Directions of Test

Test Name	2016 Bull CAT 17	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

The reconciliation of the bourgeoisie with the church finds expression, not merely in the abandonment by the bourgeoisie of its old anti-religious watchwords and of its campaign against religion, but in something more significant. To an increasing extent, the bourgeoisie is now becoming a 'believing class'. The forerunners of the contemporary European bourgeoisie were atheists, were freethinkers, were fiercely antagonistic to priests and priestdom. Their successors have taken a step back- wards. A generation ago, the bourgeois, though they were themselves still atheistically inclined, though they did not believe in religious fairy tales, and though they laughed covertly at religion, nevertheless considered that the fables must be treated with respect in public, since religion was a useful restraint for the common people. Today, the scions of the bourgeoisie are not content with looking upon religion as providing useful fetters for the people, but they have themselves begun to wear the chains.

Which of the following can you infer from the above paragraph?

A) The bourgeoisie did not compromise on their stand and beliefs in order to gain power and control
B) The union of the bourgeoisie and the church was a wedding of convenience for the church as it sought to expand its powers over the mighty bourgeoisie and the common man
C) The church has been successful in influencing the atheist bourgeoisie to toe the line with the beliefs of the church
D) The predecessors of today's bourgeoisie were hand in glove with the church – together exploiting the common man

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

Question No. : 2

Immediately after the Civil War, in a period when black people felt particularly hopeful, America began to lock up thousands of black men and put them in prison on all kinds of charges. The plantation system was no longer existent and black men roamed the country in search of work. Having been turned out into the world with few or no marketable skills and unable to support their families, many of them stole to survive. In Louisiana, for example, right after the Civil War the prison population went from being almost completely white to being majority black in fewer than twenty years.

1. Ensuring lawful behavior amongst slaves was the responsibility of the slave owner, but became the responsibility of the government after the Civil War,
2. Agriculture skills do not count for too much in an industrial economy.
3. No one becomes a robber by choice, it is always the circumstances that force him to become one.
4. The transition from slavery to freedom for the blacks was not without its share of troubles,

A) 4 B) C) D)

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

Question No. : 3

There is a principle of sufficiency: When you let go of trying to get more of what you don't really need, which is what we're all trying to get more of, it frees up immense energy to make a difference with what you have.

This new set of assumptions can create a whole new culture around money and around life. It can teach us how to be known for what we allocate rather than what we accumulate. It can teach us to be measured and measure others by our inner riches rather than our accumulation of outer riches. Although we think there are people with money and people without it, the real truth is, money is a part of everyone's life from the poorest peasant to the wealthiest industrialist, _____

Which of the following best completes the paragraph given above?

A) it is the feng shui philosophy of concentrating on the essential which sustains the world
B) the way we direct the money that comes through our lives defines us
C) moderation and prudence should be guidelines in our living
D) yet both strive to get more than what they need because of the fear that there is not enough

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

Question No. : 4

The option of arbitration involves the police officer giving each party an opportunity to explain his/her side and, based on the facts presented, rendering a decision. There are situations in which arbitration, maybe appropriate, for example, a case in which there is absolutely no doubt that a piece of property belongs to another. If I were to strike you over the head and take your Walkman, not only would I be guilty of battery but I also would have created a dispute. The dispute is suited for arbitration, since upon examination of the facts, it will become clear that I am not entitled to the property. The Walkman belongs to you. The officer has the legitimate right to order me to return your Walkman. Many interpersonal disputes in society are not so cut-and-dry. Often, both parties/disputants have a legitimate claim to the (identical) outcome sought by the other. Since identical outcomes for each Party are not always feasible, it is through collective and integrative problem-solving that parties often compromise. Most mediated agreements are compromises. For this reason, mediation is a preferred conflict-resolution method, since the parties get to have control over the contents of the agreement-they make the agreement, themselves. In this way, both parties walk away from the process, winners and with dignity intact, although they may walk away with less than what they originally sought.

1. Whenever the facts are clear, arbitration should be used for conflict resolution, else use mediation.
2. Mediation is a process that should be used only if arbitration has failed to resolve the conflict.
3. Mediation should be preferred over arbitration as a dispute resolving mechanism, as it allows both parties to maintain their self-respect.
4. Compromise is the essential thing in any dispute resolution - both parties involved should be ready to lose something to gain something.

A) 3 B) C) D)

Question No. : 5

The writer would describe the young Narcissists as per the following option(s)?

1. Condescending
2. Self-involved
3. Obsequious
4. Greedy

A) 1 & 2 B) 2 & 4 C) 3 & 4 D) Only 4

Question No. : 6

The narcissist's reaction to bad luck is indicative of –

A) Assertiveness B) Nonchalance C) Hubris D) Equanimity

Question No. : 7

The writer's view about modern day parenting resulting in a surge of narcissism in their kids is on account of the following reason(s) -

A) Him being in favour of 'old-age' parenting wherein punishment was part of the deal
B) He admits to being a narcissist as his parents too subscribed to the popular child psychology trends
C) He is a psychologist who has studied the phenomenon
D) Believes in experiential learning that had been anaesthetized for the current generation

Question No. : 8

Based on the passage we get the following view(s) about the game 'Jeopardy' –

A) Is popular among narcissists B) It takes skill, intuition and logic to win the game
C) Is recommended for grooming our children to face the modern world D) Is too risky and should be banned

Question No. : 9

The writer view(s) regarding the Graduate Business Schools can be regarded to the following –

A) Superficial B) Insightful C) Rhetorical D) Slanderous

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

Question No. : 10

The modern economist is used to measuring the 'standard of living' by the amount of annual consumption, assuming all the time that a man who consumes more is 'better off' than a man who consumes less. A Buddhist economist would consider this approach excessively irrational: since consumption is merely a means to human well-being, the aim should be to obtain the maximum of well-being with the minimum of consumption. Thus, if the purpose of clothing is a certain amount of temperature comfort and an attractive appearance, the task is to attain this purpose with the smallest possible effort, that is, with the smallest annual destruction of cloth and with the help of designs that involve the smallest possible input of toil. The less toil there is, the more time and strength is left for artistic creativity. It would be highly uneconomic, for instance, to go in for complicated tailoring, like the modern west, when a much more beautiful effect can be achieved by the skilful draping of uncut material. It would be the height of folly to make material so that it should wear out quickly and the height of barbarity to make anything ugly, shabby or mean. What has just been said about clothing applies equally to all other human requirements. The ownership and the consumption of goods is a means to an end, and Buddhist economics is the systematic study of how to attain given ends with the minimum means.

Modern economics, on the other hand, considers consumption to be the sole end and purpose of all economic activity, taking the factors of production - land, labour, and capital - as the means. The former, in short, tries to maximise human satisfactions by the optimal pattern of consumption, while the latter tries to maximise consumption by the optimal pattern of productive effort. It is easy to see that the effort needed to sustain a way of life which seeks to attain the optimal pattern of consumption is likely to be much smaller than the effort needed to sustain a drive for maximum consumption.

We need not be surprised, therefore, that the pressure and strain of living is very much less in say, Burma than it is in the United States in spite of the fact that the amount of labour- saving machinery used in the former country is only a minute fraction of the amount used in the latter. Simplicity and non-violence are obviously closely related. The optimal pattern of consumption, producing a high degree of human satisfaction by means of a relatively low rate of consumption, allows people to live without great pressure and strain and to fulfil the primary injunction of Buddhist teaching: 'Cease to do evil; try to do good.' As physical resources are everywhere limited, people satisfying their needs by means of a modest use of resources are obviously less likely to be at each other's throats than people depending upon a high rate of use. Equally, people who live in highly self sufficient local communities are less likely to get involved in large-scale violence than people whose existence depends on world-wide systems of trade.

From the point of view of Buddhist economics, therefore, production from local resources for local needs is the most rational way

of economic life, while dependence on imports from afar and the consequent need to produce for export to unknown and distant peoples is highly uneconomic and justifiable only in exceptional cases and on a small scale. Just as the modern economist would admit that a high rate of consumption of transport services between a man's home and his place of work signifies a misfortune and not a high standard of life, so the Buddhist economist would hold that to satisfy human wants from faraway sources rather than from sources nearby signifies failure rather than success. The former tends to take statistics showing an increase in the number of ton/miles per head of the population carried by a country's transport system as proof of economic progress, while to the latter - the Buddhist economist - the same statistics would indicate a highly undesirable deterioration in the *pattern* of consumption.

Excerpted from pages 149-156 of 'Small is Beautiful' by EF Schumacher

Which of the following best represents the central theme of the passage?

A) A debate about what is more important: means or ends
B) The roles played by consumers and producers in modern societies
C) A contrast between two economic views: one which optimizes production, and the other which optimizes consumption
D) The role that economics has played in the spread of violence in the world

Question No. : 11

Which of the conflicts below represent a situation where consumption patterns lead to violence?

A) The internal strife of LTTE in Sri Lanka B) The First Gulf War of the Nineties C) The Indo-Pak wars of 1965 and 1971
D) The French Revolution

Question No. : 12

The reference in the last paragraph to the 'high rate of consumption of transport services between a man's home and his place of work' is an example of -

A) A rare case where both Western and Buddhist economics are in agreement B) Local demands being met by local supplies
C) A dichotomy of views – economic progress Vs deterioration of standard of living
D) Success as seen by Western economics, as it implies a production of more automobiles

Question No. : 13

Which of the following phrases from the passage epitomize the Buddhist economic philosophy?

1. A man who consumes more is 'better off' than a man who consumes less.
2. To attain given ends with the minimum means.
3. To maximise consumption by the optimal pattern of productive effort.
4. The maximum of well-being with the minimum of consumption.

A) 2 & 4 B) 1 & 3 C) 2 & 3 D) 1 & 4

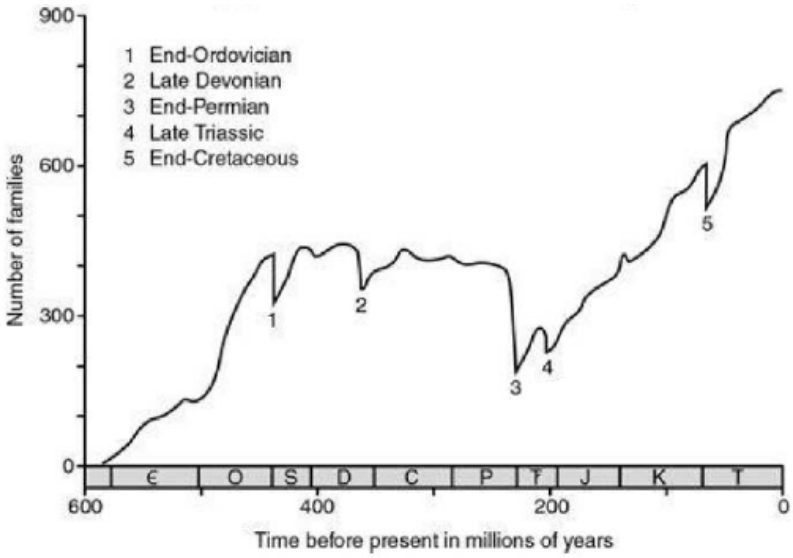
DIRECTIONS for the question: *Read the passage and answer the question based on it.*

Question No. : 14

THE same way acoustical engineers speak of "background noise" biologists talk about "background extinction." In ordinary times —times here understood to mean whole geologic epochs—extinction takes place only very rarely, more rarely even than speciation, and it occurs at what's known as the background extinction rate. This rate varies from one group of organisms to another; often it's expressed in terms of extinctions per million species-years. Calculating the background extinction rate is a laborious task that entails combing through whole databases' worth of fossils. For what's probably the best-studied group, which is mammals, it's been reckoned to be roughly 0.25 per million species-years. This means that, since there are about fifty-five hundred mammal species wandering around today, at the background extinction rate you'd expect—once again, very roughly—one species to disappear every seven hundred years.

Mass extinctions are different. Instead of a background hum there's a crash, and disappearance rates spike. Anthony Hallam and Paul Wignall, British paleontologists who have written extensively on the subject, define mass extinctions as events that eliminate a "significant proportion of the world's biota in a geologically insignificant amount of time." Another expert, David Jablonski,

characterizes mass extinctions as "substantial biodiversity losses" that occur rapidly and are "global in extent." Michael Benton, a paleontologist who has studied the end-Permian extinction, uses the metaphor of the tree of life: "During a mass extinction, vast swathes of the tree are cut short, as if attacked by crazed, axe-wielding madmen." A fifth paleontologist, David Raup, has tried looking at matters from the perspective of the victims: "Species are at a low risk of extinction most of the time." But this "condition of relative safety is punctuated at rare intervals by a vastly higher risk." The history of life thus consists of "long periods of boredom interrupted occasionally by panic."



The Big Five extinctions, as seen in the marine fossil record, resulted in a sharp decline in diversity at the family level. If even one species from a family made it through, the family counts as a survivor, so on the species level the losses were far greater.

In times of panic, whole groups of once-dominant organisms can disappear or be relegated to secondary roles, almost as if the globe has undergone a cast change. Such wholesale losses have led paleontologists to surmise that during mass extinction events —in addition to the so-called Big Five, there have been many lesser such events—the usual rules of survival are suspended. Conditions change so drastically or so suddenly (or so drastically *and* so suddenly) that evolutionary history counts for little. Indeed, the very traits that have been most useful for dealing with ordinary threats may turn out, under such extraordinary circumstances, to be fatal.

Excerpted from Pages 15-16 of 'The Sixth Extinction' by Elizabeth Kobert

Referring to the graph in the paragraph, what is the average duration between two mass extinctions?

A) 40 – 50 million years B) 70 – 80 million years C) 90 – 100 million years D) 110 – 120 million years

Question No. : 15

Which of the following can be inferred based on the last paragraph?

A) The current extinction rate is about 100 times higher than the background extinction rate in the fossil record
B) The introduction of exotic species by man leads to reduced diversity as the new species is not part of any food chain
C) Tectonically induced climate change interfered with food chains leading to mass extinctions
D) The human threat to species extinction is very low compared to threats from volcanic or meteoric events

Question No. : 16

Which of the following would be the best definition of 'speciation' as used in the first paragraph?

A) Events that eliminate a significant proportion of the world's biota in a geologically insignificant amount of time
B) The formation of new and distinct species in the course of evolution
C) The process of a plant or animal, that existed in an earlier age, being turned to stone
D) The process by which living organisms are believed to have developed from earlier forms

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. : 17

1. The cost of correcting ergonomic design at the initial part of a design project is about 10 percent of the cost that will occur later.
2. Alexander (1998) has found that "lower design and construction costs can be obtained when equipment and facilities are designed right the first time".
3. Additionally, companies must remember that you can provide workers with the most "ergonomically correct" furniture, but if users are not trained in why and how they should use it, the furniture adjustments will most likely remain unused by a large percentage of the employees.
4. All in all, companies should make the effort to ensure that ergonomics are taken into consideration from the very first when designing a work environment.
5. Companies must make an effort to be proactive and develop a total ergonomics program that includes training for the employees.

