent' as used contextually does not signify incapability to procreate hence option A, B & D are not relevant contextually rather impotency herein implies incapacity to sustain due to lack of work/money

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

Explanation:-
Option A is clearly mentioned in the opening lines of second paragraph. Nepotism means favoritism as the aversion for such attitude by Gilbert is mentioned in the concluding lines of the passage hence option B is ruled out. Option C is mentioned in the last lines of second & Third paragraph - "Gilbert thought that workhouses should be reformed to promote industrious behavior." & "Those who refused such work (the 'idle') were to endure 'hard Labor in the Houses of Correction'." Sixteenth century will mean era from 1501 to 1599 and the first Local Act was passed in 1696 which implies late seventeenth century. As per the question Option D is the correct answer.

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

Explanation:-
Options A and C are actually contained in option B. Option B can be derived from the line: This alienation and lack of knowledge puts the power over women's bodies into the hands of professionals and feeds non-professionals' ignorance about birth control as well as non-heterosexual options.

QNo:- 5 ,Correct Answer:- *A*

Explanation:-
Options highlights the main point of the passage: birth control in developed nations.? If you go through the first few lines of the passage, you would understand that the passage is trying to explore the cultural impact on birth control.
Options B and C: The history of birth control in developed nations, why women lack the power to shape their own destinies, social and ecological value of family units — all of them find a passing mention in the passage but they cannot be called the defining focus of the passage. These are points discussed with reference to the larger topic at hand of birth control, but are not the central themes of the passage.

QNo:- 6 ,Correct Answer:- *D*

Explanation:-

Please read the relevant lines carefully, it represents just a manifestation of the acceptance of birth control methods. The use of quotes in "developed" reflects an apparent non-acceptance of the title given to the UK and the USA, in the backdrop of birth control methods. While answering the question, keep in mind that birth control is the subject of the passage and not sex education. This makes option D the correct answer.

***QNo:- 7 ,Correct Answer:-** C*

Explanation:-
Refer to the lines: Dualism is sometimes defined as the doctrine that there are in the world two kinds of substances, matter and mind, which are different in kind and should be kept distinct...There are dualists who prefer to avoid the use of the word substance, and to say that the world of our experiences consists of physical phenomena and of mental phenomena, and that these two classes of facts should be kept separate.
Remember, dualism recognizes mind and matter. The reason for avoiding a term such as substance is that it implies something physical and thereby misses the aspect of 'mind'.

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

Explanation:-
In the given case, the author of the passage describes the subject of dualism and highlights the various viewpoints for the same. He goes on to explain the viewpoints of the plain man and the dualists. All through the passage, he maintains an introductory tone in the passage and is concerned with explaining the basic tenets of dualism. This makes option d the best answer in the given case.

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

Explanation:-
The trick in this question is to know the meaning of the word disagreeable. It means 'not agreeing with your tastes or expectations/not to your liking'. On the other hand, disparate means ' Fundamentally different or distinct in quality or kind'. Now refer to the lines: Now, the materialist allows these two classes to run together; so does the idealist. The one says that everything is matter; the other, that everything is mind. It would be foolish to maintain that nothing can be said for either doctrine, for men of ability have embraced each. But one may at least say that both seem to be refuted by our common experience of the world, an experience which, so far as it is permitted to testify at all, lifts up its voice in favor of Dualism.
We can see that idealists and materialists have different viewpoints and keeping all of the above in mind, option c is the correct answer here.

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

Explanation:-
Option c can be derived from the lines: We are justified in regarding this as the opinion of the plain man even when we recognize that, in his endeavor to make clear to himself what he means by minds, he sometimes speaks as though he were talking about something material or semi-material.
Option a can be negated from the lines: The phenomena which are revealed to us are indefinitely varied; all physical phenomena are not just alike, and all mental phenomena are not just alike.
Option b can be negated from the line: Now, the materialist allows these two classes to run together; so does the idealist.We can see that there is one common thread between the two.
Option d can be negated from the lines:The dualist may maintain that we have a direct knowledge of matter and of mind, and he may content himself with such a statement, doing little to make clear what we mean by matter and by mind. In this case, his position is little different from that of the plain man who does not attempt to philosophize.

***QNo:- 11 ,Correct Answer:-** B*

Explanation:-

Option b can be inferred from the lines: The dualist may maintain that we have a direct knowledge of matter and of mind, and he may content himself with such a statement, doing little to make clear what we mean by matter and by mind.
Option a is incorrect as the author clearly states that the distinction can never be absolute.
Option c is not implied in the passage.

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

Explanation:-
This is an easy question placed right at the end of the passage. The answer for this question can be directly derived from the last two paragraphs of the passage. These two points given at the end represent options a and b.

QNo:- 13 ,Correct Answer:- *C*

Explanation:-
The author mentions moralization as switch which can flip inside us and lead us to label acts amoral, moral or immoral on multiple instances, and this is the common thread that ties the passage together. This makes option C the most suitable answer for this case.

QNo:- 14 ,Correct Answer:- *A*

Explanation:-
Options A is mentioned by author in paragraph 3 wherein passive smoking is immoral now as it can harm others beside self. Options B and C are non-moralist viewpoints and hence rejected. Option D is false as the author mentions that "They are more likely to think……..like believing that meat avoidance makes people less aggressive" The author says moralists believe or think this way but it is not definitely true.

QNo:- 15 ,Correct Answer:- *B*

Explanation:-
Option B can be inferred from the lines: The other hallmark is that people feel that those who commit immoral acts deserve to be punished.
Option A mutilates the lines: We all know what it feels like when the moralization switch flips inside us — the righteous glow, the burning dudgeon, the drive to recruit others to the cause.
Option C is built around the last paragraph, but new behaviors are added to the list (they are not created).
Option D contradicts the line 'The first hallmark of moralization is that the rules it invokes are felt to be universal'.

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

Explanation:-
Throughout the passage the author has highlighted that how 'social media' is destroying the essence of the communication and thereby posing threat to humanities.
Other options are rejected as each one of them represents only the harmful effects of social media and not the essence of the passage.

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

Explanation:-
This is a question where you need to use logic in order to answer the question. The one simple attitude adopted by the author of the passage towards social media is that of 'criticism'. All options that fall within the ambit of criticism are acceptable here, and these include options A, B and D. Option C is the odd one out. Though it appears to be correct, on close perusal, we find that the

tone actually states 'harshly judgmental'. The author has been judgmental for sure, but has he been harshly so (meaning unfair in this context)? That is something we cannot conclude from the given context.

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

Explanation:-
Refer to the lines: The real purpose of social media is to gauge measure and ultimately control the behavior of the crowd for marketing purposes. And as social media, and its values of pliable, identifiable collectives based on mutual interests, migrates from the Web to become more ubiquitous in our everyday lives--try attending a movie or buying a meal, the reductionist conversation that it engenders comes with it.Reductionism is the philosophy that you could understand the world by examining smaller and smaller pieces of it. When assembled, the small pieces would explain the whole. In a sense a reductionist conversation is then a small part of a conversation.
The 'reductionist conversations' that the author talks about are those are those that take place in our everyday lives, and these are impacted by social media to a great degree. This sentiment finds reflection in option C.

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

Explanation:-
This can be inferred from the lines 'With 93% of our communication context stripped away, we are now attempting to forge relationships and make decisions based on phrases, Abbreviations, Snippets, Emoticons, and which may or may not be accurate representations of the truth.'

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

Explanation:- *The answer to this question can be found in the last paragraph of the passage: Is there a way to synthesise a compound that would take advantage of the beneficial aspects of LSD, while minimising the negative effects? There's only one way to find out – more scientific experiments!*
The author clearly wants more research to be done in this field.

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

Explanation:- *The author of the passage is clear that the positive impact (upshots) of LSD might be significant and that these need to be explored further.*
He clearly states that the effects of LSD are not ephemeral (lasting only an instant). It is mentioned in the passage LSD use might lead to effects that last for even two weeks.
Options B and D go against the tone and attitude of the author.

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

Explanation:- *In the given case, option C is the best answer. The author displays a scientific approach, which is based on analysing the given facts and arriving at a said conclusion.*
Option A is a negative answer option and hence, rejected.
Option B is incorrect because of the use of the word allegorical. An allegory is an expressive style that uses fictional characters and events to describe some subject by suggestive resemblances; an extended metaphor. This clearly does not fit the given context.
Option D is rejected because of the use of the word realistic. The author is not portraying a factual political or sociological event; he is discussing the possible scientific effects of a certain substance and at the same time, displaying a certain degree of inquisitiveness about the same. He wishes to know about LSD and its effects.

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

Explanation:- *Statement I can be derived from the lines: This is a mostly unanswered question, but researchers think it has*

something to do with the serotonin 2A receptor (5-HT2AR). This receptor is expressed all over the brain, particularly in regions associated with cognitive functions and social interactions. Stimulation of this receptor has been directly linked to cognitive flexibility, enhanced imagination and creative thinking. Disorders associated with variants of the 5-HT2AR include schizophrenia, depression, obsessive-compulsive disorder and attention deficit hyperactivity disorder – in other words, a panoply of psychiatric illness.
Statement II is incorrect and not mentioned in the passage.
Statement III is incorrect. Refer to the lines: The precise biology behind LSD's transformational potential remains a mystery.
Statement IV is a general sentiment expressed by the author of the passage.

