RRB ALP CBT-II (Machinist) Official Paper (Held On: 06 May, 2025 Shift 1) (Previous Year Paper)

RRB Assistant Loco Pilot (ALP) • 2025 • 175 questions • 150 minutes • Answer key

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

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Scan the QR code or click the link to open it.

1 question is in Hindi and not printed here. Each one links to the online version, where you can read it.

PART A

Q1. In this question, a statement is given followed by two courses of action, numbered I and II. You must assume everything in the statement to be true, and on the basis of the information given in the statement, decide which of the given courses of action logically follow(s) for pursuing.

Statement:

A major fire broke out this afternoon in a mall in Jaipur, causing several casualties amongst the people present inside.

Courses of Action:

The police must check to see if the fire safety regulations were followed by the mall.

Traffic police must divert traffic away from the fire site, to enable evacuation of people.

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

Q2. The taxi charges in a city consist of a fixed charge together with the charge per kilometre for the distance covered. For a distance of 35 km, the charge paid is Rs. 375 and for a distance of 48 km, the charge paid is Rs. 427. Find the fixed charges and the charge per km (in Rs.), respectively.

(a) 220 and 6
(b) 227 and 5
(c) 235 and 4
(d) 275 and 3

Q3. Which technology operates through an electrochemical process that transforms the energy stored in hydrogen gas (H2) and oxygen into electrical power without combustion?

(a) Hydroelectric power
(b) Solar thermal power
(c) Hydrogen fuel cells
(d) Wind power

Q4. Seema is twice as old as Alka. If nine years is subtracted from Alka's age and six years is added to Seema's age, then Seema will be four times Alka's age. How old was Alka three years ago?

(a) 18 years
(b) 21 years
(c) 16 years
(d) 20 years

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Q5. 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 ships are boats.

All boats are submarines.

Some submarines are yachts

Conclusions:

(I) Some yachts are boats.

(II) Some yachts are ships.

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

Q6. Eight people are sitting in two parallel rows containing 4 people each in such a way that there is equal distance between adjacent persons. In row 1 – A, B, C and D are seated and all of them are facing south. In row 2 – P, Q, R and S are seated and all of them are facing north. Thus each person faces another person from the other row. Only three people sit to the right of R. D faces the person who is the immediate neighbour of S and P. C faces the person who sits second to the left of S. R does not face A.

Who amongst the following faces B?

(a) R
(b) S
(c) P
(d) Q

Q7. In Engineering Drawing, which of the following is the correct definition of the term 'dimension'.

(a) The thickness of the line of a letter
(b) A continuous thick or wide line along which the prints are trimmed
(c) A line that is drawn to make a section evident
(d) A numerical value expressed in an appropriate unit of measurement

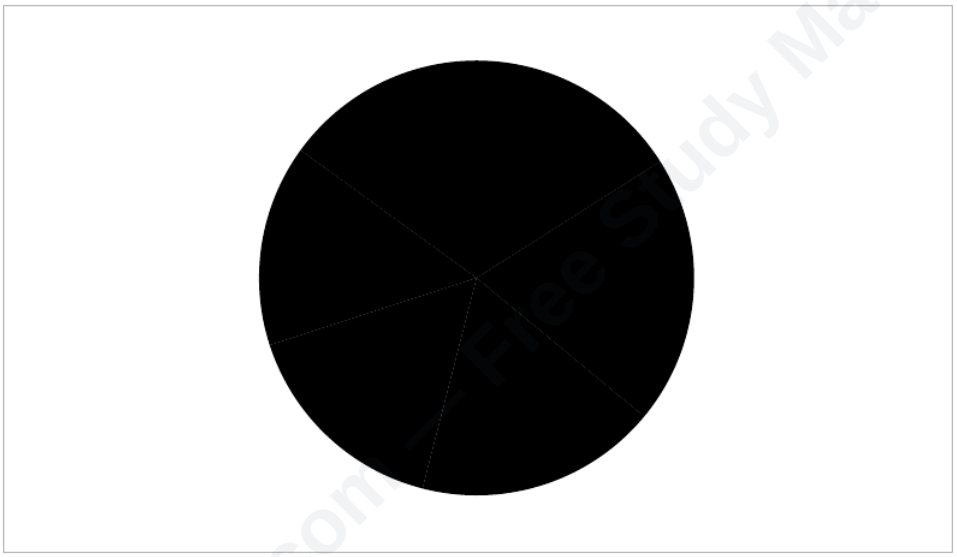
Q8. In a certain code language, ‘LOVE’ is coded as ‘8364’ and ‘EARS’ is coded as ‘3517’. What is the code for ‘E’ in the given code language?

(a) 7
(b) 5
(c) 3
(d) 4

Q9. Study the given pie chart and answer the question that follows.

The given pie chart indicates the percentage-wise breakup of students in different subjects. The total number of students in the college is 5000.

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What is the ratio of the students studying Zoology to the students studying Botany?

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

Q10. Which of the following steps is essential when configuring a web browser to enhance both security and privacy for a user?

(a) Enabling pop-ups for all websites to improve user experience
(b) Setting the homepage to a frequently visited website for quick access
(c) Configuring the browser to block third-party cookies and enabling HTTPS-only mode
(d) Disabling the browser's cache to improve website loading times

Q11. Which of the following benefits can be obtained by conducting an energy audit in a commercial building?

(a) Increasing the cost of energy bills
(b) Identification of opportunities for energy savings
(c) Reduction in price of energy per its unit usage
(d) Reduced market value of building

Q12. What should come in place of the question mark (?) in the given series?

17 29 41 59 77 101 125 ?

(a) 175
(b) 161
(c) 155
(d) 149

Q13. Which of the following options is correct when two objects at the same temperature are kept in contact with each other?

(a) Both objects transfer heat to each other.
(b) Heat is transferred from object 2 to object 1.
(c) No heat is transferred.
(d) Heat is transferred from object 1 to object 2.

Q14. What will come in place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

32 + 28 ÷ 3 × 4 − 15 = ?

