

Mock Test for CAT

General Instructions

1. **Total Duration:** 106 minutes.
 2. **Section-wise Timing:** Each section has a duration of 106 minutes. The clock starts when you begin answering a section and stops after 106 minutes. The section will auto-submit if not manually submitted.
 3. **Leaving the Examination Hall:** Candidates can leave only after completing the test.
 4. **Question Types:** Some questions are multiple-choice (MCQ), while others are non-MCQ.
 5. **Clock and Timer:** The timer is displayed on the top right corner of the screen. The examination ends when the timer reaches zero.
 6. **Rough Work:** Use the provided rough sheets for calculations. Submit them at the end of the examination.
 7. **Calculator:** No external calculators are allowed. An on-screen calculator is provided.
 8. **Question Palette:** Symbols indicate the status of each question:
 - **A:** Not visited.
 - **B:** Visited but not answered.
 - **C:** Answered.
 - **D:** Marked for review (not answered).
 - **E:** Answered and marked for review.
-

Navigating and Answering Questions

1. **To Answer a Question:**
 - Click on the question number in the Question Palette to go directly to that question.
 - For MCQ questions, select an answer by clicking the radio button (○) before the options.
 - Click **Save & Next** to save your answer and move to the next question.
 - Click **Mark for Review & Next** to save your answer, mark it for review, and move to the next question.
2. **Changing Responses:**
 - To deselect an answer, click the bubble again or use the **Clear Response** button.
 - To change your answer, click on another option and save it by clicking **Save & Next**.
3. **Sections:**
 - There are three sections:
 1. **Verbal Ability and Reading Comprehension (VARC)**
 2. **Data Interpretation and Logical Reasoning (DILR)**
 3. **Quantitative Ability**
 - You can move to the next section only after completing 106 minutes in the current section.

Test Details

- **Duration:** 106 minutes
- **Maximum Marks:** 0
- **Number of Questions:** 58
- **Marking Scheme:**
 - Each correct answer: 0 marks
 - Unattempted questions: 0 marks
 - Wrong answers: -1 mark (negative marking applies only to MCQ questions)

Declaration by the Candidate

"I have read and understood all the instructions. I confirm that all computer hardware is in proper working condition. I declare that I am not carrying any prohibited gadgets or materials. I agree to the Non-Disclosure Agreement and understand that violating these instructions may result in disciplinary action."

Section 1: Verbal Ability and Reading Comprehension (VARC)

Passage 1: Historiography is the study of how history develops truth and knowledge over time. Structures of truth and knowledge are defined as historical methodology. A historiographer can identify the philosophical position of written historical material and determine what epistemology (theory of knowledge with regard to its methods, validity, and scope, and the distinction between justified belief and opinion) is built into the narrative position. Though each structure develops its own epistemology, without a shared notion of collective human experience, there would be no collective history to reflect upon.

Wilhelm Friedrich Hegel introduces a foundational structure for approaching history with "Original History"; a "re-presentation" of the events and experiences that an individual witnesses. It is a record of what has happened, similar to a journal entry. This does not include the ballads or legends of a culture, which is a separate category. The original historian strives to record the exact events witnessed with "life like descriptions".

Hegel also introduces Reflective History, which "transcends the present". The historian looks at the collective history of a people that is recorded. Reflective history is not an exact representation of what happened. It is imbued with the power of the individual's reflective thought. The past can be shaped through the individual's present narrative and becomes "didactic".

The history of ideas is the system of reflective history that studies the Arts, Law, and Religion. These are not observable events, but creations or manifestations of ideas. The Idea is the universal substance that history flows through; this is what connects people to a Universal History. The will of the Spirit generates this activity, not the will of man; because the Idea, the

substance of thinking, comes from and is made by the Spirit, not the material activities of man. Marx states that the conditions for historical study should be verified by experience, and this makes it true. Ideas are not real. They do not exist in the world, and cannot be proven with evidence, therefore irrelevant to study. History is a relational observation of the empirical observable world. Man is therefore defined by how he relates to his natural circumstances. One notable attempt to bridge Hegel's Idealism with Marx's Materialism, was by Wilhelm Dilthey. He poetically preserved and reawakened the tradition of philosophical idealism that Marx so passionately worked to dismantle.

Wilhelm Dilthey presents an "historical being", which is constructed by the historical process. Human nature is shaped over time by the interactions of language, place and events. The present moment is a culmination of these interactions. Individual inquiry is affected by relative time and place. Their position is a causality of the conditions that came before. Therefore the individual is "historical." The conditions and framework that shape the present moment derive from the "connections in the mind affected world". The mind generates and produces the framework to view the world, and then observes the framework that has been created. This line of reasoning is Dilthey's foundation for knowledge, which has its origins in Hegel's Reflective History. Whether Marx, Hegel, or Dilthey were "right" or "wrong" is inconsequential. Each individual, through the process of historical contemplation, have outlived their own time and affected the outcome and methodology of history for over two centuries.

