

Section : 1 - Aptitude and Logical Reasoning 

1. If ‘A  B’ means ‘A is the brother of B’, ‘A # B’ means ‘A is the father of B’ and ’A \* B’ means ‘A is the mother of B’. Then, which of the following means ‘R is the son of M’?

 (a) MR # S (b) M # S \* R (c) M # S # R (d) M \* R # S

2. Find the missing number, if same rule is followed in all the three figures.



 (a) 40 (b) 36 (c) 46 (d) 34

3. Which of the following interchange of signs would make the given equation correct?

 5 + 6 3 – 12  2 = 17

 (a)  and  (b) + and  (c) + and  (d) + and –

4. Two rows of numbers are given. The resultant number in each row is to be worked out separately based on the following rules and the question below the rows of numbers is to be answered. The operations on numbers progress from left to right.

 **Rules:**

 (i) If an even number is followed by another even number, then they are to be added.

 (ii) If an even number is followed by a prime number, then they are to be multiplied.

(iii) If an odd number is followed by an even number, then the even number is to be subtracted from

 the odd number.

(iv) If an odd number is followed by another odd number, then the first number is to be added to the

 square of the second number.

 (v) If an even number is followed by a composite odd number, then the even number is to be divided by the odd number.

36 13 39
77 30 7

Which will be the outcome if the resultant of the second row is divided by the resultant of the first
row?

 (a) 12 (b) 16 (c) 8 (d) 6

5. house and in the North of Varun's house. The house of Varun is in the West of Anuj's house. Anuj's house is in which direction with respect to Mohit's house?

 (a) South-East (b) South (c) North-West (d) West

Section : 2 - Mathematics

6. Any point on x-axis is of the form

 (a) (x, y) (b) (0, y) (c) (x, x) (d) (x, 0)

7. b = 2165, a = 33. If , then =?

 (a) 8 (b) 16 (c) 64 (d) None of these

8. Two poles of height 10 m and 15 m stand on a playground. If the distance between the feet of the poles is 12 m determine the distance between their tops.

 (a) 16 m (b) 13 m (c) 15 m (d) 14 m

9. The point on x-axis at a distance of 17 units from (– 15, 15) is

 (a) (–17, 0) (b) (–23, 0) (c) (–32, 0) (d) (2, 0)

10. If , then a2 + b2 =?

 (a) 17 (b) 34 (c)  (d)

11. Find the area of the triangle whose vertices are (a, b + c), (a, b – c) and (– a, c)

 (a) 2ac (b) 2abc (c) b(a + c) (d) c(a – b)

12. The points (–5, 6), (3, 0) and (9, 8) form the vertices of

 (a) Equilateral triangle (b) Right angled isosceles triangle

 (c) Isosceles triangle (d) Right angled triangle

13. If , then ?

 (a) 200 (b) 196 (c) 198 (d) 204

**Section : 3 - Science**

14. If the units M and L are increased 3 times, then the unit of energy will be increased by

 (a) 3 times (b) 6 times (c) 27 times (d) 81 times

15. A car travelling at 22.4 m/s skids to a stop in 2.55 seconds. What is the skidding distance of the car (assume uniform acceleration)?

 (a) 24.7 m (b) 28.6 m (c) 29.9 m (d) 26.4 m

16. For a uniformly accelerated motion, the velocity-time graph is:

 (a) A straight line parallel to the time axis (b) A straight line perpendicular to the time axis

 (c) A straight line inclined to the time axis (d) A curve

17. A dirty blanket is beaten by stick to remove dust particles. Which law holds good for this?

 (a) Law of conservation of momentum (b) Law of inertia

 (c) Law of impulse (d) Law of conservation of energy

18. A Diwali rocket is ejecting 0.02 kg of gases per second at a velocity of 400 m/sec. The

 accelerating force on the rocket is

 (a) 8 dynes (b) 8 N (c) 40 dynes (d) 40 N

19. 1kWh =

 (a) 36 103 Js (b) 36104 Js (c) 36 105 Js (d) 36  106 Js

20. A body lifts an object of mass 0.3 kg to a height of 4m in 1.2 seconds. The power exerted by the body is

 (a) 1 watt (b) 10 watt (c) 15 watt (d) 20 watt

21. The atom of an element has a mass of 3.32 10–23 gms. It has 11 protons. Find the number of neutrons.

 (a) 9 (b) 8 (c) 10 (d) 12

22. Formula of sodiumbisulphate

 (a) Na2SO4 (b) NaHSO4 (c) Na2CO3 (d) none of these

23. When the equation

 

 is balanced, what are the values of A and B respectively

 (a) 1, 4 (b) 2, 4 (c) 3, 4 (d) 4, 4

24. Oxidation number of phosphorus in H3PO4 ?

 (a) 4 (b) 2 (c) 3 (d) 5

25. The green light has a wave length of 535 nm. Calculate the energy of a photon of green light.

 (a)  (b)  (c)  (d) 

26. Which of the following pairs can form correct set of isosters ?

 (a) MgS, CaF2 (b) C6H6, B3N3H6 (c) CO, N2O (d) All of above

27. Calculate pH of 0.02 mol/L H2SO4.

 (a) 1.39 (b) 1.29 (c) 1.5 (d) 1.0

28. The phenomenon where cytoplasms shrink in a hypertonic medium is called:

 (a) Frontolysis (b) Plasmolysis (c) Acidolysis (d) Glycolysis

29. Which among the following plays a vital role in pollination of pollen grains?

 (a) Petals (b) Sepals (c) Pedicel (d) Carpel

30. \_\_\_\_\_\_\_\_ is not found in xylem tissues.

 (a) Sieve tubes (b) Xylem parenchyma

 (c) Tracheids (d) Vessels

31. Categorization of epithelial tissue is based on this

 (a) function (b) type of matrix

 (c) structural modification (d) non voluntary or voluntary action

32. Which among the following statements is incorrect about Meristematic tissues?

 (a) Meristematic tissues are quite small which allows large number of cell division

 (b) Their cytoplasm is quite dense which means that they contain many cell organelles that help them

 increase their rate of respiration

 (c) Their cell wall is thin which allows them to divide easily

 (d) Larger vacuoles let them break easily and give mechanical support.

33. Which of the following cell organelles is absent in prokaryotic cells?

 (a) Nucleus ` (b) Lysosome

 (c) Endoplasmic Reticulum (d) All of the above

34. Which are not the essentials for photosynthesis

(a) Carbon dioxide (b) Water (c) Oxygen (d) Light

35. The end product of photosynthesis in plants is stored in form of:

(a) Glycogen (b) Sucrose (c) Glucose (d) Starch