



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	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade I

* Note

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

- Options shown in green color with a tick icon are correct.
- Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade I

Q.1	The estimated rate of unemployment for the year 2018–19 in urban areas was _____%.
Ans	<input checked="" type="checkbox"/> 1. 7.7 <input type="checkbox"/> 2. 5.2 <input type="checkbox"/> 3. 6.8 <input type="checkbox"/> 4. 9
Q.2	Tamper Protection is a feature that prevents unauthorised apps from changing your security settings. Which of the following Operating Systems supports the same?
Ans	<input checked="" type="checkbox"/> 1. Windows 10 <input type="checkbox"/> 2. Windows XP <input type="checkbox"/> 3. Linux <input type="checkbox"/> 4. Windows Vista
Q.3	Which of the following forces does NOT conserve mechanical energy?
Ans	<input type="checkbox"/> 1. Gravitational force <input checked="" type="checkbox"/> 2. Frictional force <input type="checkbox"/> 3. Spring force <input type="checkbox"/> 4. Electrostatic force
Q.4	In an isosceles triangle, the vertex angle measures 132° . What is the measure of each of the base angles?
Ans	<input type="checkbox"/> 1. 11° and 8° <input checked="" type="checkbox"/> 2. 24° and 24° <input type="checkbox"/> 3. 27° and 21° <input type="checkbox"/> 4. 4° and 10°
Q.5	Select the most appropriate option to fill in the blank. Intel 8051 microcontroller has _____ 16-bit timer/counter registers.
Ans	<input type="checkbox"/> 1. three <input type="checkbox"/> 2. one <input checked="" type="checkbox"/> 3. two <input type="checkbox"/> 4. four

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Q.6	When multiplying 3.24 by 0.006, how many significant figures should the result have?
Ans	<p><input type="checkbox"/> 1. 2</p> <p><input type="checkbox"/> 2. 3</p> <p><input checked="" type="checkbox"/> 3. 1</p> <p><input type="checkbox"/> 4. 4</p>
Q.7	A 5 kg object is pushed with a constant horizontal force of 20 N across a rough surface with a coefficient of kinetic friction $\mu_k = 0.2$ for a distance of 10 m. What is the net work done on the object? (Given: acceleration due to gravity $g = 10 \text{ m/s}^2$)
Ans	<p><input type="checkbox"/> 1. 60 J</p> <p><input type="checkbox"/> 2. 160 J</p> <p><input checked="" type="checkbox"/> 3. 100 J</p> <p><input type="checkbox"/> 4. 120 J</p>
Q.8	<p>Identify the correct order of steps to configure your web browser.</p> <p>I. Enable cookies in your web browser II. Enable scripts to disable or replace context menus (Mozilla Firefox only) III. Enable file download on IE 11 running on Windows 2012 IV. Enable JavaScript for your web browser</p>
Ans	<p><input type="checkbox"/> 1. IV, III, II, I'</p> <p><input type="checkbox"/> 2. III, II, IV, I</p> <p><input checked="" type="checkbox"/> 3. IV, I, III, II</p> <p><input type="checkbox"/> 4. I, II, III, IV</p>
Q.9	What is the full form of PCB?
Ans	<p><input type="checkbox"/> 1. Picture Circuit Board</p> <p><input checked="" type="checkbox"/> 2. Printed Circuit Board</p> <p><input type="checkbox"/> 3. Printed Control Board</p> <p><input type="checkbox"/> 4. Picture Control Board</p>
Q.10	The distance of the point P(2, 3) from the x-axis is
Ans	<p><input type="checkbox"/> 1. 1</p> <p><input checked="" type="checkbox"/> 2. 3</p> <p><input type="checkbox"/> 3. 5</p> <p><input type="checkbox"/> 4. 2</p>
Q.11	The most common topologies used in LAN networks are _____.
Ans	<p><input checked="" type="checkbox"/> 1. bus, ring, and star</p> <p><input type="checkbox"/> 2. mesh and ring only</p> <p><input type="checkbox"/> 3. wired, wireless, and virtual</p> <p><input type="checkbox"/> 4. insider threats, LAN sockets, viruses and malware</p>
Q.12	An open water drum is in the form of a cylinder. The height of the drum is 79 m and its internal diameter is 78 m. Find the area (in m^2 , rounded off to one decimal place) that needs to be painted if one wants to paint the inside of the drum. Take $\pi = \frac{22}{7}$
Ans	<p><input type="checkbox"/> 1. 24130.8</p> <p><input type="checkbox"/> 2. 24155.7</p> <p><input type="checkbox"/> 3. 24126.7</p> <p><input checked="" type="checkbox"/> 4. 24146.6</p>

