



## रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Date	19/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade I

## \* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

## Section : RRB Technicians Grade I

Q.1	Which country hosted the 2023 Men's Hockey World Cup?
Ans	<input checked="" type="checkbox"/> 1. Pakistan <input checked="" type="checkbox"/> 2. China <input checked="" type="checkbox"/> 3. Germany <input checked="" type="checkbox"/> 4. India
Q.2	K is the husband of S. B is the sister of T. Q is the daughter of E. T is the brother of E. S is the mother of B. How is T related to K?
Ans	<input checked="" type="checkbox"/> 1. Brother <input checked="" type="checkbox"/> 2. Father <input checked="" type="checkbox"/> 3. Son <input checked="" type="checkbox"/> 4. Daughter
Q.3	If 15th and 28th terms of an A.P. be 208 and 416 respectively, then its 49th term is:
Ans	<input checked="" type="checkbox"/> 1. 755 <input checked="" type="checkbox"/> 2. 749 <input checked="" type="checkbox"/> 3. 752 <input checked="" type="checkbox"/> 4. 751
Q.4	The full form of DDR SDRAM is _____.
Ans	<input checked="" type="checkbox"/> 1. Double Data Rate Systematic Dynamic Random Access Memory <input checked="" type="checkbox"/> 2. Dynamic Data Rate Systematic Dynamic Random Access Memory <input checked="" type="checkbox"/> 3. Double Data Rate Synchronous Dynamic Random Access Memory <input checked="" type="checkbox"/> 4. Data Dynamic Rate Synchronous Dynamic Random Access Memory
Q.5	Two parallel current-carrying conductors attract each other with a force of 3 N when placed 2 cm apart. The currents in both conductors are initially the same, and the length of the conductors is constant. If the currents in both conductors are doubled and the distance between them is halved, what will be the new force?
Ans	<input checked="" type="checkbox"/> 1. 96 N <input checked="" type="checkbox"/> 2. 24 N <input checked="" type="checkbox"/> 3. 12 N <input checked="" type="checkbox"/> 4. 48 N

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Q.6	A tower stands vertically on the ground. From a point on the ground, 30 m away from the foot of the tower, the angle of elevation of the top of the tower is $30^\circ$ . What is the height (in metres) of the tower?
Ans	<p><input type="checkbox"/> 1. <math>30\sqrt{3}</math></p> <p><input type="checkbox"/> 2. <math>15\sqrt{3}</math></p> <p><input type="checkbox"/> 3. <math>20\sqrt{3}</math></p> <p><input checked="" type="checkbox"/> 4. <math>10\sqrt{3}</math></p>
Q.7	Which of the following orders is correct for the doping level in transistors?
Ans	<p><input type="checkbox"/> 1. Emitter &lt; base &lt; collector</p> <p><input type="checkbox"/> 2. Base &lt; emitter &lt; collector</p> <p><input type="checkbox"/> 3. Collector &lt; base &lt; emitter</p> <p><input checked="" type="checkbox"/> 4. Base &lt; collector &lt; emitter</p>
Q.8	The first and last terms of an A.P. are 20 and 55. If the sum of its terms is 600, then the number of terms will be?
Ans	<p><input type="checkbox"/> 1. 15</p> <p><input checked="" type="checkbox"/> 2. 16</p> <p><input type="checkbox"/> 3. 17</p> <p><input type="checkbox"/> 4. 14</p>
Q.9	Which of the following statements is correct about a transistor?
Ans	<p><input type="checkbox"/> 1. Emitter region is much thinner as compared to base and collector.</p> <p><input type="checkbox"/> 2. All the three regions emitter, base and collector have the same size.</p> <p><input type="checkbox"/> 3. Collector region is much thinner as compared to emitter and base.</p> <p><input checked="" type="checkbox"/> 4. Base region is much thinner as compared to emitter and collector.</p>
Q.10	What will come in the place of the question mark '?' in the following equation, if '+' and '-' are interchanged and 'x' and '÷' are interchanged? $15 \times 5 \div 7 - 8 + 9 = ?$
Ans	<p><input type="checkbox"/> 1. 17</p> <p><input checked="" type="checkbox"/> 2. 20</p> <p><input type="checkbox"/> 3. 18</p> <p><input type="checkbox"/> 4. 19</p>
Q.11	Which of the following represents the applications used primarily for messaging and communication?
Ans	<p><input type="checkbox"/> 1. Gmail and Firefox</p> <p><input checked="" type="checkbox"/> 2. WhatsApp and Telegram</p> <p><input type="checkbox"/> 3. Safari and MS Word</p> <p><input type="checkbox"/> 4. Telegram and Safari</p>
Q.12	Select the most appropriate options to fill in the blanks. L.V.D.T. shows ___ hysteresis and hence repeatability is ___ under all conditions.
Ans	<p><input type="checkbox"/> 1. high; excellent</p> <p><input checked="" type="checkbox"/> 2. low; excellent</p> <p><input type="checkbox"/> 3. low; bad</p> <p><input type="checkbox"/> 4. high; bad</p>

