

PART-I PHYSICS

1. A car accelerates uniformly from 18 km/h to 36km/ h in 5 s. The acceleration in ms^{-2} is
(a) 1 (b) 2 (c) 3 (d) 4
2. How many dynes are equal to 1 N?
(a) 10^6 (b) 10^4 (c) 10^5 (d) 10^3
3. A body at rest can have :
(a) speed (b) velocity (c) momentum (d) energy
4. When an apple falls from a tree:
(a) only earth attracts the apple
(b) only apple attracts the earth
(c) both the earth and the apple attract each other
(d) none attracts each other
5. With the rise of temperature, the velocity of sound-
(a) Decreases (b) Increases
(c) Remains the same (d) is independent of temperature

Rough work

PART-II CHEMISTRY

6. Balance the following equation; $S + x \text{HNO}_3 \rightarrow \text{H}_2\text{SO}_4 + \text{NO}_2 + y \text{H}_2\text{O}$; x and y are
(a) 5, 2 (b) 2, 5 (c) 6, 2 (d) 4, 3
7. How would you prepare 1000 g of aqueous solution containing 15% mass by mass of sucrose?
(a) by dissolving 75 g of sucrose in 500 g of water
(b) by dissolving 150g of sucrose in 1000 g of water
(c) by dissolving 150 g of sucrose in 850 g of water
(d) by dissolving 75 g of sucrose in 425 g of water
8. X^{6+} has 19 electrons and 30 neutrons. Atomic number and atomic mass number of X respectively are
(a) 18 and 30 (b) 18 and 48 (c) 25 and 55 (d) 18 and 12
9. How many moles of $\text{K}_4\text{Fe}[(\text{CN})_6]$ is formed using 72g of carbon?
(Atomic mass for C is 12u)
(a) 144 (b) 1 (c) 6 (d) 2
10. Which of the following case contains minimum number of atoms?
(Atomic mass of C:12, O:16, H:1, N:14, Ca:40)
(a) 22g CO_2 (b) 50g CaCO_3
(c) 3.011×10^{24} molecules of H_2O (d) 90g Glucose
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Rough work

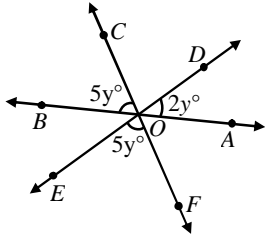
PART-III BIOLOGY

11. The cell organelles which contains its own DNA & RNA are?
(a) Mitochondria. (b) Chloroplast. (c) Golgi. (d) Lysosomes
12. The process by which cell takes water inside is called as?
(a) Phagocytosis. (b) Pinocytosis. (c) Swelling. (d) Flaccidity
13. Which of the following organelle contains acid hydrolases?
(a) Mitochondria. (b) Golgi. (c) Lysosomes. (d) E.R
14. Which among the following lacks centrioles?
(a) Muscle (b) Neuron. (c) Tissues. (d) None of these
15. The plant tissue which is capable of division are?
(a) Collenchyma. (b) Meristematic (c) Xylem. (d) Phloem

Rough work

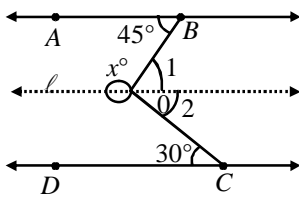
PART-IV MATHEMATICS

16. In Fig., determine the the value of y



- (a) 15
- (b) 25
- (c) 20
- (d) 10

17. In figure $AB \parallel CD$. Determine X.



- (a) 300
- (b) 285
- (c) 270
- (d) 265

Rough work

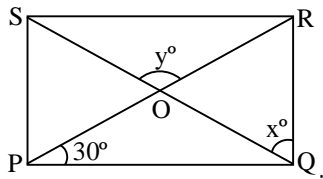
18. The sum of the digits of a two-digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the number. Find the difference of digits.
(a) 7 (b) 6 (c) 5 (d) 4
19. A fraction becomes $\frac{4}{5}$ if 1 is added to each of the numerator and denominator. However, if we subtract 5 from each, the fraction becomes $\frac{1}{2}$. Find the sum of digit of fraction
(a) 14 (b) 18
(c) 16 (d) 12
20. The length, breadth and height of a room are 5m, 4m and 3m respectively. Find the cost of white washing the walls of the room and the ceiling at the rate of Rs. 7.50 per m^2 .
(a) 575 (b) 525
(c) 555 (d) 625

Rough work

21. A patient in a hospital is given soup daily in a cylindrical bowl of diameter 7 cm. If the bowl is filled with soup to a height of 4 cm, how much soup the hospital has to prepare daily to serve 250 patients (in cubic cm)?

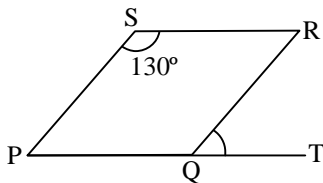
- (a) 38500 (b) 42500 (c) 36700 (d) none of these

22. In the given figure, PQRS is a rectangle. If $\angle RPQ = 30^\circ$, then find the value of $(x + y)$



- (a) 120 (b) 140 (c) 180 (d) none of these

23. In the given figure, PQRS is a parallelogram in which $\angle PSR = 130^\circ$, then find Angle RQT -



- (a) 50 (b) 60 (c) 40 (d) 70

Rough work

24. The distance between 2 towns is 300 km. 2 cars start simultaneously from these towns and move towards each other. The speed of one car is more than the other by 7km/hr. If the distance between the cars after 2 hours is 34 km. Find ratio of speed of the 2 cars.