(a) 32
(b) 26
(c) 29

(d) 20

Q15. Mangal starts from Point A and walks 14 m towards north. He takes a right turn, walks 9 m and then takes a right turn, walks 37 m, reaches Point B and stops. Jayanti starts from Point Z which is 15 m towards the east of Point B. She walks 11 m towards east, takes a left turn, walks 42 m, turns left and walks 63 m, turns left and walks 19 m and stops at Point Y. What is the shortest distance between Point A and Point Y? (All turns are 90 degree turns only.)

(a) 25 m
(b) 28 m
(c) 26 m
(d) 31 m

Q16. What is the amount of work done in moving a charge of 6 C from a point with a potential of 120 V to a point with a potential of 140 V?

(a) 840 J
(b) 120 J
(c) 720 J
(d) 3.33 J

Q17. In a clearance sale of electronic items, an item whose marked price was Rs. 12,225 is now sold for Rs. 10,758, d% is the discount percentage on the item. The value of d is:

(a) 11%
(b) 14%
(c) 12%
(d) 13%

Q18. Which of the following is NOT a fundamental quantity in the SI system?

(a) Luminous intensity
(b) Amount of substance
(c) Time
(d) Force

Q19. Alloys are preferred over pure metals in electrical heating devices:

(a) because the resistivity of an alloy is generally higher than its constituent metals.
(b) because alloys oxidise (burn) readily at high temperatures.
(c) because the elasticity of an alloy is higher than that of its constituent metals.
(d) because the resistivity of an alloy is lower than that of its constituent metals.

Q20. Which of the following correctly describes the direction of electric current?

(a) From low potential to high potential
(b) Opposite to the direction of positive charge flow
(c) Same as the direction of electron flow
(d) Opposite to the direction of electron flow

Q21. Which of the following is an application of the 5S concept in a workshop?

(a) Increasing the number of safety supervisors
(b) Keeping tools and materials organised for easy access
(c) Removing safety protocols to improve efficiency
(d) Using extra tools without proper storage

Q22. Find the value of 96.86572 × 10^7.

(a) 96,86,57,200
(b) 0.9686572
(c) 96,86,572
(d) 9,68,65,720

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Q23. Ampere is the SI unit of _____.

(a) electric current
(b) electric power
(c) electric charge
(d) mass

Q24. If a = 21 and b = 19, find the value of $(a^2 + b^2 + ab)/(a^3 - b^3)$.

(a) 3/5
(b) 2/3
(c) 2/5
(d) 1/2

Q25. What is the immediate action to take when a fire breaks out in a workplace?

(a) Ignore the fire and continue working
(b) Try to put it out using water without knowing the fire type
(c) Gather near the fire to observe the situation
(d) Raise the alarm and evacuate the area

Q26. The floor of a rectangular hall is a square with a perimeter of 220 m. If the cost of painting the four walls at the rate of Rs. 10 per m^2 is Rs. 11,000, then find the volume of the hall.

(a) 15,125 m^3
(b) 19,200 m^3
(c) 19,520 m^3
(d) 18,250 m^3

Q27. The list price of an article is Rs. 5,000 and a discount of 70% 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. 1,275?

(a) 10%
(b) 16%
(c) 18%
(d) 15%

Q28. 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.J has the exam on Friday. Only two people have the exam between V and J. Only four people have the exam between L and V. U has the exam immediately after W. K does not have the exam on Monday.How many people have the exam before K and after I?

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

Q29. The median of the data 2, 6, 4, 8, 1, 2, 5, 8, 9, 10, 12, 9, 7, 8, 3, 1, 0, 9, 2, 5 is _____.

(a) 6
(b) 5.5
(c) 5
(d) 6.5

Q30. If an electric heater draws a current of 5 A when the potential difference across its terminals is 75 V, what current will it draw when the potential difference is increased to 150 V?

(a) 10 A
(b) 15 A
(c) 20 A
(d) 30 A

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Q31. 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.)

11 – 121 – 221 – 171; 27 – 729 – 829 – 779

(a) 16 – 196 – 296 – 246
(b) 13 – 169 – 244 – 188
(c) 25 – 625 – 725 – 675
(d) 23 – 529 – 629 – 589

Q32. The HCF of two numbers is 62, and the other two factors of the LCM of these factors are 7 and 9. Which of the options given below can be a possible value of the smaller of the two numbers?

(a) 432
(b) 434
(c) 433
(d) 431

Q33. If the sum of lengths of two adjacent sides of a parallelogram is 12 cm, then the perimeter of the parallelogram is:

(a) 34 cm
(b) 36 cm
(c) 20 cm
(d) 24 cm

Q34. How many base units are given in the SI system?

(a) 9
(b) 7
(c) 3
(d) 11

Q35. A is thrice as good a workman as B and together they can finish a piece of work in 12 days. In how many days can A alone finish the work?

(a) 14 days
(b) 12 days
(c) 16 days
(d) 18 days

Q36. Which of the following is NOT one of the 5S principles?

(a) Sustain
(b) Supervise
(c) Standardise
(d) Sort

Q37. 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 pair)

(a) DW – YA
(b) MF – HJ
(c) WP – RS
(d) SL – NP

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Q38. Which of the following is a poor conductor of heat?

(a) Wool
(b) Steel spoon
(c) Copper
(d) Aluminium rod

Q39. Rakesh starts a business with a capital of Rs. 2,50,000. He incurs a loss of 5% during the first year. However, he makes a profit of 4% on his remaining investment during the second year. Finally, he makes a profit of 20% on his new capital during the third year. Find his total profit at the end of three years.

(a) Rs. 46,400
(b) Rs. 46,500
(c) Rs. 46,700
(d) Rs. 46,600

Q40. The resistances of 30 ohm, 20 ohm and 60 ohm are connected in parallel. The equivalent resistance of the combination is _____.

(a) 110 ohm
(b) 0.1 ohm
(c) 12 ohm
(d) 10 ohm

Q41. What should come in place of the question mark (?) in the given series?

UT27, RQ25, NM23, ?