Q.13	Which type of virus is designed to attach itself to documents and spread through macros in programs like Microsoft Word or Excel?
Ans	<p><input type="checkbox"/> 1. Polymorphic Virus</p> <p><input type="checkbox"/> 2. Network Virus</p> <p><input type="checkbox"/> 3. Resident Virus</p> <p><input checked="" type="checkbox"/> 4. Macro Virus</p>
Q.14	<p>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 ::?</p> <p>(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.)</p> <p>X : 40 :: 60 : Y</p>
Ans	<p><input type="checkbox"/> 1. X=32, Y=70</p> <p><input type="checkbox"/> 2. X=36, Y=68</p> <p><input checked="" type="checkbox"/> 3. X=32, Y=75</p> <p><input type="checkbox"/> 4. X=30, Y=75</p>
Q.15	In the interim budget of the union government, what budget has been allocated for Samagra Shiksha Abhiyan for the Financial Year 2024-25?
Ans	<p><input type="checkbox"/> 1. ₹47,500 crore</p> <p><input type="checkbox"/> 2. ₹53,500 crore</p> <p><input type="checkbox"/> 3. ₹40,200 crore</p> <p><input checked="" type="checkbox"/> 4. ₹37,500 crore</p>
Q.16	If an event has odds in favour 4 : 5, then the probability that the event will NOT occur is:
Ans	<p><input type="checkbox"/> 1. <math>\frac{1}{5}</math></p> <p><input type="checkbox"/> 2. <math>\frac{4}{5}</math></p> <p><input checked="" type="checkbox"/> 3. <math>\frac{5}{9}</math></p> <p><input type="checkbox"/> 4. <math>\frac{4}{9}</math></p>
Q.17	If the points A(1, 2), B(4, 3), C(1, 0) and D(k, -1) are the vertices of a parallelogram then, the value of k is :
Ans	<p><input type="checkbox"/> 1. 2</p> <p><input type="checkbox"/> 2. 1</p> <p><input type="checkbox"/> 3. -1</p> <p><input checked="" type="checkbox"/> 4. -2</p>

Q.18	<p>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 its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. 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 : 35 :: 8 : Y</p>	
Ans	<p><input checked="" type="checkbox"/> 1. X = 10 , Y = 20</p>	
	<p><input checked="" type="checkbox"/> 2. X = 7 , Y = 48</p>	
	<p><input checked="" type="checkbox"/> 3. X = 3 , Y = 74</p>	
	<p><input checked="" type="checkbox"/> 4. X = 6 , Y = 68</p>	

Q.19	<p>What should come in place of the question mark (?) in the given series? 1023 1024 1027 1032 1039 ?</p>	
Ans	<p><input checked="" type="checkbox"/> 1. 1046</p>	
	<p><input checked="" type="checkbox"/> 2. 1048</p>	
	<p><input checked="" type="checkbox"/> 3. 1045</p>	
	<p><input checked="" type="checkbox"/> 4. 1047</p>	

Q.20	<p>Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. You have to decide which conclusion/s logically follow/s from the given statements.</p> <p><b>Statements:</b> All parks are grounds. Some grounds are museums. No museum is a theatre.</p> <p><b>Conclusions:</b> (I) All museums are parks. (II) No ground is a theatre.</p>	
Ans	<p><input checked="" type="checkbox"/> 1. Only conclusion I follows.</p>	
	<p><input checked="" type="checkbox"/> 2. Neither conclusion I nor II follows.</p>	
	<p><input checked="" type="checkbox"/> 3. Only conclusion II follows.</p>	
	<p><input checked="" type="checkbox"/> 4. Both conclusions I and II follow.</p>	

Q.21	<p>Which of the following is true according to the work-energy theorem?</p>	
Ans	<p><input checked="" type="checkbox"/> 1. Work done on an object can either increase or decrease its kinetic energy</p>	
	<p><input checked="" type="checkbox"/> 2. The work done on an object is always positive</p>	
	<p><input checked="" type="checkbox"/> 3. Work done on an object always increases its kinetic energy</p>	
	<p><input checked="" type="checkbox"/> 4. Kinetic energy is always conserved</p>	

Q.22	<p>The direction of magnetic field lines inside a bar magnet is _____.</p>	
Ans	<p><input checked="" type="checkbox"/> 1. from North Pole to South Pole</p>	
	<p><input checked="" type="checkbox"/> 2. perpendicular to the magnetic axis</p>	
	<p><input checked="" type="checkbox"/> 3. random</p>	
	<p><input checked="" type="checkbox"/> 4. from South Pole to North Pole</p>	

Q.23	<p>The work done by non-conservative forces in a closed loop is _____.</p>	
Ans	<p><input checked="" type="checkbox"/> 1. always zero</p>	
	<p><input checked="" type="checkbox"/> 2. independent of the path</p>	
	<p><input checked="" type="checkbox"/> 3. dependent on the path</p>	
	<p><input checked="" type="checkbox"/> 4. negative</p>	

Q.24	Which of the following is NOT an example of application software?
Ans	<p>✓ 1. Windows Vista</p> <p>✗ 2. Google Chrome</p> <p>✗ 3. Adobe Photoshop</p> <p>✗ 4. WhatsApp</p>
Q.25	<p>In this question, a question is followed by two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and decide the appropriate answer.</p> <p>Question: Five people V, W, X, Y and Z are sitting in a straight row, facing north. Who sits to the immediate left of Z?</p> <p>Statement (I): Both V and X are immediate neighbours of Y. V sits at one of the extreme ends of the row.</p> <p>Statement (II): Z sits to the immediate left of W. W sits at one of the extreme ends of the row.</p>
Ans	<p>✗ 1. Data in either statement I alone or statement II alone are sufficient to answer the question.</p> <p>✗ 2. Data in statement II alone is sufficient to answer the question while data in statement I is not.</p> <p>✓ 3. Data in statements I and II together are sufficient to answer the question.</p> <p>✗ 4. Data in statement I alone is sufficient to answer the question while data in statement II is not.</p>
Q.26	In the equation $x = A \cos(\omega t + \phi)$ , where $x$ is displacement, $\omega$ is angular frequency, and $\phi$ is phase angle, the equation is dimensionally consistent if _____.
Ans	<p>✗ 1. <math>\omega t</math> has dimensions of length and <math>\phi</math> is dimensionless</p> <p>✗ 2. <math>A</math> has dimensions of time and <math>\omega t</math> has dimensions of frequency</p> <p>✓ 3. <math>A</math> has dimensions of length and <math>\omega t</math> is dimensionless</p> <p>✗ 4. <math>A</math> has dimensions of length and <math>\phi</math> has dimensions of time</p>
Q.27	<p>Find the value of the given expression.</p> $\frac{\cos A}{1 - \tan A} + \frac{\sin^2 A}{\sin A - \cos A} + 2\sin A - \cos A$
Ans	<p>✓ 1. <math>3\sin A</math></p> <p>✗ 2. <math>\sin A</math></p> <p>✗ 3. <math>3\cos A</math></p> <p>✗ 4. <math>\cos A</math></p>
Q.28	In which of the following cases will there be NO induced EMF in a coil?
Ans	<p>✗ 1. The magnetic flux through the coil is changing.</p> <p>✓ 2. The coil is moved parallel to the magnetic field lines.</p> <p>✗ 3. The coil is rotated in a magnetic field.</p> <p>✗ 4. The coil is moved perpendicular to the magnetic field lines.</p>
Q.29	The mode and median of a data is 87.5 and 86, respectively. What is the mean of the data? (Use empirical formula.)
Ans	<p>✓ 1. 85.2</p> <p>✗ 2. 85.4</p> <p>✗ 3. 84.2</p> <p>✗ 4. 87.1</p>

