

## Section : I - Aptitude and Logical Reasoning

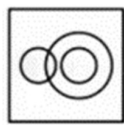
1. Select the Venn diagram that best represents the given set of classes. Currencies, Yuan, Baht

(1)



(a) 4

(2)



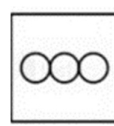
(b) 2

(3)



(c) 1

(4)



(d) 3

2. In a group discussion A, B, C, D, E and F are sitting around a rectangular table

A is sitting on a side alone

B, C are sitting on the same side.

F is facing A

D is the immediate left to F

C is facing D

1. Who is immediate right of A?

2. Who is between B and F ?

(a) 1. D 2. E

(b) 1. A 2. D

(c) 1. E 2. C

(d) 1. E 2. A

3. A's mother is sister of B and daughter of C. D is daughter of B and sister of E. How is C related to E?

(a) Either Grandfather or Grandmother

(b) Father

(c) Aunt

(d) Mother

4. Joe is walking towards north for 15 miles, turns left and walks another 10 miles. He then turns right and walks 10 miles. Now he again turns right and walks 30 miles. Which direction is he from starting point ?

(a) South-East

(b) South-West

(c) North-East

(d) North-west

5. If FIRE is coded as '#\*?%', then FREEZE will be coded as

(a) %%%?%^

(b) ??%%#\*

(c) ???%#@

(d) #&%%?\*

## Section : II - Mathematics

6. If  $10^x = 64$ , what is value of  $10^{\frac{x}{2}+1}$

(a) 70

(b) 8

(c) 80

(d) None of these

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7. If  $x = 8^{2/3} \cdot 16^{-1/4}$ , then  $x^2 =$   
 (a)  $1/2$  (b)  $1/4$  (c) 2 (d) 4
8. Which statement is true?  
 (a)  $\frac{3}{-4} > \frac{2}{-3}$  (b)  $\frac{-5}{6} < \frac{-4}{5}$  (c)  $\frac{-2}{5} = 0.4$  (d)  $\frac{-1}{3} > \frac{-1}{4}$
9.  $\frac{3}{7} \div \left(-\frac{9}{14}\right) = :$   
 (a)  $-\frac{2}{3}$  (b)  $-\frac{3}{2}$  (c)  $\frac{2}{3}$  (d)  $\frac{3}{2}$
10. If  $4^x = 64$  and  $3^y = 81$ , then  $\frac{x}{y} = :$   
 (a)  $\frac{3}{2}$  (b)  $\frac{2}{3}$  (c)  $\frac{4}{3}$  (d)  $\frac{3}{4}$
11. Simplify:  $(5^{-1} + 2^{-2})^{-1} :$   
 (a)  $\frac{4}{9}$  (b)  $\frac{9}{4}$  (c)  $\frac{20}{9}$  (d)  $\frac{9}{20}$
12. If  $3^a = 81$  and  $a^b = 16$ , then  $b = :$   
 (a) 2 (b) 3 (c) 4 (d) 5
13. The product of the following fractions is :  $\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right)\left(1 - \frac{1}{5}\right) \dots \left(1 - \frac{1}{13}\right)$   
 (a)  $\frac{1}{6}$  (b)  $\frac{1}{13}$  (c)  $\frac{2}{13}$  (d)  $\frac{1}{26}$
14. If  $x = \left(\frac{5}{8}\right)^{-2} \times \left(\frac{12}{15}\right)^{-2}$ , find the value of  $x^{-3} :$   
 (a)  $\frac{1}{4}$  (b)  $\frac{1}{16}$  (c)  $\frac{1}{64}$  (d) 64

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15. Which of the following numbers is divisible by 6?  
 (a) 97234 (b) 16524 (c) 3825 (d) 52618

### Section : III - Science

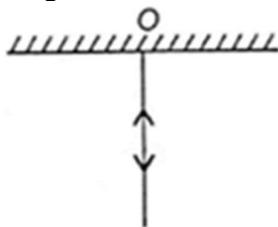
16. Distance covered by an object per unit time is called:  
 (a) Velocity (b) Speed (c) Motion (d) Acceleration
17. Density is mass per unit volume then, its SI unit is?  
 (a)  $\frac{\text{g}}{\text{m}^3}$  (b)  $\frac{\text{g}}{\text{cm}^3}$  (c)  $\frac{\text{kg}}{\text{m}^3}$  (d)  $\frac{\text{kg}}{\text{km}^3}$
18. A block of iron dimensions  $2\text{m} \times 0.5\text{m} \times 0.25\text{m}$ . The density of iron is  $7.8 \text{ g cm}^{-3}$ . Find the mass of block.  
 (a) 1095 kg (b) 0.00195 kg (c) 195 kg (d) 1950 kg
19. A car is moving with speed 54 km/hr. Its speed in CGS units can be given as \_\_\_\_\_.  
 (a) 15 m/s (b) 15 cm/s (c) 150 cm/s (d)  $1.5 \times 10^3 \text{ cm/s}$
20. For a vector quantity, which of the following is true?  
 (a) It just has the magnitude  
 (b) It has only the direction  
 (c) It has both the magnitude as well as the direction  
 (d) None of the mentioned
21. Which of the following is natural source of light?  
 (a) Electric Lamp (b) Tube Light (c) Torch (d) The Sun
22. What is rectilinear propagation of light?  
 (a) Travelling in curved lines  
 (b) Travelling in straight lines  
 (c) The ability to bend around obstacles  
 (d) The display of the phenomenon of diffraction