(a) IG21
(b) IH29
(c) JH19
(d) IH21

Q42. Refer to the following letter, number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) K A T & 4 @ Y # 6 K & 2 R % 7 D 3 5 E * S (Right)

How many such symbols are there which are immediately preceded by a number and also immediately followed by a letter?

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

Q43. Match the following.

(A) Continuous thick lines	**(P) Projection lines**
(B) Hidden lines	(Q) Principal lines
(C) Outlines	(R) Dotted lines
(D) Extension lines	(S) Object lines

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

Q44. Which of the following is an example of uniform motion?

(a) A vehicle moving through a crowded area
(b) A train moving at a constant speed on a straight track
(c) A sprinter running a 100-metre race with varying speed

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(d) A ball rolling down a slope

Q45. 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.)

24 – 48 – 108 – 36; 18 – 36 – 96 – 32

(a) 82 – 139 – 234 – 78
(b) 132 – 264 – 444 – 138
(c) 53 – 106 – 166 – 55
(d) 48 – 96 – 156 – 52

Q46. Match the following, according to lettering and numbering (uppercase lettering) as per BIS SP: 46-2003.

Width (W)	Capital letters
(A) 5	(I) W
(B) 6	(II) A, M, Q, V, X, Y
(C) 7	(III) B, D, G, H, K, N, O, P, R, S, T, U and Z
(D) 9	(IV) C, E, F, L

(a) A-(I), B-(III), C-(II), D-(IV)
(b) A-(IV), B-(III), C-(II), D-(I)
(c) A-(IV), B-(III), C-(I), D-(II)
(d) A-(IV), B-(II), C-(III), D-(I)

Q47. An object of mass m is made to fall freely from a height h. As the object continues to fall, what will happen to its energy?

(a) The kinetic energy and potential energy will not change.
(b) The potential energy would decrease while the kinetic energy would increase.
(c) The potential energy would increase while the kinetic energy would decrease.
(d) The potential energy and kinetic energy will both increase.

Q48. A can complete a piece of work in 18 days. B can complete it in 14 days. With the assistance of C, they completed the work in 7 days. C alone can complete it in _____ days.

(a) 63
(b) 42
(c) 64
(d) 36

Q49. What should come in place of the question mark (?) in the given alpha-numeric series?

2M, 5O, 10R, 13T, 18W, 21Y, ?

(a) 26B
(b) 26C
(c) 24B
(d) 26A

Q50. The mode of 4, 6, 4, 6, 5, 7, 5, 7, 4, 6, 7, 6 is:

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

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Q51. How fast should a cat of mass 15 kg run in order to have a kinetic energy of 120 J?

(a) 40 m/s
(b) 4 m/s
(c) 16 m/s
(d) 0.16 m/s

Q52. In a certain code language, ‘WILD’ is coded as ‘8164’ and ‘DOGS’ is coded as ‘3517’. What is the code for ‘D’ in the given code language?

(a) 4
(b) 1
(c) 3
(d) 5

Q53. Simran rides a distance of 60 m in one minute and then returns along the same straight path. The average velocity of her ride is _____.

(a) 0 m/s
(b) 2 m/s
(c) 1 m/s
(d) 60 m/s

Q54. The resistance of a metallic wire is R. If the radius of the metallic wire is reduced to half of its initial value while keeping all other parameters the same, the new resistance becomes _____.

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

Q55. Select the pair that follows the same pattern as the one followed by the two sets of pairs given below. Both pairs follow the same pattern.

BSR : GQW

LOB : QMG

(a) RWH : WUM
(b) HVD : LTH
(c) KRW : NPZ
(d) QGT : TDW

Q56. If 11.6 : x :: x : 2.9, and x > 0, then find the value of x.

(a) 10.9
(b) 7.7
(c) 5.8
(d) 3.1

Q57. What is the first step when encountering a system failure in a workplace?

(a) Report the issue and follow the emergency protocol
(b) Ignore the failure and continue working
(c) Immediately restart all systems without inspection
(d) Disconnect all power sources permanently

Q58. What should come in place of the question mark (?) in the given series?

87 118 149 ? 211 242

(a) 188
(b) 171
(c) 180
(d) 199

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Q59. Jaspreet deposited a sum of Rs. 12,800 at 5% rate of interest per annum, compounded annually. The total amount (in Rs.) received by Jaspreet after 2 years will be:

(a) 13,997
(b) 14,112
(c) 14,512
(d) 14,442

Q60. Which key combination is commonly used for copying text in many text editing applications in Windows?

(a) Ctrl+V
(b) Ctrl+S
(c) Ctrl+C
(d) Tab

Q61. How many significant figures are there in 4.700 m?

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

Q62. In a business, Tushar invests in Rs. 10,000 and Salil invests in Rs. 20,000. Tushar received 10% of the profit for managing the business and the rest of the profit is divided in the ratio of their capitals. Find Tushar's share of the profit (in Rs.) in a profit of Rs. 14,400.

(a) 5,610
(b) 5,760
(c) 5,510
(d) 5,910

Q63. Which of the following correctly describes the role of DNS (Domain Name System) in internet architecture?

(a) DNS routes data packets to their destination across the internet.
(b) DNS translates domain names into IP addresses to allow browsers to locate web servers.
(c) DNS translates IP addresses into domain names to make them easier to remember.
(d) DNS secures the data transmitted over the internet by encrypting it.

Q64. Which of the following is an INCORRECT formula for power?

(a) VI
(b) I^2R
(c) I^2Rt
(d) V^2/R

Q65. A boy goes to school at a speed of 5 km/hr. He returns at a speed of 14 km/hr. He takes a total of 8 hours for both going to school and returning. The distance (in km) between his home and school is:

(a) 29.5
(b) 27
(c) 28.6
(d) 31

Q66. Which of the following features allows the user to quickly find emails received from a specific sender?

(a) Archive
(b) Draft
(c) Filter
(d) Sort

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Q67. If ‘A’ stands for ‘÷’, ‘B’ stands for ‘×’, ‘C’ stands for ‘+’ and ‘D’ stands for ‘−’, then what will come in place of the question mark (?) in the following equation?

