

Section : I - Aptitude and Logical Reasoning

1. In a certain code, TABLE is written as GZYOV, then CHAIR can be written as
 (a) XRZSI (b) XZSRI (c) XSRZI (d) XSZRI
2. Burman remembers that the cricket match is after 19th July but before 22nd July, while Sumit remembers that the cricket match is before 25th July but after 20th July. On which date of July is the cricket match?
 (a) 20 (b) 21 (c) 22 (d) 19
3. C and D start cycling from their fitness club. C rides 1 km West, then turns to his left and rides 5 km. In the meanwhile D rides 3 km South, then turns West and rides 7 km, then turns to his left and rides 2 km. Where is C with respect to D?
 (a) 8 km East (b) 6 km West (c) 6 km East (d) 8 km West
4. Arrange the following words as per order in the dictionary and then choose the one which comes last.
 (a) Qualify (b) Quarter (c) Quarrel (d) Quaver
5. A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.
 Telephone, Radio, ? , Laptop
 (a) Telescope (b) Bulb (c) Pen (d) Mobile

Section : II - Mathematics

6. Evaluate the expression:

$$(-12) \div (3 - 7) + 5 \times (-2)^2$$
 (a) 17 (b) 23 (c) 28 (d) 3
7. A point P is located on a number line such that it lies 8 units to the right of -4. From P, you move 5 units to the left to reach point Q. What is the coordinate of Q?
 (a) -1 (b) 4 (c) -7 (d) 3
8. A water tank contains 40 liters of water at 8 a.m. Every hour, 7 liters are drained from it. How much water is there in the tank at 11 a.m.?
 (a) 12 liters (b) 19 liters (c) 21 liters (d) 26 liters

ROUGH SPACE

9. A gardener mixes the following amounts of soil additives:





- $\frac{3}{4}$ kg compost
- $1\frac{1}{2}$ kg peat moss
- $\frac{2}{3}$ kg fertilizer

What is the total weight of the mixture?

- (a) $2\frac{5}{6}$ kg (b) $2\frac{7}{12}$ kg (c) $2\frac{3}{4}$ kg (d) $2\frac{11}{12}$ kg
10. A company reports its annual revenue as "Sixty-three crore, eighteen lakh, forty-two thousand, and nine" in the Indian System of Numeration. In the International System of Numeration, how is this number correctly written in words?
- (a) Six hundred thirty-one million, eight hundred forty-two thousand, and nine.
 (b) Six hundred thirty-one million, eighty-four thousand, and nine.
 (c) Six hundred thirty-eight million, four hundred twenty thousand, and nine.
 (d) Six hundred thirty-one million, eight hundred forty-two thousand, and ninety.
11. In a test consisting of 50 questions, a student earns 4 marks for every correct answer and loses 1 mark for every incorrect answer. Unattempted questions carry 0 marks. If the student answers 32 questions correctly and 10 questions incorrectly, what are his/her total marks?
- (a) 98 (b) 108 (c) 118 (d) 128
12. First subtract (+14) from -18 . Then multiply the result by -6 , and finally add (-12) . What is the final value?
- (a) 168 (b) 180 (c) 192 (d) 160
13. On a number line, point A is at -9 and point B is at 15. How many integers lie strictly between A and B?
- (a) 23 (b) 24 (c) 25 (d) 26
14. What is the sum of all integers strictly between -850 and 849?
- (a) 850 (b) -850 (c) 849 (d) -849
15. What is the value of the expression : $3 - [5 - (-4 + 2)] + 6$?
- (a) 0 (b) 2 (c) -2 (d) 4

