RRB Assistant Loco Pilot (ALP) 2025 Previous Year Paper Afternoon

RRB Assistant Loco Pilot (ALP) • 2025 • 175 questions • 60 minutes • Answer key

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MATHEMATICS

Q1. The sum of the ages of a grandfather, his son, and his grandson is 128 years. The grandfather is twice as old as his son, and the son is five times as old as the grandson. Determine the age (in years) of the grandson.

(a) 8
(b) 6
(c) 9
(d) 7

Q2. Neha swims in a pool that is 50 metres long. She covers 100 metres in 1 minute by swimming from one end of the pool to the other and back along the same straight path. Find her average velocity (in m/s).

(a) 0 m/s
(b) 3.2 m/s
(c) 2.5 m/s
(d) 1.7 m/s

Q3. The resistance of a particular material wire with length L and cross-sectional area A is 2 Ω. What would be the resistance of another wire of the same material having length 2L and area of cross-section A/2?

(a) 8 Ω
(b) 4 Ω
(c) 2 Ω
(d) 1 Ω

Q4. A car starts from New Delhi and travels to Agra. The distance between the two cities is 300 km. The car travels back to New Delhi. What is the total distance travelled and the displacement of the car? (Assume the car reaches the same point and the route followed is exactly same for both travels.)

(a) Distance travelled is 0 km and displacement is 600 km
(b) Distance travelled is 300 km and displacement is 0 km
(c) Distance travelled is 0 km and displacement is 0 km
(d) Distance travelled is 600 km and displacement is 0 km

Q5. A, B, C, D, E and F live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it is numbered 2 and so on till the topmost floor, which is numbered 6. F lives on an even-numbered floor but not on floor 6. The sum of the floors on which D and F live is 9. The sum of the floors on which F and B live is 5. E lives immediately below C. How many people live between D and E?

(a) 2
(b) 1
(c) 4
(d) 3

Q6. Identify the correct pair of Personal Protective Equipment (PPE) categories based on the nature of the hazard.

(a) Non-respiratory: Safety helmet, Respiratory: Nose mask
(b) Non-respiratory: Safety goggles, Respiratory: Safety gloves
(c) Non-respiratory: Ear plugs, Respiratory: Safety shoes
(d) Non-respiratory: Nose mask, Respiratory: Safety boots

Q7. A, B, C, D, E, F and G are sitting around a circular table facing the centre. Only two people sit between G and C when counted from the left of C. F sits third to the left of E. B sits to the immediate right of E. B sits second to the left of G. D is an immediate neighbour of F.

How many people sit between A and C when counted from the right of C?

(a) 1
(b) 4
(c) 2
(d) 3

Q8. There is a rectangular sheet whose dimensions are 15.2 cm ± 0.1 cm in length and 9.1 cm ± 0.1 cm in width. What is the error in the estimation of the area of the rectangular sheet?

(a) 0.3 cm^2
(b) 2 cm^2
(c) 13 cm^2
(d) 5 cm^2

Q9. In a project involving the design of a pipeline for a building, which technical drawings would need to be referenced together?

(a) Electrical and Electronics
(b) Mechanical and Electrical
(c) Mechanical and Civil
(d) Civil and Electronics

Q10. If 46.4 : x :: x : 2.9, and x > 0, then find the value of x.

(a) 14.3
(b) 15.6
(c) 11.6
(d) 13.4

Q11. Generally, what is the process of heat transfer in liquids?

(a) Convection
(b) Both conduction and radiation
(c) Radiation only
(d) Conduction only

Q12. Calculate the kinetic energy of a body of mass 10 kg moving with a uniform velocity of 5 m s^-1.

(a) 50 J
(b) 125 J
(c) 25 J
(d) 120 J

Q13. A train goes from A to B at a speed of 40 km/hr and returns from B to A by the same route at 10 km/hr. The average speed (in km/hr) of the train during the two-way journey is:

(a) 15
(b) 19
(c) 16
(d) 14

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Q14. Which of the following statement(s) is/are true regarding electrical safety practices?

1. It is safe to plug multi-outlet bars into other multi-outlet bars as long as the total load does not exceed the rated capacity of the outlets.

2. Electrical equipment should not be used near wet surfaces or when your hands are wet, and power cords should be protected by avoiding placement under rugs or mats.

(a) Only Statement 1 is true.
(b) Both Statements 1 and 2 are true.
(c) Only Statement 2 is true.
(d) Neither Statement 1 nor 2 is true.

Q15. The measures of two supplementary angles are in the ratio 3 : 7. Find the measure of the greater of the two angles.

(a) 126°
(b) 144°
(c) 180°
(d) 54°

Q16. Which of the following materials serves as a heat insulator?

(a) Copper
(b) Aluminium
(c) Plastic
(d) Silver

Q17. By how much is 60% of 45 greater than [Formula above] of 25?

(a) 4
(b) 5
(c) 1
(d) 7

Q18. In a certain code language, ‘while you wait’ is coded as ‘ns bg sp’ and ‘why wait now’ is coded as ‘kc rw bg’. How is ‘wait’ coded in the given language?

(a) bg
(b) kc
(c) ns
(d) sp

Q19. In ΔPQR, angle Q = 90°. If tan R = 1/2, then what is the value of [Formula above]?

(a) 8/7
(b) -1/3
(c) -8/7
(d) 1/3

Q20. Reeta invests a certain sum of money at a certain rate of simple interest per annum, and the interest she gets is equal to one-fourth of the sum invested. If the time period (in years) of investment is equal to the percentage rate of interest per annum, for how many years did Reeta invest the sum of money?