35 A 7 C 9 B 3 D 16 = ?

(a) 21
(b) 18
(c) 16
(d) 10

Q68. What is the main function of the Transport Layer in the internet architecture?

(a) Reliable data transfer and error correction
(b) Data encapsulation
(c) Routing of packets
(d) IP addressing

Q69. A line in an engineering drawing is the _____.

(a) one-dimensional figure, which has length but no width
(b) dimensionless location in space or on a drawing sheet that has no width, height, or depth
(c) three-dimensional object with length, breadth, and height
(d) closed curve where all points are the same distance from a fixed centre point

Q70. The heat developed in a 5 ohm resistor in 2 minutes when a 2A current passes through it is _____.

(a) 2400 J
(b) 500 J
(c) 1000 J
(d) 40 J

Q71. The areas of three adjacent faces of a solid cuboid are 162 cm^2, 144 cm^2 and 50 cm^2. What is the volume (in cm^3) of the cuboid?

(a) 1080
(b) 805
(c) 833
(d) 1365

Q72. Pihu starts her car at 9 a.m. to reach her office, which is 20 km away. She covers the first 10 km in 30 minutes and reaches her office at 10 a.m. Pihu’s motion is _____.

(a) retarded motion
(b) non-uniform motion
(c) accelerated motion
(d) uniform motion

Q73. How does turning off unused electrical devices contribute to energy conservation?

(a) By lowering utility bills
(b) By enhancing device performance
(c) By degrading electrical devices
(d) By increasing energy use

Q74. An electric lamp with a resistance of 35 ohms and a conductor with a resistance of 5 ohms are connected to an 8 V battery in series. Calculate the current flowing through the circuit.

(a) 0.2 A
(b) 1.82 A
(c) 40 A
(d) 2 A

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Q75. Calculate the energy possessed by an object of mass 10 kg when it is raised to a height of 5 m from the ground. Given: g = 9.8 m s^(-2).

(a) 500 J
(b) 450 J
(c) 490 J
(d) 400 J

Q76. If (sin θ+cosθ)/(sinθ-cosθ)=12 then the value of (121tan²θ - 3)/(169Cot²θ + 1) is:

(a) -83/21
(b) -83/61
(c) 83/61
(d) 83/21

Q77. E, F, G, H, P, Q, and R, are sitting around a circular table facing the centre. F sits fourth to the right of E. Only R sits between F and H. H is NOT an immediate neighbour of E. Only P sits between E and G.

How many people sit between G and Q when counted from the right of G?

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

Q78. Find the value of $x^2 + y^2$, given that, $x = 7 + \sqrt{1}$, $y = 7 - \sqrt{1}$.

(a) 56
(b) 69
(c) 100
(d) 98

Q79. How do we find absolute error?

(a) Absolute error = Actual value/observed value
(b) Absolute error = Actual value × observed value
(c) Absolute error = Actual value + observed value
(d) Absolute error = Actual value − observed value

Q80. What is the main advantage of using solar energy over fossil fuels?

(a) Greenhouse gas emission is higher when solar energy is used.
(b) Solar energy extraction requires high operational cost when compared to fossil fuels.
(c) Solar energy requires mining and extraction, whereas fossil fuels are free of cost.
(d) Solar energy is abundantly available and renewable in nature.

Q81. Which of the following is an effective way to prevent electrical accidents in the workplace?

(a) Working on live wires with bare hands
(b) Using water to cool overheated electrical equipment
(c) Using insulated tools and wearing rubber gloves
(d) Ignoring minor electrical faults

Q82. Which term describes the maximum amount of solar energy that a photovoltaic (PV) system can convert into electricity under standard test conditions?

(a) Nameplate capacity
(b) Rated capacity
(c) Effective capacity
(d) Peak load

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Q83. Aditya is using two thin blankets instead of one thick blanket in winter to keep himself warm because _____.

(a) the friction between the two blankets produces heat
(b) the air trapped between the blankets is a poor conductor of heat
(c) the blankets are at a higher temperature than the surroundings
(d) two blankets are cheaper than one thick blanket

Q84. In a certain code language, 'BORE' is coded as '8624' and 'TABS' is coded as '3217'. What is the code for 'B' in the given code language?

(a) 7
(b) 1
(c) 2
(d) 8

Q85. Two trains of lengths 155 m and 160 m are running at speeds of 74 km/hr and 52 km/hr, respectively, on parallel tracks in opposite directions. In how many seconds will they pass each other?

(a) 9 seconds
(b) 14 seconds
(c) 7 seconds
(d) 18 seconds

Q86. In winters, people wear jacket because _____.

(a) it looks good
(b) fabric of jacket is a conductor of heat so it traps body heat
(c) fabric of jacket is an insulator of heat so it traps body heat
(d) jacket allows the heat to flow from our body to surroundings

Q87. Akshay gets 2% increase in his sale amount in the first year and 25% in the second year. With that his present sale is Rs. 1,42,800. What was his sale (in Rs.) two years ago?

(a) 1,14,240
(b) 92,000
(c) 1,40,000
(d) 1,12,000

Q88. What is the scientific notation for 55,60,000 km?

(a) 5.56 × 10^6 km
(b) 5.56 × 10^4 km
(c) 55.6 × 10^4 km
(d) 556 × 10^6 km

Q89. Two containers, one painted black and the other painted white, have been kept in sunlight for one hour in the afternoon. Choose the correct observation.

(a) There is no effect on either container.
(b) The white container becomes hotter than the black container.
(c) The black container becomes hotter than the white container.
(d) Both containers become equally hot.

Q90. The energy possessed by an object by virtue of its motion is known as _____.

(a) kinetic energy
(b) potential energy
(c) heat energy
(d) light energy

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Q91. 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.)

4 – 8 – 18 – 9

6 – 12 – 22 – 11

(a) 8 – 16 – 26 – 13
(b) 3 – 15 – 12 – 20
(c) 9 – 18 – 28 – 20
(d) 11 – 13 – 22 – 63

Q92. Which of the following is the temperature range in a clinical thermometer?

(a) 30°C to 43°C
(b) 35°C to 42°C
(c) 10°C to 45°C
(d) 31°C to 44°C

Q93. Which of the following groups represents conductors of heat?

