

## GRAND TEST

### GENERAL INSTRUCTIONS :

- All questions compulsory.
- The question paper consists of **36 questions** divided into three sections A, B, C and D.
  - Section A comprises of **10 questions** of **1 mark** each.
  - Section B comprises of **12 questions** of **1 marks** each.
  - Section C comprises of **8 questions** of **2 marks** each.
  - Section D comprises of **6 questions** of **3, 4 marks** each.
- Time allotted is **2 hours**. The **Maximum Marks** are **60**.

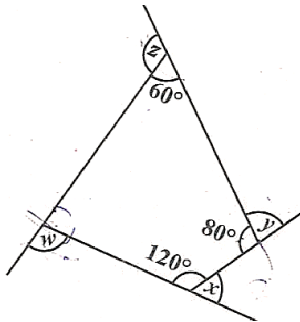
### SECTION – A (1 × 10 = 10)

M.M : 60

1. If  $2^{x+5} = 4^{x-1}$ , then x is equal to  
 (a) 6 (b) 7 (c) 4 (d)  $\frac{3}{2}$
2.  $\sqrt[3]{\frac{-27}{343}}$  is equal to  
 (a)  $\frac{-3}{7}$  (b)  $\frac{3}{7}$  (c)  $\frac{3}{49}$  (d) 0.032
3. 31y 6 is a no which is divisible by 3 where y is the smallest digit. There y is equal to  
 (a) 6 (b) 0 (c) 2 (d) 1
4. The value of  $\left[ \left\{ \left( \frac{-1}{3} \right)^2 \right\}^{-2} \right]^{-1}$  is equal to  
 (a)  $\frac{1}{81}$  (b)  $\frac{1}{27}$  (c)  $-\frac{1}{81}$  (d)  $\frac{1}{243}$
5. If 8 is added to 4 times the number, the result is two less than 5 times the no. The number is  
 (a) 6 (b) 5 (c) 8 (d) 4
6. If 16 kg of rice costs Rs 1120, the cost of 19 kg of rice will be  
 (a) 1440 (b) 1340 (c) 1330 (d) 1230
7. Two diagonals of a rectangle are of length.  $(4x + 1)$  cm and  $(2x + 15)$  cm, there the value of x is  
 (a) 10 (b) 7 (c) 9 (d) 12
8. Volume of cube is  $125 \text{ cm}^3$ , its TSA is  
 (a)  $120 \text{ cm}^2$  (b)  $175 \text{ cm}^2$  (c)  $150 \text{ cm}^2$  (d)  $100 \text{ cm}^2$
9. If  $x - y = 7$  and  $xy = 9$ , then  $x^2 + y^2$  is equal to  
 (a) 67 (b) 54 (c) 58 (d) 31
10. The graph  $y = - 3$  is  
 (a) y – axis (b) x – axis  
 (c) a line parallel to y – axis (d) a line parallel to x – axis

SECTION – B (2 × 10 = 20)

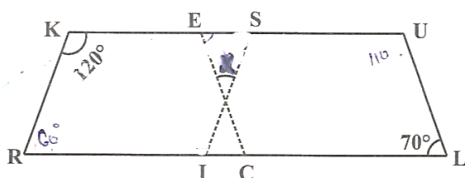
11. One of the two digits of a two digit number is three times the other digit. If you interchange the digits of this two digit number and add the resulting number to the original number, you get 88. What is the original number?
12. Find the angle measure x in this figure.



13. Evaluate:  $(5^{-1} \times 2^{-1}) \times 6^{-1}$
14. If the weight of 12 sheets of thick paper is 40 grams, how many sheets of the same paper would weigh  $2\frac{1}{2}$  kilograms ?
15. Factorise the expression and divide it as directed.  
(i)  $39y^3(50y^2 - 98) \div 26y^2(5y + 7)$
16. Find the area of a rhombus whose side is 6 cm and whose altitude is 4 cm. If one of its diagonals is 8 cm long, find the length of the other diagonal.
17. Plot the points on a graph sheet. Verify if lie on a line  
P(1, 1), Q(2, 2), R(3, 3), S(4, 4)
18. Check the divisibility of 15287 by 3.
19. Find the product:  $\left(\frac{2}{3}xy\right) \times \left(\frac{-9}{10}x^2y^2\right)$
20. Find any ten rational numbers between  $\frac{-5}{6}$  and  $\frac{5}{8}$ .

SECTION – C (3 × 6 = 18)

21. Solve  $5x - 2(2x - 7) = 2(3x - 1) + \frac{7}{2}$
- 22.



In the above figure both RISK and CLUE are parallelograms. Find the value of x.

23. Simplify and write the answer in the exponential form.

(i)  $(2^5 \div 2^8) \times 2^{-5}$

(ii)  $(-3)^4 \times \left(\frac{5}{3}\right)^4$

24. Two persons could fit new windows in a house in 3 days.

(i) One of the persons fell ill before the work started. How long would the job take now?

(ii) How many persons would be needed to fit the windows in one day?

25. Divide  $44(x^4 - 5x^3 - 24x^2)$  by  $11x(x - 8)$

26. Interest on deposits for a year.

Deposit (in Rs)	1000	2000	3000	4000	5000
Simple Interest (in Rs)	80	160	240	320	400

(i) Does the graph pass through the origin?

(ii) Use the graph to find the interest on Rs 2500 for a year

(iii) To get an interest of Rs 280 per year, how much money should be deposited?

27. Simplify:

(i)  $(ab + bc)^2 - 2ab^2c$

(ii)  $(2x + 5)^2 - (2x - 5)^2$

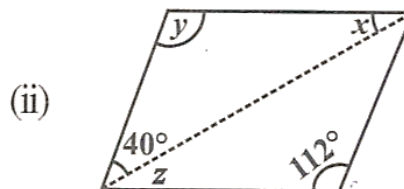
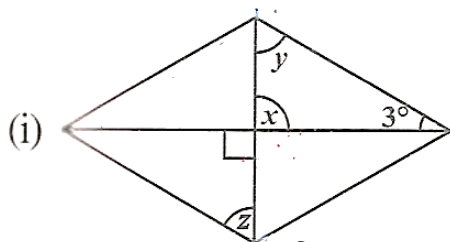
28. If  $x + \frac{1}{x} = 5$ , find the value of  $x^4 + \frac{1}{x^4}$ .

**SECTION – D (4 × 5= 20)**

29. Diagram of the adjacent picture frame has outer dimensions = 24 cm × 28 cm and inner dimensions 16 cm × 20 cm. Find the area of each section of the frame, if the width of each section is same.

30. The lateral surface are of a hollow cylinder is 4224 cm<sup>2</sup>. It is cut along its height and formed a rectangular sheet of width 33 cm. Find the perimeter of rectangular sheet?

31. Consider the following parallelograms. Find the values of the unknown x, y, z.



32. Arjun is twice as old as Shriya. Five years ago his age was three times Shriya’s age. Find their present ages.

33. A godown is in the form of a cuboid of measure 60 m × 40 m × 30 m. How many cuboidal boxes can be stored in it if the volume of one box is 0.8 m<sup>3</sup>?