(a) 4
(b) 7
(c) 5
(d) 6

GENERAL INTELLIGENCE AND REASONING

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Q21. What is the normal range of temperature for a healthy human body in Kelvin?

(a) (301.15-323.15) K
(b) (308.15-315.15) K
(c) (293.15-323.15) K
(d) (283.15-323.15) K

Q22. Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) MS – KB
(b) WC – UL
(c) TZ – RI
(d) DJ – BT

Q23. In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 179 :: 22 : Y

(a) X = 18, Y = 219
(b) X = 16, Y = 219
(c) X = 15, Y = 223
(d) X = 16, Y = 222

Q24. Given below are two statements numbered I and II. These statements may be independent causes or effects of independent causes or a common cause. One of the statements may be the effect of the other statement. Read both the statements carefully and select the correct answer.

Statements:

Traffic police has issued a traffic advisory regarding the diversion of traffic for the next two days due to closure of Raj Bhavan Road.

The Municipal Corporation is planning to repair the pot holes in Raj Bhavan Road tomorrow.

(a) Both I and II are independent causes.
(b) II is the cause and I is its possible effect.
(c) Both I and II are effects of independent causes.
(d) I is the cause and II is its possible effect.

Q25. What is the recommended action before replacing a fuse?

(a) Switch off circuit.
(b) Stand on a stool.
(c) Use rubber gloves.
(d) Wear a safety belt.

Q26. Kaushik starts from Point A and walks 32 m towards the east. He takes a right turn, walks 16 m and then takes a right turn, walks 14 m, reaches Point B and stops. Chitra starts from Point Z which is 60 m towards the east of Point A. She walks 18 m towards north, takes a right turn, walks 19 m, turns right and walks 65 m, turns right and walks 61 m and stops at Point Y. What is the shortest distance between Point B and Point Y?

(All turns are 90 degree turns only.)

(a) 29 m
(b) 33 m
(c) 25 m
(d) 31 m

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Q27. A, B, C and D are four partners in a business. A's investment is two-thirds of D's investment. B and C invest equal amounts, and C's investment is half of D's investment. If they earn Rs. 137.6 lakh at the end of one year, then find the total share (in Rs. lakh) of A and B put together.

(a) 60.2
(b) 62.2
(c) 59.2
(d) 63.2

Q28. A bulb is connected across a battery of 10 V for 20 seconds. If a current of 2 A flows through it, calculate the heat energy generated by the bulb.

(a) 120 J
(b) 100 J
(c) 400 J
(d) 200 J

Q29. In a certain code language, ‘GIFT’ is coded as ‘8264’ and ‘FEAR’ is coded as ‘3527’. What is the code for ‘F’ in the given code language?

(a) 2
(b) 3
(c) 6
(d) 5

Q30. Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?

: EAG :: IEK : %

(a) = FBH, % = HDJ
(b) = FBG, % = HDJ
(c) = FBH, % = HDI
(d) = FBH, % = HEJ

Q31. Refer to the following letter and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) ^ T J # L R Ω Y # E % S U $ K Q & * £ B (Right)

How many such symbols are there each of which is immediately preceded by a letter and also immediately followed by another symbol?

(a) Four
(b) One
(c) Two
(d) Three

Q32. Which ICT (Information and Communication Technology) service is commonly used for activities like railway reservation in e-Governance?

(a) Web portals
(b) Online payment gateways
(c) Email services
(d) Social media platforms

Q33. A man purchased two varieties of apples at the rate of Rs. 4 for 5 apples and Rs. 4 per apple, respectively. If he purchased an equal number of apples of each variety and then sold all the apples at Rs. 3 per apple, what will be his profit percentage?

(a) 0.23%
(b) 0.25%
(c) 0.2%
(d) 0.24%

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Q34. A fruit seller had some apples. He sold 40% of the apples and now has 840 apples. How many apples did he originally have?

(a) 1800
(b) 1260
(c) 2100
(d) 1400

Q35. Find the least number which when divided by 5, 6 and 7 leaves remainders 4, 5 and 6.

(a) 210
(b) 209
(c) 207
(d) 208

Q36. Which of the following factors affect(s) the resistance of a wire?

(a) Only material of the wire
(b) Only length of the wire
(c) The length, cross-sectional area and material of the wire
(d) Only length and cross-sectional area of the wire

Q37. If the arithmetic mean of A and B is 70 and the arithmetic mean of B and C is 110, what is the value of C − A?

(a) 70
(b) 90
(c) 60
(d) 80

Q38. How does the thermal pollution of water affect the water quality?

(a) Sediments get settled soon
(b) Alters the colour of water
(c) Increases pH of water
(d) Oxygen level in water gets reduced

Q39. If a force of 6 N is applied on a body, which is displaced through 2 m in the direction of the force, the work done is found to be _____.

(a) 4 J
(b) 10 J
(c) 12 J
(d) 3 J

Q40. A rheostat in the electrical circuit is used to _____.

(a) measure the current and voltage both
(b) measure the voltage only
(c) change the resistance in the circuit
(d) measure the current only

Q41. Which of the following is an example of preventive maintenance?

(a) Waiting for a machine to break down before repairing it
(b) Ignoring minor faults to save costs
(c) Conducting regular lubrication and inspections
(d) Using equipment until failure occurs

Q42. The body of the cooking vessel is of metal and handles are of plastic because _____.

(a) metal is an insulator and plastic is a good conductor of heat
(b) metal is a good conductor of heat and plastic is an insulator
(c) both metal and plastic are insulators
(d) both metal and plastic are good conductors of heat

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Q43. Refer to the following letter and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) ^ T J # L R Ω Y # % S U $ E K Q & * £ B (Right)

How many such symbols are there, each of which is immediately preceded by a symbol and also immediately followed by a letter?