Q.30	Who inaugurated India's first off-grid Green Hydrogen Plant in the Stainless Steel Sector at Hisar in March 2024?
Ans	<p><input type="checkbox"/> 1. HD Kumaraswamy</p> <p><input type="checkbox"/> 2. Amit Shah</p> <p><input type="checkbox"/> 3. Bhupathiraju Srinivasa Varma</p> <p><input checked="" type="checkbox"/> 4. Jyotiraditya M Scindia</p>
Q.31	When a conductor moves through a magnetic field, an induced current is produced. The direction of the induced current is determined by _____.
Ans	<p><input checked="" type="checkbox"/> 1. Lenz's Law</p> <p><input type="checkbox"/> 2. Faraday's Law</p> <p><input type="checkbox"/> 3. Coulomb's Law</p> <p><input type="checkbox"/> 4. Ampere's Law</p>
Q.32	If the quadratic equation $x^2 - 4ax + (b + 1) = 0$ , where a and b are real constants, has no real roots, then:
Ans	<p><input type="checkbox"/> 1. <math>b &lt; (a + 1)(a - 1)</math></p> <p><input type="checkbox"/> 2. <math>b &lt; (2a + 1)(2a - 1)</math></p> <p><input checked="" type="checkbox"/> 3. <math>b &gt; (2a + 1)(2a - 1)</math></p> <p><input type="checkbox"/> 4. <math>b &gt; (a + 1)(a - 1)</math></p>
Q.33	A car manufacturing company is sponsoring a basketball match by painting its logo on the basketball at the rate of ₹3/ cm <sup>2</sup> . There are two identical basketballs of diameter 14 cm which are to be painted. What will be the total cost (in ₹) of painting the balls for the company?
Ans	<p><input type="checkbox"/> 1. 1848</p> <p><input type="checkbox"/> 2. 3586</p> <p><input type="checkbox"/> 3. 4928</p> <p><input checked="" type="checkbox"/> 4. 3696</p>
Q.34	<p>A statement is given followed by two arguments. Decide which of the arguments is/are strong with respect to the statement.</p> <p>Statement: The Government of country B has urged its citizens to invest in rain water harvesting and avail subsidies in doing so.</p> <p>Arguments: I. Ground water resources have been continuously depleting in country B. II. Country B experiences heavy rainfall during the monsoon season leading to flooding in many low-lying areas.</p>
Ans	<p><input type="checkbox"/> 1. Both I and II weaken the statement.</p> <p><input checked="" type="checkbox"/> 2. Both I and II strengthen the statement.</p> <p><input type="checkbox"/> 3. II weakens while I strengthens the statement.</p> <p><input type="checkbox"/> 4. I weakens while II strengthens the statement.</p>
Q.35	Which element is typically found at the bottom left of the desktop in the Windows OS?
Ans	<p><input type="checkbox"/> 1. Notification Center</p> <p><input checked="" type="checkbox"/> 2. Start Menu</p> <p><input type="checkbox"/> 3. Recycle Bin</p> <p><input type="checkbox"/> 4. Quick Access Toolbar</p>