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

Explanation:- *Considering the scientific nature of the passage and the approach adopted by the author of the passage, the most suitable profession for the author is neuroscientist.*

QNo:- 25 ,Correct Answer:- *3*

Explanation:-
In this given case, you need to understand a few things:
a. the author does not say that science has not been able to explain free will; he says that science does provide us the tools to understand free will.
b. he advices us to look at animals and how they operate in order to understand the topic of free will.
Keeping these two points in mind, we find that option 3 is the best answer in the given case. The other options commit of mistake of either belittling science or shifting from the main topic of discussion in the given case.

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

Explanation:-
In this case, there are two central points of the author of the passage:
a. Happiness is not a factor of the individual alone
b. Happiness depends on social conditions (economic, political and social aspects of societies).
Keeping this mind, we can see that option 2 is the only one that covers both aspects.

QNo:- 27 ,Correct Answer:- *51342*

Explanation:-
5 makes for a good opening line, taken further by 1, which explains the idea. Note that attitude in 3, which connects with what 1 says. Thus 1,3 is a good, logical pairing. That idea in 4 continues the same logical thread, which finds a repetition in the words same, recurrent theme in 2.

QNo:- 28 ,Correct Answer:- *23541*

Explanation:-
3, which talks of mental gap, is very well connected with 2 (wide gap), which makes for an ideal, general opening sentence. 5,4 makes for a strong logical pairing due to their inherent contrast while 1 should follow 4 as 1 summarizes the ideas contained in the rest of the lines here.

QNo:- 29 ,Correct Answer:- *24153*

Explanation:-
3 and 5 are comments by the same person Gardner and we realise that 3 has to follow 5 because the 3 asks a question which is

related to the point discussed in 5, that is , the assumption earlier that a single diet is right for everyone. The paragraph is talking about how what we eat can be very important. Sentence 2, begins with the idea and 4 continues, stating that obesity may be the norm and that sugar free Milanos will not save us, but may be a different way of looking at food. The 3 and 5 give the researcher Christopher Gardner's views.

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

Explanation:-
The correct order of statements is 2-1-4. Statement 2 is the opening sentence, statement 1 takes forward the subject of autonomy, and statement 4 takes forward the subject of moral liberty.

QNo:- 31 ,Correct Answer:- *341526*

Explanation:-
In this case, you need to identify the right pairs in order to identify the correct answer. The two most significant pairs in this case are 15 (statement 5 follows statement 1 as it provides an example of what the author is talking about) and 26 (linked by the pronoun 'those'). Statement 3 forms the generic opening sentence for the paragraph and this helps us in finding the correct answer sequence..

QNo:- 32 ,Correct Answer:- *3*

Explanation:-
In this case, statements 1, 2 and 4 are connected. The correct order for these statements is: 4-1-2. These statements are generic statements and statement 3 does not fit the given context highlighted by these three statements.

QNo:- 33 ,Correct Answer:- *1*

Explanation:-
In this case, statement 1 does not fit the given context. Statements 4, 3 and 2 (in that order) form the connected pair of sentences in this case. These provide an introduction for the given context. Statement 1 introduces a contradiction that does not fit with the other statements.

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

Explanation:-
Statements 4-2-1 (in that order) form the connected set of sentences in this case. These three sentences talk about the impact of reading on the reader. Statement 3 does not fit in the given context as it does not match with the subject of discussion in the other three statements.

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

Explanation:-
Reach in Madhya Pradesh: Circulation = 10000 × 5 = 50000, Radio = 10000 × 4 = 40000

TV = 5000 × 6 = 30000 ∴ total reach in MP = 120000

Reach in Maharashtra: Circulation = 18000 × 5= 90000, Radio = 120000 × 4 = 480000

TV = 32000 × 6 = 192000 ∴ total reach in Maharashtra = 762000. ∴ required percentage = 120000/762000 × 100 = 16%. Hence

1st option.

***QNo:- 36 ,Correct Answer:-** 4*

Explanation:-

Increase in radio sets (in thousands)= $\frac{10}{100}\times 1112 = 111.2$ ∴ total radio sets = (2696 + 111.2) × 1000 = 2807200. Increase in TV sets (in thousands) = $\frac{25}{100}\times 200 = 50$ ∴ total TV sets (in thousands) = (1202 + 50) × 1000 = 1252000 ∴ required % = $\frac{1252}{2807}\times 100 = 45\%$. So 4th option.

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

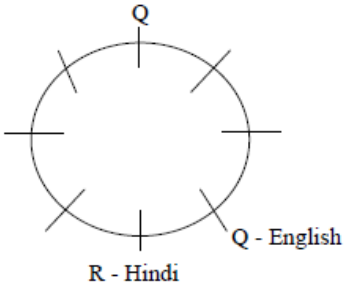
Explanation:-

By comparing the figures for these 2 columns, we observe that number of radio sets licensed is higher than circulation in Kerala, Tamil Nadu and Maharashtra. Hence 3rd option.

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

Explanation:-

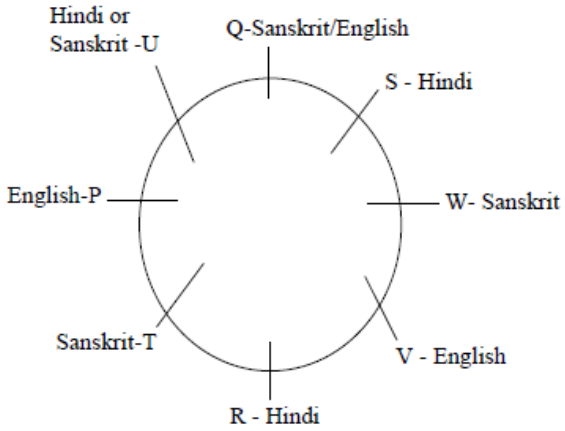
From conditions (i) & (ii) the places of the persons can be fixed as follows



As U is to the right of Q, S should be towards the left of Q.

⇒ P is to the right of U and W is between S and V.

As P is opposite to W, he cannot study Sanskrit ⇒P studies English ⇒ T studies Sanskrit Thus the final arrangement is a follows

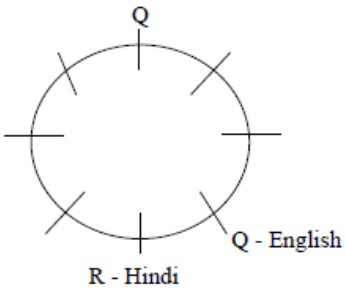


From the arrangement we can see that P sits opposite W and studies English.

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

Explanation:-

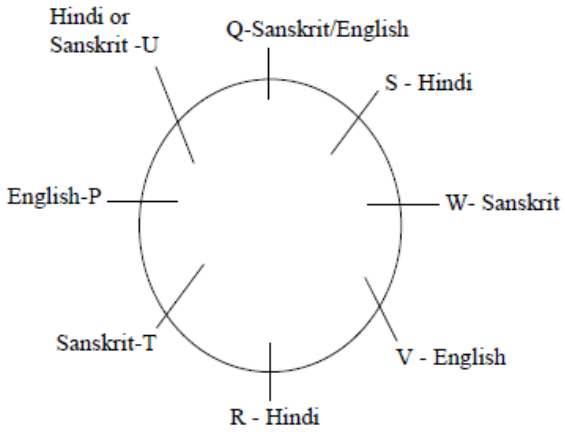
From conditions (i) & (ii) the places of the persons can be fixed as follows



As U is to the right of Q, S should be towards the left of Q.

⇒ P is to the right of U and W is between S and V.

As P is opposite to W, he cannot study Sanskrit ⇒P studies English ⇒ T studies Sanskrit Thus the final arrangement is a follows

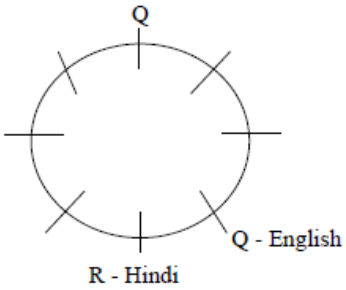


Statements P and R cannot be true as Pstudies English and W studies Sanskrit. If U studies Hindi.
Q can study either English or Sanskrit. Hence statement (B) need not be definitely true.
If Q studies Sanskrit then U must study Hindi. Hence option (D) is definitely true.

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

Explanation:-

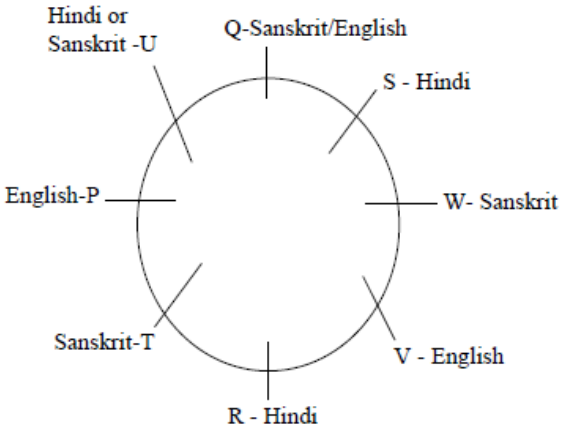
From conditions (i) & (ii) the places of the persons can be fixed as follows



As U is to the right of Q, S should be towards the left of Q.

⇒ P is to the right of U and W is between S and V.

As P is opposite to W, he cannot study Sanskrit ⇒P studies English ⇒ T studies Sanskrit Thus the final arrangement is a follows



As shown it is S

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

Explanation:-

Statement I: The required percentages for different regions is

$N-\frac{19}{13}\times\left(\frac{300}{6900}\right)\times 100<1.5$

$\therefore$ As $\frac{300}{6900}\times 100$ is common for all of them,

It is not considered for any other fraction.