(a) One
(b) Four
(c) Two
(d) Three

Q44. For a given potential difference (V), current (I) and resistance (R) across a conductor, Ohm's law is represented as:

(a) V = IR
(b) V = I − R
(c) I = VR
(d) V = I + R

Q45. Which of the following statements is correct?

(a) The normal human body temperature is 45°C.
(b) There is no method to convert temperature from one temperature scale to another.
(c) The normal human body temperature is 98.6°F.
(d) Laboratory thermometer is used to measure human body temperature.

BASIC SCIENCE AND ENGINEERING

Q46. Which of the following statements are true regarding general safety in the workshop?

Statement 1: Use any available tool for the job, even if it is not the correct one.

Statement 2: Keep the tools in their proper place after use.

Statement 3: Clean the machine while it is still running.

Statement 4: Replace worn-out or damaged tools immediately.

(a) Statements 2 and 4 are true.
(b) Statements 1 and 3 are true.
(c) Statements 3 and 4 are true.
(d) Statements 1 and 2 are true.

Q47. Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number results in the second number. Similarly, certain mathematical operation(s) on the second number results in the third number and so on. Which of the given options follows the same set of operations as in the given sets?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

68 – 136 – 121 – 363; 29 – 58 – 43 – 129

(a) 13 – 26 – 46 – 138
(b) 35 – 70 – 55 – 165
(c) 73 – 146 – 114 – 228
(d) 42 – 84 – 74 – 222

Q48. What should come in place of the question mark (?) in the given series?

67 106 88 127 109 148 ?

(a) 108
(b) 117
(c) 126
(d) 130

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Q49. Which of the following processes is primarily responsible for heat loss from a hot utensil?

(a) Convection
(b) Conduction
(c) Absorption
(d) Radiation

Q50. Which of the following is NOT a heat insulator?

(a) Silver
(b) Plastic
(c) Wool
(d) Rubber

Q51. A person saves 10% of his monthly income. If his monthly income increases by 30%, then he saves 20% more than the previous savings. The percentage increase in his expenditure, correct to two places after decimal, is _____.

(a) 40.44%
(b) 37.33%
(c) 24.89%
(d) 31.11%

Q52. An auto A covers a distance in 2 hours at the speed of 42 km/hr. Another auto B covers twice the distance covered by A in 5 hours. What is the speed of auto B (in km/hr)?

(a) 36.3
(b) 31.2
(c) 34.2
(d) 33.6

Q53. If a ball is thrown upwards, the work done by the gravitational force on the ball is _____.

(a) negative
(b) positive
(c) independent of the displacement of the ball
(d) zero

Q54. The dimension of surface tension is _____.

(a) ML^0T
(b) ML^0T^-²
(c) ML²T^-²
(d) MLT^-²

Q55. The list price of an article is Rs. 5,100 and a discount of 32% is offered on the list price. What additional discount per cent on the already discounted price must be offered to a customer to bring the net selling price to Rs. 1,734?

(a) 50%
(b) 49%
(c) 46%
(d) 55%

Q56. Which of the following letter-number clusters will replace the question mark (?) in the given series?

6S, 24T, 12V, 48Y, 24C, ?

(a) 96I
(b) 60H
(c) 96H
(d) 96G

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Q57. What is the first step in providing first aid for a minor burn?

(a) Pop any blisters that form
(b) Cover the burn with a thick cloth
(c) Run cool water over the burn
(d) Apply butter to the burn

Q58. Which of the following terms describes the process of the gradual increase in the average temperature of the Earth's atmosphere, due to the greenhouse effect caused by increased levels of carbon dioxide, CFCs and other pollutants?

(a) Global warming
(b) Ozone depletion
(c) Acid rain
(d) Deforestation

Q59. Each of I, J, K, L, U, V and W has an exam on a different day of a week, starting from Monday and ending on Sunday of the same week. Only two people have the exam before V. Only one person has the exam after L. Only three people have the exam between V and I. Only one person has the exam between J and K. W has the exam immediately before J. Who among the following has the exam on Friday?

(a) V
(b) U
(c) W
(d) I

Q60. Which of the following units are used to measure only fundamental physical quantities?

(a) Derived units
(b) Neither base nor derived units
(c) Base units
(d) Both base and derived units

Q61. What is the typical range of wind speed (in m/s) required for the efficient operation of most commercial wind turbines?

(a) 5 - 15 m/s
(b) 12 - 25 m/s
(c) 3 - 5 m/s
(d) 0 - 2 m/s

Q62. The resistivity of a conductor depends on the _____.

(a) length of conductor
(b) cross-sectional area
(c) material
(d) potential difference across conductor

Q63. In a rare coin collection, there was one gold coin for every five non-gold coins. Then, 18 more gold coins were added to the collection, after which the ratio of gold coins to non-gold coins became 5 : 7. How many coins in all are now there in the collection?

(a) 60
(b) 75
(c) 55
(d) 45

Q64. Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

Assertion (A): It is safe to work under a suspended load if you are in a hurry.

Reason (R): Never exceed the safe working load (SWL) of the equipment you are using.

(a) Assertion (A) is false, but Reason (R) is true.
(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
(c) Assertion (A) is true, but Reason (R) is false.

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(d) Both (A) and (R) are true, and (R) is the correct explanation of (A).

Q65. The value of 32 − 4 [4 + 5 (4 − 4 (6 − 2) + 4) − 18] ÷ 6 is:

(a) 58
(b) 68
(c) 60
(d) 56

Q66. Which of the following features is NOT available in Google Docs?