Question 1: A historiographer may determine all of the following by analysing an ancient written text, EXCEPT:

- The criteria used to establish the reliability of information given in the text.
- The parameters for the qualitative analysis of a creative piece of that time.
- The extent of topics, subjects, or themes covered in the written work.
- The distinction between fairly credible and speculative interpretations.

Question 2: All of the following constitute a point of difference between "Original History" and "Reflective History" EXCEPT that:

- Original History is concerned with an objective view of events, while Reflective History is concerned with a subjective view.
- Original History includes cultural lores dedicated to historic figures, while Reflective History does not.
- Reflective History may include exaggerated versions of events, while Original History does not.
- Reflective History is meant to be instructional in nature, while that may not be the case for Original History.

Question 3: With which of the following statements about the study of history would the followers of Marx agree?

- The conditions for historical study are validated by ideas.
- Only that which may be observed is true and that which may not be is not.
- The history of ideas is conceived by a union of both the human and the divine.
- An idea with a physical manifestation may hold the key to understanding history.

Question 4: On the basis of the passage, which one of the following views can be inferred to be closest to that of Dilthey?

- Individuals with similar mental frameworks have similar perceptions of the same event.
 - An event is interpreted by the mind independent of the conditions that caused the event.
 - The framework that the mind creates based on the past is subject to observation in the present.
 - An individual's present position is the culmination of the conditions of causality that he anticipates.
-

Passage 2:

The following speech was delivered by Albert Einstein, the great mathematical physicist of all times, on February 12, 1950.

I am grateful to you for the opportunity to express my conviction in this most important political question.

The idea of achieving security through national armament is, at the present state of military technique, a disastrous illusion. On the part of the United States this illusion has been particularly fostered by the fact that this country succeeded first in producing an atomic bomb. The belief seemed to prevail that in the end it were possible to achieve decisive military superiority. In this way, any potential opponent would be intimidated, and security, so ardently desired by all of us, would be brought to us and all humanity. The maxim which we have been following during these last five years has been, in short, security through superior military power, whatever the cost.

The armament race between the USA and the USSR, originally supposed to be a preventive measure, assumes hysterical character. On both sides, the means to mass destruction are perfected with feverish haste - behind the respective walls of secrecy. The H-bomb appears on the public horizon as a probably attainable goal.

If successful, radioactive poisoning of the atmosphere and hence annihilation of any life on earth has been brought within the range of technical possibilities. The ghostlike character of this development lies in its apparently compulsory trend. Every step appears as the unavoidable consequence of the preceding one. In the end, there beckons more and more clearly general annihilation.

Is there any way out of this impasse created by man himself? All of us, and particularly those who are responsible for the attitude of the US and the USSR, should realise that we may have vanquished an external enemy, but have been incapable of getting rid of the mentality created by the war.

It is impossible to achieve peace as long as every single action is taken with a possible future conflict in view. The leading point of view of all political action should therefore be: What can we do to bring about a peaceful co-existence and even loyal co-operation of the nations?

The first problem is to do away with mutual fear and distrust. Solemn renunciation of violence (not only with respect to means of mass destruction) is undoubtedly necessary.

Such renunciation, however, can only be effective if at the same time a supra national judicial and executive body is set up empowered to decide questions of immediate concern to the security of the nations. Even a declaration of the nations to collaborate loyally in the realisation of such a "restricted world government" would considerably reduce the imminent danger of war. In the

last analysis, every kind of peaceful co-operation among men is primarily based on mutual trust and only secondly on institutions such as courts of justice and police. This holds for nations as well as individuals. And the basis of trust is loyal give and take.

Question 5: On the basis of the information given in the passage, it can be inferred that Einstein speaks of which other enemy that he considers invincible in the aftermath of a war?

- The inevitable possibility of a reigning military power.
- The imminent belief of repeated confrontation thwarting peace.
- The notion of a never receding widespread armament race.
- The belief of intimidation of any potential opponent.

Question 6: What does Einstein refer to as an 'impasse' in the line, 'Is there any way out of this impasse created by man himself?'

- The promise of security to humanity portending destruction.
- The situation when a friend in peace becomes a foe in war.
- Friendship that was promoted by peace translating into rivalry over time.
- The impermanence of peace brought about by intimidation.

Question 7: According to Einstein, the ghostlike character of the arms race is an outcome of an attitude of nations that can be best captured as below:

- If you have it, then I must have it.
- If you don't have it, I still must have it.
- If you have it, I may have it.
- If you don't have it, I need not have it.

Question 8: The relationship depicted in the passage between 'hysterical' and 'feverish' can be said to be most dissimilar to that between:

- Imminent and compulsory.
- Vanquish and annihilate.
- Renunciation and fostering.
- Collaborate and co-operate.

Passage 3:

Direction: The passage below is accompanied by a set of questions. Choose the best answer to each question.

Capitalism stands exposed as a social system that has brought mankind immense calamities. Exploitation of millions upon millions of working people by a handful of financial and industrial magnates; colonialism, ruthlessly oppressing and decimating the population of the colonies; two World Wars, which took tens of millions of human lives - such is the face of capitalism as it stands in the dock of history, which explains the tremendous interest we find all over the globe in scientific socialist theory.