A) 42135 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. : 18

1. In the Jind district in northern India, where there are only 871 women per 1,000 men, bachelors have formed a union to pressure political leaders to supply them with brides.
2. A simplistic view of supply and demand may suggest that a shortage of girls will increase their social and economic value.
3. A study in India showed that a low female-to-male ratio leads to lowering the age of brides, decreasing their educational attainment and participation in the workforce, and increasing the age gap between them and their husbands—all factors correlated with higher domestic violence.
4. But rather than granting more power to the fewer marriageable women, societies slanted in males' favour respond by acquiring more brides, to expand the marriage market.
5. Communities are starting to show the strain caused by such gender imbalance.

A) 32451 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. : 19

1. The majority of those who reject human laws and proclaim their liberty and their decision to "live their own life" do so only in obedience to the most ordinary vital movements which they disguise and try to justify, if not to their own eyes, at least to the eyes of others.
2. The child can be taught, as he grows up, the relativity of all moral and social laws so that he may find in himself a higher and truer law.
3. To give a moral law to a child is evidently not an ideal thing; but it is very difficult to do without it.
4. But here one must proceed with circumspection and insist on the difficulty of discovering that true law.
5. They give a kick to morality, simply because it is a hindrance to the satisfaction of their instincts.

A) 32415 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. : 20

1. If this difference between aspiration and emotion, between the true light and the perturbations produced in the individual by that light, be kept in mind, and the closer consonance of philosophy with aspiration, the relation of Theosophy to Mysticism can be

more clearly apprehended.
2. Aspiration differs widely from emotion and yet is equally akin to devotion, and when once centred in the soul is less liable to transitions and oscillations and is nearer related to philosophy.
3. It is only through the establishment of a perfect equilibrium between faith and reason that the Divine Life and the Divine Wisdom can become manifest in man; Faith without reason becomes fanaticism; reason divorced from faith becomes sordid materialism, and while prating of order and law begets anarchy.
4. Another point should also be held clearly in view, viz.: the philosophical relation between Faith and Reason; between the existence, immutability, and beneficence of the Divine Life, and the orderly sequence of its manifestation, and apprehension by the mind of man.
5. Meditation or contemplation may coexist with either the emotional or aspirational nature, and both mystic and theosophist recognize the Divine Unity and aim at the union of the human with the divine.

A) 25143 B) C) D)

DIRECTIONS for the question: *Given below are five sentences. Identify the sentence(s) that is/are* ***incorrect*** *in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the* ***most appropriate*** *option.*

Question No. : 21

A. In parts of the world in which free speech norms are not robust, the umbrella term "hate speech" increasingly criminalizes expression.
B. South Africa, for example, is now debating a bill that would make all hate speech a statutory criminal offense–in part a reaction to a January Facebook post describing black people as monkeys.
C. Japan's Diet has just passed its first-ever legal curb on hate speech with a definition to encompass not just insults and incendiary language directed toward foreigners, but also "gregarious insults."
D. A debate in Quebec over an expansive proposed hate speech law prompted an insurance company to cancel a performance by two comedians for fear of triggering an investigation.
E. In Russia, a regional lawmaker faces up to two years in prison on a "hate speech" charge for alleging that President Vladimir Putin had committed crimes against his people. "

A) C and D only B) A, C and E C) B and D only D) A and C only

DIRECTIONS for the question: *Given below are five sentences. Identify the sentence(s) that is/are* ***incorrect*** *in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the* ***most appropriate*** *option.*

Question No. : 22

A. For over 200 years, there is an interest in the way children learn to speak and understand their first language.
B. Scholars carried on several small-scale studies, especially towards the end of the 19th century, using data they recorded in parental diaries.
C. But detailed, systematic investigation did not begin until the middle decades of the 20th century, when the tape recorder came into routine use.
D. This made it possible to keep a permanent record of samples of child speech, so that analysts could listen repeatedly to obscure extracts, and thus produce a detailed and accurate description.
E. Since then, the subject has attracted enormous multi-disciplinary interest, notably from linguists and psychologists, that have used a variety of observational and experimental techniques to study the process of language acquisition in depth.

A) C, D and E only B) A , B and E only C) D and E only D) A and C only

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. : 23

1. Pricing the exact value of a particular amenity is something of a black art, and to top it, urban amenities have grown over the last 30 years but the wage premium offered for urban living has remained static or fallen.
2. The canonical maxim that warns against paying more than 30 percent of one's income in rent doesn't capture the full picture in a city like San Francisco.

3. Desirability begets more desirability, a fact of economic life that means housing and other costs will always rise alongside the standard of living.
4. In economist lingo, cities are loaded with "amenities" that make sky-high rents worthwhile—walkability, diversity, a high number of bars and restaurants per capita, widespread public transportation, proximity to culture, a good job market.

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. : 24

1. Our law and order machinery must rise to the challenge and address security concerns in university campuses.
2. Confidence-building does not stop at creating the right economic institutions; it entails addressing negative perceptions at home and abroad.
3. Entrenched prejudices with respect to gender, race, religion and ethnicity must be acknowledged and addressed — a process that governments and businesses must pursue with a sense of urgency and enlightened self-interest.
4. Indian companies should keep this in mind, especially if they are investing in areas related to India's food, raw materials or energy security interests.

A) 4 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. : 25

1. The explanation is undoubtedly the better nutrition enjoyed by recent generations of Japanese, which is why Beijing has made it compulsory for every schoolchild from nursery school upwards to drink a quarter-pint of milk every day.
2. Officials believe that the reason for China's physical shortfall is the fact that Japanese children drink 18 times as much milk a year as Chinese infants.
3. The young adults in China are going to desperate lengths to add extra inches to their height in pursuit of celebrity and wealth.
4. For centuries, the Chinese have derisively referred to the Japanese as "dwarfs", which is why the news that the average Chinese person is now smaller than his Japanese counterpart caused such official consternation.

A) 3 B) C) D)

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

Question No. : 26

Among the chemicals on the National Toxicology Program list carcinogens, is a simple looking molecule called cisplatin. It is formed when a platinum atom bonds with two chlorine atoms and two ammonia groups. First synthesized in 1844 by an Italian chemist who was experimenting with platinum salts, cisplatin received little attention for more than a century. Then in the early 1960s it was found to have powerful biological effects. Like so many scientific discoveries this one was serendipitious – a foray into one hypothesis veering unexpectedly in another direction, answering questions no one had known to ask.

In his laboratory at Michigan State University, Barnett Rosenberg was exploring how cells behaved in the presence of electricity. He had been struck by how much the stringy, stretched-out shape of a cell undergoing mitosis resembled the field lines that appear when a magnet is held beneath a sheet of paper sprinkled with iron filings. The means by which a cell divides were poorly understood, and he wondered whether some electromagnetic effect might be involved. Reducing the problem to simpler terms, he placed two metal electrodes in a dish of single-celled organisms, Escherichia coli, and applied an electrical current. Before long the bacteria stopped dividing. Each one, however, continued to elongate, producing new protoplasm – that extended spaghetti-like until the cell was some three hundred times longer than it was wide. He turned off the current and the cells began dividing normally again. It was like having his finger on a mitotic on-off switch.

Decades later he still remembered the moment: "God, you don't often find things like that," he said. He immediately began thinking about cancer. If we could control the growth of a cell with an electric field, we could control some cells with a frequency of one sort, other cells with a frequency of another, and then we could attack a tumor by choosing a unique frequency and affecting

only the tumor cells and abnormal cells." But then came a bigger surprise. It wasn't electricity that was interfering with mitosis; the electrodes that had been used in his experiment were made of platinum, an element he had chosen, specifically because it was chemically inert. But through the process of electrolysis some platinum ions were getting into the solution, where they combined with other atoms to form cisplatin.

Rosenberg went on to test the molecule's effects on metazoans, creatures like us that consist of many cells. Just a pinch of pure cisplatin was enough to kill a mouse. But in very dilute doses it would cause sarcoma tumors to shrink. Cisplatin also had the power to arrest other cancers, and over the years scientists discovered how that works. Before a cell can reproduce, the double helix must relax its windings so that the molecular information can be copied and passed on to the next generation. Cisplatin caused bridges to form between the two helical strands. This chemical straitjacket blocks mitosis and sends the cell into turmoil. It tries to recover by dispatching DNA repairing enzymes. When that fails, apoptosis is initiated and the cell destroys itself. Cisplatin can affect any cell in the body, but since cancer cells divide at a faster rate they bear the brunt of the attack. Once the cancer is destroyed, the rest of the body stumbles, as best it can, back to health. After clinical trials in the 1970s to determine how much cisplatin you could give people without killing them, it was approved by the Food and Drug Administration. It became known as the penicillin of cancer. Because of its effect on other rapidly dividing cells – hair follicles and cells in the gastrointestinal lining and bone marrow there were sickening side effects. Patients would suffer a bone chilling nausea and their hair would fall out. Kidney and nerve damage might occur, and since cisplatin monkeyed with a cell's DNA, it raised the risk of causing a secondary cancer alongside the one the oncologists had been enlisted to treat. The trade-off was usually worth it. For testicular cancer the cure rate approached 100 percent. Other tumors were less responsive, but the chemical, often combined with radiotherapy could slow cancers of other organs and extend lives. Sometimes it could save them.

Excerpted from pages 109-111 of 'The Cancer Chronicles' by George Johnson

Which of the following is definitely true of Rosenberg's first experiment in the nineteen sixties?

A) There was a threshold voltage, below which mitosis would continue to happen
B) Permanent magnets were used in the experiment to create powerful magnetic fields
C) The volume of protoplasm in each bacterial cell was constant, even when it elongated
D) The solution in the petridish contained ammonia in some form

Question No. : 27

Which of these fallacies did Rosenberg subscribe to, before he did his petridish experiment?

A) Cancer is untreatable B) Platinum is chemically inert C) Plans are important D) A disease can be a cure

Question No. : 28

Why is cisplatin referred to as a chemical straitjacket?

A) It does not allow the two DNA strands to unwind
B) A straitjacket is used to keep violent prisoners from hurting themselves or others
C) Cancer is the deadliest of all diseases, and cisplatin arrests the spread of that disease
D) Cisplatin has unintended side effects, like secondary cancers

Question No. : 29

Here are two statements from the passage, which contradict each other.

Second Para: It was like having his finger on a mitotic on-off switch.
Third Para: It wasn't electricity that was interfering with mitosis.

What can be the best explanation to resolve this contradiction?

A) Electric current served as a catalyst in the chemical reaction
B) The experimenter did not take into account the source of the chlorine ions
C) The production of platinum ions stopped once the electricity was switched off
D) Electrolysis causes the separation of a compound into its oppositely charged atomic ions

Question No. : 30

Order the following cell groups from slowest to fastest cell division.

A. Gastro-intestinal lining
B. Sarcoma
C. Bone cells.

A) CAB B) BCA C) ABC D) CBA

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

Question No. : 31

Western medicine is in crisis. Continually increasing resources are being expended to combat the age-related diseases that include diabetes and metabolic syndrome, Alzheimer's disease, Parkinson's disease, cardiovascular disease, and cancer. Yet the causes of these diseases remain a mystery, while their incidence and morbidity either remain constant or are increasing

Huge investments in biomedical research in the recent past have resulted in some striking accomplishments, including the sequencing of the human chromosomal DNA, the identification of hundreds of thousands of human chromosomal single nucleotide polymorphisms (SNPs), and the identification of regional clusters of chromosomal SNPs (the HapMap). However, these accomplishments have failed to reveal the anticipated genetic causes for the common age-related diseases. For example, a series of ''whole-genome scans'' encompassing hundreds of thousands of chromosomal SNPs and 32,000 subjects has revealed nine polymorphic loci associated with type II diabetes, yet the aggregate risk for all nine loci accounts for only a small proportion of the overall diabetes risk.

Thomas Kuhn, in his book *The Structure of Scientific Revolutions*, argued that when the scientific effort expended on a problem increases—yet productivity declines—then the difficulty may lie with the assumptions (paradigms) on which the research is based. For the past 100 years, Western biomedical science has stood on two philosophical pillars: the anatomical paradigm of medicine and the Mendelian paradigm of genetics. The anatomical paradigm of medicine has at its foundation the work of Vesalius, who first described the organs of the human body 450 years ago. Since then, physicians and medical scientists have specialized in individual organs and their associated disease manifestations. The organ-specific compartmentalization of medicine has also led to several generally accepted corollaries: organ-associated symptoms are the result of organ specific problems, organ-specific problems are the result of tissue-specific protein and gene defects, and tissue specific protein defects should be treated with chemicals that specifically interact with the defective tissue-specific protein.

The Mendelian paradigm of genetics argues that genetic traits are transmitted across generations according to the laws of Gregor Mendel. The associated medical corollary is that if a clinical trait is transmitted in a Mendelian fashion, it is genetic, but if it is not, then the trait must be the consequence of environmental factors. This corollary is formalized through the estimation of heritability by dividing the frequency that a phenotypic trait is shared by identical twins with the frequency that it is shared by fraternal twins. However, since Mendelian genetics is the result of chromosomal dynamics, the Mendelian paradigm is specific for nuclear DNA (nDNA) genes.

While the anatomical paradigm of medicine and the Mendelian paradigm of genetics have been powerful predictors of medical relationships for the past century, they are failing to direct us toward solutions for the common age-related diseases. According to Kuhn, when a prevailing paradigm fails to make productive predictions, then hypothesis-based research begins to fail. To resolve the crisis and return to productive ''normal science,'' a new paradigm must be generated that encompasses the strengths of the previous paradigm but adds new elements that address the current problems being confronted. Assuming that this Kuhnian analysis is applicable to the biomedical sciences today, what could be the missing components of the anatomical and Mendelian paradigms necessary for understanding the age-related diseases?

Excerpted from 'Mitochondria as Chi' by Douglas Wallace

What is the central argument made by the passage?

A) If we understand our genetic structure, then we can find cures for almost all diseases
B) We need a new approach for the cure of age-related diseases
C) Death is inevitable, hence research on age-related disease is showing diminishing marginal utility on the investments made
D) Defective tissue-specific protein is a symptom of disease, not the root cause

Question No. : 32

What is the meaning of the word *phenotype*, as used in the second last paragraph?

A) An organism's expressed physical traits B) The genetic constitution of an individual organism
C) Made of Carbon Hydrogen compounds – for example benzene D) A genetic mutation that is passed on to offspring

Question No. : 33

We can infer that the problem with compartmentalized organ based medicine is –

A) That it is a very ancient science B) Does not gel well with the Mendelian paradigm of genetics
C) It takes into account the interplay between organs
D) It ignores the formulation of precise problem lists and progressively refined diagnoses

Question No. : 34

Which of the below could be the most likely paradigm that the author addresses in the paragraph that follows?

A) Calorie restrictions can extend the lifespan of lab rats two-fold
B) Non-nuclear mitochondrial DNA could be responsible for age related diseases
C) Examples of species with negligible senescence like Hydra
D) Death is programmed into us because of DNA telomere shortening

Section : DI & Reasoning

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

Question No. : 35

There are three coins – one Red, one Green and one Blue. Each coin is to be placed in a Bag among Bag1, Bag2 and Bag3 such that there is exactly one coin in each of the three Bags. It is also known that:

(i) If the Red coin is placed in Bag1 then the Blue coin cannot be placed in Bag3.
(ii) If the Green coin is placed in Bag3 then the Blue coin cannot be placed in Bag2.
(iii) If the Red coin is placed in Bag3 then the Green coin cannot be placed in Bag2.
(iv) If the Blue coin is placed in Bag1 then the Green coin cannot be placed in Bag3.
(v) If the Green coin is placed in Bag1 then the Blue coin cannot be placed in Bag3.