(a) Track changes
(b) Create tables
(c) Comment on text
(d) Insert images

Q67. The resistance of a uniform metallic conductor depends on its:

(a) area of cross-section only
(b) length only
(c) melting point only
(d) length, area of cross-section, and nature of its material

Q68. A cylindrical tank of diameter 14 m contains water up to the depth of 6 m. What is the total area of wetted surface? (Use π = 22/7)

(a) 412 m²
(b) 416 m²
(c) 414 m²
(d) 418 m²

Q69. Determine the energy of an object with a mass of 5 kg at a height of 8 metres above the ground. Assume the value of 'g' as 9.8 m s^-².

(a) 392 J
(b) 400 J
(c) 784 J
(d) 300 J

Q70. Find the four-digit dividend of 21, 42, 147 and 105 that will give the remainder 14, 35, 140 and 98, respectively.

(a) 8019
(b) 8034
(c) 8813
(d) 8816

Q71. Samir takes 6 days to complete a piece of work, while Tanvir can complete it in 8 days. If Amir also joins them, together, the trio can complete the entire work in 3 days. If a total sum of Rs. 2,400 is to be paid for the job, how much will Amir receive for his contribution?

(a) Rs. 430
(b) Rs. 300
(c) Rs. 340
(d) Rs. 250

Q72. In the following triad, each group of letters is related to the subsequent one following a certain logic. Select from the given options, the one which follows the same logic.

GRAND–GRNAD–DNARG

(a) NIGHT–NGHIT–THGIN
(b) INDEX–DEXIN–XDEIN
(c) MINOR–MOINR–RNOIM
(d) FRUIT–FRIUT–TIURF

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Q73. What is the most effective way to avoid mechanical hazards when operating large and dangerous machines?

(a) Employee physical fitness training only
(b) Proper training and experience
(c) Regular machine maintenance only
(d) Machine redesign to eliminate hazards

Q74. A, B, C, D, E, F and G are sitting around a circular table facing the centre. G is sitting second to the left of E. B is sitting third to the right of A. C is the immediate neighbour of both E and B. D is sitting to the immediate left of G. How many people are sitting between E and F when counted from the right of E?

(a) Three
(b) Four
(c) Two
(d) One

Q75. Which of the following is commonly used to treat drinking water?

(a) Oil filtration
(b) Incineration
(c) Acid neutralisation
(d) Chlorination

Q76. Study the table given below and answer the following question.

Number of mangoes sold on	Monday	Tuesday	Wednesday
Shop X	58	19	25
Shop Y	42	34	30

If one mango was sold for Rs. 80 by shop Y on Tuesday, what was the amount received by shop Y on Tuesday?

(a) Rs. 2,780
(b) Rs. 2,720
(c) Rs. 2,620
(d) Rs. 2,560

Q77. An 8 Ω resistor generates 200 J of heat every second. What is the potential difference across the resistor?

(a) 30 V
(b) 40 V
(c) 10 V
(d) 20 V

Q78. Which of the following options represents the equation for work done?

(a) Work done = force / displacement
(b) Work done = force + displacement
(c) Work done = force × displacement
(d) Work done = force − displacement

Q79. How many folds is/are required to fold an A2 size drawing sheet (420 mm × 594 mm), according to BIS SP: 46-2003?

(a) 4 folds
(b) 2 folds
(c) 3 folds
(d) 1 fold

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Q80. Simplify the following expression.

$(x - y - z)^2 - (x + y + z)^2$

(a) $-4 (xy + yz + zx)$
(b) $-4x (y + z)$
(c) $-4y (x + z)$
(d) $-4z (x + y)$

Q81. Which of the following fundamental quantities are used to express any mechanical quantity?

(a) Mass, time and force
(b) Length, mass and speed
(c) Length, time and energy
(d) Length, mass and time

Q82. What will come in place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

$9 \div 5 + 70 \times 7 - 11 = ?$

(a) 46
(b) 44
(c) 47
(d) 45

Q83. Which chemical process involves replacing the R group of an alcohol with the R' group of an ester to produce biodiesel from vegetable oils?

(a) Distillation
(b) Fermentation
(c) Transesterification
(d) Polymerisation

Q84. SI unit of luminous intensity is ____.

(a) mole
(b) metre
(c) watt
(d) candela

Q85. What should come in place of the question mark (?) in the given series?

197 112 189 129 181 146 173 163 ?

(a) 153
(b) 156
(c) 144
(d) 165

Q86. A class of 30 students appeared in a test. The average score of 12 students is 68, and that of the rest is 70. What is the average score of the class?

(a) 67.2
(b) 68.2
(c) 70.2
(d) 69.2

Q87. Mechanical energy is the sum of _____.

(a) electrical energy and light energy
(b) chemical energy and electrical energy
(c) potential energy and kinetic energy
(d) heat energy and chemical energy

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Q88. In the following series, only one letter-cluster is incorrect. Select the INCORRECT letter-cluster.

INK KPJ MRI OTH QWG SXF

(a) OTH
(b) QWG
(c) MRI
(d) SXF

Q89. A product, whose MRP is Rs. 1,590, is sold for Rs. 835 by a wholesale shop owner. What is the percentage of discount given by him (nearest to its integer)?

(a) 46%
(b) 49%
(c) 45%
(d) 47%

Q90. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusion(s) logically follow(s) from the statements.

Statements:

Some cats are rats.

All bats are tables.

All rats are bats.

Conclusions:

(I): Some cats are bats.

(II): All bats are rats.

(a) Both conclusions (I) and (II) follow.
(b) Only conclusion (I) follows.
(c) Only conclusion (II) follows.
(d) Neither conclusion (I) nor (II) follows.