Q.36	Select the most appropriate options to fill in the blanks. Microprocessor 8085 has _____ address line, hence it can access _____ of the memory.
Ans	<p><input type="checkbox"/> 1. 16; 32 kilobytes</p> <p><input type="checkbox"/> 2. 8; 32 kilobytes</p> <p><input type="checkbox"/> 3. 8; 64 kilobytes</p> <p><input checked="" type="checkbox"/> 4. 16; 64 kilobytes</p>
Q.37	Dead time is the time required by an instrument to _____ to respond to change in _____ quantity.
Ans	<p><input type="checkbox"/> 1. stop; output</p> <p><input type="checkbox"/> 2. begin; output</p> <p><input checked="" type="checkbox"/> 3. begin; input</p> <p><input type="checkbox"/> 4. stop; input</p>
Q.38	What is India's average annual HDI growth for the period 1990-2019?
Ans	<p><input checked="" type="checkbox"/> 1. 1.42</p> <p><input type="checkbox"/> 2. 1.44</p> <p><input type="checkbox"/> 3. 1.21</p> <p><input type="checkbox"/> 4. 1.58</p>
Q.39	LCDs typically have response times in the range of _____ to _____, whereas LEDs are available with response times below _____.
Ans	<p><input type="checkbox"/> 1. 100 ms; 300 ms; 1000 ns</p> <p><input type="checkbox"/> 2. 10 ms; 30 ms; 10 ns</p> <p><input type="checkbox"/> 3. 10 ms; 30 ms; 100 ns</p> <p><input checked="" type="checkbox"/> 4. 100 ms; 300 ms; 100 ns</p>
Q.40	64 identical small spheres are cast from a sphere of radius 12 cm, with the total volume of the small spheres being equal to the volume of the larger sphere. The diameter (in cm) of each of the small spheres is:
Ans	<p><input checked="" type="checkbox"/> 1. 6</p> <p><input type="checkbox"/> 2. 11</p> <p><input type="checkbox"/> 3. 5</p> <p><input type="checkbox"/> 4. 3</p>
Q.41	In which of the following devices are eddy currents utilised beneficially?
Ans	<p><input type="checkbox"/> 1. Electric heaters</p> <p><input type="checkbox"/> 2. Electric motors</p> <p><input type="checkbox"/> 3. Transformer cores</p> <p><input checked="" type="checkbox"/> 4. Induction furnaces</p>
Q.42	What does the 'This PC' icon on a Windows desktop represent?
Ans	<p><input type="checkbox"/> 1. An application launcher</p> <p><input type="checkbox"/> 2. A file that stores system updates</p> <p><input checked="" type="checkbox"/> 3. Access to drives, files and system properties</p> <p><input type="checkbox"/> 4. A shortcut to the Control Panel</p>



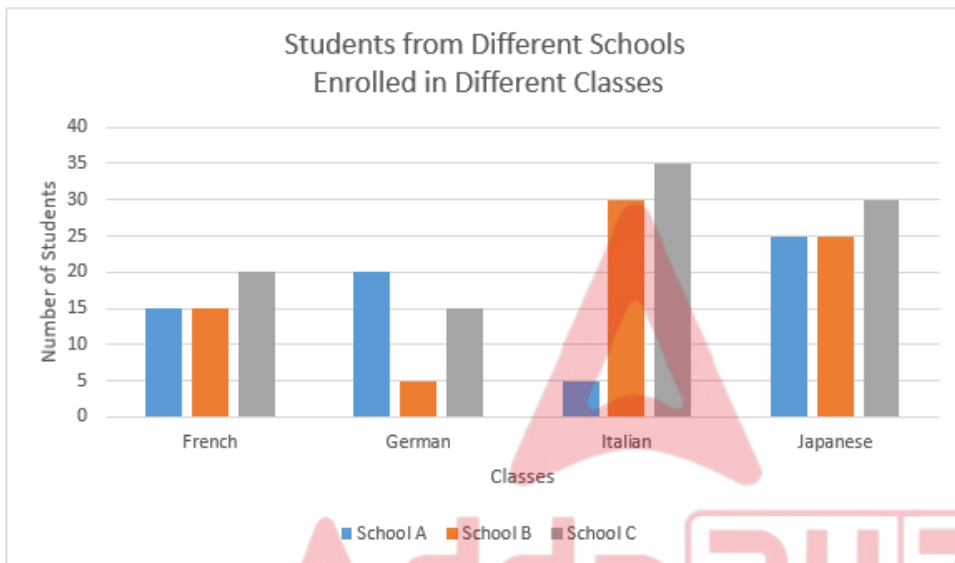
Q.43 Which view is primarily used to run a slide show in MS-PowerPoint?

- Ans
- 1. Notes Page View
  - 2. Normal View
  - 3. Slide Show View
  - 4. Slide Sorter View

Q.44 In  $\triangle PQR$ ,  $3\angle P = 4\angle Q = 6\angle R$ , then find the value of  $\left(\frac{2\angle P - \angle Q + 3\angle R}{5}\right)$ .

- Ans
- 1.  $44^\circ$
  - 2.  $30^\circ$
  - 3.  $72^\circ$
  - 4.  $65^\circ$

Q.45 Study the given bar graph and answer the question that follows.



The given bar graph shows the number of students from different schools enrolled in different classes. Which class has the maximum students from school C?

- Ans
- 1. German
  - 2. Italian
  - 3. Japanese
  - 4. French

Q.46 The product of  $(x - 9)$  and  $(x + 8)$  is:

- Ans
- 1.  $x^2 + x + 72$
  - 2.  $x^2 - x - 72$
  - 3.  $x^2 + 72$
  - 4.  $x^2 + 2x - 72$

Q.47 How do you sort data in Microsoft (MS) Excel in ascending or descending order?

- Ans
- 1. By selecting 'Sort' from the Format menu
  - 2. By selecting the data range, then choosing 'Sort' from the Data menu and specifying the sorting criteria and order
  - 3. By right-clicking on the data and selecting 'Sort' from the context menu
  - 4. By clicking on the 'Sort' button in the toolbar

