

CII – iPATE 1.0 (2020)

Computer Based PAN India Examination

Category: GRADUATE ENGINEER

Engineering Discipline: MINING ENGINEERING

Question Paper Structure

| Question Nos. | Sections & Topics | | Marks |
|---------------|--|---|------------|
| 1 to 20 | Section I : Cognitive Abilities | <ul style="list-style-type: none">Quantitative AptitudeAnalytical ReasoningData InterpretationEnglish Communication | 20 |
| 21 to 40 | Section II : Professional Abilities | <ul style="list-style-type: none">Project ManagementHealth, Safety & Risk ManagementEnvironmental LawsSocial Responsibility & EthicsFinance & AccountsLegal, Contracts & Arbitration | 20 |
| 41 to 50 | Section III (A) : Technical Abilities | Physics & Chemistry (10+2 level) | 10 |
| 51 to 100 | Section III (B) : Technical Abilities | Engineering Discipline | 50 |
| TOTAL | | | 100 |

NOTE:

- Exam Duration: 3 Hours
- Total 100 no. of Questions of 1 Mark each with Negative Marking of ½ Mark for every wrong answer
- Questions (Section wise) and respective Answer Options shuffling at Candidates' terminal

| | | | | |
|----------------|---|-----------------|-----------------|-----------------|
| Question No. 1 | Neha goes for a walk between 4 am and 5 am. After coming back, she found that the hour hand and the minute hand of her watch had exchanged their positions. How much time(approx.) did she spend on her walk? | | | |
| Answer Options | A) 55 min | B) 55:38 min | C) 55:54 min | D) 55:46 min |
| Right Answer | B | | | |

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|----------------|--|-------------|------------|------------|
| Question No. 2 | 4 red, 6 green and 5 white flowers are in a bag. 3 flowers are taken together. What is the probability of getting 1 white and 2 green flowers? | | | |
| Answer Options | A) 1/5 | B) 15/91 | C) 3/91 | D) 3/11 |
| Right Answer | B | | | |

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|----------------|--|---------------|---------------|---------------|
| Question No. 3 | Tony, Monu and James completed a work together in 36 days and received a total payment of Rs. 54000. Tony took half of the total money, Monu took one third and James took remaining. In how many days, Tony and James would have finished the work if Monu was not working? | | | |
| Answer Options | A) 72 days | B) 54 days | C) 96 days | D) 64 days |
| Right Answer | B | | | |

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|----------------|---|-----------------|-----------------|-----------------|
| Question No. 4 | A shopkeeper purchased 15 kg of variety A rice at Rs. X per kg and 10 kg of variety B rice at Rs. (X + 5) per kg. The shopkeeper sold the whole quantity of variety A rice at 10% profit and that of variety B rice at 20% profit. The total selling price of variety A rice was Rs. 30 more than that of variety B rice. Had the two varieties been mixed and sold at an overall profit of 20%, what would have been the selling price (per kg)? | | | |
| Answer Options | A) Rs. 26.40 | B) Rs. 23.20 | C) Rs. 24.20 | D) Rs. 25.00 |
| Right Answer | A | | | |

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|----------------|---|----------|----------|----------|
| Question No. 5 | A club has 256 members of whom 144 can play football, 123 can play tennis, and 132 can play cricket. Moreover, 58 members can play both football and tennis, 25 can play both cricket and tennis, while 63 can play both football and cricket. If every member can play at least one game, then the number of members who can play only tennis is | | | |
| Answer Options | A) 32 | B) 43 | C) 38 | D) 45 |
| Right Answer | B | | | |

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|----------------|---|----------|----------|----------|
| Question No. 6 | Fill up the following series: 5, 25, 7, _____, 9, 19 | | | |
| Answer Options | A) 23 | B) 22 | C) 25 | D) 32 |
| Right Answer | A | | | |

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|----------------|---|----------------------|----------------------------------|----------------------------|
| Question No. 7 | <p>The question is followed by three statements I, II, and III. Read the question and the statements carefully and choose your answer according to which set of the statement(s) is/are sufficient to answer the question.</p> <p>What is the area of the rectangle?</p> <p>I. The ratio of length to breadth of the rectangle is 35 : 12. II. The perimeter of the rectangle is 188 cm. III. The length of diagonal of the rectangle is 74 cm</p> | | | |
| Answer Options | A) I and II only | B) I and III only | C) (I and II) or (II and III) | D) Any two of the three |
| Right Answer | D | | | |

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| Question No. 8 | <p>The question below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer:</p> <p>What is the sum of the age of Ram and Mohan?</p> <p>Statement I : The age of Ram is 6 years more than the age of Mohan. Statement II : 40% of the age of Mohan is equal to 30% of the age of Ram. Statement III : The ratio between half of the age of Ram and one third of the age of Mohan is 2 : 1.</p> | | | |
| Answer Options | A) Either statement III alone or statements I and II together are sufficient. | B) Only statement III is sufficient | C) Only statement I and II are sufficient | D) Only statement I, II, and III are sufficient |
| Right Answer | C | | | |

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|----------------|---|-------------------------|-------------|-------------------------|
| Question No. 9 | <p>Mohan is the Son of Arun's Father's sister. Prakash is the son of Reva, who is the mother of Vikas and Grandmother of Arun. Pranab is the father of Neela and the grandfather of Mohan. Reva is the wife of Pranab. How is the wife of Vikas related to the neela?</p> | | | |
| Answer Options | A) Sister | B) Sister - In - Law | C) Niece | D) None of The Above |
| Right Answer | B | | | |