The Blue coin is placed in which Bag Number? (in numerical value)

A) 2 B) C) D)

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

Question No. : 36

Each of the four friends – Prakash, Prainsh, Prateek and Pranay – owns a distinct car among Figo, Fortuner, Ferrari and Fiat. It is known that there is exactly one among the four friends who never speaks the truth. The rest three always speak the truth. Each of the four friends made two statements as given below.

Prakash: Prainsh owns Figo. Prateek doesn't own Ferrari .
Prainsh: Pranay owns Fiat. Prateek doesn't own Fortuner.
Prateek: Pranay owns Ferrari Prakash doesn't own Fortuner.
Pranay: Prakash owns Fiat. Prateek owns Fortuner.

Who among the four friends owns Fiat?

A) Prakash B) Prainsh C) Prateek D) Pranay

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

In a book of Inductive Reasoning, there are 6 chapters: Explanatory Hypothesis, Numerical Probability, Hypothesis about Causes, Inductive Analogy, Induction & Probability and Inductive Generalization. Number of pages allotted to each of the chapters by the author is 29, 25, 24, 27, 26 and 24, not necessary in the same order. The chapter "Inductive Generalization" is immediately before the chapter comprising 24 pages. In two instances, the sum of the number of pages of two adjacent chapters is 50. The chapter "Hypothesis about Causes" is immediately after the chapter "Inductive Analogy" which has 24 pages, and immediately before the chapter of "Numerical Probability" which has 29 pages. The chapter "Explanatory Hypothesis" has 27 pages and it is not next to the chapter "Induction and Probability".

Question No. : 37

Which of the following statements must be true?

I. "Induction & Probability" has 24 pages.
II. "Hypothesis about Causes" has 24 pages.
III. The chapter comprising 25 pages is immediately before the chapter "Numerical Probability"

A) Only I B) Only II C) I and II D) I and III

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

In a book of Inductive Reasoning, there are 6 chapters: Explanatory Hypothesis, Numerical Probability, Hypothesis about Causes, Inductive Analogy, Induction & Probability and Inductive Generalization. Number of pages allotted to each of the chapters by the author is 29, 25, 24, 27, 26 and 24, not necessary in the same order. The chapter "Inductive Generalization" is immediately before the chapter comprising 24 pages. In two instances, the sum of the number of pages of two adjacent chapters is 50. The chapter "Hypothesis about Causes" is immediately after the chapter "Inductive Analogy" which has 24 pages, and immediately before the chapter of "Numerical Probability" which has 29 pages. The chapter "Explanatory Hypothesis" has 27 pages and it is not next to the chapter "Induction and Probability".

Question No. : 38

Which of the following has 26 pages?

A) Induction & Probability B) Hypothesis about Causes C) Inductive Generalization D) Numerical Probability

Question No. : 39

DIRECTIONS *for the question:* *Read the following information and answer the question that follow.*

Twelve cricket teams participated in a national level cricket tournament. These teams were distributed equally into two pools A and B. In the first round, each team played a match against all the other teams in its pool. Then three teams with highest average points from each pool qualified for the second round where all the teams played against each other once. Again, three teams with highest average points qualified for the final. In the final round, all the teams played a match against each other and the one with the highest average points was declared to be the winner of the tournament. A winner of any match gets two points, the loser loses one point and in case of a draw both the teams get one point each. Average points of a team are defined as the total points earned by the team so far divided by the number of matches played by the team so far.

The following table gives the total points earned and the average points for each team at the end of the tournament.

Teams	**A1**	**A2**	**A3**	**A4**	**A5**	**A6**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**
Total	14	0	5	0	8	3	-3	13	3	6	2	7
Average points	1.17	0	0.5	0	0.8	0.6	-0.6	1.08	0.6	0.6	0.4	0.58

Also,

I. The winner of the tournament won both its matches in the finals.
II. In second round, the total points earned by all the teams are 50.

Which two teams do not play against each other in the finals?

A) A1, B2 B) A1, B6 C) A5, B2 D) B2, B6

Question No. : 40

Find the total number of matches won by A2 and A4 together in the first round. (in numerical value)

A) 2 B) C) D)

Question No. : 41

How many points did the second runner up earn in the finals? (write the correct option)

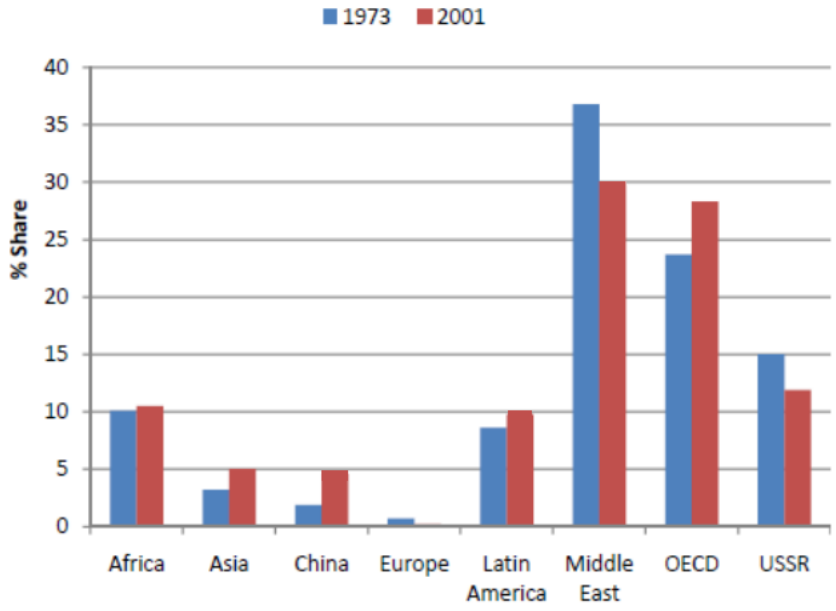
1. -1 2. -2
3. 0 4. 2

A) 2 B) C) D)

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

Question No. : 42

The graph shows the percent shares of different regions in crude oil production. The total crude oil production in 1973 and 2001 was 2861 million tons and 3574 million tons respectively.



How many regions produced less crude oil in 2001 than in 1973? (in numerical value)

A) 2 B) C) D)

Question No. : 43

The production of crude oil in Latin America in 2001 was more than its production of crude oil in 1973 by approximately (million tons). (in numerical value)

A) 114 B) C) D)

Question No. : 44

As compared to 1973, how many regions have increased their share of crude oil production in 2001 by more than 75%? (in numerical value)

A) 1 B) C) D)

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

Question No. : 45

Consider the addition problem "THREE + THREE + FIVE = ELEVEN", where each letter of the alphabet represents a unique digit from 0 to 9. Each letter of the alphabet will have the same value throughout the problem. The number ELEVEN is divisible by eleven.

What is the value of ELEVEN? (in numerical value)

A) 121913 B) C) D)

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

Question No. : 46

Consider the addition problem "THREE + THREE + FIVE = ELEVEN", where each letter of the alphabet represents a unique digit from 0 to 9. Each letter of the alphabet will have the same value throughout the problem. The number ELEVEN is divisible by eleven.

What is the value of THREE – EVEN?

A) FRVE B) VENF C) TIRVF D) HRELJ

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

Question No. : 47

Consider the addition problem "THREE + THREE + FIVE = ELEVEN", where each letter of the alphabet represents a unique digit from 0 to 9. Each letter of the alphabet will have the same value throughout the problem. The number ELEVEN is divisible by eleven.

Which of the following cannot be the value of ELEVEN – FIVE?

A) EENILL B) L × THREE C) N × IFLL D) NNHFT + RVRNR

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

Question No. : 48

Consider the addition problem "THREE + THREE + FIVE = ELEVEN", where each letter of the alphabet represents a unique digit from 0 to 9. Each letter of the alphabet will have the same value throughout the problem. The number ELEVEN is divisible by eleven.

Which of the following is not a factor of ERHI?

A) EF B) IV C) FI D) EVL

Question No. : 49

DIRECTIONS *for the question: The following table provides information about irrigated land under different crops. The irrigated area under Oilseeds denotes the area under groundnut, rapeseed & mustard, linseed, sesame and others. The figures in parentheses represent percentages of irrigated area to total area under the crop.*

IRRIGATED AREA UNDER DIFFERENT CROPS

	1970-71	1980-81	1990-91	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
Rice	14.3 (38.4)	16.4 (40.8)	19.4 (45.5)	22.1 (50.7)	23.4 (52.1)	24.5 (54.0)	23.9 (53.3)	24.5 (54.4)	21.6 (51.7)
Jowar	0.6 (3.6)	0.8 (4.7)	0.8 (5.6)	0.8 (7.3)	0.8 (8.1)	0.8 (7.8)	0.8 (8.0)	0.8 (8.0)	0.8 (8.6)
Bajra	0.5 (4.0)	0.6 (5.5)	0.5 (5.1)	0.6 (6.1)	0.7 (7.4)	0.7 (7.7)	0.8 (8.0)	0.6 (6.2)	0.7 (9.1)
Maize	0.9 (15.9)	1.2 (20.1)	1.2 (19.7)	1.3 (20.3)	1.4 (22.2)	1.5 (21.2)	1.5 (22.1)	1.3 (19.4)	1.3 (19.4)
Wheat	9.9 (54.3)	15.6 (70.0)	19.5 (81.1)	22.9 (85.8)	23.7 (86.2)	24.2 (87.7)	22.6 (87.6)	23.1 (87.8)	22.2 (88.1)
Barley	1.3 (52.0)	0.9 (50.6)	0.5 (54.5)	0.5 (55.6)	0.5 (62.5)	0.4 (57.1)	0.5 (62.5)	0.5 (71.4)	0.4 (57.1)
Total cereals	28.1 (27.6)	35.8 (34.1)	42.3 (41.0)	48.5 (47.7)	51.6 (50.4)	52.4 (50.8)	50.3 (49.6)	50.9 (50.1)	47.1 (49.9)
Total pulses	2.0 (8.8)	2.0 (9.0)	2.6 (10.5)	2.7 (11.3)	3.0 (12.3)	2.9 (13.1)	2.6 (12.3)	3.1 (13.4)	3.0 (14.1)
Total food grains	30.1 (24.1)	37.8 (29.7)	44.9 (35.1)	51.2 (40.8)	53.6 (42.3)	55.3 (44.2)	52.9 (43.1)	54.1 (43.4)	50.1 (43.3)
Oil Seeds	1.1 (7.4)	2.3 (14.5)	5.8 (22.9)	6.8 (24.4)	6.6 (23.2)	6.7 (25.0)	5.7 (22.5)	6.1 (24.2)	5.4 (22.6)
Cotton	1.4 (17.3)	2.1 (27.3)	2.5 (32.9)	3.3 (37.1)	3.3 (34.7)	3.1 (34.4)	2.8 (32.6)	3.1 (34.1)	2.5 (32.5)
Sugarcane	1.9 (72.4)	2.4 (81.3)	3.4 (86.9)	3.8 (90.5)	4.1 (93.2)	4.1 (91.1)	4.2 (91.3)	4.3 (91.5)	4.3 (91.5)

All the above information is in million hectares.

What is the average annual percentage growth in the irrigated area under Jowar from 1970-71 to 1980-81?

A) 0.616% B) 0.333% C) 3.33% D) 14.61%

Question No. : 50

Which of the following has shown the maximum percentage growth in the percentage of irrigated area to total area under the crop as compared to the previous decade?

A) Wheat 1990-91 B) Wheat 1980-81 C) Bajra 1980-81 D) Oilseeds 1980-81

Question No. : 51

In an effort to get more land under irrigation, the government, in 1998-99, sanctioned subsidised loans to farmers for irrigation projects in the Rice, Jowar and Wheat growing areas. These irrigation projects were aimed at increasing the irrigated area under Rice, Jowar and Wheat by 10%, 8% and 12% respectively. Had these projects been implemented successfully, how much more irrigated land should have been under these three crops in 1999-2000 (in million hectares)?

A) 2.26 B) 3.64 C) 5.24 D) 13.09

Question No. : 52

Which of the following statements is / are true?

I. The difference between the percentage change in the irrigated area under Barley from 2000-01 to 2001-02 and the percentage change in the area under Wheat during the same period is approximately 2.2.
II. The ratio of irrigated area under Cereals, Pulses and Sugarcane in 2002-03 is 47 : 30 : 43.
III. The percentage growth in the area under Foodgrains from 1997-98 to 1998-99 is approximately 140% of the growth in the area under Cereals over the same period.

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

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

Question No. : 53

BE Tech, a leading testing services provider, has designed a new software for a 1-hour aptitude test. For the pilot, BETech will have seven students, Arjun, Hershal, Maya, Pranav, Rutika, Soumil and Tanvi, take the test in 1-hour slots with the first slot scheduled for 12 noon, the second slot scheduled for 1 p.m., and so on till the last slot scheduled for 6 p.m. The seven students can take the test in any convenient slot subject to the following restrictions:

- Rutika must take the test in the slot immediately before Tanvi.
- Maya must take the test in any slot after Rutika.
- Exactly two students must take the test between the slots taken by Arjun and Pranav.

In which of the following time slots can Maya not take the test?

A) 1 p.m. B) 3 p.m. C) 5 p.m. D) 6 p.m.

Question No. : 54

If Hershal and Soumil take the test in time solts which are as far from each other as possible, who of the following will take the test at 12 noon, 1 p.m. and 2 p.m. respectively? (write the correct option)

1. Soumil, Arjun, Maya
2. Hershal, Arjun, Rutika
3. Hershal, Rutika, Tanvi
4. Rutika, Tanvi, Soumil

A) 2 B) C) D)

Question No. : 55

After which of the following time slots can Rutika not take the test?

A) 2 p.m. B) 3 p.m. C) 4 p.m. D) None of these

Question No. : 56

In which time slot can Arjun take the test so that Tanvi has only one time slot to take the test?

A) 12 noon B) 2 p.m. C) 3 p.m. D) 4 p.m.

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

Question No. : 57

Acting upon complaints received from citizens, the PMC is planning on removing encroachment from six major roads in Pune – FC Road, JM Road, Karve Road, Laxmi Road, MG Road and SB Road. The PMC has planned an Anti-Encroachment drive on these six roads spread over six consecutive days, Monday through Saturday. To ensure that hawkers and owners of illegal stalls are not forewarned about the drive, the PMC will conduct the drive subject to the following conditions:

- The drive on FC Road will be conducted either on Monday or Saturday.
- The drive on Laxmi Road will be conducted on a day immediately earlier than the drive on MG Road is conducted.

- The drive on SB Road is conducted on the day immediately after the drive on MG Road is conducted.
- If the drive on JM Road is conducted on Wednesday, then the drive on MG Road is conducted on Friday.

On which of the following roads can the Anti-Encroachment drive not be conducted on Friday?

A) Laxmi Road B) MG Road C) JM Road D) Karve Road

Question No. : 58

Which of the following could be the order of roads on which the Anti-Encroachment drive is conducted from Monday to Saturday?

