

**PART-I PHYSICS**

1. Sound cannot travel through  
(a) air                      (b) water                      (c) iron                      (d) vacuum
  2. A force applied on a moving body may  
(a) bring it to rest                      (b) increase its speed  
(c) decrease the speed                      (d) all of the above
  3. Force of friction is directly proportional to  
(a) size                      (b) area  
(c) weight                      (d) all these factors of the moving body
  4. Electrostatics deals with the study of the  
(a) Charges at rest                      (b) Charges in motion  
(c) Charges both at rest and in motion                      (d) Charges neither at rest nor in motion
  5. Which of the following cannot produce a virtual image?  
(a) Plane mirror                      (b) Concave mirror  
(c) Convex lens                      (d) All of the above can produce a virtual image.
- 

Rough work

**PART-II CHEMISTRY**

6. Marsh gas contains.  
(a) Methane            (b) Ethane            (c) Propane            (d) None of these
7. Which of the following is used as an anti - knocking compound?  
(a) TEL            (b) C<sub>2</sub>H<sub>5</sub>OH            (c) Glyoxal            (d) Freon
8. Match the following -
- |                     |   |
|---------------------|---|
| (a) CH <sub>4</sub> | (i) Neither combustible nor supports combustion |
| (b) CO <sub>2</sub> | (ii) Combustible                                |
| (c) N <sub>2</sub>  | (iii) Supports combustion                       |
| (d) O <sub>2</sub>  | (iv) Extinguishes fire.                         |

Which of the following indicates the correct matching?

- (a) a-(i) , b-(ii) , c-(iii) , d-(iv)  
(b) a-(ii) , b-(iv) , c-(i) , d-(iii)  
(c) a-(ii) , b-(iii) , c-(i) , d-(iv)  
(d) a-(iii) , b-(iv) , c-(ii) , d-(i)
- 

Rough work

9. The poisonous gas among the following is

- (a) carbon dioxide                      (b) nitrogen  
(c) carbon monoxide                      (d) None of these

10. Petrol mainly contains:

11. (a) butane and isobutane                      (b) methane  
12. (c) methane and ethane                      (d) octane and isooctane

---

Rough work

**PART-III BIOLOGY**

13. The crop which helps in increasing the nitrogen content of the soil is called as?  
(a) Rabi                      (b) Kharif                      (c) Legumes                      (d) Both b & c
14. Weed removal is essential because?  
(a) Reduces soil nutrients                      (b) reduces water content  
(c) Reduces yield                      (d) All of these
15. 2,4-D is a type of?  
(a) Fertilizer                      (b) Compost                      (c) Pesticide                      (d) Weedicide
16. Which animal has been termed as friend of farmer?  
(a) Tapeworm                      (b) Roundworm                      (c) Earthworm                      (d) All of these
17. Cell wall of a plant chiefly consist of?  
(a) Proteins                      (b) Lignins                      (c) Cellulose                      (d) Glycogen
- 

Rough work

**PART-IV MATHEMATICS**

18. Of two numbers, 4 times the smaller one is less than 3 times the larger one by 5. If the sum of the numbers is larger than 5 times their difference by 22, find the smaller number.
- (a) 59                                      (b) 43  
(c) 63                                      (d) 70
19. The present age of a father is 3 years more than three times the age of his son. Three years hence, father's age will be 10 years more than twice the age of the son. Find the present age of the father.
- (a) 42                                      (b) 30  
(c) 33                                      (d) 45
20. Nine countered numbered from 1 to 9 are placed in a bag. One is taken out at random. The probability that it is divisible by 3 is.
- (a)  $\frac{1}{2}$     (b)  $\frac{1}{3}$     (c)  $\frac{2}{9}$     (d)  $\frac{4}{9}$
- 

Rough work

21. By what number should  $(-8)^{-1}$  be multiplied so that the product may be equal to  $10^{-1}$

- (a)  $-6/5$                       (b)  $-4/5$   
(c)  $3/2$                       (d)  $6/5$

22.  $(6^{-1} - 8^{-1})^{-1} + (2^{-1} - 3^{-1})^{-1} =$

- (a) 20                      (b) 40  
(c) 30                      (d) 24

21. Sum of the digits of a 2 digit number is 9. When we interchange the digits, it is found that the resulting is greater than original number by 27. What is difference of digits of the number?

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

22. Amit can do a piece of work in 4 days and Sumit can do it in 6 days. How long will they take, if both Amit and Sumit work together?