Q91. In a certain code language,

'A × B' means ‘A is the son of B’,

'A − B' means ‘A is the brother of B’,

'A + B' means ‘A is the wife of B’ and

'A % B' means ‘A is the father of B’.

How is M related to T if ‘M × N − P % S + T’?

(a) Wife's father's brother
(b) Wife's father's brother's son
(c) Wife's mother's brother
(d) Wife's mother's brother's son

Q92. Which of the following statements is correct?

(a) On increasing the thickness of the conductor, resistance is increased.
(b) On increasing the length of the conductor, resistance remains unchanged.
(c) On increasing the length of the conductor, resistance is increased.
(d) On increasing the length of the conductor, resistance is decreased.

Q93. 5 men or 9 women can do a job in 9 days. 5 men work for 7 days and leave. The number of women required to complete the remaining work in 9 days is:

(a) 1
(b) 4
(c) 5
(d) 2

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Q94. In this question, two statements I and II have been given. These statements may be independent causes or effects of independent causes or a common cause. One of the statements may be the effect of the other statement. Read both the statements carefully and select the correct answer.

I. The local river's water levels have reached an all-time low this summer, disrupting water supply to the nearby towns.

II. Several power plants in the region have reported reduced electricity production due to insufficient water for cooling processes.

(a) I is the cause and II is its possible effect.
(b) II is the cause and I is its possible effect.
(c) Both I and II are effects of independent causes.
(d) Both I and II are independent causes.

Q95. What is an appropriate way to handle a misunderstanding in an online conversation?

(a) Blocking the person immediately
(b) Publicly shaming the other person
(c) Ignoring the conversation
(d) Addressing the misunderstanding politely and privately

Q96. How many fundamental units are there in the SI system?

(a) 5
(b) 7
(c) 14
(d) 10

Q97. What is the primary purpose of information kiosks set up by the government?

(a) To provide free food and beverages to citizens
(b) To offer citizens easy access to information and services such as bill payments, registrations and public information
(c) To allow citizens to participate in online gaming competitions
(d) To enable government employees to monitor social media activities of citizens

Q98. The areas of three adjacent faces of a solid cuboid are 190 cm^2, 285 cm^2 and 150 cm^2. What is the volume (in cm^3) of the cuboid?

(a) 2896
(b) 3076
(c) 2850
(d) 2716

Q99. Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) BEWZ
(b) NQIL
(c) RUNP
(d) WZRU

Q100. Which of the following correctly identifies the main components of a standard email structure?

(a) Subject Line, Recipient Address, Message Body and Signature
(b) Header, Body, Footer and Encryption Key
(c) Recipient Address, CC, BCC and Attachment
(d) Username, Password, Message Body and Signature

Q101. Which of the following statements is correct about a protractor?

Statements:

1. A protractor can be used to measure angles from both sides.
2. A protractor is typically made of a rigid metal material.

(a) Only statement 2 is true
(b) Only statement 1 is true
(c) Neither statement is true
(d) Both statements are true

Q102. What is the holding current in a DIAC?
(a) The current that flows when the device is turned off
(b) The current needed to trigger the device into conduction
(c) The current required to break down the junction
(d) The current required to keep the DIAC in conduction once it starts

Q103. The SCR (Silicon controlled rectifier) is also called a _____.
(a) transistor
(b) triac
(c) diode
(d) thyristor

Q104. What is the maximum allowable distance of the screw from the end point of a joint during installation of PVC channel?
(a) 20 cm
(b) 15 cm
(c) 10 cm
(d) 5 cm

Q105. Which of the following IEEE standards focuses on the grounding of electrical systems and equipment?
(a) IEEE 1547
(b) IEEE 519
(c) IEEE 80
(d) IEEE 1100

Q106. What is the most likely cause if a DC motor runs in the wrong direction?
(a) Faulty bearings
(b) High armature resistance
(c) Worn-out brushes
(d) Incorrect field or armature wiring connections

Q107. Which type of wiring is used only for temporary installations?
(a) Conduit wiring
(b) CTS wiring
(c) Casing and capping wiring
(d) Cleat wiring

Q108. If 'P' is the number of poles on a rotor of an alternator, 'n' is the number of revolutions made per second by the rotor, then the frequency will be:
(a) f = (P/2)n
(b) f = (P*n) / 120
(c) f = P*n
(d) f = 120P*n

Q109. Which of the following is the key difference between a fuse and a circuit breaker?
(a) A fuse is a one-time-use device, while a circuit breaker can be reset and reused.
(b) A fuse is used for high-voltage circuits, while a circuit breaker is used for low-voltage circuits.
(c) A fuse can be reset after tripping, while a circuit breaker must be replaced.
(d) A fuse is a mechanical device, while a circuit breaker is an electronic device.

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Q110. If the load on a three-phase system is unbalanced, the power calculation becomes more complex because _____.

(a) the line and phase voltages become equal
(b) the line current becomes zero
(c) the current in each phase differs, and the total power must be calculated by adding individual phase powers
(d) the power factor becomes unity

Q111. In engineering drawing (lettering and numbering), a single stroke means that the _____.

(a) thickness of the line of the letter or number is obtained in three strokes of the pencil
(b) thickness of the line of the letter or number is obtained in one stroke of the pencil
(c) thickness of the line of the letter or number is obtained in two strokes of the pencil
(d) thickness of the line of the letter or number is obtained in no strokes of the pencil

Q112. Salient pole type alternator has a _____ diameter and a _____ axial length for low speed of operation.

(a) large, large
(b) large, short
(c) short, short
(d) short, large

Q113. What is the primary purpose of implementing Lockout/Tagout (LOTO) procedures when working on a DC motor?