W- $\frac{7}{17}\times\left(\frac{300}{6900}\right)\times 100<1$

C- $\frac{10}{12}\times\left(\frac{300}{6900}\right)\times 100<1$

S- $\frac{16}{14}\times\left(\frac{300}{6900}\right)\times 100<1.5$

SC- $\frac{13}{15}\times\left(\frac{300}{6900}\right)\times 100<1$

EC- $\frac{23}{21}\times\left(\frac{300}{6900}\right)\times 100<1.5$

E- $\frac{12}{8}\times\left(\frac{300}{6900}\right)\times 100=1.5$

It will be highest for E i.e. eastern region.
Statement I is not true.
Statement II: Required ratio is

$$\frac{23}{8}\left(\frac{47600}{38700}\right)=\frac{23}{8}\times\frac{5}{4}>3$$

Statement II is true.
Choice (B)

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

Explanation:-
Statement I: The number of students selected for the course i.e. 300 is very less when compared to the number of students appeared for the exam i.e.38700 (less than 1%).

∴ The required value will be least for the region with the least number of students appeared for the exam i.e. Central region.

∴ Statement I is true.

Statement II : The number of students selected for the course is least (7%) from the Western region when compared to any other region.

∴Statement II is not true. Choice (A)

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

Explanation:-
Statement I : Required ratio is

$$\left(\frac{14}{16}\right)\left(\frac{6900}{1300}\right)<\frac{14}{16}\times 6<6$$

∴Statement I is not true.

Statement II: The required number will be highest for East-Central region but not for Southern region.
East-Central: 21% of 6900 - 16% of 1300

Southern: 14% of 6900 - 8% of 1300

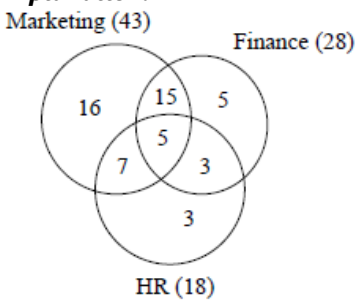
∴Statement II is not true. Choice (D)

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

Explanation:-
We cannot comment anything specific by using either statement alone. If we use both together, if Kamla is worst player, the best player is a female, but this defies other condition that the best player and worst player are of same age. Now if her brother is worst player best player is then her son. This means Kamla, her son and her brother are of same age, but this is again not possible. If her son is worst player, the best player is male so he must be Kamla's brother. Assuming that her son and her brother are of same age this can happen. Hence option 3.

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

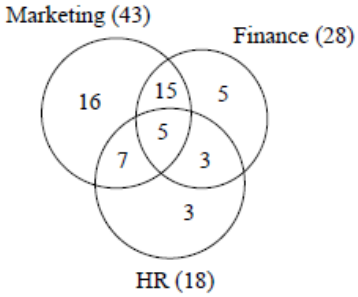
Explanation:-



Total number of students who took any of the subject = 16+15+5+3+5+7+3=54
∴Number of students who did not take any of these = 70-54=16
∴required %= $\frac{16}{70}\times 100 = 22.8\%$

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

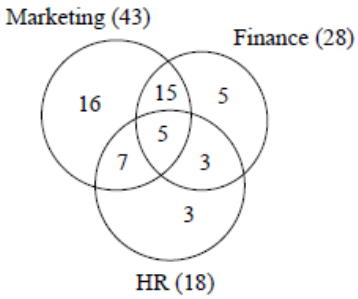
Explanation:-



As shown the ratio is 3:16

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

Explanation:-



Required % = 5/70 × 100 = 7.14%

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

Explanation:-

From the given conditions the professions of the following persons are A - professor F - scientist

B cannot be consultant, doctor or accountant ⇒ & should be either lawyer or engineer

From condition (i) the engineer lives on the fourth floor and the accountant lives on either the 5^{th} the 6^{th} or the 7^{th} floor.

From conditions (ii) and (iii) the doctor and the professor are above the lawyer ⇒ the lawyer must live a floor below the 4^{th} floor.

As the engineer lives on the fourth floor and the lawyer is not on the first floor, the lawyer must be on the second floor and A, the professor, must be on the third floor From condition (v) F, the scientist, must live on the fifth floor. As the doctor lives above the lawyer, and the accountant above the engineer, the doctor and the accountant must occupy the sixth and seventh floors in any order.

⇒The consultant must live on the first floor. As G lives two floors below E, from the above results, E must be on 6^{th} floor and G on

4 floor*

⇒ G is the Engineer and B is the Lawyer. The results can be tabulated as follows

Floor	Person	Profession
7	C	Accountant/Doctor
6	E	Doctor
5	F	Scientist
4	G	Engineer
3	A	Professor
2	B	Lawyer
1	D	Consultant

From the table we can see that the statement. "The consultant lives on the first floor", is definitely true Choice (D)

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

Explanation:-
From the given conditions the professions of the following persons are A - professor F - scientist

B cannot be consultant, doctor or accountant ⇒ & should be either lawyer or engineer

From condition (i) the engineer lives on the fourth floor and the accountant lives on either the 5^{th} the 6^{th} or the 7^{th} floor.

From conditions (ii) and (iii) the doctor and the professor are above the lawyer ⇒ the lawyer must live a floor below the 4^{th} floor.

As the engineer lives on the fourth floor and the lawyer is not on the first floor, the lawyer must be on the second floor and A, the professor, must be on the third floor From condition (v) F, the scientist, must live on the fifth floor. As the doctor lives above the lawyer, and the accountant above the engineer, the doctor and the accountant must occupy the sixth and seventh floors in any order.

⇒The consultant must live on the first floor. As G lives two floors below E, from the above results, E must be on 6^{th} floor and G on

4 floor*

⇒ G is the Engineer and B is the Lawyer. The results can be tabulated as follows

Floor	Person	Profession
7	D/C	Accountant/Doctor
6	E	Doctor/Accountant
5	F	Scientist
4	G	Engineer
3	A	Professor
2	B	Lawyer
1	C/D	Consultant

From statement (i) we can't determine whether D or C is the accountant. However, from statement (ii), if D is the consultant, then C must be the accountant or the doctor. But by (iii) statement, C is not the doctor. So, C has to be accountant. That implies E must be the doctor. Hence statement (ii) alone is sufficient.

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

Explanation:-
From the given conditions the professions of the following persons are A - professor F - scientist

B cannot be consultant, doctor or accountant ⇒ & should be either lawyer or engineer

From condition (i) the engineer lives on the fourth floor and the accountant lives on either the 5^{th} the 6^{th} or the 7^{th} floor.

From conditions (ii) and (iii) the doctor and the professor are above the lawyer ⇒ the lawyer must live a floor below the 4^{th} floor.

As the engineer lives on the fourth floor and the lawyer is not on the first floor, the lawyer must be on the second floor and A, the professor, must be on the third floor From condition (v) F, the scientist, must live on the fifth floor. As the doctor lives above the lawyer, and the accountant above the engineer, the doctor and the accountant must occupy the sixth and seventh floors in any order.

⇒The consultant must live on the first floor. As G lives two floors below E, from the above results, E must be on 6^{th} floor and G on

4 floor*

⇒ G is the Engineer and B is the Lawyer. The results can be tabulated as follows

Floor	Person	Profession
7	D/C	Accountant/Doctor
6	E	Doctor/Accountant
5	F	Scientist
4	G	Engineer
3	A	Professor
2	B	Lawyer
1	C/D	Consultant

From the table, G is the Engineer . Choice (D)

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

Explanation:-

A won its 1^{st} match by x runs. So, its NRR is x/20 = 0.65 ⇒ x = 13. C won by x runs to get NRR of 2.05 after 1^{st} match ⇒ x/20 = 2.05

⇒ x = 41. If C won by y runs in the 2^{nd} match, then (41 + y)/40 = 0.075 = 41 + y = 3 ⇒ y = –38. This means that C lost the 2^{nd}

Match by 38 runs. If C won the 3^{rd} match by z runs, then (41 – 38 + z)/60 = –0.266 ⇒ 3 + z = –16 ⇒ z = –19. This means that C

lost the 3^{rd} match by 19 runs.
Suppose B lost the 1^{st} match by 13 runs and D lost the 1^{st} match by 41 runs. If B won the 2^{nd} match by x runs then

(–13 + x)/40 = –1.575 ⇒ x – 13 = 63 ⇒ x = 76.If D won the 2^{nd} match by y runs then (–41 + y)/40 = 0.625 ⇒ y – 41 = 25 ⇒ y =

66.
We have 3 winning scores, where as these should actually be 2 winning scores and corresponding 2 losing scores. We can therefore conclude that B lost by 41 runs and D lost by 13 runs. So, in its 1^{st} match A defeated D by 13 runs and C defeated B by 41 runs.

If D won its 2nd match by x runs, then (–13 + x)/40 = 0.625 ⇒ x – 13 = 25 ⇒ x = 38. If D won its 3rd match by y runs, then (–13 + 38 + y)/60 = 0.816 ⇒ 25 + y = 49 ⇒ y = 24. If B won its 2nd match by x runs, then (–41 + x)/40 = –1.575 ⇒ x – 41 = –63 ⇒ x = –22. We know that C lost its 2nd match by 38 runs. So in the 2nd match, D defeated C by 38 runs and therefore, B lost to A by 22 runs. After the 2nd match A's NRR = (13 + 22)/40 = 35/40 = 0.875.