- (a) 2 days              (b)  $12/5$  days              (c) 3 days              (d) none of these
- 

Rough work

23. A certain company has 80 employees who are engineers. In this company engineers constitute 40% of its work force. How many people are employed in the company?  
(a) 100      (b) 200      (c) 320      (d) none of these
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 housewife saved Rs. 2.50 in buying an item on sale. If she spent Rs. 25 for the item, approximately how much percent she saved in the transaction?  
(a) 8      (b) 9      (c) 12      (d) 10

---

Rough work

**PART-V MAT**

26. Starting from a point P, Sachin walked 20 metres towards South. He turned left and walked 30 metres. He then turned left and walked 20 metres. He again turned left and walked 40 metres and reached a point Q. How far and in which direction is the point Q from the point P?
- (a) 20 Metres West                      (b) 10 Metres East  
(c) 10 Metres West                      (d) None of these
27. Six students A, B, C, D, E and F are standing in a row. B is between F and D. E is between A and C. A does not stand next to either F or D. C does not stand next to D. F is between which of the following pair of students?
- (a) B and D                      (b) B and A                      (c) B and E                      (d) B and C
28. If day before yesterday it was Monday, what day will fall on day after tomorrow?
- (a) Saturday                      (b) Friday                      (c) Sunday                      (d) Thursday
29. Honey is related to wax in the same way as Milk is related to .....?
- (a) Cow                      (b) Leather                      (c) Eggs                      (d) Butter
- 

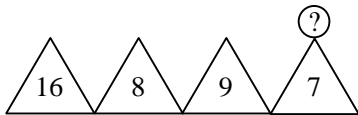
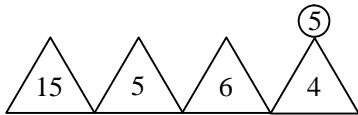
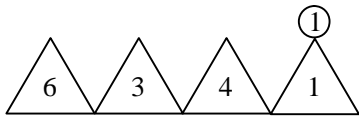
Rough work



30. There are 23 steps to reach a temple, on descending from the temple Ram takes two steps in the same time. Shyam ascends one step. If they start to work simultaneously, at which step will they meet each other?

- (a) 8th      (b) 9th      (c) 10th      (d) 11th

31. Observe the below picture



- (a) 5      (b) 6      (c) 4      (d) 3

32. \_ bcc \_ ac \_ aabb \_ ab \_ cc

- (a) aabca      (b) abaca      (c) bacab      (d) bcaca

Rough work

33. if 'TENDER' is written as 'X I R H I V', how will you write 'HOTEL', ?

- (a) K R V H O            (b) L S W I P  
 (c) L S V I P            (d) L S X I P

34. If I means 'x', □ means '+', □ means '+', ∩ means '-', □ means '=', ∩ means 'more' and ∩ means 'less', then which one of the answers is correct?

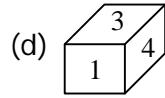
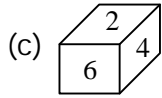
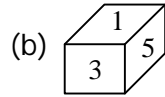
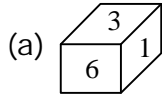
- (a) 10 I 3 □ 7 ∩ 4 □ 2 □ 5 I 5  
 (b) 10 I 3 ∩ □ 15 □ 3 I 5 ∩ 7 □ 9 I 2  
 (c) 10 □ 7 ∩ 5 I 9 □ 3 ∩ 4 I 2 ∩ 8 □ 2  
 (d) 10 ∩ 4 I 8 □ 4 □ 7 ∩ 8 I 2 ∩ 5

35. The figure (X) given on the left hand side, in the problem, is folded to form a box. Choose from amongst the alternatives (a), (b), (c) and (d) the boxes that are similar to the box formed.

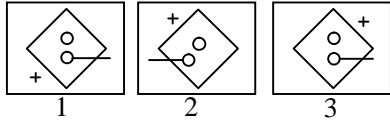
	2	
5	1	
	4	
	6	3

---

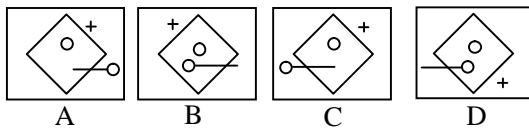
Rough work



36. Problem figures



Answer Figures



37. 'Disease' is related to 'Pathology' in the same way as 'Planet' is related to-

- (a) Sun                      (b) Satellite                      (c) Astrology                      (d) Astronomy

38. Which number would replace question mark in the series 7, 12, 19, ?, 39.

- (a) 29                      (b) 28                      (c) 26                      (d) 24

Rough work

39. bc \_ b \_ c \_ b \_ ccb

(a) cbc b

(b) bbc b

(c) cbbc

(d) bc b c

40. Insert proper arithmetical signs between the figures in the following sum.

$$7 \dots\dots 3 \dots\dots 2 = 13$$

(a) -, ×

(b) +, ×

(c) ×, /

(d) -, +

---

Rough work