Q.48	The band gap between conduction and valence band in metals is:
Ans	<p>✓ 1. 0 eV</p> <p>✗ 2. 6.0 eV</p> <p>✗ 3. 0.7 eV</p> <p>✗ 4. 1.1 eV</p>
Q.49	<p>Refer to the following letter, number and symbol series and answer the question that follows.</p> <p>(Left) + 2 \$ Q = Y L A S S X L / % 9 T \ = X H 6 ? (Right)</p> <p>How many such numbers are there that are immediately preceded by a symbol and immediately followed by a letter?</p>
Ans	<p>✗ 1. Three</p> <p>✓ 2. One</p> <p>✗ 3. Two</p> <p>✗ 4. Four</p>
Q.50	The coordinates of the centroid of the triangle ABC whose vertices are A(-5, 7), B(-4, -5) and C(4, 5), is
Ans	<p>✓ 1. <math>(-\frac{5}{3}, \frac{7}{3})</math></p> <p>✗ 2. <math>(-\frac{7}{3}, \frac{5}{3})</math></p> <p>✗ 3. <math>(-\frac{4}{3}, \frac{7}{3})</math></p> <p>✗ 4. <math>(-\frac{5}{3}, -\frac{7}{3})</math></p>
Q.51	The deflection sensitivity (s) of a CRT (cathode ray tube) is defined as: (where D is deflection of the screen and E is deflection voltage)
Ans	<p>✗ 1. <math>s = \left(\frac{D}{E}\right)^2</math></p> <p>✗ 2. <math>s = D \times E</math></p> <p>✗ 3. <math>s = \sqrt{\frac{D}{E}}</math></p> <p>✓ 4. <math>s = \frac{D}{E}</math></p>
Q.52	<p>D, E, F, G, H, I, and J, each has an exam on a different day of a week starting from Monday and ending on Sunday of the same week.</p> <p>E has the exam on Friday. Only one person has the exam between E and D. J has the exam on the day immediately after E. H has the exam on the day immediately after D. Only two people have exams between H and G. F has the exam on the day immediately before D. I does not have the exam on Monday.</p> <p>How many people have exams between J and F?</p>
Ans	<p>✗ 1. Five</p> <p>✗ 2. Four</p> <p>✓ 3. Three</p> <p>✗ 4. Two</p>

Q.53	In an isosceles triangle, the vertex angle measures $76^\circ$ . What is the measure of each of the base angles?
Ans	<p><input type="checkbox"/> 1. <math>32^\circ</math> and <math>49^\circ</math></p> <p><input type="checkbox"/> 2. <math>55^\circ</math> and <math>49^\circ</math></p> <p><input checked="" type="checkbox"/> 3. <math>52^\circ</math> and <math>52^\circ</math></p> <p><input type="checkbox"/> 4. <math>43^\circ</math> and <math>62^\circ</math></p>
Q.54	You can save your MS-PowerPoint presentation in the newest format _____, or as an MS-PowerPoint 97-2003 Presentation _____.
Ans	<p><input type="checkbox"/> 1. (.docx), (.doc)</p> <p><input checked="" type="checkbox"/> 2. (.pptx), (.ppt)</p> <p><input type="checkbox"/> 3. (.odp), (.ppt)</p> <p><input type="checkbox"/> 4. (.ppt), (.pptx)</p>
Q.55	The value of $1^3 - 8^2 + \left(\frac{36}{4}\right)^2 - 0 + 2 \times 5 =$ _____
Ans	<p><input checked="" type="checkbox"/> 1. 28</p> <p><input type="checkbox"/> 2. 27</p> <p><input type="checkbox"/> 3. 37</p> <p><input type="checkbox"/> 4. 38</p>
Q.56	Which of the following factors does NOT affect the strength of the magnetic field inside a solenoid?
Ans	<p><input type="checkbox"/> 1. Number of turns per unit length</p> <p><input checked="" type="checkbox"/> 2. Length of the solenoid</p> <p><input type="checkbox"/> 3. Presence of a magnetic core</p> <p><input type="checkbox"/> 4. Current flowing through the solenoid</p>
Q.57	Which of the following terms will replace the question mark (?) in the given series to make it logically complete? LQ13 MR20 NS27 OT34 ?
Ans	<p><input type="checkbox"/> 1. PV41</p> <p><input type="checkbox"/> 2. PV42</p> <p><input type="checkbox"/> 3. PU42</p> <p><input checked="" type="checkbox"/> 4. PU41</p>
Q.58	How can you quickly change the case of selected text in MS Word?
Ans	<p><input checked="" type="checkbox"/> 1. Use the keyboard shortcut 'Shift + F3'</p> <p><input type="checkbox"/> 2. Right-click the selected text and choose 'Font'</p> <p><input type="checkbox"/> 3. Change it manually by typing the text again</p> <p><input type="checkbox"/> 4. Go to the 'Home' tab and click on 'Change Case'</p>
Q.59	Which of the following is the standard method to print a web page using most modern web browsers?
Ans	<p><input checked="" type="checkbox"/> 1. Pressing Ctrl + P (Windows) or Cmd + P (Mac)</p> <p><input type="checkbox"/> 2. Right-clicking and selecting 'Save As'</p> <p><input type="checkbox"/> 3. Pressing F12</p> <p><input type="checkbox"/> 4. Pressing Ctrl + S (Windows) or Cmd + S (Mac)</p>

Q.60	Evaluate: $\frac{1}{\left(\frac{2}{3}\right) + \left(\frac{3}{5}\right)} \div \frac{8}{39}$
Ans	<p><input type="checkbox"/> 1. <math>3\frac{16}{19}</math></p> <p><input type="checkbox"/> 2. <math>3\frac{17}{23}</math></p> <p><input checked="" type="checkbox"/> 3. <math>3\frac{28}{33}</math></p> <p><input type="checkbox"/> 4. <math>3\frac{65}{76}</math></p>

Q.61	Which of the following statements is true regarding the factors affecting the resistance of a conductor?
Ans	<p><input checked="" type="checkbox"/> 1. Resistance increases with an increase in the temperature for most metals.</p> <p><input type="checkbox"/> 2. Resistance is independent of the conductor's length.</p> <p><input type="checkbox"/> 3. Resistance is inversely proportional to the resistivity of the material.</p> <p><input type="checkbox"/> 4. Resistance is directly proportional to the cross-sectional area of the conductor.</p>

Q.62	Which of the following Articles of the Indian Constitution states that it is the duty of the State to raise the level of nutrition and the standard of living of its people and to improve public health?
Ans	<p><input type="checkbox"/> 1. Article 42</p> <p><input type="checkbox"/> 2. Article 44</p> <p><input type="checkbox"/> 3. Article 51</p> <p><input checked="" type="checkbox"/> 4. Article 47</p>