(a) Wood, paper, silver
(b) Paper, copper, plastic
(c) Aluminium, silver, copper
(d) Aluminium, plastic, wood

Q94. Select the triad that follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JK - LM - NO

TU - VW - XY

(a) DE - FG - HI
(b) DE - FG - KL
(c) WE - DF - HI
(d) DE - FB - DF

Q95. In Engineering Drawing, principal lines are drawn to represent _____.

(a) interior or hidden edges
(b) axes of cylindrical, conical or spherical objects
(c) visible edges and surface boundaries of objects
(d) wide lines along which the prints are trimmed

Q96. A fruit seller had some apples. He sells 40% of the apples and now has 900 apples. How many apples did he originally have?

(a) 1800
(b) 2250
(c) 1500
(d) 1350

Q97. 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 pair.)

(a) SA – WQ
(b) WE – AU
(c) DL – HB
(d) MU – QL

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Q98. Which of the following represents an item with kinetic energy?

(a) An extended rubber band
(b) A stone in motion
(c) A book resting on a table
(d) A compressed spring

Q99. 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) Brother's wife's brother
(b) Brother's wife's father
(c) Brother's wife's father's brother
(d) Brother's wife's father's father

Q100. A person saves 50% of his income. If his expenditure is Rs. 640, then his income (in Rs.) is:

(a) 600
(b) 1,320
(c) 560
(d) 1,280

PART B

Q101. A heavy-duty belt drive is used to transmit large powers at _____ belt speeds.

(a) Between 10 m/s and 15 m/s
(b) Above 22 m/s
(c) Between 15 m/s and 22 m/s
(d) Up to approximately 10 m/s

Q102. Sine bars are used when measuring angles less than ____ requires a high degree of accuracy.

(a) minute
(b) 1 degree
(c) 30 minutes
(d) 30 degrees

Q103. Which of the following conversions are correct?

(a) 1 L = 1000 $dm^3$and 1 mL = 1000 cm^3
(b) 1 L = 1 dm^3 and 1 mL = 1 cm^3
(c) 1000 L = 1 dm^3 and 1 mL = 1000 cm^3
(d) 1000 L = 1 dm3 and 1000 mL = 1 cm3

Q104. When electric current flows through a conductor, what is the primary reason for the heating effect occurring in it?

(a) Heat is generated due to the motion of electrons.
(b) The conductor absorbs heat from the surrounding environment.
(c) Heat is generated due to the motion of protons.
(d) Heat is generated in a conductor due to the electric field.

Q105. Which of the following options represents the correct relationship for the tapper angle (θ) in tapper turning, where L = length of the tapper, D = major diameter, and d = minor diameter?

(a) tan θ = (D - d)/2l
(b) tan θ = (D + d)/2l
(c) 1/2tan θ = (D + d)/2l

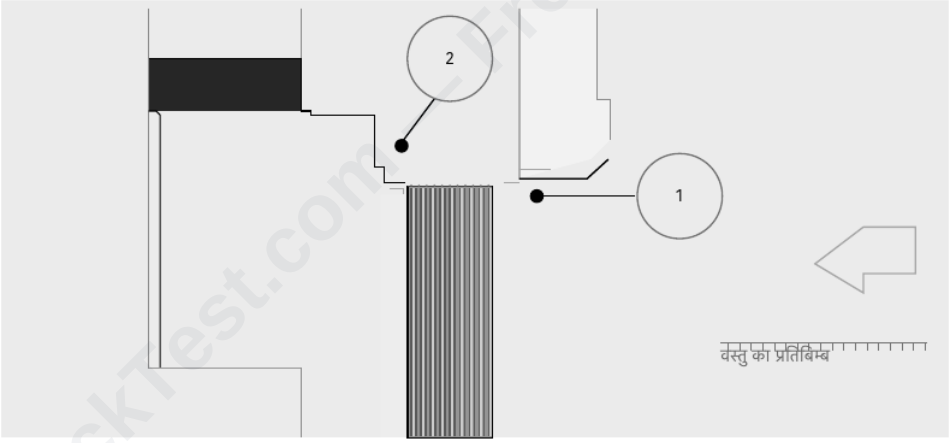
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(d) 1/2tan θ = (D - d)/2l

Q106. Malleability is most important for which type of industrial application?

(a) Sheet metal fabrication
(b) Cutting tool manufacturing
(c) Bearing production
(d) Wire manufacturing

Q107. In thread cutting operations, symbols 1 and 2 indicate ___ and ___.



(a) Pull off; pull off
(b) Start cut; start cut
(c) Pull Off; start Cut
(d) Start Cut; pull Off

Q108. Which of the following statements regarding Non-Functional Dimensions (NF) in engineering drawing is true?

Statement 1: Non-functional dimensions are shown without any limits, because they do not affect the functionality of the component or location.

Statement 2: Non-functional dimensions are used exclusively for reference purposes and do not affect the assembly or performance of the component or assembly.

(a) Only Statement 2 is true.
(b) No statement is true.
(c) Both statements are true.
(d) Only Statement 1 is true.

Q109. A 100 mm point punch may have a body diameter of 10 mm and a 6 mm diameter point ground at an angle of _____.

(a) 30°
(b) 60°
(c) 90°
(d) 120°

Q110. A force fit will result in a _____ clearance.

(a) Neither positive nor negative
(b) positive
(c) negative
(d) either positive or negative

Q111. Which of the following statements is incorrect for a belt-pulley system?

(a) The pulleys should not be too far apart from each other.
(b) The pulleys should not be too close to each other.
(c) The long belt keeps swinging from side to side, causing it to slip off the pulley.
(d) The arc of contact on the smaller pulley can be as small as possible.

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Q112. What is the primary purpose of employing a quick return mechanism in a slotting machine?

(a) To increase the cutting force of the ram
(b) To slow down the machine's overall operation
(c) To reduce the idle time during the return stroke
(d) To extend the duration of the cutting stroke

Q113. Which of the following methods is not valid for setting the tailstock offset while performing tapper turning on a lathe?