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|-----------------|---|------------|-------------|------------|
| Question No. 10 | <p>In the following question, there is a certain relationship between two given words on one side of:: and one word is given on another side of:: while another word is to be found from the given alternatives having the same relationship with this word as the words of the given pair bear. Choose the correct alternative.</p> <p>_____ : trail :: grain : grail</p> | | | |
| Answer Options | A) train | B) path | C) wheat | D) holy |
| Right Answer | A | | | |

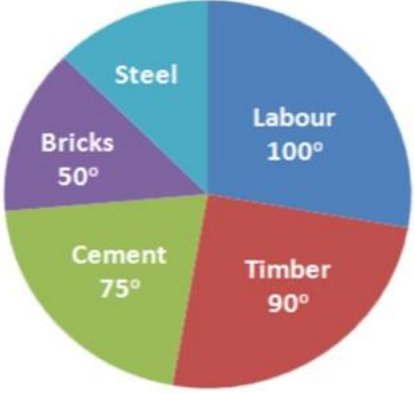
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| Question No. 11 | Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order. | | | |
| | A: Only natural dyes are used in Kalamkari and it involves several steps. B: There are two distinctive styles of Kalamkari in India. C: They are the Sri kalahasti style and the Machlipatnam style. D: Kalamkari is a type of hand-painted or block-printed cotton textile, produced in the Indian States of Andhra Pradesh and Telangana. | | | |
| Answer Options | A) CBDA | B) DABC | C) ACBD | D) DCBA |
| Right Answer | B | | | |

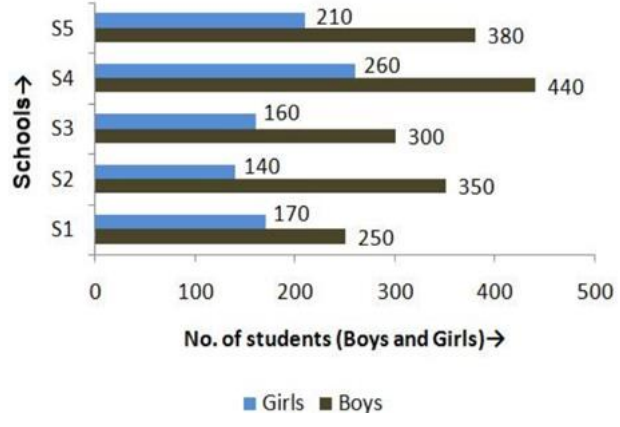
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| Question No. 12 | What is the antonym of MOROSE | | | |
| Answer Options | A) overawed | B) agitated | C) cherubic | D) cheerful |
| Right Answer | D | | | |

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| Question No. 13 | What is the synonym of ERRONEOUS | | | |
| Answer Options | A) Enormous | B) Wrong | C) Erased | D) Weak |
| Right Answer | B | | | |

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|-----------------|--|---|---|--|
| Question No. 14 | A frustrated old man, Bandi thakur was never tired of (1)_____ the exploits of his ancestors, with a little (2) _____ he would lapse into a reminiscent mood, push back the loosely tied turban from his close-cropped grizzled hair and start a familiar story, improvising (3)_____ details which, to the mirth of his audience, always kept changing with every recounting. | | | |
| Answer Options | A) (1) criticizing, (2) prompting, (3) sincere | B) (1) extolling, (2) advising, (3) rational | C) (1) invoking, (2) arguing, (3) fanciful | D) (1) extolling, (2) prompting, (3) fanciful |
| Right Answer | D | | | |

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|-----------------|---|--|--|--|
| Question No. 15 | Even my goalies and the policemen, who have arrested me or (1)_____ me as a prisoner from place to place have been kind to me, and much of the (2) _____ of conflict and the sting of goal-life has been (3) _____ because of this human touch. | | | |
| Answer Options | A) (1) safeguarded, (2) kindness, (3) egged on | B) (1) escorted, (2) affinity, (3) toned down | C) (1) abandoned, (2) bitterness, (3) pumped up | D) (1) escorted, (2) bitterness, (3) toned down |
| Right Answer | D | | | |

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|-----------------|---|----------------|----------------|----------------|
| Question No. 16 | <p>The pie chart shows the total expense of Rs 450000 to construct a house.</p> <p>The cost of steel is</p>  | | | |
| Answer Options | A) Rs 55000 | B) Rs 56250 | C) Rs 60000 | D) Rs 62500 |
| Right Answer | B | | | |