Lenin's writings give readers the opportunity to find out about the main propositions of scientific socialism and to understand the transition from pre-Marxian unscientific utopian socialist views to the science worked out by Marx, whose conclusions are backed up by profound and comprehensive theoretical analysis of social relations and have been borne out by the whole course of history.

What then is socialism? The term was first used by the French utopian socialist Pierre Leroux in 1833. Socialism is a society based on social property in the means of production, without antagonistic classes or exploitation. Visions of such a society had tantalised the minds of men long before Leroux wrote about it, and were a reflection of the passionate protest of the oppressed and exploited masses against their intolerable condition.

Humanity's best minds - Thomas Moore in the 16th century, Tommaso Campanella in the 17th century, Henri de Saint-Simon and Charles Fourier, Robert Owen and Alexander Herzen and Nikolai Chernyshevsky in the 19th century - proclaimed the need to restructure society along socialist lines. Many of their projections are naive and unacceptable in the light of our own day, but they have also made some brilliant predictions.

The weakest side of these utopian socialist doctrines was how to go about realising this social ideal and whether it was at all possible. There the utopian socialists proved to be quite helpless. They held that all the defects of capitalism sprang from private property, and they were quite right. But they had no answer as to how private property came to be established in human society, or how it was to be eliminated. They confined themselves to spreading socialist ideas, appealing to the powers that be, and so on. The main flaw of the utopian socialism was the inability to find the way to socialism and failure to realise that the struggle for socialism must rest on a definite social force. "Utopian socialism", said Lenin, "criticised capitalist society. It had visions of a better order and endeavoured to convince the rich of the immorality of exploitation. But utopian socialism could not indicate the real solution".

Where was it to be found? There was only one answer: the forces and means of transforming society were to be sought in society itself. But this required an understanding of the laws which govern society, in general, and capitalist society in particular.

Question 9: Each of the following can be considered the view of the author of this passage EXCEPT:

- The forces and means of transforming society have to be found in society itself.
- Utopian socialism tried to convince the rich about the immorality of exploitation.
- Utopian socialists, despite their best intents, failed to formulate valid social ideals.
- Capitalism, as a social system, failed as it brought immense calamities to mankind.

Question 10: According to the passage, where did the real solution of the problem lie that utopian socialism could not indicate?

- The real solution lay in the capitalist society.
- The real solution was to be found in Science.
- Since capitalist society was involved, the solution lay in the distribution of private property.
- Since the problem lay in the society, the solution also lay in the society.

Question 11: According to the passage, pre-Marxian sociology was considered unscientific because:

- It was not backed up by theoretical analysis of social relations.
- It lacked the scientific temperament of Marx and subsequently of Lenin.
- It was much like the utopian socialism that did not relate to the social needs.
- It sprang from the protests of the oppressed and exploited against intolerable conditions.

Question 12: Which of the following would appear to be definitely out of sync with the present time?

- Capitalism as a social system has failed to address the problems of the present-day society.
- Marxism alone can deliver the present-day society from the economic morass it has set into.
- Utopian socialism is possible today if the ownership of property is withdrawn from private hands.
- It is imperative to restructure society on socialist lines and give it a shape to meet the requirements of all.

Passage 4:

Directions: The passage below is accompanied by a set of questions. Choose the best answer to each question.

The young scientist in India is an endangered species. The threat comes from the predatory habits of a more evolved species that is the senior scientist. An Indian university teacher in a letter to the international science journal *Nature* wrote plaintively: "Thesis supervisors take undue credit for the work of their protégés". A young scientist needs the goodwill and support of the scientist-in-power at every step: for completion and continuation of his work, for participation in national and international meetings and research projects, for recognition and reward and for promotion. This support is available but at a price. The price often is the sharing of credit. A worthwhile research paper or a project originating from a humble scientist would often end up with the scientist-in-power as the principal author or investigator.

The power of the senior scientist over his junior stems from the fact that science is the only profession in the world which is self-assessing. Unlike in the bureaucracy or the military where the top authority vests with non-professionals, a scientist's work can be overseen and evaluated only by fellow scientists.

Fortunately for the scientists, support for science is a badge of honour for nations aspiring to modernity. That is why the government which normally would not pay the piper unless it can call the tune, happily makes an exception in the case of science. Society values continuity, stability and security, and turns to the past for guidance and support. Science, on the other hand, aspires to instability. It aims at creating something that did not exist before. It seeks a break with the past with an eye on the future.

It is an irony that in today's world, feudalism can be sustained only in the administration of a modern scientific research centre. One must, however, not be unfair to the feudal lords of

yesteryears whose conduct had the sanction of the times. Neo-feudalism is pernicious because it is anachronistic; it can be sustained only by a subversion of the system in the hands of the people who are entrusted with the task of upholding it.