Q.13	If the voltage across a conductor is doubled while keeping the resistance constant, what happens to the current through the conductor?
Ans	<p>✓ 1. It doubles</p> <p>✗ 2. It remains constant</p> <p>✗ 3. It increases four times</p> <p>✗ 4. It halves</p>
Q.14	What is the purpose of the 'grep' command in the Linux operating system?
Ans	<p>✗ 1. To rename files</p> <p>✗ 2. To display the calendar</p> <p>✗ 3. To display system processes</p> <p>✓ 4. To search for a specific pattern in a file</p>
Q.15	The p-type material is formed by doping a pure germanium or silicon crystal with impurity atoms having _____ valence electrons. The element most frequently used for this purpose is _____.
Ans	<p>✓ 1. three; gallium</p> <p>✗ 2. five; antimony</p> <p>✗ 3. five; arsenic</p> <p>✗ 4. three; phosphorus</p>
Q.16	What should come in place of the question mark (?) in the given series? 901 903 ? 913 921 931
Ans	<p>✗ 1. 909</p> <p>✗ 2. 906</p> <p>✓ 3. 907</p> <p>✗ 4. 905</p>
Q.17	If $\frac{18 \cos \theta + 5 \sin \theta}{5 \cos \theta + 4 \sin \theta} = 2$, then find the value of $\cot \theta$.
Ans	<p>✗ 1. $\frac{1}{3}$</p> <p>✗ 2. $\frac{3}{5}$</p> <p>✓ 3. $\frac{3}{8}$</p> <p>✗ 4. $\frac{1}{7}$</p>
Q.18	Which rule is commonly used to determine the direction of the induced EMF in a conductor moving in a magnetic field?
Ans	<p>✗ 1. Ampere's Law</p> <p>✗ 2. Fleming's Left-Hand Rule</p> <p>✗ 3. Lenz's Law</p> <p>✓ 4. Fleming's Right-Hand Rule</p>

Q.19	Which Article of the Indian Constitution provides that the state shall take steps, to secure the participation of workers in the management of industry?
Ans	<p><input type="checkbox"/> 1. Article 45B</p> <p><input type="checkbox"/> 2. Article 44C</p> <p><input type="checkbox"/> 3. Article 42A</p> <p><input checked="" type="checkbox"/> 4. Article 43A</p>
Q.20	The quality factor Q of a series RLC circuit at resonance is a measure of the _____.
Ans	<p><input type="checkbox"/> 1. total impedance of the circuit</p> <p><input type="checkbox"/> 2. energy stored in the circuit</p> <p><input type="checkbox"/> 3. resonance frequency</p> <p><input checked="" type="checkbox"/> 4. rate of energy loss relative to energy stored</p>
Q.21	In SI units, what is the unit of angular momentum?
Ans	<p><input checked="" type="checkbox"/> 1. $\text{kg m}^2 \text{s}^{-1}$</p> <p><input type="checkbox"/> 2. $\text{kg m}^{-1} \text{s}$</p> <p><input type="checkbox"/> 3. $\text{kg m}^2 \text{s}^{-2}$</p> <p><input type="checkbox"/> 4. kg m s^{-1}</p>
Q.22	Match the word templates from group A with their types in group B. Group A Group B I. Planners and trackers A. Questionnaire II. Marketing assets B. Flyers III. Surveys C. Planning sheets
Ans	<p><input type="checkbox"/> 1. I-A, II-C, III-B</p> <p><input type="checkbox"/> 2. I-A, II-B, III-C</p> <p><input type="checkbox"/> 3. I-B, II-C, III-A</p> <p><input checked="" type="checkbox"/> 4. I-C, II-B, III-A</p>
Q.23	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 : 16.2 :: 23 : Y
Ans	<p><input type="checkbox"/> 1. X=19, Y=22.2</p> <p><input checked="" type="checkbox"/> 2. X=17, Y=22.2</p> <p><input type="checkbox"/> 3. X=19, Y=21.2</p> <p><input type="checkbox"/> 4. X=17, Y=21.2</p>
Q.24	In microprocessor 8085, which of the following is a 16-bit register?
Ans	<p><input type="checkbox"/> 1. Z register</p> <p><input type="checkbox"/> 2. W register</p> <p><input type="checkbox"/> 3. Flag register</p> <p><input checked="" type="checkbox"/> 4. Stack pointer</p>

Q.25	Which of the following statements is correct for p-n junction diode?
Ans	<p>✓ 1. There is less barrier potential at higher junction temperature.</p> <p>✗ 2. There is no relation between barrier potential and junction temperature.</p> <p>✗ 3. When diode is conducting, junction temperature is lower than ambient temperature.</p> <p>✗ 4. There is higher barrier potential at higher junction temperature.</p>

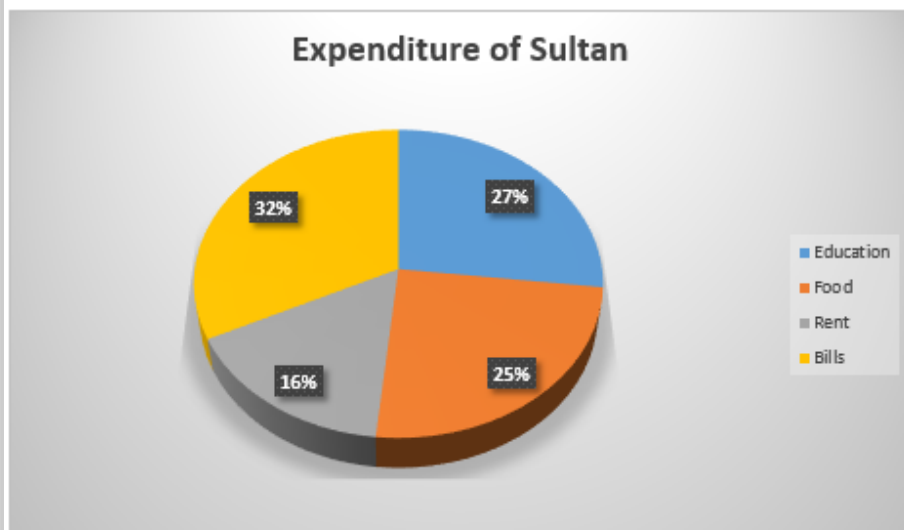
Q.26	What is the purpose of the 'Subject line' in an email?
Ans	<p>✗ 1. To include attachments with the email</p> <p>✗ 2. To provide a detailed explanation of the email content</p> <p>✓ 3. To give a brief summary of the email's topic</p> <p>✗ 4. To list the recipients of the email</p>