A) FC Road, MG Road, SB Road, Karve Road, Laxmi Road, JM Road
B) JM Road, Laxmi Road, MG Road, Karve Road, SB Road, FC Road
C) JM Road, Karve Road, Laxmi Road, MG Road, SB Road, FC Road
D) Laxmi Road, Karve Road, JM Road, MG Road, SB Road, FC Road

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

Question No. : 59

A 400 m race track has lanes numbered 1 through 7, with lane 1 being the innermost lane and lane 7 being the outermost lane. Seven sprinters, A, B, C, D, E, F and G, are lined up for the race such that:

- E is running in lane 3.
- A is not running in lane 7.
- B and C are running in consecutively numbered lanes.
- C is running in a lane closer to the inside of the track than the lane in which D is running.
- A is running in a lane that is closer to the outside of the track than the lane in which D is running

What is the lowest possible number of the lane in which A can run (numerical value only)?

A) 5 B) C) D)

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

Question No. : 60

A 400 m race track has lanes numbered 1 through 7, with lane 1 being the innermost lane and lane 7 being the outermost lane. Seven sprinters, A, B, C, D, E, F and G, are lined up for the race such that:

- E is running in lane 3.
- A is not running in lane 7.
- B and C are running in consecutively numbered lanes.
- C is running in a lane closer to the inside of the track than the lane in which D is running.
- A is running in a lane that is closer to the outside of the track than the lane in which D is running

Which of the following could be the correct order of the sprinters from lane 1 through lane 7?

A) GFEBCAD B) CBGEDAF C) GBECDAF D) BCEFDAG

Question No. : 61

DIRECTIONS *for the question:* *Read the following information and answer the question that follow.*

A factory produces products A, B, C, D and E which are made from spare parts manufactured by machines M1, M2, M3, M4, M5 and M6. A week is considered from Monday to Saturday. Each machine works for a certain number of hours on four days of the week as shown in the following table.

Machine	Days	Hours/Day
M1	Mon, Wed, Fri, Sat	8
M2	Tue, Wed, Thur, Fri	7
M3	Mon, Thur, Fri, Sat	10
M4	Mon, Tue, Wed, Thur	8
M5	Tue, Wed, Fri, Sat	8
M6	Mon, Tue, Thur, Sat	6

All products do not need spare parts made by all the machines. The production of spare parts of A, B, C, D and E is done by all the machines independently in that order only.
(Working days for a product means the number of days on which the actual work is done for that product.)
The following table gives the number of hours required by each machine to produce a spare part of each product.

Machine / Product	M1	M2	M3	M4	M5	M6
A	12	-	12	13	-	8
B	7	15	10	-	12	-
C	-	5	13	-	10	9
D	5	8	-	11	-	5
E	8	-	5	8	10	2

Note: One unit each of all parts of a specific product after assembling form a set of that product.

How many working days in a week are required to manufacture a set of product B?

A) 2 days B) 3 days C) 4 days D) 5 days

Question No. : 62

What is the minimum number of working days required to manufacture three sets of product A?

A) 15 days B) 12 days C) 16 days D) 18 days

Question No. : 63

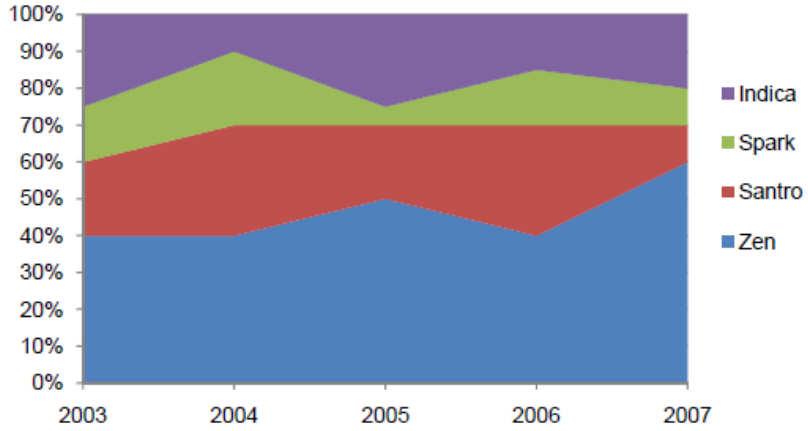
A set of which product takes the minimum number of working days to manufacture?

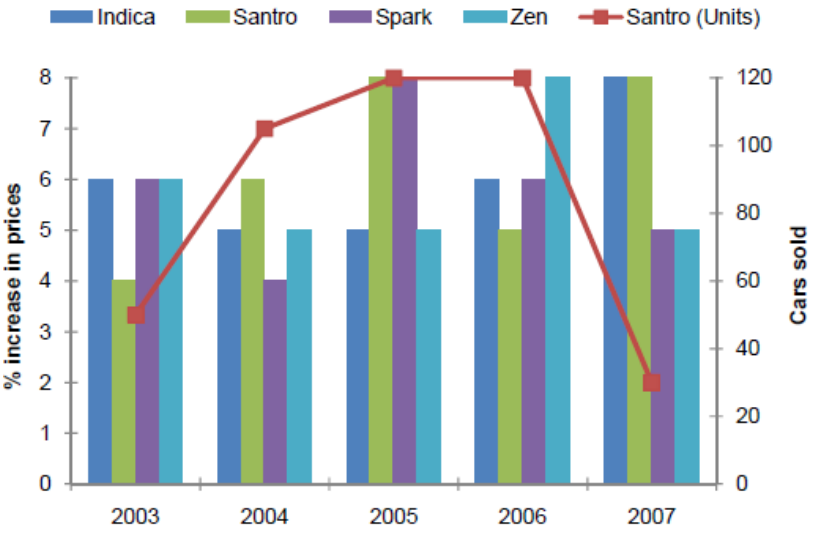
A) B B) C C) D D) E

Question No. : 64

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

The first chart below shows the market shares of four different makes of cars – Zen, Santro, Indica and Spark – over a five-year period from 2003 to 2007. The second chart shows the number of Santro cars sold in these five years (in thousands) and the *percentage* increase in the prices of the four cars over their respective prices the previous year. In 2003, the prices of the Zen, the Spark, the Indica and the Santro were Rs. 2.8 lakh, Rs. 3 lakh, Rs. 3.2 lakh and Rs. 3.25 lakh respectively. The car companies follow a unique pricing policy. Though the prices increase by a certain percentage, the value after the increase is rounded off to the nearest multiple of Rs. 5000.





What is the difference between the number of Santro and Indica cars sold in 2005?

A) 30,000 B) 12,500 C) 25,000 D) 10,000

Question No. : 65

The total number of Zen cars forms what percent of the total number of cars sold over the five year period?

A) 26% B) 55% C) 30% D) 46%

Question No. : 66

How much more would an Indica cost in 2007 as compared to its price in 2003?

A) Rs. 80,000 B) Rs. 96,800 C) Rs. 83,800 D) Rs. 50,000

Section : Quantitative Ability

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

Question No. : 67

Suppose that x, y, z are three positive numbers that satisfy the equations $xyz = 1$, $x + 1/z = 5$, $y + 1/x = 29$. If $z + 1/y = m/n$, where m and n are relatively prime positive integers, then find $m + n$.

A) 5 B) C) D)

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. : 68

Birju wanted to paint the four walls, of equal areas, of his room. He bought 130 litres of blue paint, 164 litres of red paint and 188 litres of white paint. He painted one wall blue, one wall red, one wall white and one wall pink. He obtained the pink colour by mixing the red and white paints, not necessarily in equal quantities. If, after painting the four walls, Birju had equal quantities of the blue, red and white paints left over, what was the total quantity of paint left over?

A) 38 litres B) 88 litres C) 114 litres D) 192 litres

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

Question No. : 69

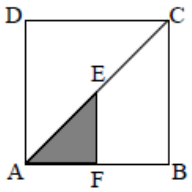
The workers in a factory produce widgets and wedges. For each product, production time is constant and identical for all workers, but not necessarily equal for the two products. In one hour, 100 workers can produce 300 widgets and 200 wedges. In two hours, 60 workers can produce 240 widgets and 300 wedges. In three hours, 50 workers can produce 150 widgets and *m* wedges. What is *m*? (in numerical value)

A) 450 B) C) D)

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

Question No. : 70

In the figure below, □ ABCD is a square of side *a*. E and F are mid-points of AC and AB respectively. What is the area of the shaded region?



A) $\frac{1}{8}a^2$ B) $6a^2$ C) $8a^2$ D) $\frac{1}{4}a^2$

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

Question No. : 71

A tennis player computes her win ratio by dividing the number of matches she has won by the total number of matches she has played. At the start of a weekend, her win ratio is exactly 0.500. During the weekend, she plays four matches, winning three and losing one. At the end of the weekend, her win ratio is greater that 0.503. What is the largest number of matches she could have won before the weekend began?

A) 24 B) 68 C) 148 D) 164

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

Question No. : 72

A mathematical organization is producing a set of commemorative license plates. Each plate contains a sequence of five characters chosen from the four letters in AIME and the four digits 2007. No character may appear in a sequence more times than it appears among the four letters in AIME or the four digits in 2007. A set of plates in which each possible sequence appears exactly once contains *N* license plates. If M = (N/10), what is the units digit of M^{2007}?

A) 8 B) C) D)

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

Question No. : 73

What is the value of $f(2)$, if $f(x) = |5 - 3x|$?

A) $f(-1)$ B) $f(1)$ C) $f(4/3)$ D) $f(7/3)$

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

Question No. : 74

In Δ ABC, $\angle ABC = \frac{\angle BAC}{2}$. If AB = c, BC = a and AC = b, which of the following is true?

A) a is the geometric mean between b and $(a + c)$ B) a is the geometric mean between c and $(a + b)$
C) a is the geometric mean between b and $(b + c)$ D) a is the geometric mean between c and $(b + c)$

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

Question No. : 75

The sum of the first three terms of a geometric sequence is equal to 42. The sum of the squares of the same terms is equal to 1092. What is the square of the sum of the first three terms of the sequence?

A) 961 B) 1026 C) 1156 D) 1764

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

Question No. : 76

The shortest distance of point P from the circumference of a circle of radius 15 units is 98 units. What is the length of the tangent to the circle from point P? (in numerical value)

A) 112 B) C) D)

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

Question No. : 77

Arnab and Biplab both took part in a two-day problem-solving competition. At the end of the second day, each had attempted questions worth a total of 500 points. Arnab scored 160 points out of 300 points attempted on the first day, and scored 140 out of 200 points attempted on the second day. Biplab, who did not attempt 300 points on the first day, had a positive integer score on each of the two days, and Biplab's daily success ratio (points scored divided by points attempted) on each day was less than Arnab's on that day. Arnab's two-day success ratio was 300/500 = 3/5. The largest possible two-day success ratio that Biplab could have achieved is m/n, where m and n are relatively prime positive integers. What is $m + n$?

A) 349 B) 529 C) 729 D) 849

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

Question No. : 78

Let P be the product of the first 100 positive odd integers. Find the largest integer k such that P is divisible by 3^k. (in numerical value)

A) 49 B) C) D)

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

Question No. : 79

Two tour guides are leading six tourists. The guides decide to split up. Each tourist must choose one of the guides, but with the stipulation that each guide must take at least one tourist. How many different groupings of guides and tourists are possible? (in numerical value)

A) 62 B) C) D)

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

Question No. : 80

If the roots of the equation $px^3 + qx^2 + rx + s = 0$ are in Geometric Progression, then which of the following relations is true?

A) $pr^3 = q^3s$ B) $p^2r = qs^2$ C) $p^3r = qs^3$ D) $pr^2 = q^2s$

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

Question No. : 81

Glen Distilliries is famous for their Whiskeys which contain 50% alcohol. The blending department has received three casks of distilled liquor, the first cask containing four gallons of 45% alcohol, the second cask containing five gallons of 48% alcohol and the third cask containing one gallon of *x*% alcohol. The master blender takes y/z gallons of liquor from the third cask and adds it to the first cask. The remaining liquor from the third cask is added to the second cask. The first and second casks now contain Whiskey with 50% alcohol each. If *y* and *z* are relatively prime natural numbers, what is the value of $x + y + z$?

A) 5 B) 23 C) 85 D) 115

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

Question No. : 82

The S.P. of two articles is Rs. 120 each. One article is sold for 20% profit and the other for 20% loss. What's the overall result?

A) Rs. 4 loss B) Rs. 4 profit C) Rs. 10 loss D) Rs. 10 profit

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

Question No. : 83

If *p* is a prime number and *a*, *b*, *c* and *d* are consecutive natural numbers, then $(a + b + c + d)^p - a^p + b^p + c^p + d^p$ is always divisible by

A) 6 B) $(a + b + c + d)$ C) p D) *None of these*

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

Question No. : 84

What is the sum of the series 1/4 + 1/8 + 2/16 + 3/32 + 5/64 + 8/128 + 13/256 + 21/512 + ...

A) 1/3 B) 1/2 C) 1 D) 3/2

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

Question No. : 85

Anshi has to attend a marriage so she starts moving towards the marriage palace directly from her office. After covering one-fourth of the total distance to the palace, she realized that she will be late with this speed. So, she started walking further with twice her original speed. When she has walked half the total distance, she further increases her speed to three times her initial speed and walks for another one-fourth of the total distance. For the remaining distance, she increases her speed to four times her initial speed. While coming back to her office, she covers the entire distance at her original speed. If Anshi walks for 2 hours and 26 minutes in all, then for how much time does she walk at twice her original speed?

A) 8 min B) 24 min C) 12 min D) Cannot be determined

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

Question No. : 86

The average of A and B is 22, of A and C is 25 and that of B and C is 27. What's C – A? (in numerical value)

A) 10 B) C) D)

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

Question No. : 87

Al walks down to the bottom of an escalator that is moving up and he counts 150 steps. His friend, Bob, walks up to the top of the escalator and counts 75 steps. If Al's speed of walking (in steps per unit time) is three times Bob's speed, how many steps are visible on the escalator at any given time? (Assume that this number is constant.)

A) 120 B) C) D)

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

Question No. : 88

What is the coefficient of x^7 in the expansion of $\left(\frac{x^2}{2}-\frac{2}{x}\right)^8$.

A) 56 B) -56 C) 14 D) -14

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

Question No. : 89

Find the no. of Lattice points on the boundary and inside the region bounded by x axis, x = 4 and $y = x^2$. (Lattice points are points with coordinates as integers) [x = 0 included] (in numerical value)

A) 35 B) C) D)

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

Question No. : 90

A man set of fuse for a blast to occur in 30 seconds. He ran away at a rate of 8 yards/sec and sound travels at 1080 feet per second. When the man heard the blast, he ran approximately...

A) 300 yd B) 352 yd C) 245 yd D) 512 yd

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

Question No. : 91

What is the ratio of the perimeter of an equilateral triangle having an altitude equal to radius of circle, to perimeter of an equilateral triangle inscribed in that circle?

A) 2 : 3 B) 1 : √3 C) √3 : 2 D) 1 : 2

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

Question No. : 92

If $a : b = b : c = c : d = 8$, then what is the value of $(ab + bc + cd) / (b^2 + c^2 + d^2)$? (in numerical value)

A) 8 B) C) D)

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

Question No. : 93

If the sum of the first thirteen terms of an AP and the sum of the next twelve terms of the progression are in the ratio 26 : 49, then what is the ratio of the thirteenth term to the seventh term of the progression?