If we define professionalism as the realisation that an institution ranks higher than an individual and that the collective goal is more important than individual ego, it must be admitted that we are unprofessional people. It is wrong in principle to give any individual a larger-than-the-institution image. This philosophy becomes all the more debilitating, because recently there has been an alarming decline in the quality of leadership in science as in other walks of life. It is relatively speaking an easy matter to evaluate a leader. His commitment can be judged by asking whether he is giving to the system or taking from it. The calibre of a leader can be gauged from the calibre of the people willing to play second fiddle to him.

Under these circumstances, if a chief executive is to be projected as the master of an institution rather than its servant, this can be done only by degrading the institution. It will be like a cinema hall whose facade remains the same, but the posters outside and the picture inside go on changing.

Question 13: The author calls 'neo-feudalism' pernicious because:

- It is not only not in sync with the times today but is also fraught with the risk of ruining the system itself.
- Feudal lords or zamindars only exploited bonded labour while a scientist corrupts the spirit of scientific research.
- Modern scientists who shoulder the task of upholding the spirit of scientific inquiry take undue credit for their protégé's works.
- Neo-feudalism extant in modern times threatens the subject of science that has the potential to create.

Section 2: Data Interpretation and Logical Reasoning (DILR)

Question 14:

Directions: The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer.

1. England and Australia, with robust domestic structures, leave it to their players to find the balance between lucrative club contracts and national duty.
 2. Cooling off makes sense in sensitive areas such as the military or government to prevent conflicts of interest, but not in cricket.
 3. It's a realistic approach as the peak earning potential for a cricketer is limited to a few years and offers from mushrooming T20 leagues are getting harder to ignore.
 4. Media reports indicate that a section of BCCI even wants to subject retired players to a cooling-off phase before they look for overseas opportunities.
-

Question 15:

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

1. Actuaries can work in any environment that involves managing long-term liability, as the very business of life insurance is investing funds for the long term.
 2. The new areas include general insurance and other businesses in the financial sector that involve putting a current value on long-term liabilities.
 3. Global consolidation among insurance companies is reducing opportunities for actuaries.
 4. Actuaries are hence looking for pastures outside the realm of life insurance.
-

Question 16:

Directions: The passage given below is followed by four alternative summaries. Choose the option that best captures the essence of the passage.

Passage: Socrates equated knowledge with virtue, which ultimately leads to ethical conduct. He believed that the only life worth living was one that was rigorously examined. He looked for principles and actions that were worth living by, creating an ethical base upon which decisions should be made. Socrates firmly believed that knowledge and understanding of virtue, or 'the good,' was sufficient for someone to be happy. To him, knowledge of the good was almost akin to an enlightened state. He believed that no person could willingly choose to do something harmful or negative if they were fully aware of the value of life.

Options:

1. A well-lived life is the one that is lived by people who mean no harm.
 2. Man's life depends on the choices he makes in life based on his levels of awareness.
 3. A sense of heightened awareness holds the key to a life of satisfaction.
 4. The road to a fulfilling life was paved by principles and actions regarded good by an individual.
-

Question 17:

Directions: The passage given below is followed by four alternative summaries. Choose the option that best captures the essence of the passage.

Passage: Yes, but someone will say to me that this design of making use of oneself as a subject to write about would be excusable in great and famous men, who by their reputation had aroused some desire to know them. That is certain, I confess it, and know very well that an artisan will scarcely lift his eyes from his work to see a man of the common sort, whereas men forsake workshops and stores to see a great and prominent person arrive in a city. It will become any

other to make himself known except him who has qualities worthy of imitation and whose life and opinions may serve as a model.

Options:

1. People tend to emulate famous men and thus are eager to read about them.
 2. Great and famous men inspire others through their writings.
 3. A man of ordinary bearings holds little privilege to publicity.
 4. All famous men have a social obligation to share their life stories.
-

Question 18:

Directions: There is a sentence that is missing in the paragraph below. Look at the paragraph and decide in which blank (option 1, 2, 3, or 4) the following sentence would best fit.

Sentence: Due to the expenses associated with maintaining plant equipment, large refineries are often dependent on subsidies to continue performing a job that is critical to the functioning of a nation.

Paragraph: ___(1)__. Petroleum refineries have typically been large pieces of infrastructure, in parts because of the huge demand for oil refining and the costly infrastructure involved. Costs associated with oil refining continue to increase as there have been moves towards legislating fuel composition more heavily, including needing reduced sulphur levels in diesel and higher octane levels in gasoline in road transport fuels. ___(2)__. Crude oil prices have often suffered with great volatility, from stresses on demand to issues with supply due to factors such as accidents involving fires and damages to refineries. ___(3)__. This has, in turn, put pressure on the ability of oil refineries to be economically viable or generate profit. ___(4)__. However, in the face of market price volatility, what happens in countries that cannot necessarily afford to build and maintain such large, but essential, infrastructure and have a rich crude oil source of their own?