Q.27	The odds against an event is 7 : 4 and the odds in favour of another event is 8 : 5. If both the events are independent, then the probability that at least one of the event will happen is:
Ans	<p>✗ 1. $\frac{88}{143}$</p> <p>✗ 2. $\frac{76}{143}$</p> <p>✗ 3. $\frac{35}{143}$</p> <p>✓ 4. $\frac{108}{143}$</p>

Q.28	What does the clock speed of a CPU measure?
Ans	<p>✗ 1. The temperature of the CPU</p> <p>✗ 2. The amount of cache memory</p> <p>✓ 3. The number of instructions executed per second</p> <p>✗ 4. The amount of data processed per second</p>

Q.29 Study the given pie-chart and answer the question that follows.

Monthly percentage expenditure of a Sultan is given in the pie-chart.



What is the monthly expenditure on Food by the Sultan (in ₹) if the total monthly expenditure of the Sultan is ₹10,000?

- Ans
- 1. 2000
 - 2. 7700
 - 3. 2500
 - 4. 1700

Q.30 Which of the following statements about the accuracy or precision of electronic instruments is correct?

- Ans
- 1. The precision is the degree to which the repeated measurement gives the same result.
 - 2. The accuracy and precision are the degree to which the measurement gives the same value.
 - 3. The accuracy of the measurement is getting the same value for respective measurements.
 - 4. The precision is the degree to which the repeated measurement gives quoted value.

Q.31 UDVA is related to CLDI in a certain way based on the English alphabetical order. In the same way, AJBG is related to IRJO. To which of the following options is YHZE related, following the same logic?

- Ans
- 1. GPHM
 - 2. GTFY
 - 3. GHYT
 - 4. GBHY

Q.32 If you need to attach a large file that exceeds the email provider's limit, what is a common solution?

- Ans
- 1. Reduce the file's resolution.
 - 2. Break the file into smaller parts and send multiple emails.
 - 3. Use a cloud storage service and share the link.
 - 4. Compress the file into a .zip format.

Q.33 The value of $\sqrt{144} + \sqrt{0.04} - \sqrt{9} =$

- Ans
- 1. 6.96
 - 2. 11.42
 - 3. 9.2
 - 4. 8.82

Q.34	Which feature is commonly found in modern anti-virus software to help with real-time threat detection?
Ans	<p><input type="checkbox"/> 1. Manual updates</p> <p><input checked="" type="checkbox"/> 2. Cloud-based detection</p> <p><input type="checkbox"/> 3. Offline scanning</p> <p><input type="checkbox"/> 4. Passive scanning</p>
Q.35	The product of two consecutive positive integers is 277. If the smaller of these two integers is represented by x, which of the options below will correspond to the equation for finding out the value of x?
Ans	<p><input type="checkbox"/> 1. $x^2 + x + 277 = 0$</p> <p><input type="checkbox"/> 2. $x^2 - x + 277 = 0$</p> <p><input type="checkbox"/> 3. $x^2 - x - 277 = 0$</p> <p><input checked="" type="checkbox"/> 4. $x^2 + x - 277 = 0$</p>
Q.36	Which SI base unit is directly derived from the definition of ampere?
Ans	<p><input type="checkbox"/> 1. Watt</p> <p><input type="checkbox"/> 2. Volt</p> <p><input type="checkbox"/> 3. Ohm</p> <p><input checked="" type="checkbox"/> 4. Coulomb</p>
Q.37	If 16th and 20th terms of an A.P. be 385 and 441 respectively, then its 90th term is:
Ans	<p><input type="checkbox"/> 1. 1419</p> <p><input type="checkbox"/> 2. 1423</p> <p><input checked="" type="checkbox"/> 3. 1421</p> <p><input type="checkbox"/> 4. 1420</p>
Q.38	M, S, A, F, J, H and D are seven family members living in the same apartment. M is S's husband. H is J's wife. S is the mother of J and daughter of A. D is the brother of H. F is the wife of A. How is D related to J?
Ans	<p><input checked="" type="checkbox"/> 1. Wife's brother</p> <p><input type="checkbox"/> 2. Father</p> <p><input type="checkbox"/> 3. Husband</p> <p><input type="checkbox"/> 4. Brother</p>
Q.39	The HCF and the LCM of two numbers are 12 and 300, respectively. If one of the numbers is $\frac{4}{9}$ times of the other, what is the smaller number?
Ans	<p><input type="checkbox"/> 1. 88</p> <p><input type="checkbox"/> 2. 49</p> <p><input checked="" type="checkbox"/> 3. 40</p> <p><input type="checkbox"/> 4. 69</p>
Q.40	<p>Read the given statement and conclusions carefully and decide which of the given conclusions follow(s) from the statement.</p> <p>Statement: Book-reading is a very healthy habit because it keeps our learning process alive even after our college or school education.</p> <p>Conclusions: I. Nowadays, e-books are gaining far more popularity than hardcovers. II. Students gain a lot of knowledge and improve language by keeping the habit of book-reading alive.</p>
Ans	<p><input type="checkbox"/> 1. Only conclusion I follows</p> <p><input type="checkbox"/> 2. Neither conclusion I nor II follows</p> <p><input checked="" type="checkbox"/> 3. Only conclusion II follows</p> <p><input type="checkbox"/> 4. Both the conclusions follow</p>