If A won by x runs in the 3rd match, (13 + 22 + x)/60 = 0.9 ⇒ 35 + x = 54 ⇒ x = 19. So, A defeated C by 19 runs in the 3rd match.

If D won its 3rd match by x runs, then (–13 + 38 + x)/60 = 0.816 ⇒ 25 + x = 49 ⇒ x = 24 => D defeated B by 24 runs and B's NRR is (–41 – 22 – 24)/60 = –87/60 = –1.45.

If W won by x runs in the 1st match, x/20 = –6.5 ⇒ x = –130. If W won the 2nd match by y runs then, (–130 + y)/40 = –5.425 ⇒ y – 130 = –217 ⇒ y = –87. If W won its 3rd match by z runs then (–130 – 87 + z)/60 = –5.05 ⇒ z – 217 = –303 ⇒ z = –86.

If X won its 1st match by x runs then x/20 = 4.3 => x= 86. So X won its first match by 86 runs.
Suppose Y lost its 1st match by 86 runs and Z won its 1st match by 130 runs. If Y won its 2nd match by x runs, then (–86 + x)/40 = 4.45 ⇒ x – 86 = 178 ⇒ x = 264. If Z won its 2nd match by x runs, then (130 + x)/40 = 0.025 ⇒ x + 130 = 1 ⇒ x = –129. This is not possible since we need two winning scores and two corresponding losing scores. So we can conclude that Y won its 1st match by 130 runs and Z lost its 1st match by 86 runs.

If Z won its 2nd match by x runs, then (–86 + x)/40 = 0.025 ⇒ x – 86 = 1 ⇒ x = 87. So Z defeated W in its 2nd match by 87 runs. If Z won its 3rd match by y runs, then (–86 + 87 + y)/60 = 0.75 ⇒ y + 1 = 45 ⇒ y = 44.

If Y won its 2nd match by x runs, then (130 + x)/40 = 4.45 ⇒ x + 130 = 178 ⇒ x = 48. So Y defeated X in its 2nd match by 48 runs and X got NRR of (86 – 48)/40 = 38/40 = 0.95.

If X won its 3rd match by x runs, then, (86 – 48 + x)/60 = 2.066 ⇒ (38 + x) = 124 ⇒ x = 86. So X defeated W in the 3rd match by 86 runs. Z defeated Y in the 3rd match by 44 runs and Y had NRR of (130 + 48 – 44)/60 = 134/60 = 2.233. We can then make the following table:

POOL A						
	1st match		2nd match		3rd match	
	NRR	W/L	NRR	W/L	NRR	W/L
A	0.65	13	0.875	22	0.9	19
B	–2.05	–41	–1.575	–22	–1.45	–24
C	2.05	41	0.075	–38	–0.266	–19
D	–0.65	–13	0.625	38	0.816	24

POOL B						
	1st match		2nd match		3rd match	
	NRR	W/L	NRR	W/L	NRR	W/L
W	–6.5	–130	–5.425	–87	–5.05	–86
X	4.3	86	0.95	–48	2.066	86
Y	6.5	130	4.45	48	2.233	–44
Z	–4.3	–86	0.025	87	0.75	44

In pool A, A won 3 matches to get 6 points and D won 2 matches to get 4 points. In pool B, X, Y and Z won 2 matches each to get 4 points each, but Y had the highest NRR of 2.233 and X had the second highest NRR of 2.066. So the Semi-Finals are played as A v/s X and Y v/s D.

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

Explanation:-

A won its 1st match by x runs. So, its NRR is x/20 = 0.65 ⇒ x = 13. C won by x runs to get NRR of 2.05 after 1st match ⇒ x/20 = 2.05

⇒ x = 41. If C won by y runs in the 2nd match, then (41 + y)/40 = 0.075 = 41 + y = 3 ⇒ y = –38. This means that C lost the 2nd

Match by 38 runs. If C won the 3rd match by z runs, then (41 – 38 + z)/60 = –0.266 ⇒ 3 + z = –16 ⇒ z = –19. This means that C

lost the 3rd match by 19 runs.
Suppose B lost the 1st match by 13 runs and D lost the 1st match by 41 runs. If B won the 2nd match by x runs then

(–13 + x)/40 = –1.575 ⇒ x – 13 = 63 ⇒ x = 76.If D won the 2nd match by y runs then (–41 + y)/40 = 0.625 ⇒ y – 41 = 25 ⇒ y =

66.
We have 3 winning scores, where as these should actually be 2 winning scores and corresponding 2 losing scores. We can therefore conclude that B lost by 41 runs and D lost by 13 runs. So, in its 1st match A defeated D by 13 runs and C defeated B by 41 runs.

If D won its 2nd match by x runs, then (–13 + x)/40 = 0.625 ⇒ x – 13 = 25 ⇒ x = 38. If D won its 3rd match by y runs, then (–13 + 38 + y)/60 = 0.816 ⇒ 25 + y = 49 ⇒ y = 24. If B won its 2nd match by x runs, then (–41 + x)/40 = –1.575 ⇒ x – 41 = –63 ⇒ x = –22. We know that C lost its 2nd match by 38 runs. So in the 2nd match, D defeated C by 38 runs and therefore, B lost to A by 22 runs. After the 2nd match A's NRR = (13 + 22)/40 = 35/40 = 0.875.

If A won by x runs in the 3rd match, (13 + 22 + x)/60 = 0.9 ⇒ 35 + x = 54 ⇒ x = 19. So, A defeated C by 19 runs in the 3rd match.

If D won its 3rd match by x runs, then (–13 + 38 + x)/60 = 0.816 ⇒ 25 + x = 49 ⇒ x = 24 => D defeated B by 24 runs and B's NRR is (–41 – 22 – 24)/60 = –87/60 = –1.45.

If W won by x runs in the 1st match, x/20 = –6.5 ⇒ x = –130. If W won the 2nd match by y runs then, (–130 + y)/40 = –5.425 ⇒ y – 130 = –217 ⇒ y = –87. If W won its 3rd match by z runs then (–130 – 87 + z)/60 = –5.05 ⇒ z – 217 = –303 ⇒ z = –86.

If X won its 1st match by x runs then x/20 = 4.3 => x= 86. So X won its first match by 86 runs.
Suppose Y lost its 1st match by 86 runs and Z won its 1st match by 130 runs. If Y won its 2nd match by x runs, then (–86 + x)/40 = 4.45 ⇒ x – 86 = 178 ⇒ x = 264. If Z won its 2nd match by x runs, then (130 + x)/40 = 0.025 ⇒ x + 130 = 1 ⇒ x = –129. This is not possible since we need two winning scores and two corresponding losing scores. So we can conclude that Y won its 1st match by 130 runs and Z lost its 1st match by 86 runs.

If Z won its 2nd match by x runs, then (–86 + x)/40 = 0.025 ⇒ x – 86 = 1 ⇒ x = 87. So Z defeated W in its 2nd match by 87 runs. If Z won its 3rd match by y runs, then (–86 + 87 + y)/60 = 0.75 ⇒ y + 1 = 45 ⇒ y = 44.

If Y won its 2nd match by x runs, then (130 + x)/40 = 4.45 ⇒ x + 130 = 178 ⇒ x = 48. So Y defeated X in its 2nd match by 48 runs and X got NRR of (86 – 48)/40 = 38/40 = 0.95.

If X won its 3rd match by x runs, then, (86 – 48 + x)/60 = 2.066 ⇒ (38 + x) = 124 ⇒ x = 86. So X defeated W in the 3rd match by 86 runs. Z defeated Y in the 3rd match by 44 runs and Y had NRR of (130 + 48 – 44)/60 = 134/60 = 2.233. We can then make the

following table:

POOL A						
	1st match		2nd match		3rd match	
	NRR	W/L	NRR	W/L	NRR	W/L
A	0.65	13	0.875	22	0.9	19
B	–2.05	–41	–1.575	–22	–1.45	–24
C	2.05	41	0.075	–38	–0.266	–19
D	–0.65	–13	0.625	38	0.816	24

POOL B						
	1st match		2nd match		3rd match	
	NRR	W/L	NRR	W/L	NRR	W/L
W	–6.5	–130	–5.425	–87	–5.05	–86
X	4.3	86	0.95	–48	2.066	86
Y	6.5	130	4.45	48	2.233	–44
Z	–4.3	–86	0.025	87	0.75	44

At the end of the League Round, the highest NRR was 2.233 and the lowest NRR was –5.05. The required difference is 2.233 – (–5.05) = 7.283.

QNo:- 53 ,Correct Answer:- *117*

Explanation:-

A won its 1st match by x runs. So, its NRR is x/20 = 0.65 ⇒ x = 13. C won by x runs to get NRR of 2.05 after 1st match ⇒ x/20 = 2.05

⇒ x = 41. If C won by y runs in the 2nd match, then (41 + y)/40 = 0.075 = 41 + y = 3 ⇒ y = –38. This means that C lost the 2nd

Match by 38 runs. If C won the 3rd match by z runs, then (41 – 38 + z)/60 = –0.266 ⇒ 3 + z = –16 ⇒ z = –19. This means that C

lost the 3rd match by 19 runs.
Suppose B lost the 1st match by 13 runs and D lost the 1st match by 41 runs. If B won the 2nd match by x runs then

(–13 + x)/40 = –1.575 ⇒ x – 13 = 63 ⇒ x = 76.If D won the 2nd match by y runs then (–41 + y)/40 = 0.625 ⇒ y – 41 = 25 ⇒ y =

66.
We have 3 winning scores, where as these should actually be 2 winning scores and corresponding 2 losing scores. We can therefore conclude that B lost by 41 runs and D lost by 13 runs. So, in its 1st match A defeated D by 13 runs and C defeated B by 41 runs.