Question 19:

Directions: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

1. Without it, donors will not give and volunteers will not get involved.
 2. This is the only way we can create hope for the large majority of our poor.
 3. Owing to lack of transparency and accountability, many voluntary organizations suffer from serious crises of credibility.
 4. This implies accountability to the public and to the charitable intent of the donors.
 5. Public trust, it needs to be remembered, is the single most important asset of the philanthropic community.
-

Section 3: Quantitative Ability (QA)

Directions: Study the following information carefully and answer the question.

In a community-driven initiative called Learn Connect, several volunteers are dedicated to facilitating educational sessions among students in various neighbourhoods. Each day, a volunteer is assigned to visit a specific residential area and engage with students in their homes or communal spaces. Once a volunteer enters the area, he can interact with any number of students within the allocated time. However, if a student or their guardian raises a concern or complaint, the volunteer must leave the neighbourhood immediately and cannot engage with other students on that day. Students may choose to participate in educational activities or opt out. The volunteers are responsible for documenting the total number of educational sessions conducted and the number of students engaged each day. The effectiveness of a volunteer for a given day is determined by the ratio of educational sessions conducted to the number of students engaged.

Additional facts about the performances of three volunteers—Alex, Bianca, and Chris—on two particular days are given below:

- (i) Over the two days, the total number of students engaged by Alex and Chris is equal.
- (ii) Over the two days, the total numbers of educational sessions facilitated by Bianca, Alex and Chris are in the ratio 1: 2: 3.
- (iii) On both days, the ratio of the number of educational sessions conducted to the number of students engaged is 1: 3 for Alex.
- (iv) The numbers of students engaged by Bianca on Day 1 and Day 2 are in the ratio 23: 17. However, the ratios for Alex and Chris are 9: 11 and 17: 43, respectively.
- (v) Alex and Chris expanded their reach by connecting with 6 and 26 more students on the second day compared to the first day.
- (vi) Over the two days, the ratio of the number of educational sessions conducted to the number

of students engaged for Bianca lies between $\frac{1}{5}$ and $\frac{1}{3}$. However, the numbers of sessions conducted by Bianca on both days are prime numbers and on Day 2, he conducted less number of sessions.

Question 20:

Question: What is the total number of educational sessions conducted by Alex over the two days?

Question 21:

Question: What is the ratio of the number of sessions conducted by Chris on Day 1 to Day 2, if the difference between the numbers of sessions conducted on Day 1 and Day 2 is 14 and he conducted fewer sessions on Day 1 than Day 2?

$\frac{4}{23}$

$\frac{17}{23}$

$\frac{9}{11}$

$\frac{4}{11}$

Question 22:

Question: How many educational sessions did Bianca conduct on both days?

Question 23:

Question: What is the total number of educational sessions conducted by all three volunteers on Day 1?

18

24

30

Data insufficient

Question 24:

Question: Over both days, what is the total number of students engaged by all three volunteers?

Directions: Read the information given below and answer the question that follows:

Mr. Roger, a millionaire, is organising an auto event and he has to select a fleet, comprising a few motor-bikes and cars, to take with him to the auto event from among the vehicles in his garage. There are exactly twelve vehicles in his garage and each vehicle is of exactly one colour among three different colours - Red, Black and Blue. Further, among the twelve vehicles, each vehicle is of exactly one engine type among two engine types - Four-stroke engine and Two-stroke engine.

It is also known that, in the fleet that Mr. Roger selects, if there is

1. Exactly one motor-bike which is of Four-stroke engine, the maximum number of vehicles in the fleet can be 10.
2. Exactly one vehicle which is of Black colour, the maximum number of vehicles in the fleet can be 9.
3. Exactly one vehicle which is of Two-stroke engine, the maximum number of vehicles in the fleet can be 9.
4. Exactly one vehicle which is of Four-stroke engine and is of Red colour, the maximum number of vehicles in the fleet can be 10.
5. Exactly one motor-bike which is of Two-stroke engine and is of Blue colour, the maximum number of vehicles in the fleet can be 9.
6. Exactly one motor-bike which is of Red colour and exactly one car which is of Black colour, the maximum number of vehicles in the fleet can be 9.

Question 25:

Question: How many cars are there among the twelve vehicles?

Question 26:

Question: If Mr. Roger selects exactly one motor-bike which is of Two-stroke engine and exactly one car which is of Red colour, what is the maximum number of vehicles that he can select?

Question 27:

Question: Among the twelve vehicles, what is the number of cars which are of Four-stroke engine?

Question 28:

Question: Among the twelve vehicles, how many cars are Black?

Question 29:

Question: Of the available colours of vehicles in his garage, in which colour does Mr. Roger have the maximum number of vehicles?

- Red

- Black
- Blue
- Cannot be determined

Directions: Study the following information carefully and answer the question.