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|-----------------|--|-----------|-----------|-----------|
| Question No. 17 | <p>The following bar graph shows the number of boys and girls of class X of 5 different schools.</p> <p>Find the difference between the number of boys and girls of schools S2 and S3 together</p>  | | | |
| Answer Options | A) 300 | B) 350 | C) 400 | D) 450 |
| Right Answer | B | | | |

| Question No. 18 | Study the tables carefully and answer the question that follow: Number of candidates (in lakhs) appearing in an entrance examination from six different states and the ratio of male candidates and female candidates in the same | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|--------------|--------------|--------------|-------|----------------------|-------|--|------|--------|----------------|------|---|---|-------|------|---|---|-----------|------|---|---|--------|------|---|---|---------|------|---|---|-------|------|---|---|
| | The number of male candidates from Andhra Pradesh and Haryana together is what percent of the total number of female candidates from Bihar? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th rowspan="2">State</th> <th rowspan="2">Number of candidates</th> <th colspan="2">Ratio</th> </tr> <tr> <th>Male</th> <th>Female</th> </tr> </thead> <tbody> <tr> <td>Andhra Pradesh</td> <td>1.85</td> <td>3</td> <td>2</td> </tr> <tr> <td>Assam</td> <td>2.73</td> <td>7</td> <td>5</td> </tr> <tr> <td>Telangana</td> <td>1.25</td> <td>7</td> <td>3</td> </tr> <tr> <td>Odisha</td> <td>3.14</td> <td>5</td> <td>3</td> </tr> <tr> <td>Haryana</td> <td>1.08</td> <td>4</td> <td>5</td> </tr> <tr> <td>Bihar</td> <td>2.27</td> <td>1</td> <td>3</td> </tr> </tbody> </table> | | | | State | Number of candidates | Ratio | | Male | Female | Andhra Pradesh | 1.85 | 3 | 2 | Assam | 2.73 | 7 | 5 | Telangana | 1.25 | 7 | 3 | Odisha | 3.14 | 5 | 3 | Haryana | 1.08 | 4 | 5 | Bihar | 2.27 | 1 | 3 |
| State | Number of candidates | Ratio | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Male | Female | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Andhra Pradesh | 1.85 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Assam | 2.73 | 7 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Telangana | 1.25 | 7 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Odisha | 3.14 | 5 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Haryana | 1.08 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bihar | 2.27 | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Answer Options | A) 98.41% | B) 48.45% | C) 95.49% | D) 93.39% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Right Answer | D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOTE | Question was displayed incorrectly at candidates' terminals. Hence grace mark has been given to all candidates, who attempted or not. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|-----------------|--|--------------|------------|------------|
| Question No. 19 | Read the following information carefully and answer the given question. | | | |
| | i. Rajesh, Raju and Pijush are intelligent. ii. Rajesh, Shib and Hari are hard-working. iii. Shib, Pijush and Hari are honest. iv. Rajesh, Raju and Hari are ambitious. | | | |
| | Which of the following person is neither honest nor hard-working but is ambitious? | | | |
| Answer Options | A) Shib | B) Pijush | C) Raju | D) Hari |
| Right Answer | C | | | |


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|-----------------|--|--------------------------|--------------------------|----------------------------|
| Question No. 20 | Read the following information carefully and answer the following question. | | | |
| | 'A + B' means 'A is the father of B'; 'A - B' means 'A is the wife of B'; 'A x B' means 'A is the brother of B'; 'A ÷ B' means 'A is the daughter of B'. | | | |
| | If $P \div R + S + Q$, which of the following is true? | | | |
| Answer Options | A) P is the daughter of Q | B) Q is the aunt of P | C) P is the aunt of Q | D) P is the mother of Q |
| Right Answer | C | | | |

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|-----------------|---|-----------------------|------------------|-------------------|
| Question No. 21 | A management point in a Work Breakdown Structure (WBS) used to consolidate and process work package data and forward the result to the project management is called _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | Part number | Specification of Part | Name of the Part | Price of the Part |
| Right Answer | A | | | |

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|-----------------|---|-----------------|------|---------|
| Question No. 22 | Various activities of a project are shown on a Bar Chart by _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | Vertical line | Horizontal line | Dots | Crosses |
| Right Answer | B | | | |

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|-----------------|---|-------|----------|-------------|
| Question No. 23 | The difference between the time avail to do a job and time required to do the job is known as _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | Event | Float | Duration | Constraints |
| Right Answer | B | | | |

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|-----------------|--|------------|-----------|--------------------------------|
| Question No. 24 | Gantt Chart is commonly used for _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | Routing | Scheduling | Follow up | Inspection and quality control |
| Right Answer | B | | | |

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|-----------------|---|-----------|-----------------|------------------|
| Question No. 25 | The following symbol is used when something in your workplace is  | | | |
| Answer Options | A) | B) | C) | D) |
| | Chemical Weapon | Biohazard | Toxic Substance | Radiation Danger |
| Right Answer | B | | | |

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|-----------------|---|-------|-----------------------|---------------------------------------|
| Question No. 26 | What is the leading cause of death on construction sites? | | | |
| Answer Options | A) | B) | C) | D) |
| | Struck by object | Falls | Caught-in or -between | Electrocutions Hazardous Materials |
| Right Answer | B | | | |

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|-----------------|--|-------------|-----------------|------------------------|
| Question No. 27 | What violations are most commonly cited by OSHA? | | | |
| Answer Options | A) | B) | C) | D) |
| | Hazard communications | Scaffolding | Fall protection | Respiratory protection |
| Right Answer | C | | | |

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|-----------------|--|-------------------|------|--------------|
| Question No. 28 | _____ is best suited to extinguishing oil or flammable liquid fire | | | |
| Answer Options | A) | B) | C) | D) |
| | Soda acid | Vaporizing liquid | Foam | Dry chemical |
| Right Answer | C | | | |