Q.41	By which of the following Acts did the rule of the East India Company end in India, and the rule of the crown begin?
Ans	<input checked="" type="checkbox"/> 1. Government of India Act of 1858 <input type="checkbox"/> 2. Regulating Act of 1813 <input type="checkbox"/> 3. Pitt's India Act of 1784 <input type="checkbox"/> 4. Government of India Act of 1853

Q.42	The derived unit for electrical conductance, the Siemens (S), can be expressed in terms of SI base units as _____.
Ans	<input checked="" type="checkbox"/> 1. $\text{kg}^{-1}\cdot\text{m}^{-2}\cdot\text{s}^3\cdot\text{A}^2$ <input type="checkbox"/> 2. $\text{kg}\cdot\text{m}^2\cdot\text{s}^{-3}\cdot\text{A}^{-1}$ <input type="checkbox"/> 3. $\text{kg}\cdot\text{m}^2\cdot\text{s}^{-3}\cdot\text{A}^{-2}$ <input type="checkbox"/> 4. $\text{kg}^{-1}\cdot\text{m}^2\cdot\text{s}^3\cdot\text{A}^2$

Q.43	In a certain code language, 'R + S' means 'R is the mother of S', 'R @ S' means 'R is the husband of S', 'R # S' means 'R is the sister of S' and 'R % S' means 'R is the father of S'. How is N related to P if 'M # N + O % P @ Q # T'?
Ans	<input type="checkbox"/> 1. Father's sister <input type="checkbox"/> 2. Mother <input type="checkbox"/> 3. Sister <input checked="" type="checkbox"/> 4. Father's mother

Q.44	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. Question: A, B, C, D and E are sitting around a circular table facing the centre. Who sits to the immediate right of A? Statement (I): Only one person sits between D and C. E sits to the immediate right of D. Statement (II): B sits to the immediate left of D. Only one person sits between B and E. Only one person sits between E and C.
Ans	<input type="checkbox"/> 1. Data in statements I and II together are sufficient to answer the question. <input type="checkbox"/> 2. Data in Statement I alone is sufficient to answer the question while data in statement II is not. <input type="checkbox"/> 3. Data in statements I and II together are NOT sufficient to answer the question. <input checked="" type="checkbox"/> 4. Data in Statement II alone is sufficient to answer the question while data in statement I is not.

Q.45	If the height of a tower is $\sqrt{3}$ times its shadow, then the angle of the elevation of the top of the tower is equal to:
Ans	<input type="checkbox"/> 1. 30° <input type="checkbox"/> 2. 90° <input checked="" type="checkbox"/> 3. 60° <input type="checkbox"/> 4. 45°

Q.46	What is the role of chemically inactive gases in a light bulb?
Ans	<input type="checkbox"/> 1. To cool the filament <input type="checkbox"/> 2. To reduce the bulb's light output <input checked="" type="checkbox"/> 3. To prolong the life of the filament <input type="checkbox"/> 4. To increase the filament's temperature

Q.47	Who has been honoured with the Goldman Environmental Prize 2024?
Ans	<p><input type="checkbox"/> 1. Jadav Payeng</p> <p><input checked="" type="checkbox"/> 2. Alok Shukla</p> <p><input type="checkbox"/> 3. Maneka Gandhi</p> <p><input type="checkbox"/> 4. Medha Patkar</p>
Q.48	Which of the following statements correctly describes the static characteristics of transistors in common emitter configuration?
Ans	<p><input type="checkbox"/> 1. There is a phase shift of $\frac{\pi}{2}$ between the input and output voltage.</p> <p><input checked="" type="checkbox"/> 2. There is a phase shift of π between the input and output voltage.</p> <p><input type="checkbox"/> 3. There is a phase shift of $\frac{3\pi}{2}$ between the input and output voltage.</p> <p><input type="checkbox"/> 4. There is no phase shift between the input and output voltage.</p>
Q.49	When dividing 0.00456 by 0.12, how many significant figures should the result be reported with?
Ans	<p><input type="checkbox"/> 1. 1</p> <p><input checked="" type="checkbox"/> 2. 2</p> <p><input type="checkbox"/> 3. 3</p> <p><input type="checkbox"/> 4. 4</p>
Q.50	The mean and the standard deviation of 25 observations were given as 42 and 5, respectively. Later it was found that one of the observations was incorrectly entered as 10, when its correct value was 210. What would have been the correct standard deviation?
Ans	<p><input checked="" type="checkbox"/> 1. $\sqrt{1049}$</p> <p><input type="checkbox"/> 2. $\sqrt{1050}$</p> <p><input type="checkbox"/> 3. $\sqrt{1048}$</p> <p><input type="checkbox"/> 4. $\sqrt{1047}$</p>
Q.51	Which of the following options is used to search for help topics in MS-Word 2021?
Ans	<p><input type="checkbox"/> 1. Access 'Help' from the 'View' tab.</p> <p><input type="checkbox"/> 2. Go to the 'File' tab and select 'Help'.</p> <p><input type="checkbox"/> 3. Click the 'Help' button in the Ribbon.</p> <p><input checked="" type="checkbox"/> 4. Use the 'Tell me what you want to do' search box.</p>
Q.52	The quadratic equation whose roots are 9 and 11 is:
Ans	<p><input checked="" type="checkbox"/> 1. $x^2 - 20x + 99 = 0$</p> <p><input type="checkbox"/> 2. $x^2 + 20x + 100 = 0$</p> <p><input type="checkbox"/> 3. $x^2 - 20x + 98 = 0$</p> <p><input type="checkbox"/> 4. $x^2 + 20x - 99 = 0$</p>