Q.63	In a survey of 350 students in a college, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?
Ans	<p><input type="checkbox"/> 1. 85</p> <p><input type="checkbox"/> 2. 65</p> <p><input checked="" type="checkbox"/> 3. 75</p> <p><input type="checkbox"/> 4. 55</p>

Q.64	Which of the following are copper deposits fields in India?
Ans	<p><input type="checkbox"/> 1. Singareni and Singrauli</p> <p><input type="checkbox"/> 2. Pench and Kanhan</p> <p><input type="checkbox"/> 3. Jharia and Raniganj</p> <p><input checked="" type="checkbox"/> 4. Khetri and Kolihan</p>

Q.65	If $A = \{3, 5, 7, 9, 11\}$ , $B = \{7, 9, 11, 13\}$ , $C = \{11, 13, 15\}$ , find $A \cap (B \cup C)$ .
Ans	<p><input checked="" type="checkbox"/> 1. <math>\{7, 9, 11\}</math></p> <p><input type="checkbox"/> 2. <math>\{3, 5, 7, 9, 11\}</math></p> <p><input type="checkbox"/> 3. <math>\{5, 7, 9, 11\}</math></p> <p><input type="checkbox"/> 4. <math>\{3, 7, 9, 11\}</math></p>

Q.66	Intel 8051 microcontroller is a/an:
Ans	<input checked="" type="checkbox"/> 1. 64-bit microcontroller <input checked="" type="checkbox"/> 2. 16-bit microcontroller <input checked="" type="checkbox"/> 3. 24-bit microcontroller <input checked="" type="checkbox"/> 4. 8-bit microcontroller
Q.67	<p>கொடுக்கப்பட்ட அறிக்கைகள் மற்றும் முடிவுகளை கவனமாக படித்து, கொடுக்கப்பட்ட முடிவுகளில் எது அறிக்கைகளை பின்பற்றுகிறது என்பதை முடிவு செய்யுங்கள்.</p> <p>அறிக்கைகள்:  'இன்று ஒரு பிரகாசமான சூரிய ஒளி மிகுந்த நாள், எனவே கடற்கரையில் காலை உணவை சாப்பிட்டுவிட்டு பின்னர் நீங்கள் அனைவரும் பார்க்க விரும்பிய அருங்காட்சியகத்திற்குச் செல்வோம்' - ஒரு தந்தை தனது குழந்தைகளிடம் கூறினார்.  முடிவுகள்:  (i) அனைத்து குடும்ப சுற்றுலாக்களும் பிரகாசமான சூரிய ஒளி மிகுந்த நாட்களில் மட்டுமே திட்டமிடப்பட வேண்டும்.  (ii) அறிவியல் அருங்காட்சியகங்கள் குழந்தைகளின் கல்விக்கு மிகவும் பயனளிப்பவை அதே சமயம் வேடிக்கையானவையும் ஆகும்.</p>
Ans	<input checked="" type="checkbox"/> 1. முடிவு (I) அல்லது (II) ஆகிய எதுவும் பின்பற்றவில்லை <input checked="" type="checkbox"/> 2. முடிவு (II) மட்டும் பின்பற்றுகிறது <input checked="" type="checkbox"/> 3. முடிவு (I) மட்டும் பின்பற்றுகிறது <input checked="" type="checkbox"/> 4. முடிவுகள் (I) மற்றும் (II) இரண்டும் பின்பற்றுகின்றன
Q.68	A thermometer consistently reads 2°C higher than the actual temperature. This thermometer is _____.
Ans	<input checked="" type="checkbox"/> 1. precise but not accurate <input checked="" type="checkbox"/> 2. neither accurate nor precise <input checked="" type="checkbox"/> 3. accurate but not precise <input checked="" type="checkbox"/> 4. both accurate and precise
Q.69	What is the name of the service unveiled by Reliance Jio Infocomm Limited, India's first satellite-based gigabit broadband service, in October 2023?
Ans	<input checked="" type="checkbox"/> 1. Jio Fiber Network <input checked="" type="checkbox"/> 2. Digital Subscriber Lines <input checked="" type="checkbox"/> 3. Jio Space Fiber <input checked="" type="checkbox"/> 4. Mobile Broadband
Q.70	What does the 'IF' function do in MS-Excel?
Ans	<input checked="" type="checkbox"/> 1. It sorts the data. <input checked="" type="checkbox"/> 2. It sums up the data. <input checked="" type="checkbox"/> 3. It checks a condition and returns one value if true and another if false. <input checked="" type="checkbox"/> 4. It filters the data.
Q.71	The induced potential difference in a conductor is directly proportional to _____.
Ans	<input checked="" type="checkbox"/> 1. the area of the conductor <input checked="" type="checkbox"/> 2. the resistance of the conductor <input checked="" type="checkbox"/> 3. the speed of the conductor's motion through the magnetic field <input checked="" type="checkbox"/> 4. the temperature of the conductor

