

PHYSICS

1. What will be the distance in the above question?
(A) 2512 m (B) 2500 m (C) 2200 m (D) Zero
2. A body of mass 20 kg moves with an acceleration of 2ms^{-2} . The rate of change of momentum in S.I. unit is -
(A) 40 (B) 10 (C) 4 (D) 1
3. The value of g on moon is $1/6^{\text{th}}$ of the value of g on the earth. A man can jump 1.5 m high on the earth. On moon he can jump up to a height of-
(A) 9 m (B) 7.5 m (C) 6 m (D) 4.5 m
4. A stone is dropped from the roof of a building takes 4s to reach the ground. The height of the building is :
(A) 19.6m (B) 39.2 m (C) 156.8 m (D) 78.4 m
5. During summer, an echo is heard—
(A) Sooner than during winter (B) Later than during winter
(C) After same time as in winter (D) Rarely

CHEMISTRY

6. A species 'X' contains 9 protons, 10 electrons and 11 neutrons. It is :-
(A) A neutral atom (B) An isotope (C) A cation (D) An anion
7. Which of the following ions is the smallest in size ?
(A) Mg^{2+} (B) Na^+ (C) O^{2-} (D) F^-
8. A mixture of alcohol and water can be separated by -
(A) Separating funnel (B) Fractional distillation
(C) Distillation (D) Crystallisation
9. How much of lime can be obtained by burining 400 g of lime stone ?
(A) 224 g (B) 220 g (C) 400 g (D) 320 g
10. The temperature at which Celsius and Fahrenheit scales show the same reading is :-
(A) 40°K (B) 100°F
(C) -40°C (D) -100°C

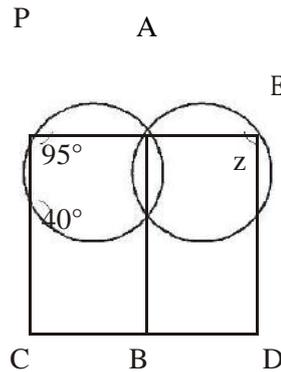
BIOLOGY

11. Intercalary maristems are found in
(A) at internodes and base of leaves (B) at growing tips of roots
(C) beneath the bark (D) at the tip of stem
12. Ascaris worm lives in which part of human body
(A) kidney (B) liver (C) small intestine (D) large intestine
13. Tape worm has ___ as excretory organs
(A) kidney (B) flame cell (C) nephridia (D) skin
14. Two important groups of detritivores are
(A) animal and plant (B) prokaryote and algae
(C) prokaryote and fungi (D) plantae and prokaryotes
15. Which is the oldest breeding method?
(A) introduction (B) hybridization (C) selection (D) mutation

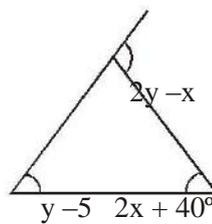
MATHEMATICS

16. $(16)^{0.16} \times (16)^{0.04} \times (2)^{0.2}$ is equal to
(A) 1 (B) 2 (C) 4 (D) 16
17. Factors of $x^3 + x^2 + x + 1$
(A) $(x+1)(x^2-1)$ (B) $(x-1)(x^2+1)$ (C) $(x-1)(x^2-1)$ (D) $(x+1)(x^2+1)$
18. The mean of a, b and c is x. If $ab + bc + ca = 0$ what is the mean of a^2, b^2 and c^2
(A) $x^2/3$ (B) x^2 (C) $3x^2$ (D) $9x^2$
19. Three coins are tossed. What is the probability of getting neither 3 Heads nor 3 Tails ?
1 1 2 3
— — — —
(A) 2 (B) 3 (C) 3 (D) 4

20. Two circles intersect in A and B. Quadrilaterals PCBA and ABDE are inscribed in these circles such that PAE and CBD are line segments. If $\angle P = 95^\circ$ and $\angle C = 40^\circ$. Find the value of Z.

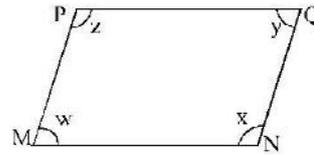
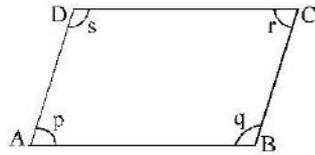


- (A) 65° (B) 105° (C) 95° (D) 85°
21. When both the coordinates of a point are negative then the point lies in the
- (A) I quadrant (B) II quadrant (C) III quadrant (D) IV quadrant
22. In figure value of y. If $x = 5^\circ$ is



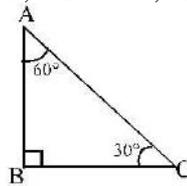
- (A) 50° (B) 60° (C) 65° (D) 45°
23. A basket ball is just packed in a cube of side 20 cm, then the surface area of the basket ball is:
- (A) 120 cm^2 (B) 2400 cm^2 (C) 400 cm^2 (D) 1256 cm^2