A) 3 : 2 B) 1 : 4 C) 1 : 5 D) 4 : 5

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

Question No. : 94

What is the remainder when 75^{75} is divided by 37? (in numerical value)

A) 1 B) C) D)

DIRECTIONS for the question: *Mark the best option:*
Question No. : 95

A bank uses an encryption key generating program that uses two numbers of the current date as its source - the number denoting the month (e.g., it is August, then the number is 8) and the date (e.g., today is the 15^{th} day of the month). The encryption key is the hardest to crack if the two numbers are relatively prime. Password hackers run Trojan programs to try to get the data on credit cards which are stored using this encryption program. Which month is the most vulnerable to Trojan attacks out of the given options?

A) January B) April C) December D) July

DIRECTIONS: *Solve the following question and mark the best possible option*
Question No. : 96

An article costing Rs. 84 was sold at a profit of 50%. The second purchaser sold it once again at a loss of 25%. At what price did he sell it?

A) Rs. 63.00 B) Rs. 78.75 C) Rs. 94.50 D) Rs. 100.00

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

Question No. : 97

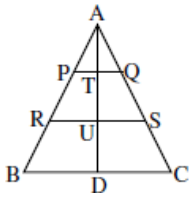
The simple interest on a sum of money $\frac{1}{16}$ is of the sum. If the number of years is numerically equal to the rate percent per annum, then the rate percent per annum is

A) $3\frac{1}{3}$ B) $6\frac{2}{3}$ C) $2\frac{1}{2}$ D) $7\frac{1}{2}$

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

Question No. : 98

Consider isosceles ΔABC as shown. PQ and RS are parallel to base BC such that the ratio of areas of ΔAPQ to ΔABC is 1 : 6 while the ratio of areas of ΔARS to ΔABC is 1 : 2. ΔABC is rotated about the height AD to form a cone. What is the ratio of the volumes of the cone with height AT, frustum with height TU and the frustum with height UD? (write the correct option)



1. 1 : 3 √3 : 6 √6 2. 1 : 2 √2 : 3 √3 3. 1 : 3 √3 – 1 : 2 √2 – 1 4. 1 : 3 √3 – 1 : 3 √3(2 √2 – 1)

A) 4 B) C) D)

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

Question No. : 99

Two biscuits each 50 gm made up of an alloy of gold and silver costs Rs 73962 and 86338 respectively. If the price of 10 gm pure gold is Rs 31500, find the price of 1 kg silver, if the quantities of gold and silver are interchanged for the second biscuit and also find the weight of gold in the second biscuit?

A) 56000, 23 gm B) 55550, 30 gm C) 56000, 27 gm D) 55550, 20 gm

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

Question No. : 100

A milk merchant buys certain number of cans full of milk. If he sells milk at Rs. 13 per litre, he gains Rs. 333. But if he sells milk at Rs. 10 per litre, he loses Rs. 150. How many such cans did be buy, if the capacity of each can is 23 litres? (in numerical value)

A) 7 B) C) D)

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

Explanation:- *The middle class has moved from atheism to religion. The last sentence in the paragraph states that though the descendents, the scions, of the bourgeoisie, are not content with using religion as a shackle for the masses but they are themselves getting shackled or caught in the bondage.*
1 – This is untrue. The paragraph states that though the bourgeois were skewed towards atheism, yet they found religion to be a useful tool which could constraint the people. So they did compromise on their beliefs for power.
2 – there is no mention of what the church thought about the growing inclination of the bourgeois towards religion
4 – There is no mention of any pact or covert working together of the church and the bourgeoisie

QNo:- 2 ,Correct Answer:- *4*

Explanation:- *We are looking at the big idea over here - which is the transition from slavery to freedom.*
1 - We do not know about the laws that existed pre Civil War - hence this cannot be inferred.
2 - A very extreme statement - what do we mean by agricultural skills. For example a mechanic at the farm could easily find a job in a factory.
3 - Works in the specific case mentioned here, but difficult to generalise. What about our corrupt government officials, who rob in spite of drawing reasonable salaries?

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

Explanation:- *The basic principle is that do more with what you have. The hint is in this sentence: how to be known for what we allocate rather than what we accumulate. Option 2 reinforces this idea.*
1 – does not connect to making a difference.
3 – does not show how moderation benefits a wealthy industrialist
4 – connects well to greed, not just money.

QNo:- 4 ,Correct Answer:- *3*

Explanation:- *The author mentions that most disputes are not cut-and-dried, so making it difficult for a police officer to do arbitration. In the absence of that, it would make sense to have mediation - where the advantage is that both parties walk away as winners.*
1 - The passage does not mention the order of conflict resolution strategies.
2 - It should actually be the vice-versa,
4 - Does not address the other issue that is also important in the passage - arbitration.

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

Explanation:- *2, 4.*
Self-involved as they cannot see beyond themselves and Greedy because they don't mind making their fortune without having to labour for it.
Condescending is not mentioned in the passage
Obsequiousness too is not mentioned in the passage

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

Explanation:- *The reaction is instinctive and self-destructive hence Hubris is the right answer*
Assertiveness is not an apt way to describe escapist behaviour of rolling a dice at Vegas
Nonchalance or Equanimity indicates a calm demeanour accompanied by application of ones mind. This is not indicated in the escapist behaviour shown by the narcissist.

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

Explanation:- *1 is correct as the writer believes in 'spare the rod, spoil the child' idiom*
2 - is not correct as the passage does not mentions this
3 - is not correct as this is not mentioned in the passage
4 - cannot be concluded as this is not mentioned in the passage

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

Explanation:- *Is correct and is mentioned in the passage*

2 - Is not correct as Jeopardy does not required the mentioned abilities to win the game
3 - Is not correct as it contributes to the development of narcissists who cannot face the modern world
4 - Is not correct as the writer doesn't demand for the game to be banned

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

Explanation:- *2 is the correct answer as it indicates a key failure of the Graduate Business Schools in grooming leaders who contribute to the betterment of our society*
1 - is not correct as the view points to a key lacuna in the system while grooming our leaders
3 - is not correct as the writer is serious about his view and is not just haranguing against the System
4 - is not slanderous as it is a statement of fact backed by key examples

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

Explanation:- *The central idea is about how Buddhist economics wants to achieve maximum satisfaction with optimisation of consumption, versus Western economics which wants to maximize consumption and optimize production.*
1 – The option does not elaborate the debate. It is actually about how one philosophy tries to use means (of consumption) to achieve ends (of prosperity) Versus another which starts with ends (of consumption) and uses minimal means (production) to reach those ends.
2 – The discussion is as much about Buddhist (read non-modern) societies as it is about modern societies. Also the option would read better if it were to delineate the roles.
4 – This is the subject of the last paragraph only. Cannot be called the central theme.

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

Explanation:- *During the Nineties, the US was heavily dependent on the Middle East region for its oil imports. The Bush Sr administration wanted to safeguard its oil supplies, so it sent in its forces after Saddam Hussein invaded Kuwait. The conflict was about consumption – oil.*
1 – The strife was primarily about Tamils fighting for their political rights, which they felt had been denied to them by the majority-Sinhalese.
3 – These were a basic continuation of the partition – where religion was used to divide the country.
4 – The conflict here was driven by the oppression of the peasants by the rulers.

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

Explanation:- *Refer to the sentence: 'Just as the modern economist would admit that a high rate of consumption of transport services between a man's home and his place of work signifies a misfortune.' In any case the Buddhist economist would have been happier if a man's work place was close to his house. Hence we can say that both are in agreement here.*
2 – the need for employment is causing a demand for transportation. The demand is local (need for employment) - but the supply is not (the distant workplace)
3 – Refer to the explanation for Option 1. Both consider it as bad for the standard of living. There are no two views (dichotomy) about this.
4 – Again go back to option 1 explanation, the Western economist considers this as a failure. He would have preferred consumption more in the material sense, where there is no discomfort involved.

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

Explanation:- *Statements 2, & 4. These represent the Buddhist philosophy where the aim is to maximize happiness with the least of consumption.*
Statements 1 and 3 represent the Western economic philosophy.

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

Explanation:- *The five extinctions took place about 60, 190, 230, 350 and 430 million years before.*
The chronological time spans between each of two of these extinctions is: 130, 40, 120 and 80.
What we need is an average of this: 370/4 = 92.5
(Btw, you could have also just looked at the time between the first and last extinction – and then divided that by 4!)
So the answer is option 3.

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

Explanation:- *Excerpted from the last paragraph: Conditions change so drastically or so suddenly (or so drastically and so suddenly) that evolutionary history counts for little.*
Tectonic means related to the earth's crust. This is clearly hinting to something like a meteor hit or volcanic explosion. We can infer that species died because the food supply was hit – or the weather changed drastically.

1 – The first paragraph talks about the background extinction rate, not the last.
2 – Though the human role in extinction is quite clear to most of us, the passage does not talk about it.
4 – A comparison of the rates has not been made. Btw, there are some paleontologists who argues that what is happening because of humans is as drastic as the earlier 5 mass extinctions. The book is titled Sixth extinction, for that reason.

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

Explanation:- *Here is the context: In ordinary times—times here understood to mean whole geologic epochs—extinction takes place only very rarely, more rarely even than speciation, and it occurs at what's known as the background extinction rate.*
So speciation would be the opposite of extinction of species – i.e. it would be about the formation of species.

1 – is a definition of mass extinction.
3 – is a definition of fossilization
4 – is close. It looks like a definition of evolution, but it is not a precise one. It could for example simply be a definition of reproduction.

QNo:- 17 ,Correct Answer:- *42135*

Explanation:- *The paragraph is talking about using ergonomics right from the beginning, when designing the work environment begins. So the general introduction of this paragraph is given in the statement 4.*
2 states that the savings in monetary terms when the equipment and facilities are designed right the first time, 1 continues with giving a specific number.

QNo:- 18 ,Correct Answer:- *32451*

Explanation:- *The passage is talking about the what happens when there are shortage of girls in a society. Though one feels that the shortage will increase the girl's social and economical value, the male favoured society instead calls for more brides to expand the market. Communities feel the strain and the example of the Jind district illustrates that. 3 gives the effect of getting more brides – as the age get lowered the negative effects manifest into the form of domestic violence*

QNo:- 19 ,Correct Answer:- *32415*

Explanation:- *The paragraph talks about giving a moral law to the child and teaching the child the relativity of moral and social laws. Then it moves on to tell us why people reject human laws and proclaim their liberty.*

QNo:- 20 ,Correct Answer:- *25143*

Explanation:- *The paragraph talks about aspiration and emotion. We can understand that 4 and 3 are talking about the Faith and Reason. Hence 43 should be together.*

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

Explanation:- *A – in which to be replaced by where ……..*
C – gregarious to be replaced by egregious …….

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

Explanation:- *A – has been instead of is, as we are saying over a period*
B – 'carried out' in place of 'carried on'.
E- who instead of that. We cannot have a comma before that if it is used as a restrictive cause. Here we need to use who for it refers to the linguists and psychologists.

QNo:- 23 ,Correct Answer:- *3*

Explanation:- *The talk is here about rent and how exorbitant rents can be justified. So 2 – 4 – 1 they form a paragraph.*
Option 3 may the topic under discussion but it does not fit in with the other three sentences

QNo:- 24 ,Correct Answer:- *4*

Explanation:- *The paragraph is talking about negative perceptions and how the law and order machinery must rise to the challenge and address security concerns. The talk about what Indian companies should keep in mind probably comes somewhere later, but not with 2 – 1 - 3.*

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

Explanation:- *The paragraph is about the Chinese, height and milk. So the story begins with the Chinese ridiculing the short Japanese only to now find themselves holding the short stick. The Chinese found that the Japanese children drank more milk and hence want to emulate that.*
Sentence 3 though of the same article is talking about the young (which would mean young adults) while 4 – 2 – 1 talks about children.

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

Explanation:- *Cisplatin is a chemical composed of platinum, two chlorine and two ammonia groups. The platinum came from the electrode, so the chlorine and ammonia groups would have come from the solution.*
1 – the mitosis stopped because of the chemical, not the current.
2 – An electromagnetic field is created by current, not permanent magnets.
3 – The paragraph mentions that new protoplasm was created, so the volume would have increased.

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

Explanation:- *Cisplatin formed because some of the platinum of the electrodes reacted – which means that platinum is not chemically inert. He had chosen a platinum electrode, specifically because it was inert.*

1 – the experiment was not designed with cancer in mind.
3 – Serendipity does not mean not having plans – so we cannot call this statement a fallacy.

4 – Rosenberg was just exploring cell division. His hypothesis was based on electricity being a cure, not cisplatin. Having said this, cisplatin is listed as a carcinogen, so the statement is true. It is not a fallacy at all.

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

Explanation:- *A straitjacket is an apparel with no openings for arms. You strap it over someone, with the arms inside. It keeps the arms joined to the body, so to say. This is used to restrain them from doing damage. The analogy over here is applied to the bridges between the DNA strands. Cisplatin binds them together – in a sense straitjackets them.*
2 – does not have a cisplatin angle in it.
3 – does not have the straitjacket angle in it.
4 – is not relevant, as we are not discussing why it is called a straitjacket.

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

Explanation:- *Though the electricity did not have a direct role to play, its indirect role was in keeping platinum ions in circulation for cisplatin formation to happen.*
1 – A catalyst is a chemical that does not take part in a reaction, but quickens it. Electricity cannot be a catalyst, as it is not a chemical.
2 – The passage does not mention the source of chlorine. Even if we knew the source, it would not explain the stoppage of the reaction on switching of electricity.
4 – Is factually correct, but too general to be of any use in resolving this paradox.

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

Explanation:- *CAB*
Refer last paragraph: Cisplatin can affect any cell in the body, but since cancer cells divide at a faster rate they bear the brunt of the attack.
So sarcoma – which is basically a synonym for cancer – will divide at a faster rate.
Bone cells are normal cells (we are not talking of bone marrow here) – so they will be the slowest in terms of division.
Gastro-intestinal lining cells reproduce at a faster rate than the rest of the body – so they fit in between.

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

Explanation:- *The passage begins by talking of a crisis in medicine. It goes on to explore that it is because the traditional paradigms are not working. Hence the need for a new one, as expressed in the last paragraph.*
1 – The author has expressed disappointment about this in the first paragraph. Nine polymorphic loci associated with type II diabetes, yet the aggregate risk for all nine loci accounts for only a small proportion of the overall diabetes risk.
3 – Not mentioned in the passage
4 – The passage does talk of defects of tissue-specific proteins, but not in a symptom-cause context.

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

Explanation:- *Here is the context.*
The associated medical corollary is that if a clinical trait is transmitted in a Mendelian fashion, it is genetic, but if it is not, then the trait must be the consequence of environmental factors. This corollary is formalized through the estimation of heritability by dividing the frequency that a phenotypic trait is shared by identical twins with the frequency that it is shared by fraternal twins.
We expect phenotypic to be related to physical features – since it is used for identical twins.
2 – the word referenced here is genotype
3 – Actually phenol is a prefix used for benzene, but the context over here is wrong.
4 – Whoa! Where did that come from?

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

Explanation:- *The author is implying that organ based specializations is making us short-sighted and thereby not able to solve our current set of medical problems. What is required is starting from an overview – and then narrowing down possibilities. This is what option 4 says.*

1 – If a science works, then why worry about its age.
2 – Passage actually talks of how both Anatomical and Mendelian paradigm work together.
3 – This cannot be a problem. (Btw, the statement is false.)