Q.72	What will happen to the power consumed by a device if the current flowing through it is doubled while the resistance remains constant?
Ans	<p><input type="checkbox"/> 1. Power will double.</p> <p><input checked="" type="checkbox"/> 2. Power will quadruple.</p> <p><input type="checkbox"/> 3. Power will remain the same.</p> <p><input type="checkbox"/> 4. Power will decrease.</p>
Q.73	Which of the following is true for resistors in parallel?
Ans	<p><input type="checkbox"/> 1. The equivalent resistance is greater than the smallest resistance.</p> <p><input type="checkbox"/> 2. The equivalent resistance is the sum of all resistances.</p> <p><input type="checkbox"/> 3. They have the same current.</p> <p><input checked="" type="checkbox"/> 4. They have the same voltage.</p>
Q.74	<p>Three resistors have the following magnitudes.</p> <p><math>R_1 = 30 \Omega \pm 5\%</math>, <math>R_2 = 60 \Omega \pm 5\%</math>, <math>R_3 = 50 \Omega \pm 5\%</math></p> <p>Determine the magnitude of limiting resultant resistance when all three resistances are connected in series.</p>
Ans	<p><input checked="" type="checkbox"/> 1. <math>140 \pm 7 \Omega</math></p> <p><input type="checkbox"/> 2. <math>140 \pm 15 \Omega</math></p> <p><input type="checkbox"/> 3. <math>27.27 \pm 15 \Omega</math></p> <p><input type="checkbox"/> 4. <math>27.27 \pm 7 \Omega</math></p>
Q.75	When printing a web page, what is the 'Margins' setting control?
Ans	<p><input checked="" type="checkbox"/> 1. The space between the content and the edges of the printed page</p> <p><input type="checkbox"/> 2. The number of pages the content will span</p> <p><input type="checkbox"/> 3. The color scheme of the web page</p> <p><input type="checkbox"/> 4. The font size of the content</p>
Q.76	What is term used to refer the 'exports to foreigners' in the circular flow of income diagram?
Ans	<p><input checked="" type="checkbox"/> 1. injection</p> <p><input type="checkbox"/> 2. Investment</p> <p><input type="checkbox"/> 3. expenditure</p> <p><input type="checkbox"/> 4. leakage</p>
Q.77	A device operates with a current of 2 A and a voltage of 12 V. What is the energy consumed in 5 minutes?
Ans	<p><input type="checkbox"/> 1. 1440 J</p> <p><input checked="" type="checkbox"/> 2. 7200 J</p> <p><input type="checkbox"/> 3. 14400 J</p> <p><input type="checkbox"/> 4. 720 J</p>
Q.78	<p>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 pair DOES NOT belong to that group?</p> <p>(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster pair.)</p>
Ans	<p><input checked="" type="checkbox"/> 1. OH-MT</p> <p><input type="checkbox"/> 2. SL-RX</p> <p><input type="checkbox"/> 3. RK-QW</p> <p><input type="checkbox"/> 4. LE-KQ</p>

Q.79	The Deflection Factor (G) of a CRT (where s is the deflection sensitivity) is defined as:
Ans	<p><input type="checkbox"/> 1. <math>G = \frac{1}{s^2}</math></p> <p><input checked="" type="checkbox"/> 2. <math>G = \frac{1}{s}</math></p> <p><input type="checkbox"/> 3. <math>G = s^2</math></p> <p><input type="checkbox"/> 4. <math>G = s</math></p>
Q.80	The probability that a student passes a Mathematics test is $\frac{3}{4}$ and the probability that he passes both the Mathematics and a Physics test is $\frac{13}{36}$ . The probability that he passes at least one test is $\frac{5}{6}$ . What is the probability that he passes the Physics test?
Ans	<p><input type="checkbox"/> 1. <math>\frac{5}{36}</math></p> <p><input checked="" type="checkbox"/> 2. <math>\frac{4}{9}</math></p> <p><input type="checkbox"/> 3. <math>\frac{7}{9}</math></p> <p><input type="checkbox"/> 4. <math>\frac{5}{9}</math></p>
Q.81	Eddy currents are produced in a conductor when it is subjected to _____.
Ans	<p><input checked="" type="checkbox"/> 1. a changing magnetic field</p> <p><input type="checkbox"/> 2. a uniform magnetic field</p> <p><input type="checkbox"/> 3. a constant magnetic field</p> <p><input type="checkbox"/> 4. an electrostatic field</p>
Q.82	There are two types of links supported in the NTFS file system, _____.
Ans	<p><input type="checkbox"/> 1. soft links and direct linking</p> <p><input type="checkbox"/> 2. hard links and direct linking</p> <p><input checked="" type="checkbox"/> 3. hard links and junctions</p> <p><input type="checkbox"/> 4. soft links and junctions</p>
Q.83	Which of the following keyboard shortcuts is NOT used in MS Word 2019 to manipulate the formatting of selected text?
Ans	<p><input type="checkbox"/> 1. Ctrl + U</p> <p><input checked="" type="checkbox"/> 2. Ctrl + S</p> <p><input type="checkbox"/> 3. Ctrl + I</p> <p><input type="checkbox"/> 4. Ctrl + B</p>
Q.84	What happens when you click the 'Font Color' button in the Home tab of MS-Word?
Ans	<p><input type="checkbox"/> 1. It changes the font color of the selected text to the default color.</p> <p><input type="checkbox"/> 2. It changes the background color of the selected text.</p> <p><input type="checkbox"/> 3. It opens the Font dialog box.</p> <p><input checked="" type="checkbox"/> 4. It opens a drop-down list of colors to choose from.</p>