If D won its 2nd match by x runs, then (–13 + x)/40 = 0.625 ⇒ x – 13 = 25 ⇒ x = 38. If D won its 3rd match by y runs, then (–13 + 38 + y)/60 = 0.816 ⇒ 25 + y = 49 ⇒ y = 24. If B won its 2nd match by x runs, then (–41 + x)/40 = –1.575 ⇒ x – 41 = –63 ⇒ x = –22. We know that C lost its 2nd match by 38 runs. So in the 2nd match, D defeated C by 38 runs and therefore, B lost to A by 22 runs. After the 2nd match A's NRR = (13 + 22)/40 = 35/40 = 0.875.

If A won by x runs in the 3rd match, (13 + 22 + x)/60 = 0.9 ⇒ 35 + x = 54 ⇒ x = 19. So, A defeated C by 19 runs in the 3rd match.

If D won its 3rd match by x runs, then (–13 + 38 + x)/60 = 0.816 ⇒ 25 + x = 49 ⇒ x = 24 => D defeated B by 24 runs and B's NRR is (–41 – 22 – 24)/60 = –87/60 = –1.45.

If W won by x runs in the 1st match, x/20 = –6.5 ⇒ x = –130. If W won the 2nd match by y runs then, (–130 + y)/40 = –5.425 ⇒ y – 130 = –217 ⇒ y = –87. If W won its 3rd match by z runs then (–130 – 87 + z)/60 = –5.05 ⇒ z – 217 = –303 ⇒ z = –86.

If X won its 1st match by x runs then x/20 = 4.3 => x= 86. So X won its first match by 86 runs.
Suppose Y lost its 1st match by 86 runs and Z won its 1st match by 130 runs. If Y won its 2nd match by x runs, then (–86 + x)/40 = 4.45 ⇒ x – 86 = 178 ⇒ x = 264. If Z won its 2nd match by x runs, then (130 + x)/40 = 0.025 ⇒ x + 130 = 1 ⇒ x = –129. This is not possible since we need two winning scores and two corresponding losing scores. So we can conclude that Y won its 1st match by 130 runs and Z lost its 1st match by 86 runs.

If Z won its 2nd match by x runs, then (–86 + x)/40 = 0.025 ⇒ x – 86 = 1 ⇒ x = 87. So Z defeated W in its 2nd match by 87 runs. If Z won its 3rd match by y runs, then (–86 + 87 + y)/60 = 0.75 ⇒ y + 1 = 45 ⇒ y = 44.

If Y won its 2nd match by x runs, then (130 + x)/40 = 4.45 ⇒ x + 130 = 178 ⇒ x = 48. So Y defeated X in its 2nd match by 48 runs and X got NRR of (86 – 48)/40 = 38/40 = 0.95.

If X won its 3rd match by x runs, then, (86 – 48 + x)/60 = 2.066 ⇒ (38 + x) = 124 ⇒ x = 86. So X defeated W in the 3rd match by 86 runs. Z defeated Y in the 3rd match by 44 runs and Y had NRR of (130 + 48 – 44)/60 = 134/60 = 2.233. We can then make the following table:

POOL A						
	1st match		2nd match		3rd match	
	NRR	W/L	NRR	W/L	NRR	W/L
A	0.65	13	0.875	22	0.9	19
B	–2.05	–41	–1.575	–22	–1.45	–24
C	2.05	41	0.075	–38	–0.266	–19
D	–0.65	–13	0.625	38	0.816	24

POOL B						
	1st match		2nd match		3rd match	
	NRR	W/L	NRR	W/L	NRR	W/L
W	–6.5	–130	–5.425	–87	–5.05	–86
X	4.3	86	0.95	–48	2.066	86
Y	6.5	130	4.45	48	2.233	–44
Z	–4.3	–86	0.025	87	0.75	44

The highest number of runs by which any of the matches was won was 130 runs and the lowest was 13 runs. The required difference is 117.

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

Explanation:-

A won its 1st match by x runs. So, its NRR is x/20 = 0.65 ⇒ x = 13. C won by x runs to get NRR of 2.05 after 1st match ⇒ x/20 = 2.05

⇒ x = 41. If C won by y runs in the 2nd match, then (41 + y)/40 = 0.075 = 41 + y = 3 ⇒ y = –38. This means that C lost the 2nd

Match by 38 runs. If C won the 3rd match by z runs, then (41 – 38 + z)/60 = –0.266 ⇒ 3 + z = –16 ⇒ z = –19. This means that C

lost the 3rd match by 19 runs.
Suppose B lost the 1st match by 13 runs and D lost the 1st match by 41 runs. If B won the 2nd match by x runs then

(–13 + x)/40 = –1.575 ⇒ x – 13 = 63 ⇒ x = 76.If D won the 2nd match by y runs then (–41 + y)/40 = 0.625 ⇒ y – 41 = 25 ⇒ y =

66.
We have 3 winning scores, where as these should actually be 2 winning scores and corresponding 2 losing scores. We can therefore conclude that B lost by 41 runs and D lost by 13 runs. So, in its 1st match A defeated D by 13 runs and C defeated B by 41 runs.

If D won its 2nd match by x runs, then (–13 + x)/40 = 0.625 ⇒ x – 13 = 25 ⇒ x = 38. If D won its 3rd match by y runs, then (–13 +

38 + y)/60 = 0.816 ⇒ 25 + y = 49 ⇒ y = 24. If B won its 2nd match by x runs, then (–41 + x)/40 = –1.575 ⇒ x – 41 = –63 ⇒ x = –

22. We know that C lost its 2nd match by 38 runs. So in the 2nd match, D defeated C by 38 runs and therefore, B lost to A by 22 runs. After the 2nd match A's NRR = (13 + 22)/40 = 35/40 = 0.875.

If A won by x runs in the 3rd match, (13 + 22 + x)/60 = 0.9 ⇒ 35 + x = 54 ⇒ x = 19. So, A defeated C by 19 runs in the 3rd match.

If D won its 3rd match by x runs, then (–13 + 38 + x)/60 = 0.816 ⇒ 25 + x = 49 ⇒ x = 24 => D defeated B by 24 runs and B's NRR

is (–41 – 22 – 24)/60 = –87/60 = –1.45.

If W won by x runs in the 1st match, x/20 = –6.5 ⇒ x = –130. If W won the 2nd match by y runs then, (–130 + y)/40 = –5.425 ⇒ y –

130 = –217 ⇒ y = –87. If W won its 3rd match by z runs then (–130 – 87 + z)/60 = –5.05 ⇒ z – 217 = –303 ⇒ z = –86.

If X won its 1st match by x runs then x/20 = 4.3 => x= 86. So X won its first match by 86 runs.
Suppose Y lost its 1st match by 86 runs and Z won its 1st match by 130 runs. If Y won its 2nd match by x runs, then (–86 + x)/40 =

4.45 ⇒ x – 86 = 178 ⇒ x = 264. If Z won its 2nd match by x runs, then (130 + x)/40 = 0.025 ⇒ x + 130 = 1 ⇒ x = –129. This is not

possible since we need two winning scores and two corresponding losing scores. So we can conclude that Y won its 1st match by 130 runs and Z lost its 1st match by 86 runs.

If Z won its 2nd match by x runs, then (–86 + x)/40 = 0.025 ⇒ x – 86 = 1 ⇒ x = 87. So Z defeated W in its 2nd match by 87 runs. If Z

won its 3rd match by y runs, then (–86 + 87 + y)/60 = 0.75 ⇒ y + 1 = 45 ⇒ y = 44.

If Y won its 2nd match by x runs, then (130 + x)/40 = 4.45 ⇒ x + 130 = 178 ⇒ x = 48. So Y defeated X in its 2nd match by 48 runs

and X got NRR of (86 – 48)/40 = 38/40 = 0.95.

If X won its 3rd match by x runs, then, (86 – 48 + x)/60 = 2.066 ⇒ (38 + x) = 124 ⇒ x = 86. So X defeated W in the 3rd match by

86 runs. Z defeated Y in the 3rd match by 44 runs and Y had NRR of (130 + 48 – 44)/60 = 134/60 = 2.233. We can then make the following table:

POOL A		
1st match	**2nd match**	**3rd match**

	NRR	W/L	NRR	W/L	NRR	W/L
A	0.65	13	0.875	22	0.9	19
B	–2.05	–41	–1.575	–22	–1.45	–24
C	2.05	41	0.075	–38	–0.266	–19
D	–0.65	–13	0.625	38	0.816	24

	POOL B					
	1st match		**2nd match**		**3rd match**	
	NRR	**W/L**	**NRR**	**W/L**	**NRR**	**W/L**
W	–6.5	–130	–5.425	–87	–5.05	–86
X	4.3	86	0.95	–48	2.066	86
Y	6.5	130	4.45	48	2.233	–44
Z	–4.3	–86	0.025	87	0.75	44

X won against Z and W by 86 runs each. So statement 3 is true.

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

Explanation:-

	Viewers	Cost	Cost/Viewer
1. P + R	34%	15000	441
2. P + S	48%	18000	375
3. T+U+V	29%	11000	379
4. S + U	37%	12000	324

Thus, S + U is the best combination.

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

Explanation:-

	Viewers	Cost	Cost/viewer
1. S	37%	13000	351
2. U	40%	16000	400
3. P	34%	18000	529
4. T	15%	10000	667

Thus, S is the best combination.