Ten friends, Alice, Bob, Carol, David, Emily, Frank, Grace, Henry, Isabel, and Jack, are going to Delhi from Kolkata by a flight operated by Discount Airlines. In the flight, sitting is arranged in 10 rows, numbered 1 to 10, each consisting of 6 seats, marked by letters A to F from left to right, respectively. Seats A to C are to the left of the aisle (the passage running from the front of the aircraft to the back), and seats D to F are to the right of the aisle. Seats A and F are by the windows and referred to as Window seats, C and D are by the aisle and are referred to as Aisle seats, while B and E are referred to as Middle seats. Seats marked by consecutive letters are called consecutive seats (or seats next to each other). A seat number is a combination of the row number, followed by the letter indicating the position in the row; e.g. 1A is the left window seat in the first row, while 10E is the right middle seat in the 10th row.

Discount Airlines charges extra for seats as follows:

- (a) Rows 1, 2 and 5 have extra legroom for Middle seats and cost \$500 extra.
- (b) Rows 4 and 7 cost \$150 extra for Window seats.
- (c) Rows 3 and 6 cost \$100 extra for Aisle seats.
- (d) Rows 8, 9 and 10 have no extra charges for any seat.

The following additional information is given:

- (i) the ten friends are seated in ten different rows.
- (ii) They occupy 4 Window seats, 2 Aisle seats, and 4 Middle seats.
- (iii) None of Isabel, Henry and Jack pays an extra amount and none of them sits on an Aisle seat; however, only Isabel among these three likes to sit on a Middle seat.
- (iv) None of Frank, Carol, Grace and David sits on an extra legroom seat. Also, Emily does not want to sit in the first three rows.
- (v) Grace and Frank pay the lowest extra charge. However, Grace decides to sit in the row just after the row of Emily.
- (vi) Carol sits on the right side of the aisle and David sits on the left side of the aisle. However, David does not want to sit before the row of Emily.
- (vii) Jack and Henry sit on the seat numbers containing letters A and F, respectively.
- (viii) Henry, Alice and Grace are on the same side of the aisle and the number of persons sitting on the left side of the aisle is equal to the number of persons sitting to the right side of the aisle.
- (ix) There are 2 seats containing letter A, 2 seats containing letter B, 1 seat containing letter C, 1 seat containing letter D, 2 seats containing letter E, and 2 seats containing letter F.
- (x) There is a gap of 3 rows between the seats of Grace and Jack. However, there is a gap of only 2 rows between the seats of Emily and Isabel.
- (xi) Alice and Emily are on the opposite sides of the aisle. However, there is a gap of 2 rows between them.

Question 30:

Question: In which of the following seats is Alice seated?

- Row 1, left of the aisle
 - Row 1, right of the aisle
 - Row 2, left of the aisle
 - Row 2, right of the aisle
-

Question 31:

Question: How many rows are there between the seats of Jack and Emily?

Directions: Study the given information and answer the following question.

On a particular day, exactly twelve aircraft visited a certain airport and each aircraft availed of exactly one type of maintenance at the airport. Of the twelve aircraft, four needed preventive maintenance, four needed corrective maintenance and four needed predictive maintenance. The twelve aircraft landed at the airport at the same time and each aircraft took off immediately after it had availed respective maintenance schedule. At the airport, each of the three types of maintenance was provided in different hangars - Hangar-1 for preventive maintenance, Hangar-2 for corrective maintenance and Hangar-3 for predictive maintenance. Each hangar can hold only one aircraft at any time. The time taken by Hangar-1, Hangar-2 and Hangar-3 to maintain and repair one aircraft is from 11 hours to 15 hours (both inclusive), from 16 hours to 20 hours (both inclusive), and from 21 hours to 25 hours (both inclusive), respectively.

Engineers in hangars always start servicing an aircraft waiting to avail of their maintenance schedule without delay, unless they are already servicing another aircraft. The time spent by any aircraft at the airport is the sum of the time spent by it waiting to be maintained and the time spent by the corresponding engineers in hangars in servicing it.

Given below is the total time spent by each of the twelve aircraft at the airport (in alphabetical order of their names).

Name	Time Spent (in hours)
A1	13
A2	52
A3	36
A4	67

A5	22
A6	17
A7	43
A8	24
A9	50
A10	69
A11	33
A12	90

Question 32:

Question: Which of the following aircraft was maintained in Hangar-2?

- A3
 - A2
 - A9
 - A4
-

Question 33:

Question: What was the maximum time (in hours) taken to maintain any aircraft in Hangar-1?

- 12
 - 13
 - 14
 - 15
-

Question 34:

Question: Which of the following aircraft was not maintained in Hangar-1?

- A1
 - A9
 - A3
 - A11
-

Question 35:

Question: Which of the following aircraft spent the most time waiting to get maintained at the airport in Hangar-1?

- A9
 - A2
 - A7
 - A3
-

Question 36:

Question: For what more time was Hangar-3 busier than Hangar-1? Key in the value in hours.

Question 37:

Question: The clerk of a school calculated the number of students of a class who had not paid their fees by making a list. By mistake the clerk also counted some of the students who had completely paid their fees. When the clerk realized his mistake he made a new list, wherein the number of students who had not paid their fees reduced to half and the ratio of students in class who had paid their fees to those who had not paid their fees became 3 : 2. What percentage of students was mentioned incorrectly by the clerk?