Q.85	The SI unit for measuring very large distances, such as astronomical distances, is _____.
Ans	<input checked="" type="checkbox"/> 1. metre <input checked="" type="checkbox"/> 2. kilometre <input checked="" type="checkbox"/> 3. astronomical unit <input checked="" type="checkbox"/> 4. light-year
Q.86	Which of the following methods is used to create a custom series in MS-Excel?
Ans	<input checked="" type="checkbox"/> 1. Using Data Validation <input checked="" type="checkbox"/> 2. Using Conditional Formatting <input checked="" type="checkbox"/> 3. Using Sort & Filter <input checked="" type="checkbox"/> 4. Using the Fill Handle and dragging
Q.87	பின்வருவனவற்றில் தர்மசாஸ்திரம் எது?
Ans	<input checked="" type="checkbox"/> 1. மேகதூதம் <input checked="" type="checkbox"/> 2. பகவத் கீதை <input checked="" type="checkbox"/> 3. சகுந்தலா <input checked="" type="checkbox"/> 4. அர்த்தசாஸ்திரம்
Q.88	The value of $3^3 - 5^2 + \left(\frac{26}{13}\right)^2 - 8 + 0 \times 9 =$ _____
Ans	<input checked="" type="checkbox"/> 1. -3 <input checked="" type="checkbox"/> 2. -5 <input checked="" type="checkbox"/> 3. -4 <input checked="" type="checkbox"/> 4. -2
Q.89	Which of the following statements is FALSE with respect to Style Set in Outlook for writing an email?
Ans	<input checked="" type="checkbox"/> 1. You can change the colors or fonts that are used in a Style Set by clicking Change Styles in the Styles group, and then clicking Colors or Fonts. <input checked="" type="checkbox"/> 2. If you changed the styles in a message and the styles are not updating the way you expected, click the Styles Dialog Box Launcher, and then click the Style Inspector button (located at the bottom of the pane) to find out whether text was manually formatted instead of formatted by using styles. <input checked="" type="checkbox"/> 3. You can see how a Quick Style set will look in a message by pointing to a Style Set without clicking it. <input checked="" type="checkbox"/> 4. After you select a Style, you can see a list of the style sets available within the styles. In the Styles group, click the Styles Dialog Box Launcher .
Q.90	Which type of virus attaches itself to executable files and spreads when the file is run?
Ans	<input checked="" type="checkbox"/> 1. Macro Virus <input checked="" type="checkbox"/> 2. Polymorphic Virus <input checked="" type="checkbox"/> 3. Boot Sector Virus <input checked="" type="checkbox"/> 4. File Infector Virus
Q.91	Which of the following is NOT a disadvantage of LAN?
Ans	<input checked="" type="checkbox"/> 1. It can face security issues if the central server is not properly secured. <input checked="" type="checkbox"/> 2. It has high data transmission rates. <input checked="" type="checkbox"/> 3. It has a high initial setup cost. <input checked="" type="checkbox"/> 4. It restricts the size of the network.



Q.92	Select the most appropriate option to fill in the blank. Intel 8051 microcontroller has _____ internal RAM.
Ans	<p><input type="checkbox"/> 1. 64-byte</p> <p><input checked="" type="checkbox"/> 2. 128-byte</p> <p><input type="checkbox"/> 3. 32-byte</p> <p><input type="checkbox"/> 4. 16-byte</p>
Q.93	A particle starts from rest and accelerates uniformly along a straight line with acceleration $a$ . After a time $t$ , its velocity is $v$ . If the particle continues to accelerate for the next $2t$ , what will be the ratio of the distance travelled in the first $t$ seconds to that in the next $2t$ seconds?
Ans	<p><input checked="" type="checkbox"/> 1. 1 : 8</p> <p><input type="checkbox"/> 2. 1 : 12</p> <p><input type="checkbox"/> 3. 1 : 6</p> <p><input type="checkbox"/> 4. 1 : 4</p>
Q.94	Dimensional consistency of an equation implies that _____.
Ans	<p><input type="checkbox"/> 1. the equation is correct in all circumstances</p> <p><input checked="" type="checkbox"/> 2. the equation respects the principles of homogeneity of dimensions</p> <p><input type="checkbox"/> 3. the physical quantities involved are related correctly</p> <p><input type="checkbox"/> 4. the units of measurement can be easily converted</p>
Q.95	Which property of the material of a conductor determines its resistivity?
Ans	<p><input type="checkbox"/> 1. Melting point</p> <p><input checked="" type="checkbox"/> 2. Electrical conductivity</p> <p><input type="checkbox"/> 3. Temperature coefficient</p> <p><input type="checkbox"/> 4. Density</p>
Q.96	The work done by a variable force is given by which of the following?
Ans	<p><input type="checkbox"/> 1. <math>W = F \cdot \cos\theta</math></p> <p><input type="checkbox"/> 2. <math>W = F \cdot d</math></p> <p><input checked="" type="checkbox"/> 3. <math>W = \int F dx</math></p> <p><input type="checkbox"/> 4. <math>W = \frac{1}{2} mv^2</math></p>
Q.97	In which year was Pitt's India Act passed by the British Parliament?
Ans	<p><input checked="" type="checkbox"/> 1. 1784</p> <p><input type="checkbox"/> 2. 1857</p> <p><input type="checkbox"/> 3. 1774</p> <p><input type="checkbox"/> 4. 1853</p>
Q.98	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 that follows the same logic.  LIVE - IVLE - EVIL REST - ESRT - TSER
Ans	<p><input type="checkbox"/> 1. WIND - INWD - INDW</p> <p><input type="checkbox"/> 2. WEST - WSET - TSEW</p> <p><input checked="" type="checkbox"/> 3. MUTE - UTME - ETUM</p> <p><input type="checkbox"/> 4. YORK - OYRK - KORY</p>

Q.99 The brightness of LED depends upon \_\_\_\_\_; when source voltage is much \_\_\_\_\_ than diode voltage, then the brightness of the LED is approximately constant.

Ans  1. temperature; smaller

2. temperature; greater

3. current; greater

4. current; smaller

Q.100 Select the most appropriate options to fill in the blanks.  
\_\_\_\_\_ are used in load cells and proving rings to measure \_\_\_\_\_ produced.

Ans  1. Linear Variable Differential Transformer (LVDT); strain by the force

2. Strain gauges; force by the strain

3. Capacitive transducers; force by the strain

4. Piezoelectric transducers; strain by the force

2024/12/21-19:26:15