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|-----------------|--|--------|--------|---------|
| Question No. 29 | Out of the 37 countries, which country still not ratified the second commitment known as the Doha amendment to the Kyoto Protocol? | | | |
| Answer Options | A) | B) | C) | D) |
| | USA | Canada | Norway | Ukraine |
| Right Answer | A | | | |

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|-----------------|---|---|---|------------------|
| Question No. 30 | The Ministry also serves as the nodal agency in the country for the which of these organisations? | | | |
| Answer Options | A) | B) | C) | D) |
| | United Nations Environment Programme (UNEP) | South Asia Co-operative Environment Programme (SACEP) | International Centre for Integrated Mountain Development (ICIMOD) | All of the above |
| Right Answer | D | | | |

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|-----------------|---|--|---|------------------|
| Question No. 31 | There are many benefits to implementing an EMS. These include a potential for | | | |
| Answer Options | A) | B) | C) | D) |
| | Reduction in waste production | The avoidance in use, and costly disposal of, other hazardous or potentially polluting materials | A planned approach to compliance with regulations and the consequential reduced risk of prosecutions and fines. | All of the above |
| Right Answer | D | | | |

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|-----------------|--|----------------------------|-----------------------------|--------------------------|
| Question No. 32 | Which of the following does not contribute to the development of a manager's standard of ethics? | | | |
| Answer Options | A) | B) | C) | D) |
| | competitor behaviours | society's norms and values | individual life experiences | environmental situations |
| Right Answer | A | | | |

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|-----------------|--|-----------------|------------|------------------|
| Question No. 33 | Which is the approach to corporate planning? | | | |
| Answer Options | A) | B) | C) | D) |
| | Customers and workers satisfaction | Planning skills | Optimising | All of the above |
| Right Answer | D | | | |

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|-----------------|--|-----------------------|-----------------------|------------------------------|
| Question No. 34 | Which one of the following is not principle business ethics? | | | |
| Answer Options | A) | B) | C) | D) |
| | Principle of universality | Principle of humanity | Principle of autonomy | Principle of dissatisfaction |
| Right Answer | D | | | |

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|-----------------|--|---|--|--|
| Question No. 35 | Which of the following is a definition for variable costs? | | | |
| Answer Options | A) | B) | C) | D) |
| | Costs that remain the same whatever the level of output | Costs that contain a fixed and variable element | Costs that vary directly with the number of units produced | Costs that will remain fixed as output increases until the activity reaches a level where the costs have to increase sharply |
| Right Answer | C | | | |

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|-----------------|---|---|---|--------------------------------------|
| Question No. 36 | Which of the following is a definition of break-even point? | | | |
| Answer Options | A) | B) | C) | D) |
| | The difference between the selling price of a product and the variable costs incurred in producing that product | The fixed plus variable costs of the business | The situation where neither a profit nor a loss is made | The situation where a profit is made |
| Right Answer | C | | | |

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|-----------------|--|------------------------------|---|--|
| Question No. 37 | Which of the following is not a benefit of budgeting? | | | |
| Answer Options | A) | B) | C) | D) |
| | It promotes study, research, and a focus on the future | It is a source of motivation | It will prevent net losses from occurring | It is a mean of coordinating business activities |
| Right Answer | C | | | |

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|-----------------|---|---|--|--|
| Question No. 38 | What is the obligation of the peaceful settlement of dispute? | | | |
| Answer Options | A) | B) | C) | D) |
| | It is an obligation of result i.e. States are under a strict obligation to resolve the disputes at the earliest | It is an obligation of conduct i.e. States have an obligation to try to resolve the disputes via peaceful mean. That does not entail an obligation to resolve the dispute | It is an intention to act immediately as per norms of International Law and all States have a legal interest to safeguard its application in any dispute | It is an obligation which concerns solely International courts and tribunal. |
| Right Answer | B | | | |

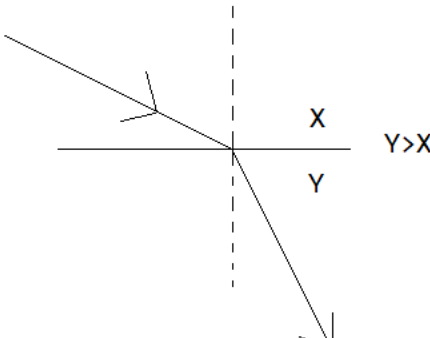
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|-----------------|--|--|---------------------------|--|
| Question No. 39 | What is the primary function of the Law of Tort? | | | |
| Answer Options | A) | B) | C) | D) |
| | Punishment of a wrong motivator | Clarification of the human rights of the parties | Compensating the claimant | Spreading of losses throughout the parties |
| Right Answer | C | | | |

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|-----------------|---|--|--|---|
| Question No. 40 | IDIC published a completely new suite of contracts in various coloured books which contain different conditions. What condition is mentioned in Red Book? | | | |
| Answer Options | A) | B) | C) | D) |
| | Conditions of contract for Construction project. | Conditions of contract for EPC/ Turnkey project. | Conditions of contract for Plant & Design. | Conditions of contract for DBO (Design, Build & Operate) project. |
| Right Answer | A | | | |

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|-----------------|--|--|---|--|
| Question No. 41 | The center of mass of the system consisting of Earth, the Sun, and the planet Mars is: | | | |
| Answer Options | A) | B) | C) | D) |
| | Closer to Earth than to either of the other bodies | Closer to the Sun than to either of the other bodies | Closer to Mars than to either of the other bodies | At the geometric center of the triangle formed by the three bodies |
| Right Answer | B | | | |