Q.53	Which of the following options is NOT used to perform the next animation or advance to the next slide in MS PowerPoint?
Ans	<p><input type="checkbox"/> 1. Enter</p> <p><input type="checkbox"/> 2. Shift+F5</p> <p><input checked="" type="checkbox"/> 3. N</p> <p><input type="checkbox"/> 4. Page Down</p>

Q.54	Convert binary number 1101.1101 into decimal equivalent.
Ans	<p><input type="checkbox"/> 1. 12.8125</p> <p><input checked="" type="checkbox"/> 2. 13.8125</p> <p><input type="checkbox"/> 3. 12.625</p> <p><input type="checkbox"/> 4. 13.625</p>

Q.55	Evaluate: $\frac{1}{\left(\frac{5}{6}\right) + \left(\frac{2}{4}\right)} \div \frac{4}{29}$
Ans	<p><input type="checkbox"/> 1. $5\frac{5}{16}$</p> <p><input checked="" type="checkbox"/> 2. $5\frac{7}{16}$</p> <p><input type="checkbox"/> 3. $5\frac{1}{2}$</p> <p><input type="checkbox"/> 4. $5\frac{9}{16}$</p>

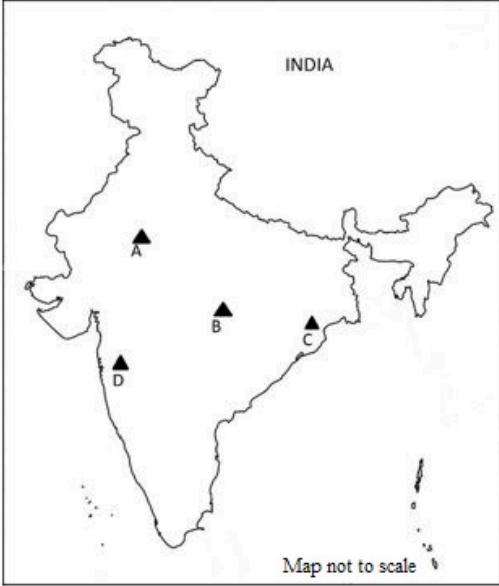
Q.56	What is the formula for the heat produced in a conductor due to the electric current flowing through it?
Ans	<p><input type="checkbox"/> 1. $H = IR^2t$</p> <p><input type="checkbox"/> 2. $H = I^2R/t$</p> <p><input type="checkbox"/> 3. $H = IRt$</p> <p><input checked="" type="checkbox"/> 4. $H = I^2Rt$</p>

Q.57	The Mozilla Firefox/Google Chrome/Microsoft Edge requires support for the _____ protocol.
Ans	<p><input type="checkbox"/> 1. HTTP 2.1</p> <p><input type="checkbox"/> 2. HTTP 3.1</p> <p><input checked="" type="checkbox"/> 3. HTTP 1.1</p> <p><input type="checkbox"/> 4. HTTP 1.2</p>

Q.58	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.)
Ans	<p><input checked="" type="checkbox"/> 1. EIRV</p> <p><input type="checkbox"/> 2. XBIO</p> <p><input type="checkbox"/> 3. KOVB</p> <p><input type="checkbox"/> 4. AELR</p>

Q.59	What is the form of the emf produced in thermocouple? (where Δt = difference in temperature between the hot thermocouple junction and the reference junction of the thermocouple and a, b are constants)
Ans	<p><input type="checkbox"/> 1. $E = \frac{a}{(\Delta t)^2}$</p> <p><input type="checkbox"/> 2. $E = b e^{-a\Delta t}$</p> <p><input type="checkbox"/> 3. $E = a(\Delta t)$</p> <p><input checked="" type="checkbox"/> 4. $E = a(\Delta t) + b(\Delta t)^2$</p>
Q.60	How do you view hidden files and folders in File Explorer in the Windows OS?
Ans	<p><input checked="" type="checkbox"/> 1. Go to 'View' -> Select 'Show hidden items'</p> <p><input type="checkbox"/> 2. Right-click -> Select 'View hidden files'</p> <p><input type="checkbox"/> 3. Go to 'Settings' -> Select 'Hidden files'</p> <p><input type="checkbox"/> 4. Go to 'Edit' -> Select 'Show hidden items'</p>
Q.61	What is the name of the astronaut who was selected for the Axiom-4 mission to the International Space Station (ISS) in August 2024?
Ans	<p><input type="checkbox"/> 1. Sharmila Bhattacharya</p> <p><input type="checkbox"/> 2. Ashwin Vasavada</p> <p><input type="checkbox"/> 3. Kamlesh Lulla</p> <p><input checked="" type="checkbox"/> 4. Shubhanshu Shukla</p>
Q.62	Select the set in which the numbers are related in the same way as are the numbers of the following sets. (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/deleting/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) (5, 9, 52) (11, 7, 90)
Ans	<p><input type="checkbox"/> 1. (7, 13, 98)</p> <p><input type="checkbox"/> 2. (14, 4, 63)</p> <p><input type="checkbox"/> 3. (8, 11, 95)</p> <p><input checked="" type="checkbox"/> 4. (9, 6, 65)</p>
Q.63	What does the middle finger represent in Fleming's Left-Hand Rule?
Ans	<p><input type="checkbox"/> 1. Direction of magnetic field</p> <p><input type="checkbox"/> 2. Direction of induced EMF</p> <p><input checked="" type="checkbox"/> 3. Direction of current</p> <p><input type="checkbox"/> 4. Direction of force</p>
Q.64	After Indian Hockey Federation was dismissed in 2008 by IOA, _____ was formed.
Ans	<p><input type="checkbox"/> 1. Indian Hockey</p> <p><input checked="" type="checkbox"/> 2. Hockey India</p> <p><input type="checkbox"/> 3. Hockey Association</p> <p><input type="checkbox"/> 4. National Hockey Federation</p>
Q.65	Which of the following statements regarding the microprocessor 8085 is NOT correct?
Ans	<p><input type="checkbox"/> 1. It has serial I/O control, which allows serial communication.</p> <p><input type="checkbox"/> 2. It has a mechanism by which it is possible to increase its interrupt handling capacity.</p> <p><input type="checkbox"/> 3. It can be used to implement three chip microcomputers with supporting I/O devices like IC 8155 and IC 8355.</p> <p><input checked="" type="checkbox"/> 4. It does not provide control signal ($\overline{IO/M}$, \overline{RW}, \overline{WR}) to control the bus cycles, hence external bus controller is required.</p>