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

Explanation:- *The hint is in the last line of the second last paragraph.*
However, since Mendelian genetics is the result of chromosomal dynamics, the Mendelian paradigm is specific for nuclear DNA (nDNA) genes.
So we are looking at some other kind of genetic material. Btw, DNA is also found in Mitochondria. Those of you with an eye for detail, would have also noted the presence of Mitochondria in the title of the book (mentioned at the end of the passage)

1, 3, 4 – are plausible hypotheses for ageing, but do not connect as well to the current passage.

QNo:- 35 ,Correct Answer:- *2*

Explanation:-
The following six cases of distribution are possible:

	Bag1	Bag2	Bag3
Case 1	Red	Green	Blue
Case 2	Red	Blue	Green
Case 3	Blue	Green	Red
Case 4	Blue	Red	Green
Case 5	Green	Red	Blue
Case 6	Green	Blue	Red

Statements (i) to (v), in that order, reject cases 1 to 5. Hence, the only possible case is case 6 . hence blue coin is in Bag 2

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

Explanation:-
Either Prainsh or Prateek is the liar as they make contradictory claims about the car owned by Pranay. Hence, Prakash and Pranay always speak the truth. The only possible arrangement is given below.

Prakash	Prainsh	Prateek	Pranay
Fiat	Figo	Fortuner	Ferrari

Hence Prakash owns fiat.

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

Explanation:-

In our discussion let us use the acronyms of the names of the chapters for simplicity.

Explanatory Hypothesis - EH
Numerical Probability - NP
Hypothesis about Causes - HC
Inductive Analogy - IA
Induction & Probability - IP
Inductive Generalization - IG

Let us take the statements given in the problem and write them using the symbols.
Number of pages, wherever known, is written in parenthesis or implies immediately after or before respectively.

I. IG (24)
II. IA (24) HC NP (29)
III. EH (27) not exceed to (IP)
IV. In two instances, the total number of pages of two adjacent chapters is 50.

To satisfy condition IV, there is only one possibility – 24, 26, 24 – as there are only two no's, whose total is 50.
I. IG (24)
Either IG has 26 pages or IG is before the three consecutive chapters with pages 24, 26, 24.
Case (1): IG is before the 3 chapters.
IG
__ 24 26 24
From statement II, it is clear that IA must be the extreme right one in the above 4 chapters.
IG IA HC NP
( ) (24) (26) (24) ( ) (29)
But in the above case condition III is violated. Therefore case (1) is not possible.
Case (1): IG has 26 pages.
IG IA HC NP
(24) (26) (24) ( ) (29)
The above arrangement is made by taking condition II into consideration.
EH is (27) but not next to IP.
IP has 24 pages and is the first chapter. EH is the last chapter.
HC has 25 pages.

IP IG IA HC NP EH
(24) (26) (24) (25) (29) (27)
Hence only I and III are true.

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

Explanation:-

In our discussion let us use the acronyms of the names of the chapters for simplicity.

Explanatory Hypothesis - EH
Numerical Probability - NP
Hypothesis about Causes - HC
Inductive Analogy - IA
Induction & Probability - IP
Inductive Generalization - IG

Let us take the statements given in the problem and write them using the symbols.
Number of pages, wherever known, is written in parenthesis or implies immediately after or before respectively.

I. IG (24)
II. IA (24) HC NP (29)

III. EH (27) not exceed to (IP)
IV. In two instances, the total number of pages of two adjacent chapters is 50.
To satisfy condition IV, there is only one possibility – 24, 26, 24 – as there are only two no's, whose total is 50.
I. IG (24)
Either IG has 26 pages or IG is before the three consecutive chapters with pages 24, 26, 24.
Case (1): IG is before the 3 chapters.
IG
__ 24 26 24
From statement II, it is clear that IA must be the extreme right one in the above 4 chapters.
IG IA HC NP
( ) (24) (26) (24) ( ) (29)
But in the above case condition III is violated. Therefore case (1) is not possible.
Case (1): IG has 26 pages.
IG IA HC NP
(24) (26) (24) ( ) (29)
The above arrangement is made by taking condition II into consideration.
EH is (27) but not next to IP.
IP has 24 pages and is the first chapter. EH is the last chapter.
HC has 25 pages.

IP IG IA HC NP EH
(24) (26) (24) (25) (29) (27)
Hence, Inductive Generalization has 26 pages.

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

Explanation:-
From the data given, we know that in the first round each team plays 5 matches, in the second round each team plays 5 matches and in the finals each team plays 2 matches.
Thus, if a team gets eliminated after the first round, it has played only 5 matches in all, if a team gets eliminated after the second round, it has played 10 matches in all and if a team reaches the finals, it plays 12 matches in all.
From the table, we can determine the number of matches played by each team in the tournament and hence the highest round they reach.

Teams	**Total**	**Average points**
A1	14	1.17
A2	0	0.00
A3	5	0.50
A4	0	0.00
A5	8	0.80
A6	3	0.60
B1	-3	-0.60
B2	13	1.08
B3	3	0.60
B4	6	0.60
B5	2	0.40
B6	7	0.58

Teams	**Number of matches**	**Highest round reached**

	played	
A1		Finals
A2	5	First
A3	10	Second
A4	5	First
A5	10	Second
A6	5	First
B1	5	First
B2	12	Finals
B3	5	First
B4	10	Second
B5	5	First
B6	12	Finals

Thus, A5 and B2 did not play against each other in the finals.

***QNo:- 40 ,Correct Answer:-** 2*

Explanation:-
Let a, b and c be the number of matches won, lost and drawn respectively by A2 in first round. Then, a + b + c = 5 and 2a – b + c = 0. Adding these two equations, we get, 3a + 2c = 5, which holds only when a = c = 1. Similarly, A4 won 1 match in the first round. Thus, the number of matches won by A2 and A4 in the first round is 2.

***QNo:- 41 ,Correct Answer:-** 2*

Explanation:-
The teams playing in the second round were A1, A3, A5, B2, B4 and B6.
The total points earned by them after second round are 50 (From II).
But the total points earned by A3, A5 and B4 after second round are 5 + 8 + 6 = 19.
i.e., the total points earned by A1, B2 and B6 after second round are 50 – 19 = 31.
Also, we know the total points earned by A1, B2 and B6 after finals, which are 14 + 13 + 7 = 34. That means points scored by all the teams in the finals are 3. From I, the winner of the tournament i.e., A1 won both its matches in the finals.
In these two matches, the total points earned by the three teams are 4 – 1 – 1 = 2.
∴ The match between B2 and B6 cannot be a draw. ∴ Either B2 or B6 must have won that match. Now, consider the second round. If B6 would have won the match between B2 and B6 in finals, then the total points earned by B2 and B6 after second round would have been 13 – (-1 – 1) = 15 and 7 – (-1 + 2) = 6 and the average points would have been 1.5 and 0.6 respectively, which contradicts the fact that the three teams with the highest average points went to the next round, as B4's average points after second round are 0.6. ∴ B2 won the match against B6 in finals. The second runner up i.e., B6 earned -1 – 1 = -2 points in finals.

***QNo:- 42 ,Correct Answer:-** 2*

Explanation:-
From the graph, we can estimate the percent shares and calculate values of crude oil production as follows.

Region	1973		2001	
	%	Qty	%	Qty
Africa	10	286	10.5	375
Asia	3	85	5	178
China	2	57	5	178

Europe	0.5	14	0.2	7
Latin America	8.5	257	10	357
Middle East	37	1058	30	1072
OECD	24	686	28	1000
USSR	15	429.15	12	428.88

From the table we can see that Europe and USSR produced less crude oil in 2001 as compared to 1973.

QNo:- 43 ,Correct Answer:- *114*

Explanation:-
From the graph, we can estimate the percent shares and calculate values of crude oil production as follows.

Region	1973		2001	
	%	Qty	%	Qty
Africa	10	286	10.5	375
Asia	3	85	5	178
China	2	57	5	178
Europe	0.5	14	0.2	7
Latin America	8.5	257	10	357
Middle East	37	1058	30	1072
OECD	24	686	28	1000
USSR	15	429.15	12	428.88

The production of crude oil in Latin America in 2001 was approximately 357 – 243 = 114 million tons more than the production in 1973.

QNo:- 44 ,Correct Answer:- *1*

Explanation:-
From the graph, we can estimate the percent shares and calculate values of crude oil production as follows.

Region	1973		2001	
	%	Qty	%	Qty
Africa	10	286	10.5	375
Asia	3	85	5	178
China	2	57	5	178
Europe	0.5	14	0.2	7
Latin America	8.5	257	10	357
Middle East	37	1058	30	1072
OECD	24	686	28	1000

USSR	15	429.15	12	428.88

China's shares in 1973 and 2001 were 2% and 5% respectively. This is an increase of more than 75%. It happens only in case of China.

QNo:- 45 ,Correct Answer:- *121913*

Explanation:-
Since E is the leading digit of the answer, we know that E can take only two values, 1 or 2. (since the sum of 3 digits cannot exceed 27).
If E = 1, then N = 3 and V = 9.
If E = 2, then N = 6 and V = 8.
For ELEVEN to be divisible by 11, ELEVEN must be 121913 or 232826.
232826.is eliminated because even T = 9 can't yield 23xxxx.
The only possible combinations of R and I are (0, 8), (4, 0) and (7, 4).
(7, 4) is the only combination which yields the answer.

ELEVEN = 121913.

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

Explanation:-
Since E is the leading digit of the answer, we know that E can take only two values, 1 or 2. (since the sum of 3 digits cannot exceed 27).
If E = 1, then N = 3 and V = 9.
If E = 2, then N = 6 and V = 8.
For ELEVEN to be divisible by 11, ELEVEN must be 121,913 or 232,826.
232,826.is eliminated because even T = 9 can't yield 23x,xxx.
The only possible combinations of R and I are (0, 8), (4, 0), (7, 4) and (5,8).
(7, 4) is the only combination which yields the answer.

THREE – EVEN = 56711 – 1913 = 54798 = TIRVF.

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

Explanation:-
Since E is the leading digit of the answer, we know that E can take only two values, 1 or 2. (since the sum of 3 digits cannot exceed 27).
If E = 1, then N = 3 and V = 9.
If E = 2, then N = 6 and V = 8.
For ELEVEN to be divisible by 11, ELEVEN must be 121,913 or 232,826.
232, 826.is eliminated because even T = 9 can't yield 23x, xxx.
The only possible combinations of R and I are (0, 8), (4, 0), (5,8) and (7, 4).
(7, 4) is the only combination which yields the answer.

ELEVEN – FIVE = 121913 – 8491 = 113422 = EENILL.
L × THREE = 2 × 56711 = 113422.
N × IFLL = 3 × 4822 = 14466 ≠ 113422.
NNHFT + RVRNR = 33685 + 79737 = 113422.
Hence answer is option C.

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

Explanation:-
Since E is the leading digit of the answer, we know that E can take only two values, 1 or 2. (since the sum of 3 digits cannot exceed 27).
If E = 1, then N = 3 and V = 9.
If E = 2, then N = 6 and V = 8.
For ELEVEN to be divisible by 11, ELEVEN must be 121,913 or 232,826.
232, 826.is eliminated because even T = 9 can't yield 23x, xxx.
The only possible combinations of R and I are (0, 8), (4, 0), (5,8) and (7, 4).
(7, 4) is the only combination which yields the answer.

ERHI = 1764 = $2^2 \times 3^2 \times 7^2$.
EF = 18 = 2×3^2.
IV = 49 = 7^2.
FI = 84 = $2^2 \times 3 \times 7$.
EVL = 192 = $2^6 \times 3$.
Hence option D

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

Explanation:-
From 1970-71 to 1980-81, the irrigated area under Jowar has increased from 0.6 million hectares to 0.8 million hectares. This is an increase of 33.33% over 10 years. So the average annual percentage growth is 33.33/10 = 3.33%.
Hence the answer is option C

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

Explanation:-
Percentange change % =
*Wheat 1990-91 = (81.1 - 70) / 70 * 100 = 15.8 %*
*Wheat 1980-81 = (70 - 54.3) / 54.3 * 100 = 29 %*
*Bajra 1980-81 = (5.5 - 4)/ 4 * 100 = 37.5 %*

A simple comparison of these values will show that Oilseeds in 1980-81 has shown the maximum growth of almost 100% from 7.4 to 14.5.
Hence the answer is option D.

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

Explanation:-
In 1998-99, the irrigated land under Rice, Jowar and Wheat was 23.4, 0.8 and 23.7 respectively. In 1999-2000, the irrigated land under Rice, Jowar and Wheat should have been 23.4 × 1.1 = 25.74, 0.8 × 1.08 = 0.864 and 23.7 × 1.12 = 26.54 respectively. So the irrigated land under these three crops would have been 25.74 + 0.864 + 26.54 = 53.14. From the table, we know that the irrigated area under these crops in 1999-2000 is 24.5 + 0.8 + 24.2 = 49.5. So the area would have increased by 53.14 – 49.5 = 3.64.

Hence the answer is option B

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

Explanation:-
The irrigated area under Barley has not changed over the given period while the irrigated area under Wheat over the same period has changed by (23.1 – 22.6)/22.6 ≈ 2.21%. The difference between these percentage changes is approximately 2.2. So statement I is true.

The ratio of the irrigated areas under Cereals, Pulses and Sugarcane in 2002-03 is approximately 47 : 3 : 4. So statement II is false. The area under Foodgrains in 1998-99 was (53.6/42.3) × 100 ≈ 126.71 and in 1997-98 was (51.2/40.8) × 100 ≈ 125.49. So the growth in the area under Foodgrians is (126.71 – 125.49)/125.49 ≈ 0.97%. The area under Cereals in 1998-99 was (51.6 / 50.4) × 100 ≈ 102.38 and in 1997-98 was (48.5/47.7) × 100 ≈ 101.68. So the growth in the area under Cereals is (102.38 – 101.68) / 101.68 ≈ 0.69%. So the percent growth in the area under Foodgrains is (0.97 / 0.69) × 100 ≈ 140%. Thus statement III is true.

Hence the answer is option C

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

Explanation:-
From the given information, we know that Rutika must take the test in the slot immediately before Tanvi. The earliest that the two of them can take the test would be 12 noon and 1 p.m. respectively. So, Maya can take the test in any time slot from 2 p.m. onwards. Hence option 1.

***QNo:- 54 ,Correct Answer:-** 2*

Explanation:-
Based on the answer choices, we can fix the slots as follows:

	12 noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.
Option 1	Soumil	Arjun	Maya	---	---	---	---
Option 2	Hershal	Arjun	Rutika	Tanvi	Pranav	Maya	Soumil
Option 3	Hershal	Rutika	Tanvi	Arjun / Pranav	Maya / Soumil	Soumil / Maya	Pranav / Arjun
Option 4	Rutika	Tanvi	Soumil	Arjun / Pranav	Maya / Hershal	Hershal / Maya	Pranav / Arjun

Option 1 is ruled out as Maya cannot take the test before Rutika.
The other 3 options satisfy all conditions given in the original information. However, in options 3 and 4, the slots taken by Hershal and Soumil are not as far apart as possible.
Hence option 2.

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

Explanation:-
Rutika must take the test in a time slot immediately before Tanvi and Maya must take the test after Rutika. If we assume that the three of them take tests in consecutive time slots, the last such set of three consecutive time slots is 4 p.m., 5 p.m. and 6 p.m. Since the last that Rutika can take the test is at 4 p.m., we know that she cannot take the test after 4 p.m.