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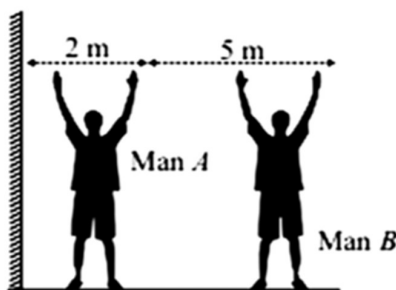
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23. What is the angle of incidence and angle of reflection in the given figure?



- (a)  $360^\circ$  (b)  $180^\circ$  (c)  $90^\circ$  (d)  $0^\circ$
24. Two men are standing in front of a plane mirror as shown. When man A looks into the mirror, how far away from him will man B seem to be?



- (a) 3 m (b) 5 m (c) 7 m (d) 9 m
25. A plane mirror forms a virtual image. The distance between Maria and her image produced by a plane mirror is 10m. How much distance should she move in order to get the distance of 5m between herself and her image?
- (a) 2.5 m away from the mirror (b) 2.5 m towards the mirror  
(c) 5 m away from the mirror (d) 5 m towards the mirror
26. Electronic configuration of Ca.
- (a) 2, 8, 8, 2 (b) 2, 8, 8, 1 (c) 2, 8, 10 (d) 2, 6, 4
27.  ${}_6\text{C}^{12}$ ,  ${}_6\text{C}^{13}$  are
- (a) isotones (b) isobars (c) isotopes (d) none
28.  $\text{CN}^-$  and  $\text{N}_2$  are
- (a) isobars (b) isoelectronic (c) isotopes (d) none

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29. \_\_\_\_\_ are highly compressible.  
 (a) solids (b) liquids (c) gases (d) none
30. When gas is cooled, speed of molecules.  
 (a) no effect (b) increases (c) both a and b (d) decreases
31. Which of the following is mixture?  
 (a) Water (b) Air (c) Common salt (d) Plaster of Paris
32. How would you separate a mixture of iron filings and sulfur?  
 (a) Filter (b) Use a magnet (c) Use a sieve (d) Use tweezers
33. Which of the following is a homogeneous mixtures?  
 (a) Salad (b) Oil and water  
 (c) Sand and iron fillings (d) Salt dissolved in water
34. Atomic number of element X is 16, its stable ion is  
 (a)  $X^{2-}$  (b)  $X^{2+}$  (c)  $X^{-}$  (d)  $X^{+}$
35. Isotopes have  
 (a) similar chemical properties (b) different chemical properties  
 (c) similar physical properties (d) none
36. Cell boundary in animal cell is  
 (a) Cell membrane (b) Cell wall (c) Both a and b (d) None of these
37. Fluid connective tissue in humans is  
 (a) Blood and cartilage (b) Lymph and plasma  
 (c) Blood and lymph (c) Stroma and matrix
38. Smooth muscles cells are  
 (a) Uninucleate (b) Multinucleate (c) Eucleate (d) Both a & b
39. Collenchyma : Simple : : Phloem : \_\_\_\_\_.  
 (a) Simple (b) Parenchyma (c) Complex (d) Xylem

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40. Organelle which contains instructions for cell function.  
(a) Mitochondria (b) Nucleus (c) Chloroplast (d) Vacuole
41. A junction between axon of one neuron and the dendrite of the next is called  
(a) synapse (b) joint (c) bridge (d) junction
42. Which tissue give support and structure to the body?  
(a) Epithelial tissue (b) Connective tissue (c) Muscular tissue (d) Nervous tissue
43. The kitchen of the cell is called \_\_\_\_\_.  
(a) Cell wall (b) Nucleus (c) Vacuoles (d) Plastids
44. Plant tissue found in the midrib and stalk of leaves?  
(a) Parenchyma (b) Collenchyma (c) Phloem (d) Epithelium
45. Which of the following are examples of prokaryotes?  
(a) Algae (b) Fungi (c) Bacteria (d) Protozoa

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