Q.66	What is the function of the 'AutoFit' feature in MS PowerPoint?
Ans	<input checked="" type="checkbox"/> 1. Automatically adjusts the size of the text to fit the text box <input type="checkbox"/> 2. Automatically adds bullet points to text <input type="checkbox"/> 3. Changes the text colour based on the slide background <input type="checkbox"/> 4. Aligns text to the centre of the text box

Q.67	<p>In the given map, the location of the Simlipal National Park is shown at:</p> 
Ans	<input type="checkbox"/> 1. D <input type="checkbox"/> 2. B <input checked="" type="checkbox"/> 3. C <input type="checkbox"/> 4. A

Q.68	In an AC circuit, if the power factor is 1, it means that _____.
Ans	<input type="checkbox"/> 1. all power is reactive power <input checked="" type="checkbox"/> 2. the circuit is purely resistive <input type="checkbox"/> 3. the circuit is purely inductive <input type="checkbox"/> 4. the circuit is purely capacitive

Q.69	In an electric motor, what is the purpose of the commutator?
Ans	<input type="checkbox"/> 1. To increase the motor speed <input checked="" type="checkbox"/> 2. To reverse the direction of current in the armature <input type="checkbox"/> 3. To decrease the motor speed <input type="checkbox"/> 4. To supply current to the armature

Q.70	<p>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?</p> $18 A 6 B 11 C 8 D 6 = ?$
Ans	<input checked="" type="checkbox"/> 1. 35 <input type="checkbox"/> 2. 33 <input type="checkbox"/> 3. 36 <input type="checkbox"/> 4. 34

Q.71	What was the unemployment rate (UR) in urban areas as of January – March 2024 for persons of age 15 years and above?
Ans	<p><input type="checkbox"/> 1. 67.18%</p> <p><input checked="" type="checkbox"/> 2. 6.7%</p> <p><input type="checkbox"/> 3. 48.35%</p> <p><input type="checkbox"/> 4. 53.25%</p>
Q.72	Which option in the Print dialog box allows you to specify the range of pages to print in Microsoft Word 2010?
Ans	<p><input type="checkbox"/> 1. Printer</p> <p><input checked="" type="checkbox"/> 2. Pages</p> <p><input type="checkbox"/> 3. Orientation</p> <p><input type="checkbox"/> 4. Copies</p>
Q.73	Which of the following terms will replace the question mark (?) in the given series to make it logically complete? PU16 QV18 RW22 SX28 ?
Ans	<p><input type="checkbox"/> 1. TZ36</p> <p><input type="checkbox"/> 2. TZ37</p> <p><input checked="" type="checkbox"/> 3. TY36</p> <p><input type="checkbox"/> 4. TY37</p>
Q.74	A car engine generates a force of 10000 N to move the car 1.2 km in 2 minutes. What is the power of the engine?
Ans	<p><input type="checkbox"/> 1. 1000 kW</p> <p><input checked="" type="checkbox"/> 2. 100 kW</p> <p><input type="checkbox"/> 3. 10 kW</p> <p><input type="checkbox"/> 4. 200 kW</p>
Q.75	When the displacement of a spring is reduced to half its original value, and the spring constant remains unchanged, what happens to the spring's potential energy?
Ans	<p><input type="checkbox"/> 1. It decreases to 1/2 of its original value</p> <p><input checked="" type="checkbox"/> 2. It decreases to 1/4 of its original value</p> <p><input type="checkbox"/> 3. It increases to 2 times its original value</p> <p><input type="checkbox"/> 4. It remains unchanged</p>
Q.76	The points (-5, 1), (1, k) and (4, -2) are collinear if the value of k is
Ans	<p><input checked="" type="checkbox"/> 1. -1</p> <p><input type="checkbox"/> 2. 2</p> <p><input type="checkbox"/> 3. 3</p> <p><input type="checkbox"/> 4. 1</p>
Q.77	If $U = \{ 1, 2, 3, 4, 5, 6, 7, 8, 9 \}$, and $B = \{ 2, 4, 6, 8 \}$, then the number of elements in the set B' is:
Ans	<p><input checked="" type="checkbox"/> 1. 5</p> <p><input type="checkbox"/> 2. 9</p> <p><input type="checkbox"/> 3. 8</p> <p><input type="checkbox"/> 4. 4</p>