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|-----------------|--|-------|-------|----|
| Question No. 42 | At the same instant that a 0.50-kg ball is dropped from 25m above Earth, a second ball, with a mass of 0.25 kg, is thrown straight upward from Earth's surface with an initial speed of 15m/s. They move along nearby lines and pass without colliding. At the end of 2 sec the magnitude of the acceleration of the center of mass of the two-ball system is: | | | |
| Answer Options | A) | B) | C) | D) |
| | 0.25g | 0.50g | 0.75g | g |
| Right Answer | D | | | |

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|-----------------|--|--------------|------------|--------------|
| Question No. 43 | The rainbow seen after a rain shower is caused by: | | | |
| Answer Options | A) | B) | C) | D) |
| | diffraction | interference | refraction | polarization |
| Right Answer | C | | | |

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|-----------------|--|---|--|--|
| Question No. 44 | When light travels from medium X to medium Y as shown:  | | | |
| Answer Options | A) | B) | C) | D) |
| | both the speed and the frequency decrease | both the speed and the frequency increase | both the speed and the wavelength decrease | both the speed and the wavelength increase |
| Right Answer | C | | | |
| NOTE | Question was displayed incorrectly at candidates' terminals. Hence grace mark has been given to all candidates, who attempted or not. | | | |

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|-----------------|--|--|--------|---|
| Question No. 45 | An object rests on a horizontal frictionless surface. A horizontal force of magnitude F is applied. This force produces an acceleration: | | | |
| Answer Options | A) | B) | C) | D) |
| | only if F is larger than the weight of the object | only while the object suddenly changes from rest to motion | always | only if the inertia of the object decreases |
| Right Answer | C | | | |

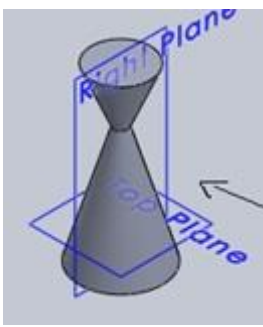
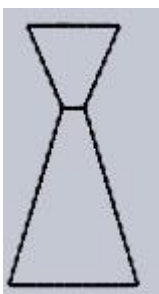
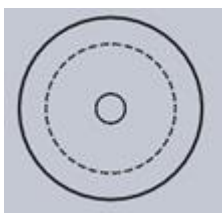
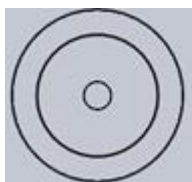
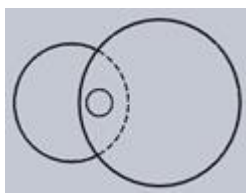
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|-----------------|---|---|-----------------------------------|-----------------------------------|
| Question No. 46 | Which statement is incorrect? | | | |
| Answer Options | A) | B) | C) | D) |
| | All the metals are good conductor of electricity. | All the metals are good conductor of heat | All the metals form positive ions | All the metals form acidic oxides |
| Right Answer | D | | | |

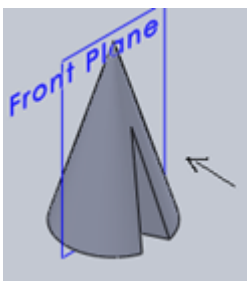
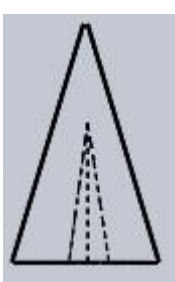
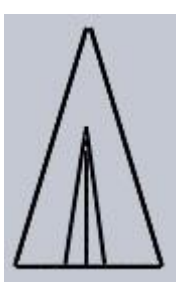
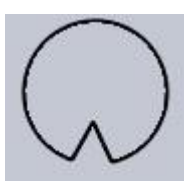
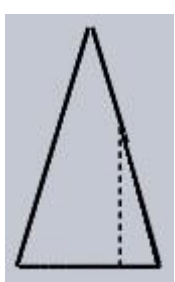
| | | | | |
|-----------------|--|---|---|--------------------------------|
| Question No. 47 | Based on the first law of thermodynamics, which one of the following is correct? | | | |
| Answer Options | A) | B) | C) | D) |
| | For an isothermal process, $q = +w$ | For an isochoric process, $\Delta U = -q$ | For an adiabatic process, $\Delta U = -w$ | For a cyclic process, $q = -w$ |
| Right Answer | D | | | |

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|-----------------|---|-----------------|------------------------------|------------------------|
| Question No. 48 | Among the electrolytes Na_2SO_4 , CaCl_2 , $\text{Al}_2(\text{SO}_4)_3$ and NH_4Cl , the most effective coagulating agent for Sb_2S_3 sol is | | | |
| Answer Options | A) | B) | C) | D) |
| | Na_2SO_4 | CaCl_2 | $\text{Al}_2(\text{SO}_4)_3$ | NH_4Cl |
| Right Answer | C | | | |