(a) Using a Dial Test Indicator for Precise Measurement
(b) Manually Adjusting the Tool Holder Angle
(c) Using the calibrated scale on the tailstock base
(d) Transverse contact using a feeler gauge with a calibrated collar

Q114. Match the following sheet designations with their corresponding dimensions (length and width).

designation corresponding dimensions
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-Q; D-P
(b) A-P; B-R; C-Q; D-S
(c) A-Q: B-R; C-S; D-P
(d) A-S; B-P; C-Q; D-R

Q115. Which of the following statements regarding a line standard is incorrect?

(a) It is more precise due to the thickness of the line.
(b) Subject to parallax error.
(c) Provides rapid measurements over a wide range.
(d) Used to measure the distance between two engraved lines.

Q116. Which of the following characteristics best describes an angular milling cutter?

(a) Their straight teeth are arranged perpendicular to the axis.
(b) The teeth are parallel to the axis and are cylindrical in shape.
(c) In these, the teeth are on the periphery and the core is on the conical surface.
(d) These are used solely for vertical milling operations.

Q117. Which of the following instruments is used to draw mutually perpendicular lines on a plane surface?

(a) Try Square
(b) Bevel square
(c) Folding rule
(d) Straight edge

Q118. Natural rubber becomes soft at high temperatures and brittle at low temperatures; Therefore, to strengthen raw rubber, it is heated with sulfur and other additives at temperatures between 373-415 K. This process is called _____ of rubber.

(a) Molding
(b) Extrusion
(c) vulcanization
(d) Latex

Q119. A statement and a conclusion regarding a pictorial drawing are given below. Determine the logical relationship between them.

Statement: Pictorial drawings are three-dimensional and provide a visual representation of an object.

Conclusion: Therefore, pictorial drawings are useful for describing the shape of a piece part or component.

(a) The conclusion does not logically follow from the statement.

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(b) The conclusion is not related to the statement.
(c) The conclusion logically follows from the statement.
(d) The conclusion is partially supported by the statement.

Q120. Which of the following statements regarding the care and maintenance of a marking table is incorrect?
(a) After use, the marking table should be cleaned with a soft cloth.
(b) The marking table should be protected from rusting.
(c) A thin layer of oil should not be applied to the surface of the marking table.
(d) The marking table should be protected from damage.

Q121. Why is acetylene gas not stored in cylinders in its gaseous form at a pressure exceeding 1 kg/cm²?
(a) Because it reacts with the material of the cylinder and causes corrosion.
(b) Because it condenses into a liquid and reduces efficiency.
(c) Because it sheds its flammability and becomes ineffective.
(d) Because it becomes unstable and can explode under high pressure.

Q122. Which option is correct when converting 27°C to the Kelvin scale?
(a) 246 K
(b) 300 K
(c) .-246 K
(d) -300 K

Q123. Tiles are to be laid on a rectangular floor measuring 10 m × 8 m. If each tile covers 0.25 m², how many tiles will be required?
(a) 200
(b) 300
(c) 320
(d) 250

Q124. _____ suggests a 20 mm wide margin for sheet sizes A0 and A1 in engineering drawing.
(a) Geographic coordinate systems
(b) Custom grids
(c) Borders and frames: SP: 46 (2003)
(d) Grid reference system

Q125. What is the primary goal of the 5S concept?
(a) To replace traditional safety measures
(b) To eliminate the need for maintenance
(c) To improve workplace organisation and efficiency
(d) To increase the number of safety regulations

Q126. When a job having parallel diameter is turned fully or partially by cutting one side of it to reduce its diameter by lathe machine, it is called _____.
(a) turning
(b) knurling
(c) chamfering
(d) tapper tuning

Q127. The SI unit of 'extreme force' is _____.
(a) Newton per meter (N/m)
(b) Pascal (Pa)
(c) Newton (N)
(d) Joule per square meter (J/m²)

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Q128. What term is used to describe a program that distinguishes between uppercase and lowercase letters—for example, treating "yes" and "YES" as different inputs?

(a) Case-sensitive
(b) numeric
(c) Case-insensitive
(d) Alphabetic

Q129. What is the first step when entering offset data on the Offset page?

(a) Directly Inputting the Tool Offset Value
(b) First, entering the tool wear offset value.
(c) Pressing the Function key
(d) Adjusting the Work Offset Value Before Enabling Settings

Q130. What is the main reason for conducting a vehicle road test?

(a) To ensure that the vehicle is functioning safely and properly.
(b) To increase fuel efficiency
(c) To avoid the need for inspections
(d) To check how fast the vehicle can travel.

Q131. Which of the following is an advantage of taper turning by swiveling the compound slide?

(a) Allows automatic feed during operation
(b) Enables both internal and external tapers to be produced
(c) Allows taper length beyond the top slide movement
(d) Suitable for producing threads on the taper portion

Q132. _____ work best for cutting soft materials such as wood and plastic.

(a) Fine-toothed blades
(b) Coarse-toothed blades
(c) Bi-metal blades
(d) High-carbon steel blades

Q133. What type of surfaces can be checked using a radius gauge?

(a) Only flat surfaces
(b) Both internal and external curved surfaces
(c) Only external curved surfaces
(d) Only internal curved surfaces

Q134. What is the orientation of the slope for a positive top rake angle on a cutting tool?

(a) From the back of the tool to the front of the cutting edge.
(b) from the top of the tool to the bottom of the cutting edge
(c) from the front of the cutting edge to the back of the tool
(d) from the bottom of the cutting edge towards the top of the tool

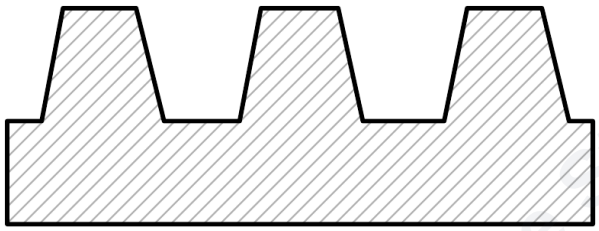
Q135. What material is generally used for hand reamers constructed as a one-piece assembly?

