

Section : I - Aptitude and Logical Reasoning

- Given Sequence : NOPQYBZARSHIJKLMTUVGFEXDC
What will come in place of (?) the following series.
NDP, QWB, ZFR, ?
(a) SVI (b) AFS (c) IVS (d) SFA
- In a certain code language,
(A) 'pit dar na' means 'you are good'
(B) 'dar tok pa' means 'good and bad'
(C) 'tim na tok' means 'they are bad'
In that language, which word stands for 'they' ?
(a) na (b) tok (c) tim (d) pit
- Select the related word/letters/number from the given alternatives.
AB : YX :: LM : ?
(a) NM (b) OP (c) IJ (d) GH
- Arrange the given words in the sequence in which they occur in the dictionary.
i. Hunger
ii. Horse
iii. Hungry
iv. Handmade
(a) iv, ii, i, iii (b) iii, iv, ii, i (c) iv, iii, i, ii (d) i, iv, ii, iii
- If P means ' \div ', Q means '+', R means '-' and S mean ' \times ', then the value of
10 R 192 P 48 S 48 P 96 Q 1
(a) 10 (b) 9 (c) 8 (d) 7

Section : II - Mathematics

- The sum of the three prime numbers is 100. If one of them exceeds another number by 24, then one of the other numbers is
(a) 7 (b) 29 (c) 43 (d) 61
- Three times the second number from three consecutive odd integers is 3 more than twice the third number. The third integer is:
(a) 11 (b) 7 (c) 5 (d) 9

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8. The sum of two numbers is 14 and the difference between them is 4. What will be the product of those two numbers?
 (a) 36 (b) 54 (c) 27 (d) 45
9. Find the mean of first n odd natural numbers is
 (a) $\frac{n+1}{2}$ (b) $\frac{n}{2}$
 (c) n (d) more than one of the above
10. A whole number is added to 25 and the same number is subtracted from 25. The sum of the resulting numbers is
 (a) 0 (b) 25 (c) 50 (d) 75
11. The value of $\sqrt{609 + \sqrt{248 + \sqrt{60 + \sqrt{7 + \sqrt{81}}}}}$
 (a) 20 (b) 25 (c) 16 (d) 9
12. If $\frac{45}{53} = \frac{1}{a + \frac{1}{b + \frac{1}{c - \frac{2}{5}}}}$, where a , b and c are positive integers, then what is the value of $(4a - b + 3c)$
 (a) 6 (b) 4 (c) 7 (d) 5
13. Among the given numbers the one, which is not a perfect square, is:
 (a) 2116 (b) 2342 (c) 2209 (d) 5041
14. The value of $(1331)^{\left(\frac{2}{3}\right)}$ is _____.
 (a) $\frac{1}{120}$ (b) $\frac{1}{121}$ (c) $\frac{1}{111}$ (d) $\frac{1}{122}$
15. If $7^x + 7^x + 7^x = 1029$, then the value of x is “
 (a) 3 (b) 2 (c) 4 (d) 6

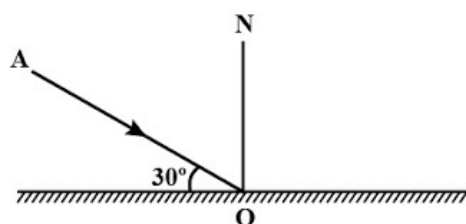
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Section : III - Science

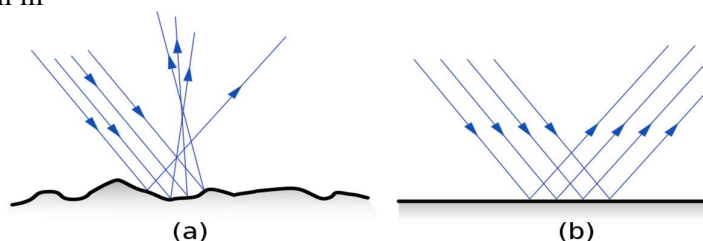
16. Which pair of quantities consists of a vector derived quantity and a scalar fundamental quantity?
 (a) Force and Time (b) Volume and Mass
 (c) Velocity and Speed (d) Electric Current and Pressure
17. Which of the following physical quantities is a fundamental quantity?
 (a) Pressure (b) Acceleration (c) Electric Current (d) Volume
18. A brick has a mass of 3.6 kilogram (kg) and density of 2,000 kilograms per cubic meter (kg/m^3). Find the volume of the brick in cubic centimeters (cm^3).
 (a) $18 \times 10^2 \text{ cm}^3$ (b) $1.8 \times 10^3 \text{ cm}^3$ (c) $1.8 \times 10^4 \text{ cm}^3$ (d) $1.8 \times 10^5 \text{ cm}^3$
19. If 1 Pascal (Pa) is equal to 10 barye, then 7.5×10^4 barye is equal to how many megapascals (MPa)
 (a) $7.5 \times 10^{-3} \text{ MPa}$ (b) $7.5 \times 10^2 \text{ MPa}$ (c) $7.5 \times 10^{-1} \text{ MPa}$ (d) $7.5 \times 10^1 \text{ MPa}$
20. The SI unit Energy or Work, the Joule (J), can be expressed in terms of the SI base units (kilogram, meter, second) as:
 (a) $\text{kg} \cdot \text{m} \cdot \text{s}^{-2}$ (b) $\text{kg} \cdot \text{m}^2 \cdot \text{s}^{-3}$ (c) $\text{kg} \cdot \text{m}^2 \cdot \text{s}^{-2}$ (d) $\text{kg} \cdot \text{m}^2 \cdot \text{s}^{-1}$
21. A person wants a mirror that can produce a larger, upright image of their face when held close, when is ideal for applying makeup or shaving. Which type of mirror should they use?
 (a) Convex mirror (b) Plane mirror (c) Concave mirror (d) Concave lens
22. A beam of parallel light rays strikes a concave mirror. Where do the reflected rays converge, or meet?
 (a) Behind the mirror
 (b) In front of the mirror, at the focal point
 (c) In front of the mirror, at the center of curvature
 (d) The rays diverge and never meet