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|-----------------|--|----------|-----------|----------|
| Question No. 49 | Of the following which one is classified as polyester polymer? | | | |
| Answer Options | A) | B) | C) | D) |
| | Nylon-66 | Terylene | Backelite | Melamine |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|-----------------|------------------|-----------------|
| Question No. 50 | In order to increase the volume of a gas by 10%, the pressure of the gas should be | | | |
| Answer Options | A) | B) | C) | D) |
| | increased by 10% | increased by 1% | decreased by 10% | decreased by 1% |
| Right Answer | C | | | |

| | | | | |
|------------------------|--|---|--|---|
| <p>Question No. 51</p> | <p>Identify the top view for the below-given cone.</p>  | | | |
| <p>Answer Options</p> | <p>A)</p>  | <p>B)</p>  | <p>C)</p>  | <p>D)</p>  |
| <p>Right Answer</p> | <p>C</p> | | | |

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|------------------------|---|---|--|---|
| <p>Question No. 52</p> | <p>Identify the front view of the following cone.</p>  | | | |
| <p>Answer Options</p> | <p>A)</p>  | <p>B)</p>  | <p>C)</p>  | <p>D)</p>  |
| <p>Right Answer</p> | <p>B</p> | | | |

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|-----------------|---|------|----------|--------|
| Question No. 53 | Curve of any shape can be drawn in perspective by enclosing it in a _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | rectangle | cube | cylinder | square |
| Right Answer | A | | | |

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|-----------------|---|--------------|---------------------|-------------|
| Question No. 54 | A prism and cone got intersected at 90 degrees the line of intersection will be _____ and parallel to axis of _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | straight line, prism | curve, prism | straight line, cone | curve, cone |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|-------------------------------------|-------------------------------------|---------------------|
| Question No. 55 | The plane surfaces intersect in a _____ the line of intersection between two curved surfaces is _____ and between a plane surface and curved surfaces is a _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | straight line, curve, curve | straight line, straight line, curve | straight line, curve, straight line | curve, curve, curve |
| Right Answer | A | | | |

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|-----------------|--|-----|-----|-----|
| Question No. 56 | The Walling is done in a shaft by cement concreting. The minimum thickness of walling is | | | |
| Answer Options | A) | B) | C) | D) |
| | 0.03 | 0.4 | 0.5 | 0.6 |
| Right Answer | A | | | |

| | | | | |
|-----------------|---|----------------|-----------------------------|--------|
| Question No. 57 | Drilling for Blasting in shaft Sinking is done in | | | |
| Answer Options | A) | B) | C) | D) |
| | Triangular Pattern | Square Pattern | Concentric circular Pattern | Random |
| Right Answer | C | | | |

| | | | | |
|-----------------|--|-------|-------|-------|
| Question No. 58 | In a heavy-duty Long wall face production is 2500 Ton/day. Height of the seam is 3 m, the length of the face will be Hint: face length = Production (ton per day)/5.4*working thickness of the seam | | | |
| Answer Options | A) | B) | C) | D) |
| | 100 m | 125 m | 150 m | 175 m |
| Right Answer | C | | | |

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|-----------------|--|-------|-------|-------|
| Question No. 59 | A Seam laying at a depth of 300 m, Seam Thickness is 3m, Gradient 1in10, desired production 2500 T/day with heavy duty long wall face, the face length will be | | | |
| Answer Options | A) | B) | C) | D) |
| | 115 m | 135 m | 155 m | 175 m |
| Right Answer | C | | | |

| | | | | |
|-----------------|---|---|---|---|
| Question No. 60 | For planning of an open cast mine | | | |
| Answer Options | A) | B) | C) | D) |
| | Decision has to be taken for method of mining | The matching equipment has to be proposed | Geometry of the benches has to be decided | planning has to be done accordingly considering all the above |
| Right Answer | D | | | |

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|-----------------|--|----|----|----|
| Question No. 61 | While dealing with a misfired shot the relieving hole shall be drilled in such a way that at no point shall it be nearer than _____ cm from the misfired hole. | | | |
| Answer Options | A) | B) | C) | D) |
| | 15 | 20 | 25 | 30 |
| Right Answer | A | | | |

| | | | | |
|-----------------|--|---------------|-------------------------------|----------------------------|
| Question No. 62 | The sheath of the metal-seat bed cables shall be of thickness as prescribed in | | | |
| Answer Options | A) | B) | C) | D) |
| | DGMS Standards | BIS Standards | Central Electricity Authority | Manual of the manufacturer |
| Right Answer | B | | | |

| | | | | |
|-----------------|---|--------------------|-----------------------|--------------|
| Question No. 63 | What instrument is used for determining the sagging of roof | | | |
| Answer Options | A) | B) | C) | D) |
| | Tale-Tell | Roof Sagging Meter | Borehole Extensometer | None of them |
| Right Answer | C | | | |

| | | | | |
|-----------------|--|---------------------------|-------------------------------------|----------------|
| Question No. 64 | In long wall caving at which point total stress of roof load comes | | | |
| Answer Options | A) | B) | C) | D) |
| | Center line of the goaf edge | End line of the goaf edge | On a vertical line to the goaf edge | None of Above. |
| Right Answer | A | | | |

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|-----------------|---|----------|-----------------|---------------|
| Question No. 65 | Lining, freezing, concreting are the terms used for | | | |
| Answer Options | A) | B) | C) | D) |
| | Shaft sinking | Drifting | Incline Drivage | None of above |
| Right Answer | A | | | |