(a) Mild steel
(b) Cast iron
(c) High-speed steel
(d) High-carbon steel

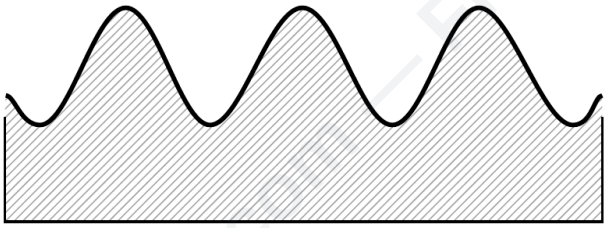
Q136. Identify the ACME thread.

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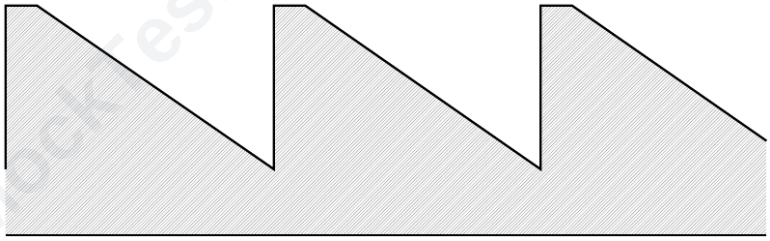
(a)



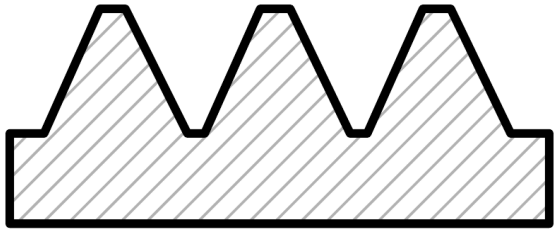
(b)



(c)



(d)



Q137. Which of the following is not a component of a twist drill?

(a) Shank
(b) Neck
(c) Body
(d) Flutes

Q138. In which of the following hardness tests is a hard steel ball used as the indenter?

(a) Knoop Hardness Test
(b) Brinell Hardness Test
(c) Vickers Hardness Test
(d) Rockwell Hardness Test

Q139. Which of the following instruments is frequently used in conjunction with a planer gauge for precise height measurement?

(a) depth gauge
(b) Vernier Caliper
(c) Dial Indicator
(d) Micrometer

Q140. _____ is the line of zero deviation and represents the basic size.

(a) Tolerable size
(b) Actual size
(c) Nominal size
(d) Zero line

Q141. What is the main disadvantage of using a 4-jaw chuck compared to a 3-jaw chuck?

(a) It cannot grip the workpiece on the inner surface.
(b) It requires a longer setting time.
(c) It provides a less secure grip.
(d) It can hold only regularly shaped workpieces.

Q142. Which of the following is a function of the top section of the steady rest in a CNC lathe?

(a) It provides a concentric axial support to the tailstock during turning.
(b) It locks the workpiece in place to prevent rotational motion.
(c) It swings away from the base to facilitate the easy removal of the workpiece.
(d) It automatically adjusts to compensate for machining forces.

Q143. An angle greater than 180 degrees is called a _____.

(a) right angle
(b) obtuse angle
(c) reflex angle
(d) acute angle

Q144. Which of the following screwdrivers has cross-shaped tips that can be used for Phillips recessed head screws?

(a) Offset screwdriver
(b) Stumpy screwdriver
(c) Cross-recess screwdriver
(d) Ratchet screwdriver

Q145. What is the function of the work part zero point in CNC machining?

(a) It adjusts the tool offset for various machining processes.
(b) This limits the range of motion of the machine table during operation.
(c) This machine defines the highest point reached by the spindle.
(d) This establishes the reference position for the workpiece coordinate system.

Q146. This question is in Hindi. Read it online.

Q147. Which of the following is not a component of a Vernier caliper?

(a) vernier scale
(b) Locking Screw
(c) anvil
(d) Main Scale

Q148. Which of the following is a characteristic of a flat drill?

(a) It is primarily used for deep-hole drilling with high efficiency.
(b) It features parallel and taper shank designs for various applications.
(c) For the smooth ejection of the chip, it features a helical groove running along its length.
(d) Its production is inexpensive, but its chip removal capability is poor.

Q149. In a circuit consisting of an NTC-type thermistor and a fixed resistor connected in series with a DC power supply, what effect will an increase in temperature have on the output voltage?

(a) The output voltage will fluctuate based on the resistor value.
(b) The output voltage will remain constant.
(c) The output voltage will increase.
(d) The output voltage will decrease.

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Q150. Which of the following is an advantage of using a recirculating ball screw system in CNC machine tools?

(a) It eliminates the stick-slip effect and possesses high efficiency.
(b) This requires high driving power and leads to an increase in temperature.
(c) It operates with increased resistance and a slow traverse speed.
(d) It exhibits high friction and frequent abrasion.

Q151. A shaft with a basic size of 40 mm has a clearance allowance of 0.06 mm. What is the design size of the shaft?

(a) 40.06 mm
(b) 40.00 mm
(c) 39.94 mm
(d) 39.04 mm

Q152. The accuracy of measurement using a try square is approximately _____.

(a) 0.002 mm per 10 mm length
(b) 0.001 mm per 10 mm of length
(c) 0.004 mm per 10 mm length
(d) 0.02 mm per 10 mm length

Q153. _____ is a measuring device that utilizes the difference between two separate measuring scales to determine the measurement of a workpiece.

(a) Vernier Micrometer Principle
(b) Vernier Caliper or Micrometer Principle
(c) Vernier Caliper Principle
(d) Neither the principle of the Vernier caliper nor the principle of the micrometer.

Q154. In a riveted joint, for a given thickness of the plates, the diameter (d) is given by _____, where t is the thickness of the plates in mm.

(a) d = 3.5 (t) ^(1/2)
(b) d = 6 (t)^(1/2)
(c) d = 15 (t)^(1/2)
(d) d = 12 (t)^(1/2)

Q155. How is the height of a planer gauge adjusted?