(a) To measure motor speed
(b) To increase motor efficiency
(c) To prevent accidental startup during maintenance
(d) To improve motor cooling

Q114. What is another name for CTS wiring?

(a) Casing and capping wiring
(b) Cleat wiring
(c) Conduit wiring
(d) Batten wiring

Q115. Which of the following losses remains variable during normal operation of transformer?

(a) Eddy current loss
(b) Copper loss
(c) Stray loss
(d) Hysteresis loss

Q116. Identify the type of brazed joint shown below.

[Figure: see this question online]

(a) Joggle Lap
(b) Strapped Lap
(c) Butted Flange
(d) Simple Lap

Q117. Which of the following statements correctly describes the placement and purpose of orientation marks on a drawing sheet?

1. Orientation marks are placed at two opposite corners of the drawing sheet to indicate the correct orientation on the drawing board.

2. Orientation marks consist of arrow heads placed across the frame, with one at the shorter side and one at the longer side, coinciding with the centering marks.

3. One of the orientation marks always points towards the draughtsman, indicating the direction in which the drawing sheet should be placed.

4. Orientation marks are used to mark the midpoint of each side of the drawing sheet for accurate centering.

(a) 1, 2, and 4 only
(b) 1, 2, and 3 only

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(c) 1 and 4 only
(d) 2 and 3 only

Q118. In a single-phase transformer, which instrument is used to check continuity between the primary and secondary windings when they are not energised?
(a) Use a multimeter set to ohms
(b) Use a multimeter set to current
(c) Use a multimeter set to voltage
(d) Use an energy meter

Q119. Which of the following parts of a hammer-head is used for shaping and forming work like riveting and bending?
(a) Face
(b) Pein
(c) Cheek
(d) Eyehole

Q120. A resistor has these colour bands: Brown, Black, Red and Gold. What is its resistance value?
(a) 100 Ω ± 5%
(b) 10 Ω ± 5%
(c) 1,000 Ω (1 kΩ) ± 5%
(d) 10,000 Ω (10 kΩ) ± 5%

Q121. In parallel grouping of capacitors, what happens to the total capacitance?
(a) It increases.
(b) It remains the same.
(c) It becomes zero.
(d) It decreases.

Q122. What is the chemical effect that occurs in a battery during the charging process of a Lead Acid battery?
(a) Lead sulphate decomposes into lead and sulphuric acid
(b) Water dissociation into hydrogen and oxygen
(c) Sulphuric acid dissociates into hydrogen and sulphate ions
(d) Lead reacts with sulphur to form lead sulphate

Q123. A capacitor with a capacitance of 10 μF is connected in series with a 1 MΩ resistor. How much time will it take for the capacitor to reach 90% of its final charge?
(a) 50.2 seconds
(b) 10.5 seconds
(c) 35.7 seconds
(d) 23.03 seconds

Q124. A DC generator delivers a load current of 25 A at 200 V. If the generated EMF is 205 V, what is the armature resistance?
(a) 0.4 Ω
(b) 0.1 Ω
(c) 0.2 Ω
(d) 0.3 Ω

Q125. Why is it important to follow proper disposal procedures for industrial waste?
(a) To save time and effort in sorting waste
(b) To comply with environmental regulations and reduce pollution
(c) To reduce the number of trash bins needed
(d) To allow waste to decompose anywhere

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Q126. Match the correct length and breadth of the Trimmed sizes of sheets.

Designation	Trimmed size
A. A0	P. 297 × 420
B. A1	Q. 420× 594
C. A2	R. 594 × 841
D. A3	S. 841 × 1189

(a) A - S, B - R, C - P, D - Q
(b) A - P, B - R, C - Q, D - S
(c) A - R, B - S, C - Q, D - P
(d) A - S, B - R, C - Q, D - P

Q127. What happens to inductive reactance, when frequency increases?
(a) It increases.
(b) It remains the same.
(c) It becomes zero.
(d) It decreases.

Q128. In a Power MOSFET, the gate-to-source voltage (Vgs) controls the _____.
(a) source current
(b) drain current
(c) gate current
(d) breakdown voltage

Q129. Which of the following processes is used to manufacture thick film resistors?
(a) Embedding metal wire in ceramic
(b) Spraying metal powder on a ceramic base
(c) Coating a metal rod with ceramic
(d) Pasting metal compound and powdered glass on a ceramic base

Q130. Which of the following is an example of a p-type semiconductor?
(a) Germanium doped with phosphorus
(b) Silicon doped with arsenic
(c) Silicon doped with boron
(d) Silicon doped with phosphorus

Q131. When drawing a curved line of a specific length in an engineering drawing, which tool is most appropriate for ensuring accuracy?
(a) Protractor
(b) Compass
(c) Straightedge
(d) French Curve

Q132. What is waste?
(a) Unwanted or unusable materials
(b) Valuable substances for agriculture
(c) Useful materials for industries
(d) Natural resources for living organisms

Q133. Which of the following is true for an alternator?
(a) Alternator is a synchronous motor.
(b) Alternator is a synchronous generator.
(c) Alternator is a DC machine.

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(d) Alternator is an AC induction generator.

Q134. A shunt release in an MCCB is commonly used for:

(a) remote tripping of the MCCB
(b) overcurrent protection
(c) voltage stabilisation
(d) improving power factor

Q135. If 'P' is the number of poles on a rotor of an alternator, how many cycles of EMF are completed in one revolution?

(a) 2P
(b) P
(c) P/2
(d) P/4

Q136. Which of the following instruments is used to measure the resistance of an earthing electrode?