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23. The sum of angle of incidence and the angle of reflection in the shown picture will be



- (a) 60° (b) 50° (c) 120° (d) 100°
24. The picture shows reflection from two different surface. The angle of incidence will be equal to the angle of reflection in



- (a) only (a) (b) only (b) (c) both (a) & (b) (d) cannot be said
25. What is the main difference between transparent and opaque materials in terms of light?
- (a) Transparency allows light to pass through completely, while opacity allows partial light passage.
 (b) Transparency allows partial light passage, while opacity allows light to pass through completely.
 (c) Transparent materials don't allow any light to pass through, while opaque materials allow partial light passage.
 (d) Transparent materials allow light to pass through completely, while opaque materials do not allow any light passage.
26. The solid state of CO_2 is called
- (a) Tear gas (b) Cooking gas (c) Dry ice (d) Laughing gas
27. Which of the following is not a chemical change characteristic?
- (a) Change in colour (b) Change in state
 (c) Production of sound (d) Change in smell

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28. Which of the following does not represent a chemical change?
 (a) Burning of leaves (b) Fermentation of grapes
 (c) Turning brown of freshly cut banana (d) Freezing of water
29. What kind of change is the explosion of fireworks?
 (a) Physical change (b) Chemical change (c) Not a change (d) Reversible change
30. The change of state of substance from gas to liquid is called
 (a) melting (b) boiling (c) condensation (d) vaporization
31. The ratio between the neutrons in C and Si with respect to atomic masses 12 and 28 is
 (a) 2 : 3 (b) 3 : 2 (c) 3 : 7 (d) 7 : 3
32. Which of the following are isoelectronic with one another?
 (a) Na^+ and Ne (b) K^+ and O (c) Ne and O (d) Na^+ and K^+
33. The size of the nucleus is measured in _____ units.
 (a) a.m.u. (b) Angstrom (c) Fermi (d) c.m.
34. The present atomic weight scale is based on
 (a) C^{12} (b) O^{16} (c) H^1 (d) C^{13}
35. The atomic weight of an element is 23 and its atomic number is 11. The number of protons, electrons and neutrons respectively, present in the atom of the element are
 (a) 11, 11, 12 (b) 12, 12, 11 (c) 11, 12, 11 (d) 12, 11, 12
36. The term cell was given by
 (a) Anton van Leeuwenhoek (b) Robert Hooke
 (c) Robert Brown (d) Benda
37. Which organelle kills foreign pathogen?
 (a) Lysosome (b) Golgi body
 (c) Endoplasmic reticulum (d) Nucleus
38. Which is the largest cell?
 (a) Neuron (b) Bacterial cell (c) Algae (d) Ostrich egg

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39. Which plant tissue consist of dead cells?
(a) Meristem (b) Sclerenchyma (c) Parenchyma (d) Collenchyma
40. What helps in the transportation of water in xylem tissue?
(a) Vessels (b) Sieve tube (c) Companion cell (d) Xylem fibre
41. The neuron has short, branched structure called
(a) Nucleus (b) Axon (c) Cell body (d) Dendrite
42. _____ tissue connects bone to bone.
(a) Ligament (b) Tendon (c) Cartilage (d) Epithelium
43. Muscle found in the stomach and intestine is
(a) Involuntary (b) Skeletal (c) Cardiac (d) Voluntary
44. Cube shape cells epithelium is called
(a) Squamous epithelium (b) Cuboidal epithelium
(c) Columnar epithelium (d) Glandular epithelium
45. Plasma membrane is
(a) Semi-permeable (b) Freely permeable (c) Impermeable (d) None of these

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