MATHS
SAMPLE QUESTION PAPER ( SEMESTER II )

Class: VII  Maximum Marks: 60
Time duration: 2hrs  No of pages:3

List of Topics covered in this sample paper:
Problems based on simple equations
Percent and Percentage
Profit, Loss and Discount
Construction of Quadrilaterals
Volume and Surface area
Factorization
Indices
Set concepts
Subsets, Universal Set
Venn- diagrams
Congruent Triangles
Simple Interest
Averages
Collection and tabulation of Data

General Instructions:
All questions are compulsory.
Section A – Questions 1 to 5 carry 1 marks each.
Section B – Questions 6 to 15 carry 2 marks each.
Section C – Questions 16 to 20 carry 3 marks each.
Section D – Questions 21 to 24 carry 5 marks each.

Section A
1. Find the number which is greater than one fifth of its by 26.
2. Find \( a^5 + a^7 \) using product rule.
3. In \( 32 = 9 \), base is _____ and index is ______
4. Define Venn-diagram
5. State the law of indices

Section B
6. The difference between the length and the breadth of a rectangle field is 20 m. If the perimeter of the field is 120 m, find its length and breadth.

7. If \( x \) is 40% less than \( y \), find:
   
   a) \( \frac{x}{5y} \)  
   b) \( \frac{x}{6(4x-y)} \)

8. Factorize:
   
   a) \( 6x^2 + 3x - 12x^2y \)  
   b) \( -18x^2y + 12xy = 0 \)

9. Find \( (-3ab)^2 \)  
   \( (-5a^2b^4)^2 \)

10. How to represent a set

11. What sum of money will amount to Rs 852 at 5% in 4 \( \frac{1}{2} \) years

12. The average of 6 results 8. The average of first two results if 8.5, what is the average of the remaining four results

13. Find the mean of 20, 1, 22, 13, 52 and 14

14. A certain number of a article bought for Rs 2000 and it is sold at a loss of 10%, find the selling price of article.

15. Find the total surface area and volume of cuboid with \( l = 5 \) m, \( b = 25 \) cm, \( h = 80 \) m.

Section C

16. Factorize by using an identity \( 3xy - 6y - 3ax + 6a \)

17. Represent a set when sets are given as follows
   
   a) Set \( A = \{2, 4, 6, 8, 10\} \) in set builder form
   
   b) Set \( B = \) The set of natural number in roster form.

18. Find the rate of interest for Rs 1800 becomes 2800 in 3 years at simple interest.

19. In the given figure prove that:
   
   a) \( PQ = RS \)  
   b) \( PS = QR \)
20. Find the mean of the data

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<td>2</td>
<td>1</td>
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Section D

21. Construct a parallelogram ABCD if, AB = 6cm , BC = 8cm , and angle ABC = 56\(^\circ\)cm

22. Given U = \{a, b, c, d, e, f, g, h, i\} X = \{a, b, d, f\} B = \{a, b, c, d\} C = \{d, f, g, h\} find

a) A-B  
b) B-C  
c) A'-B'  
d) B'-C'

23. From the Venn diagram to show the relation ship between the sets in given situation

U = \{all triangles\}  
A = \{isosceles triangle\}  
B = \{scalene triangle\}  
C = \{right angled triangle\}

a) AuB = A  
b) AnB = A  
c) AuB  
d) A'nC'

24. Prove that if two angles and the included side of one triangle are equal to the two angles and the included side of the other triangle, then the triangles are congruent.