- 20
 - 30
 - 40
 - 60
-

Question 38:

Question: Radha distributes 5 sweets to each of her friends, Arjun, Deepika, Govind, and Jaya. The following three points are valid for the sweets with Arjun, Deepika, Govind, and Jaya before they receive the sweets from Radha.

(i) The number of sweets with Arjun was equal to one-third of that with Govind.

(ii) The average number of sweets with Jaya and Deepika was 27.

(iii) The average number of sweets with Govind, Jaya, and Deepika was 30.

What must be the average number of sweets with Govind, Arjun, Deepika, and Jaya now?

- 29.75
- 30.50
- 31.25

Question 39:

Question: A rocket is launched from Earth's surface with an initial velocity (u) of 6 km/s. According to the relation $D = ut + Bt^2$, where D is the total distance in kilometres (km) covered by the rocket in ' t ' seconds and B is the constant of proportionality, it covers 51 kilometres in the 5th second. How much distance (in kilometres) would the rocket cover in the 8th second?

Question 40:

Question: Oyo Cab service offers free ride to customers for a certain distance and then charges at a constant rate per kilometre. Biswas uses the cab to go to a nearby shopping complex and Amit goes to mall on the cab. The combined bill of Biswas and Amit amounts to Rs. 110. If the distance covered by Biswas on the cab had doubled, he would have paid Rs. 200 as charges to the cab driver, whereas in case of Amit, if the distance had doubled the charges would have been 50% less than the charges paid by Biswas in case of increased distance. What would be the amount paid by Biswas if he travelled thrice the distance travelled by him initially?

Question 41:

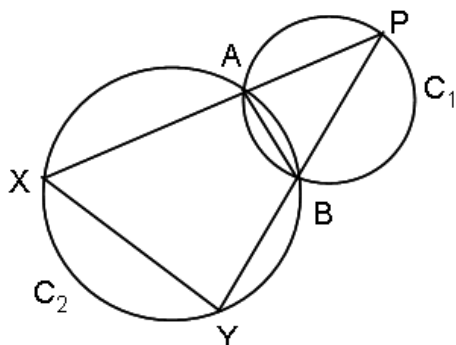
Question: A motorboat race is held in Bogasha river in Kenya over 3 stretches; P, Q and R. The maximum speeds allowed in stretches P, Q and R are 80 km/hr, 65 km/hr and 30 km/hr, respectively. The minimum speeds allowed over the 3 stretches are 50 km/hr, 40 km/hr and 15 km/hr, respectively. Each of the stretches is 4 km in length and speed over a stretch is assumed constant. Current record for the race is 12 minutes 30 seconds.

Abdul completes the first stretch at the minimum speed and is able to maintain the same speed in the second stretch also. If he takes 60% more time than the current record time, then his speed over the stretch R is approximately

- 23 km/hr
 - 17 km/hr
 - 28.8 km/hr
 - 13 km/hr
-

Question 42:

Question: In the given diagram, the two circles C_1 and C_2 have a common chord AB . Point P is chosen on C_1 so that it is outside C_2 . Lines PA and PB are extended to cut C_2 at X and Y , respectively. If $AB = 6$ cm, $PA = 5$ cm, $PB = 7$ cm and $AX = 16$ cm, determine the length of XY .



- 21 cm
- 18 cm
- 33 cm
- 29 cm

Question 43:

Question: Suppose there are two functions, ' $f(x)$ ' and ' $g(x)$ ', and they satisfy the following conditions:

$$f(x) + f(x + 1) = 3 \text{ and } g(x) = 1 + x^2. \text{ If } f(1) = -1. \text{ Then key in the value of } \frac{f(g(9))}{g(f(9))} ..$$

Question 44:

Question: Let $N = 1! + 2! + 3! + 4! + \dots + 99!$. The remainder when N is divided by 18 is _____.

Question 45:

Question: Let $ABCD$ be a convex quadrilateral with area ' s ' and let P, Q, R and S be the midpoints of sides $AB, BC, CD,$ and $DA,$ respectively. The sum of the areas of the triangles PBQ and RDS equals

- $\frac{s}{2}$
 - $\frac{3s}{4}$
 - $\frac{2s}{3}$
-

Question 46:

Question: The number of ways in which $p + q$ things can be divided into two groups containing p and q things respectively is

1. $C(p + q, q)$
2. $P(p + q, p)$
3. $P(p + q, q)$
4. $C(p + q, p - q)$
5. None of these

Question No. 47

A piece of work is assigned to Manoj, Farooq and Shibid. Manoj can complete the work alone in 20 days, while Farooq takes 10 days less than Shibid to complete the work alone. If Manoj starts the work and after working alone for 4 days, Farooq and Shibid join him from

fifth day for the task. The work is completed in $\frac{144}{19}$ days earlier than the time that would be taken by Manoj alone to complete the work. What is the time taken (in days) by Manoj and Farooq to complete 97.5% of the work?