(a) Tachometer
(b) Clamp meter
(c) Earth resistance tester
(d) Power analyser

Q137. What will be the eddy current loss if the supply frequency of a transformer becomes double?

(a) Double
(b) Four times
(c) No change
(d) Half

Q138. What is the significance of the term 'equipotential bonding' in the context of IEEE regulations for earthing?

(a) It is a method to increase the resistance of the grounding system.
(b) It refers to the insulation of electrical cables.
(c) It refers to ensuring that all metallic parts of electrical systems are connected together to maintain the same electrical potential.
(d) It ensures that electrical systems operate at different voltage levels.

Q139. Which of the following maintenance practices helps prevent overheating in a DC motor?

(a) Regular lubrication of bearings
(b) Reducing field current
(c) Disconnecting the load frequently
(d) Increasing armature resistance

Q140. A device operates at 240 V and consumes 480 W of power. What is the current flowing through the device?

(a) 2 A
(b) 1.5 A
(c) 2.5 A
(d) 1 A

Q141. What should be the minimum thickness of the MS clips used for fixing PVC channels under steel joints?

(a) 2.2 mm
(b) 1.7 mm
(c) 0.5 mm
(d) 1.2 mm

Q142. Which of the following methods is used to reduce earth resistance in an earthing system?

(a) Reducing the distance between the earth and the neutral
(b) Using insulated grounding cables
(c) Using larger conductors for grounding
(d) Increasing the depth of the ground electrode

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Q143. Which of the following is a key advantage of using Thyristors in power control applications?

(a) High efficiency and low power loss
(b) Small size and low cost
(c) High frequency switching
(d) Low voltage handling capabilities

Q144. Which of the following punches is used to make deeper witness marks on scribed lines and make it easier for the drill to start correctly?

(a) Solid punch
(b) Centre punch
(c) Pin punch
(d) Prick punch

Q145. In a balanced three-phase system, the phase angles between the line-to-line voltages are _____.

(a) 0°
(b) 120°
(c) 60°
(d) 90°

Q146. The EMF per turn of a single phase 10 kVA, 2200/220 V, 50 Hz transformer is 10 V. Calculate the number of primary and secondary turns, respectively.

(a) 22 and 220
(b) 10 and 110
(c) 110 and 10
(d) 220 and 22

Q147. Which type of material is used to protect the transformer winding from the core?

(a) Steel
(b) Iron
(c) Water
(d) Mica

Q148. A 6-pole alternator is running and producing a frequency of 50 Hz. If the frequency is decreased to 20 Hz, how many poles will be required, if the alternator is to be run at the same speed?

(a) 4
(b) 2
(c) 6
(d) 8

Q149. Which power loss is assessed by open-circuit test on transformer?

(a) Friction loss
(b) Copper loss
(c) Winding loss
(d) Core loss

Q150. When did India implement the Hazardous Wastes (Management and Handling) Rules to regulate the disposal and handling of hazardous waste?

(a) 1987
(b) 2000
(c) 1989
(d) 1982

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Q151. If the coefficient of linear expansion of a material is 2 × 10^-^5 °C^-¹, what does it mean?

(a) The material expands by 2 × 10^-^5 times its original length per degree Celsius
(b) The material expands by 2 × 10^-^5 times its original area per degree Celsius
(c) The material always increases by 2 × 10^-^5 kg when temperature is increased by 1°C
(d) The material expands by 2 × 10^-^5 times its original volume per degree Celsius

Q152. Select the correct statement regarding grounding and earthing in electrical system.

(a) Grounding involves connecting the earth to a system's neutral or other conductors, while earthing connects the system's frame or body to the earth.
(b) Grounding and earthing are the same process with no distinction.
(c) The grounding and earthing are related to single phase system.
(d) Grounding is used to protect humans from electric shocks, while earthing is used to reduce power consumption.

Q153. What does inductance (L) oppose in a circuit?

(a) Change in current magnitude
(b) Change in resistance
(c) Change in voltage
(d) Change in frequency

Q154. What is the main difference between grounding and earthing in a three-phase system?

(a) Grounding connects only the body of the electrical equipment to the earth, whereas earthing is associated with the neutral conductor.
(b) Grounding is used to protect electrical appliances from surge voltages, while earthing is used to prevent system overloads.
(c) Grounding and earthing are used interchangeably, with no major difference.
(d) Grounding provides a return path for current, while earthing provides a safe path for fault current.

Q155. Which type of DC generator has its field winding connected in parallel with the armature?

(a) Separately excited DC generator
(b) Compound DC generator
(c) Series DC generator
(d) Shunt DC generator

Q156. Which of the following types of wooden mallets are used for hollowing panel beatings?

(a) Side-faked mallets
(b) Standard wooden mallets
(c) Bossing mallets
(d) End-faked mallets

Q157. What force (effort) will be required to push a load, initially at rest, of mass 500 g, so that at a distance of 20 m, its final velocity is 20 m/sec [Assume that there is no friction and 'g' = 10 m/s²].

(a) 10 N
(b) 10 J
(c) 5 N
(d) 5 J

Q158. In an unbalanced three-phase system, the neutral current will _____.

(a) be equal to the ratio of phase voltage of any phase to the impedance of that phase
(b) always be zero
(c) be equal to the phasor sum of the unbalanced currents
(d) be equal to the ratio of phasor sum of phase voltage of any two phases to the total impedance of both phases

Q159. The total power delivered by a balanced three-phase system is _____.