- (a) 9:10 (b) 6:7 (c) 5:6 (d) none of these

25. A man cycles to his office from his house at speed of 5km/hr and reaches 10min late. If he cycles at a speed of 6 km/hr, he reaches 10 min early. What is distance between his office and house?

- (a) 10 km (b) 8 km (c) 12 km (d) none of these

Rough work

PART-V MAT

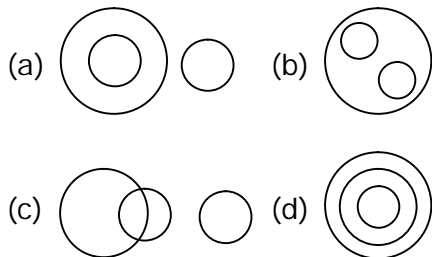
26. Five persons A, B, C, D and E are standing in a row. B is between A and C and D is between C and E. If the distance of C from B is equal to the distance of D from C, what is the relation between the distances of A to B and B to E?

- (a) Both are equal
- (b) A B is smaller than B E
- (c) There is no relation in A B and B E
- (d) Nothing can be said about it

27. A man starts walking towards South. After walking 10 m, he turns left at right angles, then after 15 m he again turns left at right angles. In what direction is he finally walking?

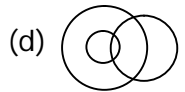
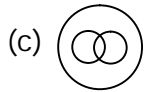
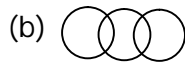
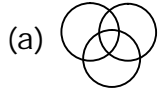
- (a) North
- (b) South
- (c) East
- (d) West

28. Which of the following diagrams indicates the best relations between Judge, Thieves and Criminals?



Rough work

29. Which is the most suitable venn diagram among the following, which represents interrelationship among Antisocial elements, Pick pockets and Black mailers?



30. Late President Neelam, Sanjeev Reddy died on 1st June, 1996. Tell the day of week on that date -

- (a) Sunday (b) Saturday (c) Thursday (d) None of these

31. Tight-Loose; Love-Hate; Earth-?

- (a) Sun (b) Cloud (c) Sky (d) Height

32. There are 35 steps to reach a temple. On descending from the temple Soni takes two steps in the same time Gunjan ascends four steps. If they start to work simultaneously, at which step will they will they meet each other?

- (a) 18th (b) 10th (c) 24th (d) 17th

33. ab _ aa _ caab _ c _ abb _ c

- (a) bbcaa (b) bcbca (c) cabac (d) cbbac

Rough work

34. If 'FRIIHH' stands for 'COFFEE', how will you write 'NOODLES'?

- (a) R S S H P I W (b) P Q Q F N G U
 (c) Q R R G O H V (d) R S S H P I W

35.

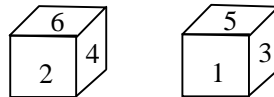
13	54	?
7	45	32
27	144	68

- (a) 42 (b) 36 (c) 6 (d) 4

36. If '-' stands for addition, '+' for multiplication, '□' for subtraction and '×' for division, which one of the following equations is wrong?

- (a) $5 - 2 + 12 \times 6 \square 2 = 27$
 (b) $5 + 2 - 12 \square 6 \times 2 = 13$
 (c) $5 + 2 - 12 \times 6 \square 2 = 10$
 (d) $5 \square 2 + 12 \times 6 - 2 = 13$

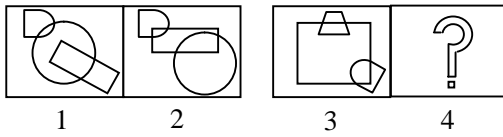
37. Two positions of a block are shown below, when 2 is at the bottom what number will be at the top?



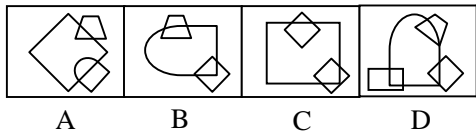
- (a) 1 (b) 3 (c) 4 (d) 5

Rough work

38. Problem figures



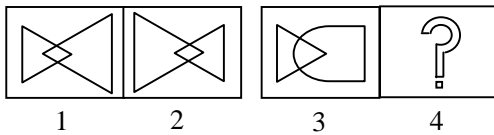
Answer Figures



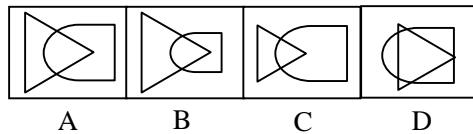
39. If a, b means '□' or '+', c, d means '-' or 'x'; b, c means '+' or '-' and a, c means '□' or '-' then $10a - 2b + 4c - 8d - 6 = ?$

- (a) 6 (b) 57 (c) 39 (d) None of these

40. Problem figures



Answer Figures



Rough work