- 10
- 13
- 17
- 25

Question No. 48

After GST implementation, a bar owner increased the prices of all the drinks by $y\%$ and then decreased them by $y\%$. After this change, the price of one particular drink called Bazooka in the bar was Rs. 100 less than its original price. After one month, he again

increased the prices of the drinks by $\frac{y}{2}\%$ and then decreased them by $\frac{y}{2}\%$. Now, after this second change, the price of that Bazooka was less than Rs. 2380 but more than Rs. 2360. Which of the following can be the original price (in Rs.) of that Bazooka?

- Rs. 2600
- Rs. 2490
- Rs. 2413
- Rs. 2515

Question No. 49

Four friends, Akash, Bhavana, Chetan, and Divya, win a lottery and decide to split the winnings. Akash receives $x\%$ of the total amount. Bhavana receives $y\%$ of what remains after Akash's share. Chetan receives $z\%$ of the remaining amount, and Divya gets the rest. Divya receives $x\%$ less than what Akash gets, while Bhavana and Chetan receive equal shares. If $y = 2x$, then what percentage of Akash's share does Chetan receive?

- 40%
- 80%
- 160%
- 240%

Question No. 50

In April, the price of wheat per kilogram increased by 40% and the price of mustard per kilogram rose by 25% in a local grocery store. A customer allocated an equal expenditure on wheat as he did in March, and likewise for mustard. If the customer purchased 80 kilograms of wheat and 48 kilograms of mustard in April, how many kilograms of wheat and mustard together did he purchase in March?

Question No. 51

Two squares are chosen at random on a chessboard. What is the probability that they have a side in common?

- $\frac{1}{18}$
- $\frac{64}{4032}$
- $\frac{63}{64}$
- $\frac{1}{9}$

Question No. 52

Vasco, along with his friend, embarked on a boat journey. Before the journey, they made all the preparations. After all the supplies had been kept, he checked with the boat manufacturer's data and was glad to learn that the boat was really dependable as it could float even with 75% full of water (with more water than that it could sink). Unfortunately, the boat developed a hole during journey off the coast of Africa, which was making water fill in the boat at the rate of 2 litres per minute. A pump installed in the boat can empty the boat full of water in 32 hours. If Vasco figures that they must reach a safe place in 12 hours (so as not to sink), what is the capacity of the boat (in litres)? (Assume luggage volume as negligible.)

- 1280
- 1480
- 1600
- 1056

Question No. 53

Which of the following must be false such that $6a + \frac{11}{a} < 198$, where a is an integer?

- No solution for $a < 10$
- A solution for $0 < a < 30$
- No solution for $-10 < a < 0$
- No solution for $35 < a < 60$

Question No. 54

Rahul and Simran attempted to solve a quadratic equation, which is in terms of x. However, Rahul misinterpreted the coefficient of x, resulting in the roots of -5 and +8. Simultaneously, Simran incorrectly read the constant term of the equation, leading to the roots of -3 and +9. Which of the following is/are the correct roots of the quadratic equation?

- I. 4
- II. 10
- III. -10
- IV. -4

- Only I
 - Only II
 - Only I and III
 - Only II and IV
-

Question No. 55

Find the sum of the digits at the units, tens, hundreds, and thousands places of the result obtained by multiplying 20021, 30022, 40023, 50024, 60025, 70026, 80027, and 90028.

Question No. 56

In a race of 1000 m, A beats B by 150 m, while in another race of 3000 m, C beats D by 400 m. Speed of B is equal to that of D. (Assume that A, B, C and D run with uniform speed in all the events). If A and C participate in a race of 6000 m, then which of the following is correct?

- A beats C by 250 m.
- C beats A by 250 m.
- A beats C by 115.38 m.
- C beats A by 115.38 m.

Question No. 57

A petroleum company has launched petrol of two qualities, A and B, and their costs are Rs. 20 and Rs. 25 per litre, respectively. If a car owner uses the petrol of brand A, then it takes 5 hours to cover 200 km with 10 litres. Petrol of brand B gives an average of 2 km more per litre than that given by A, but the speed becomes 25% less. A mix of the two fuels can be used, and the speed and mileage are proportional to the amounts of fuels used in the mix. The car owner mixes the two petrol brands so that his car can cover 212 km with 10 litres of petrol in less than 6 hours and 25 minutes. The amount spent(in Rs.) by the car owner on petrol is

Question No. 58

Two bugs are climbing a slippery wall. Initially, both are at the bottom of the wall. Bug A climbs at the rate of 3 inches a minute and bug B climbs at the rate of 4 inches a minute. Due to the slippery wall, however, bug A slips back 1 inch for every 2 inches climbed and bug B 1.5 inches for every 2 inches. Moreover, bug A takes rest for 1 minute after every 2 minutes and bug B takes rest for 1 minute after every 3 minutes. Assume that slipping occurs continuously when climbing.

At what height do the two bugs meet each other?

- 2 inches
- 3 inches
- 5 inches
- 12 inches