24. ABCD and MNOP are quadrilaterals as shown in figure then



- (A) $p + q + r + s = w + x + y + z$ (B) $p + q + r + s < w + x + y + z$
 (C) $p + q + r + s > w + x + y + z$ (D) None of these In the fig

25. In the figure right triangle ABC is given, $\angle B = 90^\circ, \angle A = 60^\circ, \angle C = 30^\circ$. Then correct order of inequality is



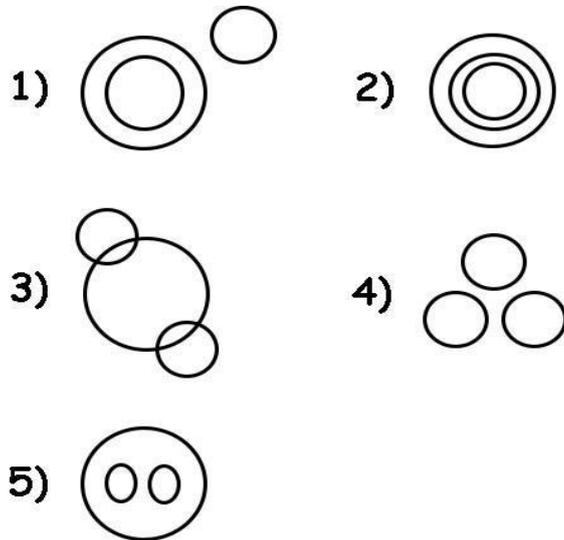
- (A) $AB > AC > BC$ (B) $BC > AC > AB$
 (C) $AC > BC > AB$ (D) $AC > AB > BC$

MENTAL ABILITY TEST

26. Given interchanges : Signs + and x and numbers 4 and 5.
 (A) $5 \times 4 + 20 = 40$ (B) $5 \times 4 + 20 = 85$ (C) $5 \times 4 + 20 = 104$ (D) $5 \times 4 + 20 = 95$
27. Nitin ranks 18th in a class of 49 students. What is rank from the last
 (A) 31 (B) 18 (C) 32 (D) 19
28. In which of the following pairs, second person is to the immediate right of the first person
 (A) H,E (B) B,D (C) B,C (D) D,A
29. Find out the wrong term in the series 2, 3, 4, 4, 6, 8, 9, 12, 1
 (A) 9 (B) 12 (C) 16 (D) 8
30. You are in a bus. The bus reaches your stop but still you have not purchased the ticket because of heavy rush. What will you do ?
 (A) Jump out quickly to avoid embarrassment.
 (B) call the conductor, give him the money and get the ticket.
 (C) Hand the money to someone sitting nearby to give it to the conductor
 (D) Give the money to the driver.
31. The presence of calcium in milk makes it white. Rice ,too, is white. Therefore rice also contains calcium

- (A) False (B) Probably true (C) True (D) Can't say

32. Select from the five alternative diagrams, the one that best illustrates the relationship among the three classes : Truck, Ship, Goods



33. K is 40 m South-West of L. If M is 40 m South-East of L, then M is in which direction of K?

- (A) East (B) West (C) North-East (D) South

34. In a certain code language,

'134' means 'good and tasty';

'478' means 'see good pictures' and

'729' means 'pictures are faint'.

Which of the following digits stands for 'see'?

- (A) 9 (B) 2 (C) 1 (D) 8

35. In three coloured boxes - Red, Green and Blue, 108 balls are placed. There are twice as many balls in the green and red boxes combined as there are in the blue box and twice as many in the blue box as there are in the red box. How many balls are there in the green box?

- (A) 18 (B) 36 (C) 45 (D) None of these

36. Directions : For the Assertion (A) and Reason (R) below, choose the correct alternative

Assertion (A) : Eskimos reside in igloos.

Reason (R) : No other material except snow is available.

- (A) Both A and R are true and R is the correct explanation of A.
 (B) Both A and R are true but R is NOT the correct explanation of A.
 (C) A is true but R is false.
 (D) A is false but R is true.

37. From the word 'ASTOUNDER', how many independent words can be made with-out changing the order of the letters and using each letter only once ?
(A) 1 (B) 3 (C) 4 (D) 2
38. In a class of 60 students, the number of boys and girls participating in the annual sports is in the ratio 3 : 2 respectively. The number of girls not participating in the sports is 5 more than the number of boys not participating in the sports. If the number of boys participating in the sports is 15, then how many girls are there in the class ?
(A) 20 (B) 25 (C) 30 (D) Data inadequate
39. If FRIEND is coded as HUMJTK, how is CANDLE written in that code ?
(A) EDRIRL (B) DCQHQB (C) ESJFME (D) DEQJQM
40. If $A \times B$ means A is to the south of B; $A + B$ means A is to the north of B; $A \% B$ means A is to the east of B; $A - B$ means A is to the west of B; then in $P \% Q + R - S$, S is in which direction with respect to Q?
(A) South-West (B) South-East (C) North-East (D) North-West