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

Explanation:-
We know that Rutika and Tanvi take the test in consecutive time slots.
Consider option 1. If Arjun takes the test at 12 noon, then Pranav must take the test at 3 p.m. Now, Rutika and Tanvi can take the test at 1 p.m. and 2 p.m. respectively or at 4 p.m. and 5 p.m. respectively. So option 1 is ruled out.
Consider option 2. If Arjun takes the test at 2 p.m., then Pranav must take the test at 5 p.m. Now, Rutika and Tanvi can take the test at 12 noon and 1 p.m. respectively or at 3 p.m. and 4 p.m. respectively. So option 2 is ruled out.
Consider option 3. If Arjun takes the test at 3 p.m., then Pranav can take the test at 12 noon or 6 p.m. If Pranav takes the test at 12 noon, then Rutika and Tanvi can take the test at 1 p.m. and 2 p.m. respectively or at 4 p.m. and 5 p.m. respectively. If Pranav takes the test at 6 p.m., then Rutika and Tanvi can take the test at 12 noon and 1 p.m. respectively. So option 3 is ruled out.
Consider option 4. If Arjun takes the test at 4 p.m, then Pranav must take the test at 1 p.m. Now, Rutika and Tanvi can take the test

only at 2 p.m. and 3 p.m. respectively. So option 4 is the answer.

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

Explanation:-
The drive on Laxmi Road cannot be conducted on Friday as the drive on Laxmi Road must be conducted on a day before the drive on MG Road, which must be conducted on the day immediately before the drive on SB Road.

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

Explanation:-
Option 1 is incorrect as the drive on Laxmi Road, must be conducted earlier than the drive on MG Road.
Option 2 is incorrect as the drive on SB Road must be conducted on the day immediately after the day on which the drive is conducted on MG Road.
Option 3 satisfies all the given conditions.
Option 4 is incorrect as if the drive is conducted on JM Road on Wednesday, then the drive on MG Road must be conducted on Friday.

QNo:- 59 ,Correct Answer:- *5*

Explanation:-
If B and C are running in lanes 1 and 2, then D could run in lane 4, in which case A can run in lane 5.

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

Explanation:-
Option 1 is incorrect as A is not running in a lane closer to the outside of the track than the lane in which D is running.
Option 2 is incorrect as E is not running in lane 3.
Option 3 is incorrect as B and C are not running in consecutively numbered lanes.
Option 4 satisfies all the given conditions and is therefore the correct answer.

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

Explanation:-
Machine M_1 works for 8 hours per day. Taking 8 hours on Monday and 4 hours on Wednesday, M_1 produces one part of product A. To produce a part of product B, M_1 utilizes 4 hours on Wednesday and 3 hours on Friday. To produce a part of product D, M_1 utilizes 5 hours on Friday and on Saturday it manufactures one part of product E. Similarly, for all other machines we can have the following distribution table.

	Mon	**Tue**	**Wed**
M1	8-A	-	4-A, 4-B
M2	-	7-B	7-B
M3	10-A	-	-
M4	8-A	5-A, 3-D	8-D
M5	-	8-B	4-B, 4-C
M6	6-A	2-A, 4-C	-

	Thur	**Fri**	**Sat**
M1	-	3-B,	8-E

		5-D	
M2	1-B, 5-C, 1-D	7-D	-
M3	2-A, 8-B	2-B, 8-C	5-C, 5-E
M4	8-E	-	-
M5	-	6-C, 2-E	8-E
M6	5-C, 1-D	-	4-D, 2-E

Here, the numbers indicate hours required to manufacture a part of a product indicated by the letters.
Manufacturing of parts for product B starts from Tuesday and ends on Friday.
Thus, 4 days are required to complete the manufacturing of a set of product B.

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

Explanation:-
Machine M_1 works for 8 hours per day. Taking 8 hours on Monday and 4 hours on Wednesday, M_1 produces one part of product A. To produce a part of product B, M_1 utilizes 4 hours on Wednesday and 3 hours on Friday. To produce a part of product D, M_1 utilizes 5 hours on Friday and on Saturday it manufactures one part of product E. Similarly, for all other machines we can have the following distribution table.

	Mon	**Tue**	**Wed**
M1	8-A	-	4-A, 4-B
M2	-	7-B	7-B
M3	10-A	-	-
M4	8-A	5-A, 3-D	8-D
M5	-	8-B	4-B, 4-C
M6	6-A	2-A, 4-C	-

	Thur	**Fri**	**Sat**
M1	-	3-B, 5-D	8-E
M2	1-B, 5-C, 1-D	7-D	-
M3	2-A, 8-B	2-B, 8-C	5-C, 5-E
M4	8-E	-	-
M5	-	6-C, 2-E	8-E
M6	5-C, 1-D	-	4-D, 2-E

Here, the numbers indicate hours required to manufacture a part of a product indicated by the letters.

To manufacture two sets of product A, two weeks are required and to manufacture the third set, four days i.e., from Monday to Thursday are required. Thus, 4 + 4 + 4 i.e., 12 days are required.

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

Explanation:-
Machine M_1 works for 8 hours per day. Taking 8 hours on Monday and 4 hours on Wednesday, M_1 produces one part of product A. To produce a part of product B, M_1 utilizes 4 hours on Wednesday and 3 hours on Friday. To produce a part of product D, M_1 utilizes 5 hours on Friday and on Saturday it manufactures one part of product E. Similarly, for all other machines we can have the following distribution table.

	Mon	**Tue**	**Wed**
M1	8-A	-	4-A, 4-B
M2	-	7-B	7-B
M3	10-A	-	-
M4	8-A	5-A, 3-D	8-D
M5	-	8-B	4-B, 4-C
M6	6-A	2-A, 4-C	-

	Thur	**Fri**	**Sat**
M1	-	3-B, 5-D	8-E
M2	1-B, 5-C, 1-D	7-D	-
M3	2-A, 8-B	2-B, 8-C	5-C, 5-E
M4	8-E	-	-
M5	-	6-C, 2-E	8-E
M6	5-C, 1-D	-	4-D, 2-E

Here, the numbers indicate hours required to manufacture a part of a product indicated by the letters.
Product B requires 4 days i.e., from Tuesday to Friday.
Product C requires 5 days i.e., from Tuesday to Saturday.
Product D requires 5 days i.e., from Tuesday to Saturday.
Product E requires 3 days i.e., from Thursday to Saturday.

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

Explanation:-
The number of Santro and Indica cars sold in 2005 were 20% and 25% of the total number of cars sold. This is a difference of 5%. Since the 120,000 Santro cars are 20%, the difference of 5% is (120,000 × 5/20) = 30000.

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

Explanation:-
Suppose 100 cars are sold each year. Then the number of Zen cars sold is 40 + 40 + 50 + 40 + 60 = 230.
The required percentage is 230/500 = 46%.

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

Explanation:-
The cost of an Indica in 2003 is Rs. 320,000.
The cost of an Indica in 2004 is 1.05 × 320,000 = Rs. 336,000 ≈ Rs. 335,000.
The cost of an Indica in 2005 is 1.05 × 335,000 = Rs. 351,750 ≈ Rs. 350,000.
The cost of an Indica in 2006 is 1.06 × 350,000 = Rs. 371,000 ≈ Rs. 370,000.
The cost of an Indica in 2007 is 1.08 × 370,000 = Rs. 399,600 ≈ Rs. 400,000.
The required difference is Rs. 80,000.

QNo:- 67 ,Correct Answer:- *5*

Explanation:-
By multiplying the equations

$x + 1/z = 5, y + 1/x = 29, z + 1/y = m/n$

we get
$(x + 1/z)(y + 1/x)(z + 1/y) = 5 \times 29 \times m/n = 145m/n$
$xyz + x + y + z + 1/x + 1/y + 1/z + 1/xyz = 145m/n$ *On the left side, we can substitute*
$xyz = 1, 1/y = (m/n) - z, 1/z = 5 - x, 1/x = 29 - y$
to obtain
$1 + x + y + z + (29 - y) + (m/n) - z + (5 - x) + 1 = 145m/n,$
$36 + m/n = 145m/n,$
$144\ m/n = 36$
$m/n = 1/4$
so that $m = 1$ *and* $n = 4$. *Thus,* $m + n = 1 + 4 = 5$

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

Explanation:-
Suppose the quantity of paint used to paint each wall is X litres. Let us assume that the pink colour is obtained by mixing R litres of red paint with W litres of white paint, so that X = R + W. The quantity of blue paint left over is 130 – X, the quantity of red paint left over is 164 – X – R and the quantity of white paint left over is 188 – X – W. Since, after painting the walls, Birju is left with equal quantities of each paint, we get 130 – X = 164 – X – R = 188 – X – W.
If we consider 130 – X = 164 – X – R, we get R = 34 litres. If we consider 130 – X = 188 – X – W, we get W = 58 litres. So, X = 34 + 58 = 92 litres. So, the quantity of blue paint left over is 130 – 92 = 38 litres, the quantity of red paint left over is 164 – 92 – 34 = 38 litres and the quantity of white paint left over is 188 – 92 – 58 = 38 litres. Thus the total quantity of paint left over is 38 × 3 = 114 litres.

QNo:- 69 ,Correct Answer:- *450*

Explanation:-
Let x denote the time (in hours) required for one worker to produce one widget, and let y denote the time (in hours) required for one worker to produce one wedge. We wish to write an equation, in terms of x and y, for the amount of time required (given as one hour) for 100 workers to produce 300 widgets and 200 wedges. Note that 100 workers can produce one widget in x/100 hours.
Thus, to produce 300 widgets requires 300 (x/100) = 3x hours. Similarly, 200 wedges requires 200(y/100) = 2y hours. The total time required to produce both is 3x + 2y hours.
Thus, we are given that 3x + 2y = 1:
Similarly, for two hours, the given information tells us that
$240(x/60) + 300(y/60) = 4x + 5y = 2:$
Solving $3x + 2y = 1$ *and* $4x + 5y = 2$, *we get* $x = 1/7$ *and* $y = 2/7$.
Now, in three hours, we have $150(x/50) + m(y/50) = 3$, *which on solving yields* $m = 450$.

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

Explanation:-

In Δ ABC, since E and F are mid-points of AC and AB respectively, we know that EF = ½ BC. So, the areas of Δ AFE and Δ ABC are in ratio 1 : 4. Since AC is the diagonal of the square, the area of Δ ABC = ½ area of □ ABCD, i.e., area Δ ABC = ½ a^2. Since area Δ AFE = ¼ area ΔABC, we get area Δ AFE = $^1/_8$ a^2.

Aliter:

Since E and F are middle points. So, EF is parallel to BC.

And EF = 1/2(BC)

So, AF =EF = a/2

Area = $\frac{1}{2}\times\frac{a}{2}\times\frac{a}{2}=\frac{a^2}{8}$

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

Explanation:-

Let initially she plays 2n matches and wins n matches out of it.

According to condition 2,

(n + 3)/ (2n + 4) > 0.503

Solving we get the greatest integer value of n = 164

QNo:- 72 ,Correct Answer:- *8*

Explanation:-

To form a license plate that meets the constraints in the problem, we must use five of the symbols A, I, M, E, 2, 0, 0, and 7. Note that the double occurrence of '0' implies that it is allowed to occur up to two times in a license plate. Let us delineate (mutually exclusive) cases according to how many 0's occur in the license plate.

Case 1: Two zeros occur in a license plate. There are $^5C_2$ *= 10 ways to choose two of the five positions in the license plate in which to place the zeros. Three open spots remain.*

The first can be filled with any of six symbols (A, I, M, E, 2, or 7), the second can be filled with any of five remaining symbols, and the third can be filled with any of four remaining symbols.

So, we have 10 × 6 × 5 × 4 = 1200 license plates in this case.

Case 2: At most one zero occurs in a license plate. There are five slots to be filled with distinct symbols from among A, I, M, E, 2, 0, and 7. The first slot can be filled with any of seven symbols, the second slot can be filled with any of six remaining symbols, and so on.

So, there are 7 × 6 × 5 × 4 × 3 = 2520 license plates in this case.

So, the number of license plates obtained in each of these two cases gives a total of N = 1200 + 2520 = 3720 license plates. Therefore, M = N /10 = 372. Now, the units digit of M^{2007} *is the same as the units digit of* 2^{2007}*. We know that powers of 2 will end in a cycle of 2, 4, 8 and 6. Since 2007/4 leaves remainder 3, we can conclude that* M^{2007} *ends in 8.*

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

Explanation:-

f(2) = |5 – 3(2)| = |–1| = 1.

f(–1) = |5 – 3(–1)| = |8| = 8.

f(1) = |5 – 3(1)| = |2| = 2.

f(4/3) = |5 – 3(4/3)| = |1| = 1.

f(7/3) = |5 – 3(7/3)| = |–2| = 2.

Thus, f(2) = f(4/3).

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

Explanation:-

Since ΔABC is any triangle in general, the option that is true must also be true for a 30°-60°-90° triangle. Suppose ΔABC is a 30°-60°-90° triangle with ∠B = 30°, ∠A = 60° and ∠C = 90°. Then, AC = b = 1, BC = a = $\sqrt{3}$ and AB = c = 2. Substituting these values, we get $a^2 = b \times (b + c)$, i.e., $(\sqrt{3})^2 = 1 \times (1 + 2)$. Hence option 3 is true

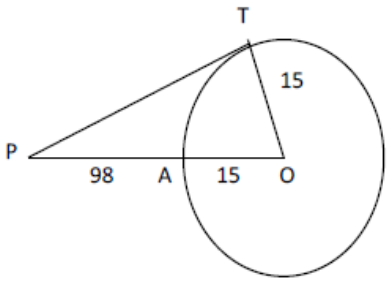
QNo:- 75 ,Correct Answer:- *D*

Explanation:-

sum1 = a + a r + a r^2 = 42: the sum of the three terms given, r is the common ratio.
sum2 = a^2 + a^2r^2 + a^2r^4 = 1092: the sum of the squares of the three terms given .
sum1 = a + ar + ar^2 = a(r^3 - 1) / (r - 1) = 42 : apply formula for a finite sum of geometric series.
sum2 = a^2 + a^2r^2 + ar^4 = a^2(r^6 - 1) / (r^2 - 1) = 1092 : the sum of squares is a also a sum of geometric series.
sum2/$sum1^2$ = 1092 / 42^2 = [a^2(r^6 - 1)/(r^2 - 1)] / [a^2(r^3 - 1)^2 / (r - 1)^2]
=> (r^2 - r + 1) / (r^2 + r + 1) = 1092 / 42^2
r = 4 , r = 1/4 : solve for r
a = 2 : substitute r = 4 and solve for a
a = 32 : substitute r = 1/4 and solve for a
a = 2 , ar = 8 , ar^2 = 32 : find the three terms for r = 4
a = 32 , ar = 8 , ar^2 = 2 : find the three terms for r = 1/4
Thus the square of the sum of the three terms is (32 + 8 + 2)^2 = 1764.
Aliter:
Read the first and last line of the question.
Sum of first three terms is given to be 42.
So, its square is $(42)^2$
i.e. 1764

QNo:- 76 ,Correct Answer:- *112*

Explanation:-



Suppose point P is 98 units away from point A on the circumference of the circle with centre O. Extending PA to meet the centre of the circle, we get PO = 113. If PT is the tangent to the circle, then PO^2 = PT^2 + OT^2. So, PT^2 = 113^2 – 15^2 = 12769 – 225 = 12544 = 112^2. Thus, PT = 112 units.