Q.78	A and B are two independent events. If $P(A) = 0.4$ and $P(B) = 0.6$, then the $P(A \text{ or } B)$ is equal to:
Ans	<input checked="" type="checkbox"/> 1. 0.66 <input checked="" type="checkbox"/> 2. 0.78 <input checked="" type="checkbox"/> 3. 0.68 <input checked="" type="checkbox"/> 4. 0.76
Q.79	Which menu option allows you to change the height and width of cells in MS-Excel?
Ans	<input checked="" type="checkbox"/> 1. Format <input checked="" type="checkbox"/> 2. Review <input checked="" type="checkbox"/> 3. Insert <input checked="" type="checkbox"/> 4. Page Layout
Q.80	If the heights of two cones are in the ratio 11 : 9 and their diameters are in the ratio 6 : 11, what is the ratio of their volumes?
Ans	<input checked="" type="checkbox"/> 1. 11 : 3 <input checked="" type="checkbox"/> 2. 11 : 4 <input checked="" type="checkbox"/> 3. 3 : 11 <input checked="" type="checkbox"/> 4. 4 : 11
Q.81	A voltmeter has a uniform scale with 100 divisions; the full-scale reading is 300 V and $1/10$ of a scale division can be estimated with a fair degree of certainty. Determine the resolution of the instrument in volt.
Ans	<input checked="" type="checkbox"/> 1. 0.1 V <input checked="" type="checkbox"/> 2. 0.5 V <input checked="" type="checkbox"/> 3. 0.2 V <input checked="" type="checkbox"/> 4. 0.3 V
Q.82	The first and last terms of an A.P. are 28 and 31. If the sum of its terms is 236, then the number of terms will be?
Ans	<input checked="" type="checkbox"/> 1. 8 <input checked="" type="checkbox"/> 2. 11 <input checked="" type="checkbox"/> 3. 6 <input checked="" type="checkbox"/> 4. 5
Q.83	<p>Refer to the following letter, number and symbol series and answer the question that follows.</p> <p>(Left) 6 2 8 # 7 \ 2 L % 9 3 3 \ / + H 2 \$ S P # H (Right)</p> <p>How many such symbols are there that are immediately preceded by a letter and immediately followed by a number?</p>
Ans	<input checked="" type="checkbox"/> 1. One <input checked="" type="checkbox"/> 2. Two <input checked="" type="checkbox"/> 3. Four <input checked="" type="checkbox"/> 4. Three

Q.84	Six people P, Q, R, S, T and U live on six different floors of the same building. The bottom-most floor of the building is numbered as 1; the floor above it is numbered as 2 and so on. The topmost floor is numbered as 6. P lives on an even-numbered floor but not on floor number 4. Only two people live between S and P. R lives immediately below T. U lives on an even-numbered floor. Q does not live on the bottom-most floor. How many people live between Q and S?
Ans	<p><input type="checkbox"/> 1. Three</p> <p><input checked="" type="checkbox"/> 2. One</p> <p><input type="checkbox"/> 3. Four</p> <p><input type="checkbox"/> 4. Two</p>
Q.85	How can a user define cell address in an MS Excel sheet?
Ans	<p><input checked="" type="checkbox"/> 1. Column letter plus row number</p> <p><input type="checkbox"/> 2. Column letter plus row letter</p> <p><input type="checkbox"/> 3. Column number plus row letter</p> <p><input type="checkbox"/> 4. Column number plus row number</p>
Q.86	In a school there are 26 teachers who teach mathematics or physics. Of these, 14 teach mathematics and 6 teach both physics and mathematics. How many teach physics ?
Ans	<p><input type="checkbox"/> 1. 8</p> <p><input checked="" type="checkbox"/> 2. 12</p> <p><input type="checkbox"/> 3. 10</p> <p><input type="checkbox"/> 4. 14</p>
Q.87	In the case of a conservative force, the potential energy _____.
Ans	<p><input checked="" type="checkbox"/> 1. can be defined for any configuration of the system</p> <p><input type="checkbox"/> 2. depends on the work done by friction</p> <p><input type="checkbox"/> 3. is zero</p> <p><input type="checkbox"/> 4. is path dependent</p>
Q.88	A metal rod of length 1.5 m moves with a velocity of 10 m/s through a uniform magnetic field of 2 T. What is the magnitude of the induced EMF if the rod moves at an angle of 60° to the magnetic field?
Ans	<p><input type="checkbox"/> 1. 30 volts</p> <p><input type="checkbox"/> 2. 36 volts</p> <p><input type="checkbox"/> 3. 18 volts</p> <p><input checked="" type="checkbox"/> 4. 26 volts</p>
Q.89	Which of the following is an ancient Jain text written by Acharya Umaswami that explains the Jain philosophy in the most systematic form acceptable to all sects of Jainism?
Ans	<p><input type="checkbox"/> 1. Svayambhu Stotra</p> <p><input type="checkbox"/> 2. Atthapahuda</p> <p><input checked="" type="checkbox"/> 3. Tattvarthasutra</p> <p><input type="checkbox"/> 4. Pravacanasara</p>
Q.90	Which of the following household appliances uses the principle of electromagnetic induction?
Ans	<p><input type="checkbox"/> 1. Toaster</p> <p><input type="checkbox"/> 2. Refrigerator</p> <p><input checked="" type="checkbox"/> 3. Electric Fan</p> <p><input type="checkbox"/> 4. Electric Iron</p>