ROUGH SPACE

Section : III - Science

16. A peregrine falcon is diving at a speed of 97.2 m/s. What is this approx. speed in km/h ?
 (a) 270 km/h (b) 300 km/h (c) 350 km/h (d) 380 km/h
17. A certain transistor gate length in a modern microprocessor is 45 nm (nanometers). Convert this measurement to meters.
 (a) 4.5×10^{-8} m (b) 4.5×10^{-9} m (c) 4.5×10^{-10} m (d) 4.5×10^{-12} m
18. The average orbital speed of the space shuttle was approximately 7.8×10^3 m/s. Convert this speed into km/h and express the answer in standard scientific notation (with one digit before the decimal point).
 (a) 2.808×10^4 km/h (b) 2.808×10^3 km/h (c) 7.8×10^3 km/h (d) 2.8×10^7 km/h
19. Which of the following units is a derived SI unit?
 (a) Second (s) (b) Ampere (A) (c) Joule (J) (d) Mole (mol)
20. Given that the SI unit for Pressure is the Pascal (Pa), which defined as one Newton per square meter ($1 \text{ Pa} = 1 \text{ N} / \text{m}^2$), and the SI unit for Force is $1 \text{ N} = 1 \text{ kg} \cdot \text{m/s}^2$.
 Which of the following correctly represents 1 Pa in terms of fundamental SI base units (kg, m, s)?
 (a) $\text{kg} \cdot \text{m}^{-1} \cdot \text{s}^{-2}$ (b) $\text{kg} \cdot \text{m}^{-2} \cdot \text{s}^{-2}$ (c) $\text{kg} \cdot \text{m}^{-1} \cdot \text{s}^{-1}$ (d) $\text{kg} \cdot \text{m} \cdot \text{s}^{-2}$
21. Which of the following options is a source of Artificial light?
 (a) Moon (b) Flashlight
 (c) Lightning (d) Aurora (Northern/Southern lights)
22. Butter (tracing) paper is _____ which will let some light pass through it.
 (a) Translucent (b) Transparent (c) Opaque (d) Light
23. What is the term for the area of a shadow where the light source is only partially blocked by the object, resulting in a lighter shadow?
 (a) Umbra (b) Antumbra (c) Penumbra (d) Total shadow
24. Which image best represents the shadow cast by the Sun at 6:00 P.M?
 (a)  (b)  (c)  (d) 

ROUGH SPACE

25. Which one of the mirror images of the following combination is correct when the mirror is placed at 'PQ'?

$\begin{array}{c} \text{P} \\ \text{SuNRiSe} \\ \text{Q} \end{array}$

- (a) SeiRiNu2 (b) e2iRiNu2 (c) 2uIR!2e (d) 2uIR!2e
26. Which of the following processes can be used to remove both temporary and permanent hardness?
 (a) Clark's method (b) Addition of washing soda
 (c) Boiling (d) All the above
27. Which of the following terms is not related to underground water?
 (a) Infiltration (b) Aquifer (c) Water table (d) Potable water
28. Which of the following water is suitable for drinking?
 (a) Soft water (b) Demineralized water
 (c) Potable water (d) Distilled water
29. When the water gets converted to ice, its volume
 (a) decreases (b) increases
 (c) remains the same (d) initially decreases and then increases
30. Which of the following salts is responsible for temporary and permanent hardness of water respectively?
 (a) $\text{Mg}(\text{HCO}_3)_2$ and Na_2SO_4 (b) $\text{Ca}(\text{HCO}_3)_2$ and MgCl_2
 (c) MgSO_4 and $\text{Mg}(\text{HCO}_3)_2$ (d) CaCl_2 and CaSO_4
31. Purity of oxalic acid can be determined by
 (a) determining the boiling point (b) determining the melting point
 (c) by dissolving it into water (d) None of these
32. Temperature at which pure ice melts is :
 (a) 0°C (b) 100°C (c) 273°C (d) -5°C
33. In fractional distillation of petroleum, the liquid with the highest boiling point, condenses in:
 (a) Top most tray (b) Middle tray (c) Lower tray (d) Any tray

ROUGH SPACE

34. A liquid with soluble impurities is purified by:
 (a) Filtration (b) Sublimation (c) Cooling (d) Distillation
35. A liquid with insoluble impurities is purified by:
 (a) Filtering (b) Cooling (c) Freezing (d) Boiling
36. Which plant part makes seeds?
 (a) leaves (b) roots (c) flower (d) the birds
37. Identify the structure:



- (a) Corolla (b) Gynoecium (c) Calyx (d) Androecium
38. This system grows above the soil and is made up of stem, buds, leaves, flowers and fruits.
 (a) Stem (b) Shoot system (c) Root system (d) Branches
39. In cactus leaf are modified into
 (a) Spines (b) Tendrils (c) Fleshy for storage (d) climber
40. Which plant has fibrous root?
 (a) Tulsi (b) Mango (c) Orange (d) Rice
41. From the given list select how many are abiotic in aquatic habitat.
 i. Soil
 ii. Fishes
 iii. Whale
 iv. Plants
 v. Rocks
 vi. Water
 (a) 2 (b) 3 (c) 4 (d) 5

ROUGH SPACE

42. Which of the following is not a terrestrial habitat ?
(a) Forest (b) Desert (c) Grassland (d) Pond
43. What is an increase in the amount of living material and/or the formation of new structures?
(a) Reproduction (b) Development (c) Homeostasis (d) Growth
44. A change in an organism's surroundings that causes it to react is called
(a) development (b) a stimulus (c) a response (d) energy
45. What is the habitat of camel ?
(a) desert (b) water (c) none of the above (d) forest

ROUGH SPACE
