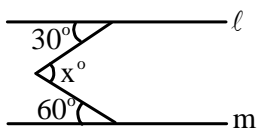## Section : 1 – Mathematics

1.   A student scored 315 marks in a subject. If this score is 70% of total marks, find the total marks.
     (a) 400   (b) 450   (c) 500   (d) 550

2.   A train moving at a speed of 108 km/hr crosses a pole in one fourth of a minute. Find the time taken by this train to cross a platform of length 600m.

     (a) 35 seconds   (b) 1 minute   (c) $\frac{1}{2}$ minutes   (d) 50 seconds

3.

     $\ell \parallel m$. Find x
     (a) 120° (b) 90° (c) 150° (d) Cannot be determined

4.   Solve the following equation
     $$\frac{1}{x+1}+\frac{1}{x+2}=\frac{2}{x+10}$$
     (a) 26/17   (b) –26/17   (c) 8/17   (d) –8/17

5.   Simplify $(3x+2y)^2-(3x-2y)^2$
     (a) 24xy   (b) $9x^2+4y^2$ (c) 12xy   (d) $18x^2+8y^2$

6.   If x is 20% of y, what % is y of x?
     (a) 5%   (b) 20%   (c) 500%   (d) 200%

7.   Find the area of a square whose length of diagonal measures $5\sqrt{2}$ units.
     (a) 50 unit^2 (b) 25 unit^2 (c) $\frac{25}{2}$ unit^2 (d) $\frac{25}{4}$ unit^2

—————— **ROUGH SPACE** ——————

8. A sum of money is kept at simple interest. After 5 years, the sum amounts to Rs. 500 and after 8 years, the sum amounts to Rs. 650. Find the initial sum of money (Principal)
    (a) Rs. 250   (b) Rs. 50   (c) Rs. 200   (d) Rs. 300

9. Consider 2 sets A and B. Number of elements in A = 10, number of elements in B = 12 and number of elements in $A \cup B$ is 18. Find number of elements in $A \cap B$.
    (a) 0   (b) 4   (c) 5   (d) 6

10. Find the lowest number by which 216 must be multiplied to make it a perfect square.
    (a) 2   (b) 3   (c) 6   (d) 8

Section : 2 – Science

11. The process in which no medium is required for the transfer of heat is known as _____.
    (a) Conduction   (b) Convection   (c) Radiation   (d) None of these

12. Which of the following is/are correct?
    (a) Land breeze blows during night
    (b) Sea breeze blows during day
    (c) Dark coloured clothes are preferred during winter
    (d) All of these

13. Temperature of boiling water can be measured by a _____ thermometer.
    (a) Laboratory   (b) Clinical   (c) Both (a) & (b)   (d) None of these

14. 36 km/hr can also be expressed as _____.
    (a) 10 m/s   (b) 3.6 m/s   (c) 100 m/s   (d) 36 m/s

15. The meter that is used to measure the distance covered by a vehicle is known as _____.
    (a) Speedometer   (b) Odometer   (c) Chronometer   (d) Amimeter

16. Which of the following acts as safety device in electric appliances?
    (a) Fuse   (b) Connecting wires   (c) Resistors   (d) Battery

17. Image formed by a convex mirror is _____.
    (a) Virtual   (b) Erect   (c) Diminished   (d) All of these

———————————— ROUGH SPACE ————————————

18. The mirror used as a rear-view mirror in vehicles is a _____.
(a) Concave mirror   (b) Convex mirror   (c) Plane mirror   (d) None of these

19. Akshay is observing his image in a plane mirror. The distance between Akshay and his image is 10m. If the mirror is moved by 2m towards Akshay, the distance between Akshay and his image will be _____.
(a) 4 m   (b) 6 m   (c) 8 m   (d) 10 m

20. Ram walks to his school which is at a distance of 1.5 km from his home in 15 minutes. On reaching he finds that the school is closed and comes back by a bicycle with his friend and reaches home in 10 minutes. His average speed in km/h is _____.
(a) 8.3   (b) 7.2   (c) 5   (d) 3.6

21. pH of 3 different solutions are 6,7 & 8. Red litmus in all 3 solutions will give color change as follows.
(a) Red, Red and Blue   (b) Red, Blue and Blue   (c) Blue, Red and Blue   (d) Blue, Blue and Red

22. Which term is related to Stratosphere?
(a) Submarines   (b) Ionosphere   (c) Oceans   (d) Ozone layer

23. Which of the following will convert directly from solid to gaseous form?
(a) Iodine   (b) Water   (c) Iron   (d) All of these

24. Which one will have basic nature?
(a) Tartaric acid   (b) Formic acid   (c) Antacids   (d) All of these

25. Which of the following property is basis of separating funnel?
(a) Size   (b) Density   (c) Melting point   (d) Boiling point

26. Anthracite is the better type of coal compared to
(a) Peat   (b) Bituminous   (c) Lignite   (d) All of these

27. Which is an example of both physical and chemical change?
(a) Burning of candle   (b) Burning of grass   (c) Burning of paper   (d) Burning of wood

--- **ROUGH SPACE** ---

28. When ____ is passed through lime water it turns lime water milky.
(a) NO_2 (b) SO_2 (c) H_2O (d) N_2O

29. Air contains maximum amount of _____.
(a) Oxygen   (b) Nitrogen   (c) CO_2 (d) Argon

30. Two miscible liquids having their boiling point close to each other can be separated by
(a) Separating funnel   (b) Condensation
(c) Fractional distillation   (d) Sedimentation

31. Wind pipe is called as
(a) Oesophagus   (b) Tracheae   (c) Bronchus   (d) Nasal cavity

32. Some organisms live together and share shelter and nutrients. This is called.
(a) Predation   (b) Autotrophs
(c) Symbiotic relationship   (d) Heterotrophs

33. When wind speed increases, air pressure
(a) Increases   (b) Decreases   (c) Remains constant   (d) None of these

34. Toys, pots and statues are made up of which soil type?
(a) Clayey soil   (b) Sandy soil   (c) Loamy soil   (d) None of these

35. The process of fusion of gamete is called as
(a) Pollination   (b) Growth   (c) Fertilization   (d) Implantation

36. Green plants are also referred as _____.
(a) Consumers   (b) Decomposers   (c) Herbivores   (d) Producers

37. Which of the following disease is caused by water contamination?
(a) Gastroenteritis   (b) T. B   (c) Flu   (d) All of these

38. The walls of large intestine absorb
(a) Cellulose   (b) Proteins   (c) Roughage   (d) Water

─────────── **ROUGH SPACE** ───────────

39.   The main function of a leaf is:
       (a) To prepare food   (b) To prevent disease
       (c) To support the plant   (d) To give a proper shape

40.   Which of the following is a ruminant?
       (a) Buffalo   (b) Camel   (c) Goat   (d) All of these

─────────────── **ROUGH SPACE** ───────────────