# **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**.

 $SECTION - A (1 \times 10 = 10)$ 

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. If x y = 7 and xy = 9, then  $x^2 + y^2$  is equal to
  - (a) 67

- (b) 54
- (c) 58

- (d) 31
- 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.** A polyhedron has 30 edges and 20 vertices. The number of faces are.
  - (a) 12

- (b) 14
- (c)15

- (d) 6
- 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 cm<sup>3</sup>, its TSA is
  - (a)  $120 \text{ cm}^2$
- (b)  $175 \text{ cm}^2$
- (c)  $150 \text{ cm}^2$
- (d)  $100 \text{ cm}^2$
- **9.** In the adjacent fig, what % of the circle is occupied by sector c'.



- (a)  $33\frac{1}{3}$  %
- (b)  $22\frac{2}{9}\%$
- (c)  $16\frac{2}{3}\%$
- (d)  $27\frac{7}{9}\%$

- **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

#### $SECTION - B (2 \times 10 = 20)$

- 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 greatest 4-digit number which is a perfect square.
- 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) 
$$39v^3(50v^2 - 98) \div 26v^2(5v + 7)$$

- **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

- **18.** Check the divisibility of 15287 by 3.
- 19. When a de is thrown, list the outcomes of an event of getting
  - (i) (a) a prime number

- (b) not a prime number.
- (ii) (a) a number greater than 5
- (b) a number not greater than 5.
- **20.** I borrowed Rs 12,000 from Jamshed at 6% per annum simple interest for 2 years. Had I borrowed this sum at 6% per annum compound interest, what extra amount would I have to pay?

#### $SECTION - C (3 \times 6 = 18)$

- **21.** Solve  $5x 2(2x 7) = 2(3x 1) + \frac{7}{2}$
- 22. Is 2352 a perfect square? If not, find the smallest multiple of 2352 which is a perfect square. Find the square root of the new number.
- **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. On a particular day, the sales (in rupees) of different items of a baker's shop are give below.

Ordinary bread: 320

Fruit bread: 80

Cakes and pastries: 160

Biscuits: 120

Other: 40

**Total:** 720

28. Find the amount and the compound interest on Rs 10,000 for  $1\frac{1}{2}$  years at 10% per annum, compounded half yearly. Would this interest be more than the interest he would get if it was compounded annually?

### SECTION – D $(4 \times 5 = 20)$

- 29. Diagram of the adjacent picture frame has outer dimensions =  $24 \text{ cm} \times 28 \text{ cm}$  and inner dimensions  $16 \text{ cm} \times 20 \text{ cm}$ . 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. Find CI paid when a sum of Rs 10, 000 is invested for 1 year and 3 months at  $8\frac{1}{2}$ % per annum compounded the time in years.
- **32.** Number 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of.
  - (i) getting a number 6?
  - (ii) getting a number less than 6?
  - (iii) getting a number greater than 6?
  - (iv) getting at 1-digit number?
- 33. A godown is in the form of a cuboid of measure  $60 \text{ m} \times 40 \text{ m} \times 30 \text{ m}$ . How many cuboidal boxes can be stored in it if the volume of one box is  $0.8 \text{ m}^3$ ?