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

Explanation:-

Suppose that Biplab attempts k points on the first day (where 1 ≤ k ≤ 499) and earns x points. Then Biplab attempts 500 – k points on the second day, and suppose Biplab earns y points on the second day. Since Biplab's success ratio was less on each day than Arnab's, we must have
x/k < 160/300 = 8/15 and y / (500 – k) < 140/ 200 = 7/10
We are seeking the largest possible two-day success ratio for Biplab, which occurs when the integer x + y is as large as possible.

Now we have x + y < 8k /15 + 7(500 – k) /10 = 350 – (k /6)
Since k > 0, the largest possible integer value of x + y is 349. Thus, m = 349 and n = 500,
and we conclude that m + n = 349 + 500 = 849.

QNo:- 78 ,Correct Answer:- *49*

Explanation:-
We are interested in all odd numbers from 1 to 199. The powers of 3 can be obtained from all odd multiples of 3, i.e., from 3 × 1, 3 × 3, and so on up to 3 × 65, which is 33 values. Another 3 can be obtained from all odd powers of 9 each, i.e., one 3 each from 9 × 1, 9 × 3, and so on up to 9 × 21, which is 11 values. Another 3 can be obtained from all odd powers of 27 each, i.e., one 3 each from 27 × 1, 27 × 3 and so on up to 27 × 7, which is 4 values. Another 3 can be obtained from all odd powers of 81 each, i.e., one 3 from 81 × 1, which is 1 value. Thus, the number of times 3 appears in the product is 33 + 11 + 4 + 1 = 49. So, $3^k = 3^{49}$. Thus k = 49.
Alternate solution: 200/3 gives quotient 66, then 66/3 gives quotient 22, then 22/3 gives quotient 7 and finally 7/3 gives quotient 2. So, 3^{97} will divide 200!.
Since there are only half as many odd numbers up to 200, the power of 3 should also be approximately half. From the options, the best answer is 49.

QNo:- 79 ,Correct Answer:- *62*

Explanation:-
If we begin by ignoring the stipulation, then each tourist has two choices for a tour guide. The same "tour guide" can be repeatedly chosen by the tourists, so repetition is allowed. Furthermore, the order of arrangements matters in the sense that it matters which tourists go with each tour guide. So we have $2^6 = 64$ possible outcomes to this selection. However, two configurations violate the stipulation that each guide must take at least one tourist; namely, if all tourists happen to choose the same guide. Thus, by subtraction, we obtain the final answer: 64 - 2 = 62

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

Explanation:-
Lets the roots be a, ar, ar^2.

Now, sum of roots, $a+ar+ar^2 = -\frac{q}{p} \Rightarrow a(1+r+r^2) = -\frac{q}{p}$ ....(i)

Again $aar + ar.ar^2 + a.ar^2 = = \frac{r}{p} \Rightarrow a^2r(1+r^2+r) = \frac{r}{p}$ ....(ii)

and $a.\ ar.\ ar^2 = -\frac{s}{p} \Rightarrow a^3r^3 = -\frac{s}{p}$ ....(iii)

Dividing equation (ii) by equation (i): $ar = -\frac{r}{q}$

From equation (iii): $\left(-\frac{r}{q}\right)^3 = -\frac{s}{p} \Rightarrow pr^3 = q^3 s$

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

Explanation:-
Let us assume that each cask contains some quantity of pure alcohol and some quantity of water. The first cask contains 1.8 gallons of alcohol and 2.2 gallons of water. The second cask contains 2.4 gallons of alcohol and 2.6 gallons of water.

The third cask contains $\frac{x}{100}$ gallons of alcohol and $\frac{(100-x)}{100}$ gallons of water.

Now, $\frac{y}{z}$ gallons of liquor is moved from the third cask to the first cask.

The quantity of alcohol in the first cask is now $1.8 + \frac{x}{100} \times \frac{y}{z}$ gallons and the quantity of water in the first cask is now $2.2 + \frac{(100-x)}{100} \times \frac{y}{z}$ gallons.

Since the first cask now contains 50% alcohol, we know that $1.8 + \frac{x}{100} \times \frac{y}{z} = 2.2 + \frac{(100-x)}{100} \times \frac{y}{z}$.

The remaining $\left(1 - \frac{y}{z}\right)$ gallons in the third cask is moved to the second cask.

The quantity of alcohol in the second cask is now $2.4 + \frac{x}{100}\left(1 - \frac{y}{z}\right)$ gallons and the quantity of water in the first cask is now $2.6 + \frac{(100-x)}{100}\left(1 - \frac{y}{z}\right)$ gallons.

Since the second cask now contains 50% alcohol,

we know that $2.4 + \frac{x}{100}\left(1 - \frac{y}{z}\right) = 2.6 + \frac{(100-x)}{100}\left(1 - \frac{y}{z}\right)$.

Solving these equations, we get x = 80, y = 2 and z = 3. Thus, x + y + z = 80 + 2 + 3 = 85.

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

Explanation:-

The cost of the article sold at a 20% profit is 120/1.2 = Rs. 100. The cost of the article sold at a 20% loss is 120/0.8 = Rs. 150. The total selling price is 2 × 120 = Rs. 240 and the total cost price is 100 + 150 = Rs. 250. Thus, there is a loss of Rs. 10.

Alternate solution: Since the selling prices of the two articles are the same, we know that the overall profit or loss is 20 – 20 – 400/100 = –4%. The total selling price is Rs. 240 after incurring a loss of 4%. Thus the loss incurred must be (4 × 240)/96 = Rs. 10.

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

Explanation:-

Suppose a = 2, b = 3, c = 4, d = 5 and p = 2. Then, $(a + b + c + d)^p - a^p + b^p + c^p + d^p = (2 + 3 + 4 + 5)^2 - 2^2 + 3^2 + 4^2 + 5^2$ = 196 – 4 + 9 + 16 + 25 = 242. From the options, 242 is divisible by p = 2. But if we take a = 1, b = 2, c = 3, d = 4 and p = 5, then we get the answer to this expression as 101298. But this is not divisible by 5. So going by options, none of the given options is true definitely. So answer is 4th option.

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

Explanation:-

Let S= 1/4 + 1/8 + 2/16 + 3/32 + 5/64 + 8/128 + 13/256 + 21/512 + ...

(1 /2) S = 1/8 + 1/16 + 2/32 + 3/64 + 5/128 + 8/256 + 13/512 + 21/1024 + ...

Subtracting we get:

(1 /2) S = 1/4 + 1/16 + 1/32 + 2/64 + 3/128 + 5/256 + 8/512 + ... = 1/4 + 1/4 S

∴ S = 1

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

Explanation:-

Let the distance from her office to marriage palace be 4D km and let her original speed be S km/hr. Time taken to travel first one-fourth distance $= \frac{D}{S}$

Time taken to travel second one-fourth distance $= \frac{D}{2S}$ and so on... hence,

$\frac{D}{S}+\frac{D}{2S}+\frac{D}{3S}+\frac{D}{4S}+\frac{4D}{S} = 2\text{hr } 26\text{ min.} = 146\text{ min.} = \frac{146}{60}\text{hrs}$

$\Rightarrow D = \frac{2}{5}S$ ∴Time taken to travel distance D at 2S is $\frac{2}{5}S \div 2S = \frac{2S}{10S} = \frac{1}{5}hr = 12\text{ min.}$

QNo:- 86 ,Correct Answer:- *10*

Explanation:-

From the given information, we know that A + B = 44 and B + C = 54. Subtracting these equations, we get C – A = 54 – 44 = 10.

QNo:- 87 ,Correct Answer:- *120*

Explanation:-

Imagine Al and Bob starting at opposite ends of the escalator at the same time.
The number n of steps visible on the escalator is precisely the number of steps separating the two. We shall determine the number of steps each of them takes until they meet, and then we will sum those numbers.
In the time that Bob takes 75 steps to reach the top of the escalator, observe that Al is capable of taking 3 × 75 = 225 steps (since he moves at three times faster speed than Bob). However, Al only needed 150 steps to reach the opposite end of the escalator, which means that Al can walk down the escalator in 2/3 the time that it takes Bob to go up the escalator. Therefore, at whatever point P the two meet, if the physical distance from P to Bob's starting point is x, then the distance from P to Al's starting point is 3 x /2. Hence, the total length of the escalator is 5 x /2, which means that Al and Bob have met 2/5 of the way from Bob's starting point to Al's starting point. At this point, Bob has taken 2/5 of his steps on the escalator, while Al has taken 3/5 of his steps on the escalator. So the total number of steps taken by the two individuals is (2/5)(75) + (3 /5) (150) = 30 + 90 = 120

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

Explanation:-

$\left(\frac{x^2}{2}-\frac{2}{x}\right)^8 = \frac{1}{(2x)^8}\left(x^3-4\right)^8$

We need coefficient of x^{15} in $(x^3 – 4)^8$
General term = ${}^8C_r(-4)^{8-r}\,x^{3r}$

r = 5 ⇒ coefficient = ${}^8C_5(-4)^{+3}$

Coefficient of $x^7 = \frac{1}{2^8} \times {}^8C_5 \times (-1)^{+3} \times 2^6 = \frac{-6 \times 7 \times 8}{4 \times 6} = -14$

QNo:- 89 ,Correct Answer:- *35*

Explanation:-
On line x = 4, integer coordinates are 0,1,2, --------- 16
X = 3 → 0,1,2--------9
X = 2 → 0, 1,2,3,4
X = 1 → 0,1
X = 0 → 0
No. of lattice points = 17 + 10 + 5+ 2 + 1 = 35

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

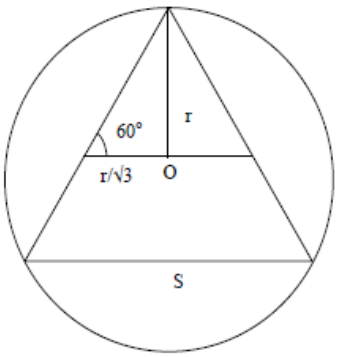
Explanation:-
Let after blast, both travel for t sec.
So 360 × t = 8 (30 + t)

⇒ 360t = 240 + 8t ⇒ t = 240/352

So total distance = 240 + (240/352 × 8) = 245 yards.
Hence answer is option C.

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

Explanation:-



Let P_1 and P_2 be perimeter of smaller and larger triangle respectively.
Let side of smaller triangle = a_1

So $h = \frac{\sqrt{3}}{2}a_1 \Rightarrow \frac{\sqrt{3}}{2}a_1 = r \Rightarrow a_1 = \frac{2r}{\sqrt{3}}$

$\Rightarrow$ Perimeter $P_1 = \frac{6r}{\sqrt{3}}$ _____(1)

Let side of larger triangle = a_2

So $r = \frac{a_2}{\sqrt{3}} \Rightarrow a_2 = r\sqrt{3} \Rightarrow$ Perimeter $P_2 = 3\sqrt{3}r$

$\Rightarrow$ required ratio $= \frac{6r}{\sqrt{3}} : 3\sqrt{3}r \Rightarrow 6 : 9 \Rightarrow 2 : 3$

Hence answer is option A.

QNo:- 92 ,Correct Answer:- *8*

Explanation:-

As a/b = b/c = c/d = 8,

$a/b = ab/b^2 = 8$.....(1)

$b/c = bc/c^2 = 8$.....(2)

$c/d = cd/d^2 = 8$.....(3)

By property, a/b = c/d = k, then (a + c) / (b + d) = k

Hence using above property in equations (1), (2) and (3) we get $(ab + bc + cd)/(b^2 + c^2 + d^2) = 8$.

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

Explanation:-

Sum of the first thirteen terms = 13 × middle term = 13 × seventh term (say a) = 13a

Sum of the first twenty five terms = 25 × middle term = 25 × thirteenth term (say b) = 25b

Therefore, sum of the next twelve terms after the first thirteen terms = 25b – 13a

Given, 13a / (25b – 13a) = 26/49

b/a = 3/2

QNo:- 94 ,Correct Answer:- *1*

Explanation:-

75/37 will give the remainder as 1.

So 75^{75} when divided by 37 will also give the same remainder 1.

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

Explanation:-

A month will be most vulnerable to attack if it has the least number of relatively prime dates. So out of the options we find that December will be the most vulnerable as all the dates which are multiples of 2 or 3 or both will not be relatively prime with it. The best answer is option 3.

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

Explanation:-

Cost price = Rs. 84

Firstly there is an increase of 50% & then a decrease of 25%.

Final price = 84x1.5x0.75 = Rs. 94.50

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

Explanation:-

Interest on a sum of money is $\frac{1}{16}$ of the sum

$SI = \frac{p}{16}$

$t = r$

$\Rightarrow SI = \frac{p \times r \times t}{100}$

$\Rightarrow \frac{p}{16} = \frac{p \times r \times t}{100}$

$\Rightarrow r^2 = \frac{100}{16}$

$\Rightarrow r = \frac{10}{4} = \frac{5}{2} = 2\frac{1}{2}$

QNo:- 98 ,Correct Answer:- *4*

Explanation:-

Since ∆APQ ≈ ∆ARS ≈ ∆ABC, we know that the ratio of heights and radii will be the same as that of the heights and bases of the triangles.We can calculate the ratio of areas of ∆APQ : ∆ARS : ∆ABC as 1 : 3 : 6.
So the ratio of dimensions will be 1 : √3 : √ 6.
From this, the ratio of volumes of the corresponding cones will be 1 : 3√3 : 6√6.
The volume of the frustum with height TU will be 3√3 – 1 and the volume of the frustum with height UD will be 6√6 - 3√3 = 3√3(2√2 – 1).
Thus the required ratio is 1 : (3√3 – 1) : 3√3(2√2 – 1).

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

Explanation:-

Let the weight of gold and silver in the first biscuit be x and (50 – x) gm respectively. Let 'y' be the cost of 10 gm silver.

	Gold	Silver
Weight in gm	*x*	50 - *x*
Cost per 10 gm	31500	*y*
Total cost of the biscuit	(*x*/10) × 31500 + [(50 – *x*)/10] × *y* = 73962 .....(1)	
Total cost when weights are interchanged	(50 – *x*)/10 × 31500 + *xy*/10 = 86338 .....(2)	

Adding eqns (1) and (2) we get 50y + 1575000 = 1603000
So y = 560, which is the price of 10 gm silver, hence price of 1 kg silver is Rs 56000.
Substituting the value of y in eqn (1), we get, x = 23 gm, thus 50 – x = 27 gm which is the weight of gold in the second biscuit.
Hence, option 3.

QNo:- 100 ,Correct Answer:- *7*

Explanation:-

Solution: *Let the number of cans that the milk merchant purchases be 'c'.*
So total quantity of milk = 23c litres.
If he sells milk for Rs. 13 per litre, he gains Rs. 333, CP = SP – gain
=> CP = 23c × 13 – 333 .....(1)

Also, if he sells milk at Rs. 10 per litre, he loses Rs. 150, CP = SP + loss
=> CP = 23c × 10 + 150 ....(2).
Equating equations (1) & (2), we get, 23c × 13 – 333 = 23c × 10 + 150
=> c = 7.
Thus, the number of cans purchased is 7.