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|-----------------|--|----------------|------------------|---------------|
| Question No. 66 | In which direction of the seam the deposited overburden will have minimum angle of repose? | | | |
| Answer Options | A) | B) | C) | D) |
| | Dip direction | Rise direction | Strick direction | None of above |
| Right Answer | B | | | |

| | | | | |
|-----------------|-----------------------------|---------------|---------------------|---------------|
| Question No. 67 | Smooth Blasting is known as | | | |
| Answer Options | A) | B) | C) | D) |
| | Crest Blasting | Deck Blasting | Controlled Blasting | None of above |
| Right Answer | C | | | |

| | | | | |
|-----------------|---------------------------------------|--------------------------|---------------|------------------|
| Question No. 68 | Gate Road is Supported up to 30 m for | | | |
| Answer Options | A) | B) | C) | D) |
| | Back Abatement Pressure | Front Abatement Pressure | Smooth Travel | B&C are correct. |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|---------------|----------------|------------------|
| Question No. 69 | Triangular failure in connection with bench failure is Known as | | | |
| Answer Options | A) | B) | C) | D) |
| | Angular Failure | Wedge Failure | Trough failure | Circular Failure |
| Right Answer | B | | | |

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|-----------------|---|----------------|----------------|---------------|
| Question No. 70 | While Hammering on a core what type of force is acting? | | | |
| Answer Options | A) | B) | C) | D) |
| | Shear Force | Uniaxial Force | Breaking Force | Bending Force |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|--------------------|--------------|-----------------|
| Question No. 71 | In connection with bench failure which one is incorrect? | | | |
| Answer Options | A) | B) | C) | D) |
| | Shear Failure | Rotational Failure | Plan Failure | Angular Failure |
| Right Answer | B | | | |

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|-----------------|---|-------------|-----------|-----------------|
| Question No. 72 | The auxiliary fan shall be _____ with the switchgear controlling power supply to the in-by face equipment | | | |
| Answer Options | A) | B) | C) | D) |
| | Independent | Interlocked | dependent | All the Options |
| Right Answer | B | | | |

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|-----------------|--|------|------|------|
| Question No. 73 | A 1m wide belt runs at a speed of 1.5 m/sec carrying, coal of density 1.4 T/M ³ space utilization factor 15%.the capacity of belt is tonne/hour is Hint: Belt capacity in ton per hour= $1 \times 1.5 \times 60 \times 60 \times 1.4 \times 0.15 = 1134$ | | | |
| Answer Options | A) | B) | C) | D) |
| | 900 | 1000 | 1100 | 1300 |
| Right Answer | C | | | |

| | | | | |
|-----------------|--|-------------|-----------|----------|
| Question No. 74 | Which of the following is/are the example of gaseous fuel? | | | |
| Answer Options | A) | B) | C) | D) |
| | Cock Oven Gas | Produce Gas | Water Gas | only B&C |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|--------|---------|-------------|
| Question No. 75 | Which of the following constituent of coal has a dull Experience? | | | |
| Answer Options | A) | B) | C) | D) |
| | Vitrain | Durain | Fuscain | All of them |
| Right Answer | C | | | |

| | | | | |
|-----------------|---|----------------------------------|--------------------|--------------|
| Question No. 76 | The best method of mining a coal seam 8.5 m thick is by | | | |
| Answer Options | A) | B) | C) | D) |
| | B&P method | Long wall sublevel caving method | Long wall in lifts | None Of them |
| Right Answer | B | | | |

| | | | | |
|-----------------|---|---------------------------------|--------------------------|-------------------|
| Question No. 77 | On the face means working with the line of face | | | |
| Answer Options | A) | B) | C) | D) |
| | Parallel to the main cleat | perpendicular to the main cleat | At 30° to the main cleat | None of the Above |
| Right Answer | A | | | |

| | | | | |
|-----------------|---|--|-------------------------------------|---|
| Question No. 78 | A person is said to be not employed in the mine | | | |
| Answer Options | A) | B) | C) | D) |
| | who works as a manager | who works under appointment by the Manager | who works in any office of the mine | who works as a pump operator in a residential colony belonging to the mine. |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|-----|-----|------|
| Question No. 79 | For every mine where in more than _____ persons are ordinarily employed, the owner, agent or manager shall constitute a safety committee. | | | |
| Answer Options | A) | B) | C) | D) |
| | 100 | 300 | 500 | 1000 |
| Right Answer | B | | | |

| | | | | |
|-----------------|---|----|-----|-----|
| Question No. 80 | For every mine employing more than _____ persons ordinarily there shall be provided a suitable shelter. | | | |
| Answer Options | A) | B) | C) | D) |
| | 50 | 75 | 100 | 150 |
| Right Answer | A | | | |

| | | | | |
|-----------------|---|-----|-----|-----|
| Question No. 81 | For every mine where in _____ or more persons are ordinarily employed, the owner, agent or manager shall appoint a suitable qualified person as Welfare officer | | | |
| Answer Options | A) | B) | C) | D) |
| | 150 | 200 | 500 | 600 |
| Right Answer | C | | | |

| | | | | |
|-----------------|--|----|----|----|
| Question No. 82 | The floor area of the rest shelter shall not be less than _____ sq. mts. | | | |
| Answer Options | A) | B) | C) | D) |
| | 10 | 14 | 15 | 20 |
| Right Answer | B | | | |