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

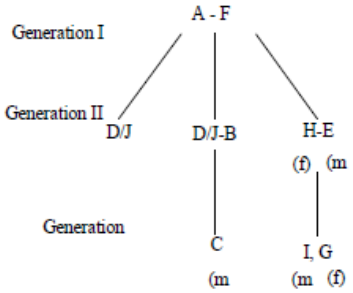
Explanation:-

	Viewers	Cost	Cost/viewer
Prime time	23%	17000	739
Morning	31%	20000	645
Late night	30%	13000	433

It is best to book the late night slot.

QNo:- 58 ,Correct Answer:- *6*

Explanation:-
From the given conditions, we get the following chart.

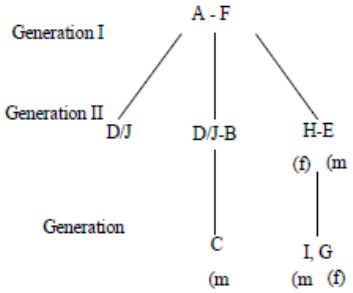


D and J are brothers and one of them is married to B
[since H is the only daughter of A and F]

The number of male members in the family is
Generation 1 -1 (A/F).
Generation 11-3 (D, J and E).
Generation III- 2 (C and I).
Therefore, there are 6 male members in the family.

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

Explanation:-
From the given conditions, we get the following chart.

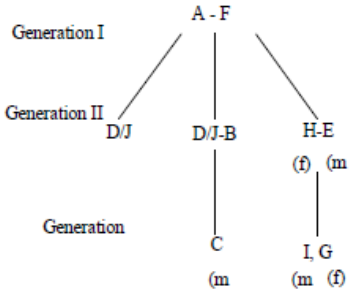


D and J are brothers and one of them is married to B
[since H is the only daughter of A and F]

It is already known that D is H's brother. So this data
Is redundant. The unmarried person could be either D or J

QNo:- 60 ,Correct Answer:- *4*

Explanation:-
From the given conditions, we get the following chart.



D and J are brothers and one of them is married to B [since H is the only daughter of A and F]

J is I's uncle.

QNo:- 61 ,Correct Answer:- *3*

Explanation:-
The following information is known from the passage
Drona – 3 medals (v)
Espionage – 7 km (vi)
Drona – 6 km (vi)
Operations – 9 km – 5 medals (iii)
Bheem – one medal (ii)

From (iv), we know that Arjun – 4 or 5 medals, Chandrakant – 4 or 5 medals.
From (v), we know that Chandrakant did not get four medals.
Hence, Arjun got four medals, Chandrakant got five medals and the department headed by Arjun is at a distance of 7 km from the HQ and he heads the Espionage department.
From (ii), we know that Bheem does not head the Finance or the Artillery department. Hence, Bheem heads the Logistics department.
From (iv), Drona does not head the Artillery department. Hence, Drona heads the Finance department and Eshwar heads the Artillery department.
From (i), we know that the farthest department from the HQ is not headed by the officer with the least number of medals. Hence, the department headed by the officer with least number of medals i.e. Bheem is at a distance of 8km and Eshwar's office is at a distance of 10 km from the HQ. Thus, we get the following arrangement.

Number of medals	Officer's Name	Department	Distance
1	Bheem	Logistics	8 km
2	Eshwar	Artillery	10 km
3	Drona	Finance	6 km
4	Arjun	Espionage	7 km
5	Chandrakant	Operations	9 km

Chandrakant got five medals

QNo:- 62 ,Correct Answer:- *2*

Explanation:-
The following information is known from the passage
Drona – 3 medals (v)
Espionage – 7 km (vi)
Drona – 6 km (vi)
Operations – 9 km – 5 medals (iii)

Bheem – one medal (ii)

From (iv), we know that Arjun – 4 or 5 medals, Chandrakant – 4 or 5 medals.
From (v), we know that Chandrakant did not get four medals.
Hence, Arjun got four medals, Chandrakant got five medals and the department headed by Arjun is at a distance of 7 km from the HQ and he heads the Espionage department.
From (ii), we know that Bheem does not head the Finance or the Artillery department. Hence, Bheem heads the Logistics department.
From (iv), Drona does not head the Artillery department. Hence, Drona heads the Finance department and Eshwar heads the Artillery department.
From (i), we know that the farthest department from the HQ is not headed by the officer with the least number of medals. Hence, the department headed by the officer with least number of medals i.e. Bheem is at a distance of 8km and Eshwar's office is at a distance of 10 km from the HQ. Thus, we get the following arrangement.

Number of medals	Officer's Name	Department	Distance
1	Bheem	Logistics	8 km
2	Eshwar	Artillery	10 km
3	Drona	Finance	6 km
4	Arjun	Espionage	7 km
5	Chandrakant	Operations	9 km

Drona heads the Finance Department

QNo:- 63 ,Correct Answer:- *8*

Explanation:-
The following information is known from the passage
Drona – 3 medals (v)
Espionage – 7 km (vi)
Drona – 6 km (vi)
Operations – 9 km – 5 medals (iii)
Bheem – one medal (ii)

From (iv), we know that Arjun – 4 or 5 medals, Chandrakant – 4 or 5 medals.
From (v), we know that Chandrakant did not get four medals.
Hence, Arjun got four medals, Chandrakant got five medals and the department headed by Arjun is at a distance of 7 km from the HQ and he heads the Espionage department.
From (ii), we know that Bheem does not head the Finance or the Artillery department. Hence, Bheem heads the Logistics department.
From (iv), Drona does not head the Artillery department. Hence, Drona heads the Finance department and Eshwar heads the Artillery department.
From (i), we know that the farthest department from the HQ is not headed by the officer with the least number of medals. Hence, the department headed by the officer with least number of medals i.e. Bheem is at a distance of 8km and Eshwar's office is at a distance of 10 km from the HQ. Thus, we get the following arrangement.

Number of medals	Officer's Name	Department	Distance
1	Bheem	Logistics	8 km
2	Eshwar	Artillery	10 km
3	Drona	Finance	6 km
4	Arjun	Espionage	7 km
5	Chandrakant	Operations	9 km

Logistics department is 8 km away from HQ

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

Explanation:-
A is not the shortest and C is not the tallest. Further, A is shorter than C and B is shorter than D. Since, C is taller than A but not the tallest, A cannot have five floors. Similarly C cannot have two floors. B cannot be the tallest since it is shorter than D.

⇒ The possibilities are

A→ 2,3
B→1,2,3,4
C→ 3,4
D→ 2,3,4,5
E→ 1,2,3,4,5
Given A+E=C+D
But C can take only 3 or 4 and neither A nor D can take 1.

∴C + D = (3 + 2) or (2 + 3) is not possible as A + E = 1 + 4 in such a case and A can be neither 1 nor 4. C + D = 3 + 4 is possible

⇒A + E = 2 + 5 (1)

C + D = 4 + 3 is possible ⇒A + E=2 + 5 (2)

In both the cases B is the building with only one floor..
B is the shortest.
Choice (A)

QNo:- 65 ,Correct Answer:- *2*

Explanation:-
A is not the shortest and C is not the tallest. Further, A is shorter than C and B is shorter than D Since, C is taller than A but not the tallest, A cannot have five floors. Similarly C, cannot have two floors. B cannot be the tallest since it is shorter than D.

⇒ The possibilities are

A→ 2,3
B→1.2.3.4
C→ 3,4
D→ 2,3,4,5
E→ 1,2,3,4,5
Given A+E=C+D
But C can take only 3 or 4 and neither A nor D can take 1.

∴C + D = (3 + 2) or (2 + 3) is not possible as A + E = 1 + 4 in such a case and A can be neither 1 nor 4. C + D = 3 + 4 is possible

⇒A + E = 2 + 5 (1)

C + D = 4 + 3is possible ⇒A + E=2 + 5 (2)

In both the cases B is the building with only one floor.

C + B = 3 + 1 = 4 = 2^2 and D + E = 4 + 5 = 9 = 3^2.
Hence, for two pairs.

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

Explanation:-
A is not the shortest and C is not the tallest. Further, A is shorter than C and B is shorter than D Since, C is taller than A but not the tallest, A cannot have five floors. Similarly C, cannot have two floors. B cannot be the tallest since it is shorter than D.

⇒ The possibilities are

A→ 2,3
B→1.2.3.4
C→ 3,4
D→ 2,3,4,5
E→ 1,2,3,4,5
Given A+E=C+D
But C can take only 3 or 4 and neither A nor D can take 1.

∴C + D = (3 + 2) or (2 + 3) is not possible as A + E = 1 + 4 in such a case and A can be neither 1 nor 4. C + D = 3 + 4 is possible

⇒A + E = 2 + 5 (1)

C + D = 4 + 3is possible ⇒A + E=2 + 5 (2)

In both the cases B is the building with only one floor.

Statement (1) is not true as the arrangement will be as follows:

1	2	3	4	5
B	A	C	D	E

Statement (2) is true as C+A=5=E. Choice (B)

QNo:- 67 ,Correct Answer:- C

Explanation:-

Let x be the distance between P and Q. Time taken by A to walk from P to Q = $\frac{40}{2}$, i.e. 20 minutes. Similarly,

B takes 30 minutes to travel from Q to P. So, the speeds of A and B are $\frac{x}{20}$ m/min and $\frac{x}{30}$ m/min

$\therefore$ The time taken by them to meet each other = $\frac{x}{\frac{x}{20}+\frac{x}{30}} = 12$ minutes. So, they meet at 10:12 a.m.