(a) By tightening the micrometer screw
(b) by rotating the vernier scale
(c) by using a slip gauge
(d) by manually applying pressure

Q156. Which of the following statements best describes the application of oxy-fuel gas welding?

(a) It is used for welding operations requiring high heat input.
(b) It is primarily used for welding thick steel sections.
(c) It generates a higher flame temperature compared to oxy-acetylene welding.
(d) It is preferred for welding operations with lower heat requirements.

Q157. According to BS standards, what is the Environmental Management Code?

(a) BS EN ISO 14001
(b) BS ISO 45001
(c) BS EN ISO/IEC 27001
(d) BS EN ISO 9001

Q158. What is the purpose of the axis motors in a CNC machine?

(a) To provide lubrication to the moving parts
(b) To drive each axis of the machine independently
(c) To control the machine's spindle speed
(d) To operate the machine's cooling system

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Q159. Which of the following options correctly describes the significance of the first letter in the ISO-designated tool insert code 'C NMG 12 04 08-MP'?

(a) It denotes the shape of the insert used in machining.
(b) It indicates the cutting-edge geometry of the insert.
(c) It specifies the material of the insert used for machining.
(d) It designates the type of coating applied to the insert for wear resistance.

Q160. Why do cars have treaded tires?

(a) To reduce weight
(b) To reduce friction
(c) To increase friction and grip on the road
(d) To increase speed

Q161. Match the following columns.

Column I		Column II	
(A)	Hinge	(P)	Reinforcing the downward-projecting sand mass
(B)	Welding	(Q)	Finishing of flat surfaces and joints
(C)	Trowels	(R)	Permanent joint
(D)	Gaggers	(S)	Movable joint

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

Q162. Which of the following options represents a major risk associated with fuel spillage?

(a) Increased productivity
(b) Reduced ventilation requirements
(c) Fire hazard and environmental pollution
(d) Proper lubrication for the workshop floo

Q163. When the required belt tension cannot be achieved by other means, which of the following flat belt drives is provided to achieve a high velocity ratio?

(a) Open belt drive
(b) Crossed or twist belt drive
(c) Quarter turn belt drive
(d) Belt drive with idler pulleys

Q164. In a logic circuit, three SPST (Single-Pole, Single-Throw) switches are used to implement a logic gate. The switches are connected in series. If all the switches are closed, what will be the output of the circuit?

(a) 1
(b) The output will depend on the type of gate used.
(c) 0
(d) Undefined

Q165. What is the primary purpose of shielding in electrical cables?

(a) To increase the voltage capacity of the cable
(b) To increase the current-carrying capacity of the cable
(c) To prevent heat loss from the cable
(d) To protect the cable from external electromagnetic

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Q166. For which of the following calipers, a screw and nut are provided for opening and closing the caliper legs?

(a) Firm joint calipers
(b) Leg and point calipers
(c) Simple calipers
(d) Spring joint calipers

Q167. The purpose of pressing the zero button on a digital vernier caliper is to _____.

(a) Change the units of measurement
(b) Lock the jaws in a fixed position
(c) Turn the LCD display on or off
(d) Set the reading to zero

Q168. In a lathe with a 3-jaw chuck, how are the jaws moved?

(a) By magnetic force
(b) By rotating the pinion simultaneously in a radial direction
(c) By pneumatic pressure
(d) Independently using individual levers

Q169. Which of the following is a key electrical safety tip for a workshop?

(a) Operate machines with wet hands.
(b) Ignore worn-out wires if the device is still functioning.
(c) Ensure that electrical equipment is properly grounded.
(d) Use water to clean electrical panels.

Q170. Which of the following statements is correct regarding a Type 4 tapered grinding wheel?

(a) It is primarily used for rough grinding and has tapered sides.
(b) It is primarily used for polishing and has straight sides.
(c) It is primarily used for fine grinding and has flat sides.
(d) It is primarily used for cutting and has curved edges.

Q171. Which of the following substances is the most malleable?

(a) Gold
(b) Copper
(c) Cast Iron
(d) Glass

Q172. What is the speed ratio of the forward stroke to the return stroke in a slotting machine’s quick return mechanism?

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

Q173. What is the primary objective of preventive maintenance?

(a) To eliminate the need for regular inspections
(b) To increase the workload of employees
(c) To reduce unexpected equipment failures
(d) To delay repairs when a breakdown occurs

Q174. What is the main difference between primary and secondary electrochemical cells among the following options?

(a) There is no difference between primary and secondary cells.
(b) A secondary cell generates more energy compared to a primary cell.
(c) A primary cell cannot be recharged, whereas a secondary cell can be recharged.
(d) A primary cell can be recharged, whereas a secondary cell cannot be recharged.

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Q175. Which of the following actions is included in the responsibilities of an emergency response team during an active emergency?

(a) Rescuing individuals in immediate danger
(b) Scheduling regular evacuation drills
(c) Conducting regular safety inspections
(d) Preparing reports on emergency incidents

ANSWER KEY

1	a	2	a	3	a	4	a	5	a	6	a	7	a	8	a	9	a	10	a
11	a	12	a	13	a	14	a	15	a	16	a	17	a	18	a	19	a	20	a
21	a	22	a	23	a	24	a	25	a	26	a	27	a	28	a	29	a	30	a
31	a	32	a	33	a	34	a	35	a	36	a	37	a	38	a	39	a	40	a
41	a	42	a	43	a	44	a	45	a	46	a	47	a	48	a	49	a	50	a
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111	a	112	a	113	a	114	a	115	a	116	a	117	a	118	a	119	a	120	a
121	a	122	a	123	a	124	a	125	a	126	a	127	a	128	a	129	a	130	a
131	a	132	a	133	a	134	a	135	a	136	a	137	a	138	a	139	a	140	a
141	a	142	a	143	a	144	a	145	a	146	a	147	a	148	a	149	a	150	a
151	a	152	a	153	a	154	a	155	a	156	a	157	a	158	a	159	a	160	a
161	a	162	a	163	a	164	a	165	a	166	a	167	a	168	a	169	a	170	a
171	a	172	a	173	a	174	a	175	a										

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