| | | | | |
|-----------------|---|--------|--------|--------|
| Question No. 83 | Registers of daily attendance of persons employed in below ground workings shall be maintained in | | | |
| Answer Options | A) | B) | C) | D) |
| | Form-C | Form-D | Form-E | Form-B |
| Right Answer | D | | | |

| | | | | |
|-----------------|--|-------|-------|-------|
| Question No. 84 | Persons of _____ years age shall not be deployed as apprentices or trainees except under supervision | | | |
| Answer Options | A) | B) | C) | D) |
| | 14-16 | 16-18 | 15-18 | 14-18 |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|--------|--------|--------|
| Question No. 85 | Registers of leave with wages of every employee shall be maintained in | | | |
| Answer Options | A) | B) | C) | D) |
| | Form-I | Form-D | Form-A | Form-B |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|----|----|----|
| Question No. 86 | Notice of commencement of any mining operation shall be given so as to reach the persons concerned at least _____ months before commencement of mining operations | | | |
| Answer Options | A) | B) | C) | D) |
| | 3 | 1 | 6 | 2 |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|----|----|----|
| Question No. 87 | Notice of abandonment shall be given when it is intended to abandon the mine for a period exceeding _____ days | | | |
| Answer Options | A) | B) | C) | D) |
| | 10 | 20 | 30 | 60 |
| Right Answer | D | | | |

| | | | | |
|-----------------|--|----------|----------|---------|
| Question No. 88 | Notice of accident shall be submitted to the concerned authorities within _____ of any such occurrence | | | |
| Answer Options | A) | B) | C) | D) |
| | 15 days | 24 hours | 48 hours | 1 month |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|------------------------|-----------------------|----------------------|
| Question No. 89 | Every application for competency examinations shall be accompanied by the following certificates/ documents except | | | |
| Answer Options | A) | B) | C) | D) |
| | Certificate of Age | Certificate of Fitness | Character Certificate | Domicile Certificate |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|---------|---------|--------|
| Question No. 90 | Authorization to act as a Manager of a mine shall have effect for a period not exceeding _____ except with previous consent in writing of CIM | | | |
| Answer Options | A) | B) | C) | D) |
| | 60 days | 30 days | 90 days | 1 year |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|---------------|-------------------------------|--|
| Question No. 91 | Which of one of the following statements is incorrect: In case of a fatal accident in a mine, the Manager must | | | |
| Answer Options | A) | B) | C) | D) |
| | inspect the site of accident | notify to RIM | conduct investigation himself | ensure that the place of accident is not disturbed |
| Right Answer | C | | | |

| | | | | |
|-----------------|---|--------------------|----------|-----------------------------------|
| Question No. 92 | The Electrical Supervisor shall be appointed by | | | |
| Answer Options | A) | B) | C) | D) |
| | Manager | CMD of the company | Engineer | Director Personnel of the Company |
| Right Answer | A | | | |

| | | | | |
|-----------------|--|------|------|-----|
| Question No. 93 | A mine or part thereof may be treated as naturally wet if the roadway dust sample contain _____ or more of moisture by weight. | | | |
| Answer Options | A) | B) | C) | D) |
| | 0.1 | 0.15 | 0.05 | 0.3 |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|-------|-------|-------|
| Question No. 94 | The thickness of ventilation stopping constructed of masonry or brickwork shall be _____ cms in thickness | | | |
| Answer Options | A) | B) | C) | D) |
| | 20 cm | 15 cm | 25 cm | 10 cm |
| Right Answer | C | | | |

| | | | | |
|-----------------|--|--------------|--------------|---------------|
| Question No. 95 | M.V.T. Rules 1966 shall not apply to the following persons | | | |
| Answer Options | A) | B) | C) | D) |
| | Timber man | Coal driller | Track Layers | Mine Managers |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|--------------------|-----------------|---------------|
| Question No. 96 | The following items are not considered as a part of personal protective equipment | | | |
| Answer Options | A) | B) | C) | D) |
| | Safety goggles | reusable ear plugs | visible harness | mobile phones |
| Right Answer | D | | | |

| | | | | |
|-----------------|---|--------|---------|---------|
| Question No. 97 | As per M.V.T. Rules 1966 every person holding a gas testing certificate shall once in _____ undergo a course of training as detailed in 8th schedule of M V T Rules 1966. | | | |
| Answer Options | A) | B) | C) | D) |
| | 5 years | 1 year | 2 years | 3 years |
| Right Answer | B | | | |

| | | | | |
|-----------------|--|-----|-----|-----|
| Question No. 98 | Main Mechanical Ventilator of a mine shall be installed on the surface at a distance of not less than _____ from the opening of the shaft or incline | | | |
| Answer Options | A) | B) | C) | D) |
| | 10 m | 8 m | 7 m | 5 m |
| Right Answer | A | | | |

| | | | | |
|-----------------|--|----------|---------|---------|
| Question No. 99 | _____ days' prior notice of installation of a booster fan shall be sent to _____ | | | |
| Answer Options | A) | B) | C) | D) |
| | 15 & RIM | 15 & CIM | 7 & RIM | 7 & CIM |
| Right Answer | C | | | |

| | | | | |
|------------------|--|-------|------|--------------|
| Question No. 100 | Auxiliary fan shall not be installed at a location unless the quantity of air available at that location is at least _____ the capacity of the auxiliary fan | | | |
| Answer Options | A) | B) | C) | D) |
| | double | equal | half | one and half |
| Right Answer | A | | | |