QNo:- 68 ,Correct Answer:- A

Explanation:-

$f(1) = 1; f(2) = 1+\frac{1}{2}+\frac{1}{3} = \frac{11}{6} < 2; f(3) = 1+\frac{1}{2}+\frac{1}{3}+\frac{1}{4}+\frac{1}{5}+\frac{1}{6}+\frac{1}{7} = \frac{1089}{420} < 3$

So, we can safely say that $f(100) \le 100$.

QNo:- 69 ,Correct Answer:- B

Explanation:-

Let x be the total amount

Money spend on article = 20% of x or 0.2x — *Amount left = x – 0.2x = 0.8x*

Money spend on transportation = 5% of 0.8x or 0.04x — *Amount left = 0.8x – 0.04x = 0.76x*

Money spend on gift = 120/- — *Amount left = 0.76x – 120*

We are given that 0.76x – 120 = 1400 => x = 2000/-

Money spend on transportation = 0.04x = 0.04 × 2000 = 80/-

QNo:- 70 ,Correct Answer:- 6

Explanation:-

Let the two series be

$a_1, a_1r_1, a_1r_1^2 \ldots\ldots\ldots\ldots a_1r_1^{n-1}$

$a_2, a_2r_2, a_2r_2^2 \ldots\ldots\ldots\ldots a_2r_2^{n-1}$

Given $a_1r_1^3 = a_2r_2$ ..... *(1)*

$a_1r_1^5 = a_2r_2^2$ .....*(2)*

(2) ÷ (1) gives $r_2 = r_1^2$ ..... *(3)*

and (3) in (1) gives $a_2 = a_1r_1$.....*(4)*

also given $a_2r_2^{n-1} = 64\ a_1r_1^{n-1}$ .....*(5)*

Substituting $r_2 = r_1^2$ *and* $a_2 = a_1r_1$ *in (5)*

$r_1^n = 64$ .....*(6)*

Also given fifth term of first series = 8 (second term)

$\Rightarrow a_1r_1^4 = 8a_1r_1 \quad \Rightarrow r_1^3 = 8 \quad \Rightarrow r_1 = 2$ ..... *(7)*

Now $2^n = 64 \quad \Rightarrow n = 6$

QNo:- 71 ,Correct Answer:- 13

Explanation:-
Let the no. of men be 'M'.
The total cost will be 39 × 8 × 5 ½, assuming the consumed quantity to be 1 kg.
If the price of 1 kg rice reduces by Rs 6 i.e. 33 then,
39 × 8 × 5 ½ = 33 × M × 4
→ M = 13.

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

Explanation:-

Slope of line AB is 2 and its midpoint is (1.5, 3). The slope of the perpendicular bisector is –1/2. The equation of this line, using the slope-point form is (y – 3) = – ½ (x – 1.5) → x + 2y = 7.5. Point C(4, c) also satisfies this equation. So, substituting x = 4 and y = c, we get c = 7/4.
Alternately, point C must be equidistant from A and B. Equating the distances, we get c = 7/4.

QNo:- 73 ,Correct Answer:- *54*

Explanation:-
The possible values of N are 250,251,252,253 and 254 and possible values of M are 200,201,202,203 and 204.
So maximum possible difference is 254 – 200 =54

QNo:- 74 ,Correct Answer:- *5*

Explanation:-
As the rat and the insect are moving on the same surface , surface's speed plays no role in determining the required time.
Thus, T = 75/(20 – 5) = 5 seconds.

QNo:- 75 ,Correct Answer:- *95*

Explanation:-

The number of points of intersection using 6 straight lines is $^{6}C_{2} = \frac{6 \times 5}{1 \times 2} = 15$
We know that a straight line and a circle can intersect in at most two different points.

∴ The number of points of intersection = $^{6}C_{1} \times {}^{5}C_{1} \times 2 = 60$*. We know that two circles can intersect in at most two different points.*

The number of points of intersection possible by five circles is $^{5}C_{2} \times 2 = 20$*.*

∴The maximum number of distinct points of intersection = 15 + 60 + 20 = 95.

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

Explanation:-

Principle = Rs. 5000

Time = 2 years

Difference, i.e. C.I-S.I = Rs. 32

Using the difference formula that is applicable for 2 years only

$$\text{Principal} = \frac{\text{Difference}}{\left(\frac{R}{100}\right)^2}$$

$$5000 = \frac{32}{(R)^2} \times (100)^2$$

$R^2 = 64$

$R = 8\%$

QNo:- 77 ,Correct Answer:- *350*

Explanation:-

The grid can be considered to be formed by a set of 7 parallel lines intersecting another set of 7 parallel lines. Then the number of parallelograms that can be observed is $^7C_2 \times {}^7C_2$ *i.e. 21 × 21 = 441. But since the two sets of parallel lines are perpendicular to each other, all the parallelograms that can be observed are rectangles (some of them are squares). The number of squares in the grid will be 6 x 6 (each of side 1 unit) + 5x5 (each of side 2 units) + 4 x 4 (of side 3 units) + 3 x 3 (of side 4 units) + 2 x 2 (of side 5 units) +1 x 1 (of side 6 units) = 91. The number of rectangles that are not squares that can be observed in the grid = 441-91 = 350*

QNo:- 78 ,Correct Answer:- *437*

Explanation:-

The balls are arranged as shown in the table below

Green	RED	Blue	Yellow
1	2	3	4
5	6	7	8
-	-	-	-
-	-	-	-
21	22	23	24
25	26	27	28
-	-	-	-
-	-	-	-
41	42	43	44

If the last 'complete' group has n BALLS

$$\frac{n(n+1)}{2} \le 1000 < \frac{(n+1)(n+2)}{2} \quad \frac{(44)(45)}{2} = 990 \text{ and } \frac{(45)(46)}{2} = 1035$$

$\Rightarrow n = 44$

The red balls occur in separate groups containing

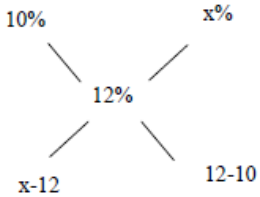
The following numbers 2, 6,10,14,18,22, 26, 30

The sum of the first 7 of these (2 to 26) is 7[(2 + 26)/2] or 98. The 100^{th} *red ball is the* 2^{nd} *one in the* 2^{nd} *group of in the* 8^{th} *set (row). The number of all the balls upto that is [29(30)/2] + 2 or 437*

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

Explanation:-

Let the solution B contain x% milk. Let a and b be the volumes of A and B (in liters) respectively.



But A : B = 3 : 1

$$\Rightarrow \frac{x-12}{12-10}=\frac{3}{1}\Rightarrow x-12=6\Rightarrow x=18$$

$$\frac{18B}{100}=9\Rightarrow B=50 \text{ litres}\Rightarrow A=150\text{litres}$$

$\therefore$ *Total volume = 200 litres.*

QNo:- 80 ,Correct Answer:- *2*

Explanation:-

Average of 4 and 10 is 7 which is 60% of total. Hence total is 7/60% and 75% of which is 8.75. So required number of papers is 2.

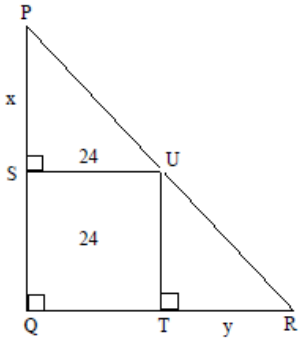
QNo:- 81 ,Correct Answer:- *A*

Explanation:-

The time after which all three meet
= LCM(L/RS_{AB}, L/RS_{BC}, L/RS_{AC}), where 'L' is the circumference of the garden
and RS_{AB}, RS_{BC} & RS_{AC} are their relative speeds with respect to each other
= LCM (1500/300, 1500/50, 1500/250)
= LCM (5, 30, 6) = 30 min.
Hence option 1.

QNo:- 82 ,Correct Answer:- *56*

Explanation:-



PR = 70m

Triangles PQR, PSU and UTR are similar. From the similarity of triangles $\angle TUR = \angle P$

$$\therefore \frac{TR}{UT}=\frac{SU}{PS}$$

$$\frac{y}{24}=\frac{24}{x}\Rightarrow xy=576 \ldots\ldots\ldots\ldots(1)$$

$PR^2 = PQ^2 + QR^2$

$70^2 = (x + 24)^2 + (24 + y)^2$

$4900 = x^2 + 48x + 576 + 576 + 48y + y^2$

$4900 = (x + y)^2 – 2xy + 48 (x + y) + 2 (576)$

$(1) \Rightarrow 4900 = (x + y)^2 – 2xy + 48 (x + y) + 2xy$

$\Rightarrow (x + y)^2 + 48(x + y) – 4900 = 0$

$x + y = 50 \text{ or } – 98$
$\text{But } x + y > 0$

$\therefore x + y = 50 \ldots\ldots (2)$

given that $x + 24 > y + 24 \quad \therefore x > y$

$\therefore$ solving (1) and (2), $x = 32$ and $y = 18$

$\therefore \text{Height} = (x + 24)m = 56 \text{ inches}$

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

Explanation:-
SP of 1st half = 400 x 105/100 = Rs. 420

SP of whole = 800 x 120/100 = Rs. 960

Therefore, Second half he should sell at = (540-400)x100/400 = 140x100/400 = 35% profit.

Hence, option D is the correct answer.