(a) the product of the phase voltage and current of any one phase
(b) the sum of the individual powers of any two phases
(c) the average of the powers in all three phases

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(d) the sum of the individual powers in each phase

Q160. If a machine has an efficiency of 80%, it means:

(a) the machine has a velocity ratio and mechanical advantage both equal to 80
(b) the machine does not have any loss in input energy
(c) the machine loses 20% of the input
(d) the machine produces more output than input

Q161. What is the blade length of the T1 'T' square, as per IS:1360-1989?

(a) 1500 mm
(b) 700 mm
(c) 1000 mm
(d) 500 mm

Q162. In which application is a Gate Turn-Off Thyristor (GTO) used?

(a) Low-power digital circuits
(b) Audio amplifiers
(c) Power inverters and motor drives
(d) High-speed communication systems

Q163. In engineering drawing, what is defined as the path of a moving point with no thickness?

(a) Point
(b) Line
(c) Curve
(d) Angle

Q164. Which of the following punch marks is used for the correct location and seating of the divider point?

(a) Prick punch marks of 30°
(b) Centre punch marks of 60°
(c) Centre punch marks of 30°
(d) Prick punch marks of 120°

Q165. What is the primary principle behind the generation of electrical energy in a piezoelectric device?

(a) Conversion of thermal energy into electrical energy
(b) Conversion of light energy into electrical energy
(c) Conversion of mechanical stress into electrical energy
(d) Conversion of chemical energy into electrical energy

Q166. What does an optical pyrometer measure?

(a) The temperature of the surface
(b) The relative density of liquids
(c) The volume of liquids
(d) The pressure of gases

Q167. Which of the following uses of wire gauge is INCORRECT?

(a) It does not help determine how much current a wire can carry.
(b) It measures the diameter of a wire.
(c) It is used in electrical installations, welding and other applications.
(d) Using the wrong wire gauge can damage appliances and electronic devices.

Q168. Which of the following types of wooden mallets are used for general purpose work such as flattening and bending?

(a) Standard wooden mallets
(b) Bossing mallets
(c) Side-faked mallets
(d) End-faked mallets

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Q169. Select the option that is correct regarding the following two statements labelled Assertion (A) and Reason (R).

Assertion: The line voltage in a star-connected system is √3 times the phase voltage.

Reasoning: In a star connection, the line voltage is the vector sum of the phase voltages, resulting in a √3 factor between them.

(a) Both Assertion and Reason are correct, but the Reason is not the correct explanation for the Assertion.
(b) Assertion is correct, but Reason is incorrect.
(c) Both Assertion and Reason are correct, and the Reason is the correct explanation for the Assertion.
(d) Assertion is incorrect, but Reason is correct.

Q170. Which of the following is a fundamental unit?

(a) metre
(b) watt
(c) pascal
(d) newton

Q171. Pencils are rated in engineering drawings based on the _____.

(a) hardness or softness of the lead
(b) durability of the lead
(c) shape of the lead
(d) colour of the lead

Q172. What is the recommended action if a DC motor produces excessive sparking at the brushes?

(a) Replace worn-out brushes and clean the commutator
(b) Add resistance to the armature circuit
(c) Increase the supply voltage
(d) Reduce the motor speed

Q173. Which of the following statements is/are correct?

Statement I - The annealing process uses heat to reduce the hardness and increase the ductility and toughness of various steels, cast iron, and alloys.

Statement II - Quenching is a rapid cooling process that alters specific properties of materials by manipulating the cooling rate.

(a) Statement (I) is correct but Statement (II) is incorrect.
(b) Statement (I) and (II) both are incorrect.
(c) Statement (I) is incorrect but Statement (II) is correct.
(d) Statement (I) and (II) both are correct.

Q174. Which type of semiconductor material is typically used to construct a DIAC?

(a) Copper
(b) Silicon
(c) Gallium Arsenide
(d) Aluminium

Q175. What determines the appropriate current rating of a fuse in a circuit?

(a) The length of the circuit wires
(b) The voltage supplied to the circuit
(c) The smallest cable rating in the circuit
(d) The number of electrical devices connected

ANSWER KEY

1	a	2	a	3	a	4	d	5	a	6	a	7	c	8	b	9	c	10	c
11	a	12	b	13	c	14	c	15	a	16	c	17	d	18	a	19	d	20	c

21	b	22	d	23	a	24	b	25	a	26	d	27	a	28	c	29	a	30	a
31	b	32	a	33	b	34	d	35	b	36	c	37	d	38	d	39	c	40	c
41	c	42	b	43	c	44	a	45	c	46	a	47	b	48	d	49	d	50	a
51	d	52	d	53	a	54	b	55	a	56	c	57	c	58	a	59	b	60	c
61	a	62	c	63	a	64	a	65	b	66	a	67	d	68	d	69	a	70	c
71	b	72	d	73	b	74	c	75	d	76	b	77	b	78	c	79	c	80	b
81	d	82	a	83	c	84	d	85	d	86	d	87	c	88	b	89	d	90	b
91	b	92	c	93	d	94	a	95	d	96	b	97	b	98	c	99	c	100	a
101	b	102	d	103	d	104	b	105	c	106	d	107	d	108	a	109	a	110	c
111	b	112	b	113	c	114	d	115	b	116	d	117	d	118	a	119	b	120	c
121	a	122	a	123	d	124	c	125	b	126	d	127	a	128	b	129	d	130	c
131	d	132	a	133	b	134	a	135	c	136	c	137	b	138	c	139	a	140	a
141	d	142	d	143	a	144	b	145	b	146	d	147	d	148	b	149	d	150	c
151	a	152	a	153	a	154	d	155	d	156	c	157	c	158	c	159	d	160	c
161	c	162	c	163	b	164	a	165	c	166	a	167	a	168	a	169	c	170	a
171	a	172	a	173	d	174	b	175	c										

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