Q.91	Which of the following will NOT produce an induced current in a coil?
Ans	<p><input type="checkbox"/> 1. Moving the coil towards a stationary magnet</p> <p><input type="checkbox"/> 2. Rotating the coil within a magnetic field</p> <p><input type="checkbox"/> 3. Increasing the number of turns in the coil while changing the magnetic flux</p> <p><input checked="" type="checkbox"/> 4. Moving the coil parallel to the magnetic field lines</p>
Q.92	Which of the following correctly describes the most useful biasing conditions of the emitter-base and base-collector junctions (common base configuration) for a Bipolar Junction Transistor (BJT) among its different modes of operation?
Ans	<p><input type="checkbox"/> 1. Active Mode: Emitter-base junction is reverse-biased, and base-collector junction is forward-biased.</p> <p><input checked="" type="checkbox"/> 2. Active Mode: Emitter-base junction is forward-biased, and base-collector junction is reverse-biased.</p> <p><input type="checkbox"/> 3. Cut-off Mode: Both emitter-base and base-collector junctions are forward-biased.</p> <p><input type="checkbox"/> 4. Saturation Mode: Both emitter-base and base-collector junctions are reverse-biased.</p>
Q.93	Choose the correct statement related to government expenditure.
Ans	<p><input type="checkbox"/> 1. Revenue expenditure directly contributes to GDP growth.</p> <p><input type="checkbox"/> 2. Revenue expenditure impacts assets liability of the government.</p> <p><input type="checkbox"/> 3. Revenue expenditure does not impact assets liability of the government.</p> <p><input checked="" type="checkbox"/> 4. Capital expenditure directly contributes to GDP growth.</p>
Q.94	Which of the following statements is true about the accuracy of an analog to digital (A/D) converter?
Ans	<p><input type="checkbox"/> 1. A dual-slope integrating-type A/D converter has the same accuracy as a single-slope integrating-type A/D converter.</p> <p><input type="checkbox"/> 2. A dual-slope integrating-type A/D converter has a very small accuracy than a single-slope integrating-type A/D converter.</p> <p><input checked="" type="checkbox"/> 3. A dual-slope integrating-type A/D converter has a higher accuracy than a single-slope integrating-type A/D converter.</p> <p><input type="checkbox"/> 4. A dual-slope integrating-type A/D converter has a small accuracy than a single-slope integrating-type A/D converter.</p>
Q.95	$\triangle ABC$ is such that $AB = 5$ cm, $BC = 4$ cm and $CA = 4.5$ cm. $\triangle XYZ$ is similar to $\triangle ABC$. If $YZ = 8$ cm, then find the perimeter of $\triangle XYZ$.
Ans	<p><input type="checkbox"/> 1. 28 cm</p> <p><input checked="" type="checkbox"/> 2. 27 cm</p> <p><input type="checkbox"/> 3. 26 cm</p> <p><input type="checkbox"/> 4. 25 cm</p>
Q.96	The voltage range of resistance-voltage divider is limited to a few:
Ans	<p><input type="checkbox"/> 1. Micro volts</p> <p><input type="checkbox"/> 2. Milli Volts</p> <p><input type="checkbox"/> 3. Volts</p> <p><input checked="" type="checkbox"/> 4. Kilo Volts</p>
Q.97	Match the options from Group A with Group B regarding Auto Fill Options in MS-Excel sheets.
	<p>Group A Group B</p> <p>1. Copy Cells. I. Copy only the cell formatting</p> <p>2. Fill Formatting Only II. Copy the entire contents of the cell, including the formulas and the formatting</p> <p>3. Fill Without Formatting III. Copy the contents of the cell, including the formulas but not the formatting</p>
Ans	<p><input type="checkbox"/> 1. 1-II, 2-III, 3-I</p> <p><input type="checkbox"/> 2. 1-III, 2-I, 3-II</p> <p><input checked="" type="checkbox"/> 3. 1-II, 2-I, 3-III</p> <p><input type="checkbox"/> 4. 1-I, 2-II, 3-III</p>

Q.98 Select the most appropriate option to fill in the blank.
For a given accelerating voltage E_a and for particular dimensions of CRT, the deflection of the electron beam is _____ to the deflecting voltage.

Ans 1. independent

2. directly proportional

3. inversely proportional

4. square proportional

Q.99 A statement is given followed by two arguments. Decide which of the arguments is/are strong with respect to the statement.

Statement:

The Government of State A is planning to shut down all markets by 7 pm.

Arguments:

I. Incidents of shoplifting and attempted robberies have increased especially during night time.

II. Many people get time to shop only after office hours.

Ans 1. Both I and II strengthen the statement.

2. I weakens while II strengthens the statement.

3. Both I and II weaken the statement.

4. II weakens while I strengthens the statement.

Q.100 What is the purpose of the 'Sleep' option in the Windows OS?

Ans 1. To shut down the system

2. To restart the system

3. To save all open documents and programs while reducing power consumption

4. To delete temporary files