QNo:- 84 ,Correct Answer:- *40*

Explanation:-
Volume of Tank = 15cm × 12cm × 10cm =1800cm^3
Qty of water = 360cm^3, Left over = 18,00 – 360 = 1440cm^3
Volume of Bricks = 5cm × 4cm × 2cm = 40cm^3
Absorbed = 4 cm^3, Volume Replaced = 40 – 4 = 36cm^3
No. of Bricks = $\frac{1440}{36} = 40$

QNo:- 85 ,Correct Answer:- *56*

Explanation:-
First of all, the houses in which stealing is not done, can be arranged in 1 way as O O O O O O O
Now, the 3 houses (in which stealing can be done)
can be arranged at any of the 8 places marked with : X O X O X O X O X O X O X O X
We can choose these 3 houses out of 8 places as = ${}^{8}C_{3}$ = 56 ways

QNo:- 86 ,Correct Answer:- *46*

Explanation:-
Let $x = 2^{150}$ taking log on both sides $\log x = \log 2^{150}$
$\log x = 150 \log 2 = 150 \times .3010$
$\log x = 45.15$
Hence number of digits = 46

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

Explanation:-
Since x, y and z are positive integers such that any 2 of them have HCF = 1 i.e., co-prime.
Thus, H(x, y) = 1, H(y, z) = 1, H(x, z) = 1 and L(x, y) = xy
Hence, h(x, y) = H(x, y) / L(x, y) = 1/xy
Now, h[1/h(x, y), z] = h[xy, z] = H(xy, z) / L(xy, z) = 1/xyz = 1 / 12
Thus, a student may think of the following 4 solutions:
$xyz = 12 = 1 \times 1 \times 12 = 1 \times 2 \times 6 = 1 \times 3 \times 4 = 2 \times 2 \times 3$.
But since x, y and z are co-prime to each other, therefore only 2 solution exists i.e., $1 \times 3 \times 4$, $1 \times 1 \times 12$ and hence only 2 values of (x + y + z) are possible.

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

Explanation:-
Initially when pipe P is opened, then time taken to half fill the cistern = 2 hours.
After that, both pipes P and R are open, then time taken to empty $1/4^{th}$ of the cistern = $1/4^{th}$ of (4x3)/(4 – 3) = 3 hours
Now, when all three pipes P, Q and R are open, then time taken to completely fill the cistern (filling the remaining $3/4^{th}$ cistern) = $3/4^{th}$ of (5x4x3)/ (12 + 15 – 20) = 45/7 = 6.42 hours.
Therefore, total time taken to completely fill the cistern = 2 + 3 + 6.42 = 11.42 hrs.

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

Explanation:-
There are 45 even 2-digit integers and 450 even 3-digit integers. Substituting n = 2 and 3 in the answers given by four of them ,we find that only Kejriwal gave the correct answer.

Alternatively:
Any number of n digits which is even should have unit's place as one of the digits 0, 2, 4, 6 or 8. So unit's place can be filled in 5 ways. Rest all of the places of the n digit number can be filled in 10 ways i.e 0 to 9 except the first digit which can be filled in 9 ways from 1 to 9. So the total numbers would be $9 \times 10 \times 10 \times \ldots\ldots\ldots \times 5 = 45 \times 10^{n-2}$ as excluding the 1^{st} and the last place, we have n – 2 places. (The number is of n digits).Hence Kejriwal gave the correct answer.

QNo:- 90 ,Correct Answer:- *19*

Explanation:-

Since, $|a| \leq 100$, $b \leq 100 \Rightarrow -100 \leq a \leq 100$

As, b is a square of a natural number, thus the possible values for b are 1, 4, 9, 16, 25, 36, 49, 64, 81 and 100, i.e. 10 values.
For each value of b, a can assume two values (one positive and one negative) except when b = 100, where a can take only one value i.e. '99'.

$\Rightarrow$ There are a total of $(10 \times 2 - 1) = 19$ solutions.

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

Explanation:-

In order to find the number of zeroes, we need to find the number of integers that end in a 5 and the number of integers that end in an even digit. Consider numbers that end in a 5.

Since repetition of digits is not allowed, the other 3 digits can be chosen in 4, 3 and 2 ways respectively. So, there are $4 \times 3 \times 2 = 24$ integers that end in a 5. There are definitely 48 even integers.

So, we will have 24 zeroes.

Now consider integers that contain higher powers of 5. All such integers will end in 25.

These integers are $1325 = 5^2 \times 53$, $1425 = 5^2 \times 57$, $3125 = 5^5$, $3425 = 5^2 \times 137$, $4125 = 5^3 \times 33$ and $4325 = 5^2 \times 173$.

In each of these 6 integers, one 5 has already been considered in the first set of 24 integers.

So, these 6 integers will yield an additional 10 fives. Since there are 10 other even integers, we have another 10 zeroes.

Thus the total number of zeroes is $24 + 10 = 34$.

QNo:- 92 ,Correct Answer:- *12*

Explanation:-
As we know that, Sum of any two sides of a triangle > third side.
Thus, the length of the longest side must be ≤ 13.
If the length of the longest side is 13 then the possible combinations of sides are (13, 12, 2), (13, 11, 3), (13, 10, 4), (13, 9, 5) and (13, 8, 6).
If the length of the longest side is 12 then the possible combinations of sides are (12, 11, 4), (12, 10, 5), (12, 9, 6) and (12, 8, 7).
If the length of the longest side is 11 then the possible combinations of sides are (11, 10, 6) and (11, 9, 7). If the length of the longest side is 10 then the only possible combination of sides is (10, 9, 8). So there are 12 possibilities in all.

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

Explanation:-
Let us assume the sequence to be $x_1, x_2, x_3, \ldots\ldots x_{100}$.

According to the question:
$x_1 + x_2 + \ldots x_6 = x_2 + x_3 + \ldots x_7$.

$\Rightarrow x_1 = x_7$. *Similarly it can be proved that* $x_2 = x_8$, $x_3 = x_9$ *and so on.*

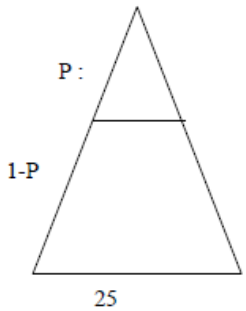
Combining these equations we get $x_k = x_{k+6} = x_{k+12} = \ldots$ *for all natural numbers k.*
Therefore $x_{28} = x_{34} = 34$
Also $x_{56} = \ldots = x_{80} = 56$.
So the required sum is 56 + 34 = 90.

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

Explanation:-
$(\log 1+\log 4+\log 9+\ldots+\log 100) - 2(\log 1+\log 2+\ldots+\log 7)$
$= 2\log 10! - 2\log 7! = 2\log \frac{10!}{7!} = 2\log 720$
$= 2[\log(10\times 9\times 8)] = 2[1+3\log 2+2\log 3] = 2[1+3P+2Q] = 2+6P+4Q$
So, $2 + 6P + 4Q = a + bP + cQ \therefore (a, b, c) = (2, 6, 4)$

QNo:- 95 ,Correct Answer:- *100*

Explanation:-



To form an equilateral triangle & a trapezium using a single division, the line drawn must be parallel to the base.
Let's assume that the line divides the sides in the ratio P : (1 – P).
Then the sides of the trapezium are 25(1 - P), 25, 25(1 – P) and 25P.
When two such trapeziums are placed together (with one side common), then we get a parallelogram whose sides are 25(1 – P), 25 + 25P, 25(1 – P) and 25+25P.
So the perimeter = 4 × 25 = 100cm.

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

Explanation:-
If N^2 *has three of its factors less than N, it has also three factors more than N and N is also a factor of* N^2
Thus, N^2 *has 3+3+1 i.e.7 factors*
Hence, N^2 *is of the form* P^6, *where P is a prime number.*
For $N = P^3$
$N^3 = P^9$ *and* P^9 *has 10 factors. Choice(C)*

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

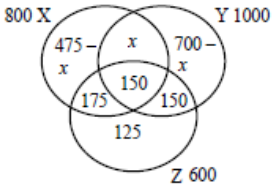
Explanation:-
The increase in volume will be minimum when p, q and r are 10% each.
The new volume will be 1.1 × 1.1 × 1.1 = 1.331 times of the original volume.
So the percentage increase in volume will be 33.1%.
Similarly, the increase in volume will be maximum when p, q and r are 30% each.
The new volume will be 1.3 × 1.3 × 1.3 = 2.197 times of the original volume.
So the percentage increase in volume will be 119.7%.
As the final percentage increase in volume is an integer, the value must be an integer from 34 to 119 i.e. 86 distinct values are possible.

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

Explanation:-
Total Cost Price of all soaps for the shopkeeper = Marked Price of 14 × 3 soaps = Marked Price of 42 soaps.
Total Selling Price of all soaps for the shopkeeper = Marked Price of 15 × 4 soaps = Marked Price of 60 soaps
So Profit = Marked Price of 60 – 42 = 18 soaps
Profit % = 18/42× 100 = 42.85% ≈ 43%

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

Explanation:-
From the given information, we can draw the Venn diagram as follows:



So the total number of share holders is $600 + 700 - x + x + 475 - x = 1775 - x$
The minimum and maximum values of x are 0 and 475 respectively.
So the maximum and minimum number of share holders is 1775 and 1300 respectively.
The required difference is 475.

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

Explanation:-
Suppose the turnovers of companies XYZ and ABC are 8x and 7x respectively and their expenditures are 19y and 16y respectively. So, 8x – 19y = 1250 and 7x – 16y = 1250. Solving these equations yields x = 750 and y = 250. So, the turnover of company XYZ is 8x = 6000 and the expenditure of company ABC is 16y = 4000.