**Goa Board**
**Class VIII Mathematics**
**Sample Paper - 5**

**Time: 3 hours**                                                                     **Total Marks: 90**

**General Instructions:**
1. **All** questions are **compulsory**.
2. The question paper consists of **34** questions and it is divided into **four sections:** A, B, C and D.
3. **Section A** comprises of **8** questions carrying 1 mark each.
4. **Section B** comprises of **6** questions carrying 2 marks each.
5. **Section C** comprises of **10** questions carrying 3 marks each.
6. **Section D** comprises of **10** questions carrying 4 marks each
7. Question numbers **1 to 8** in **Section A** are multiple choice questions where you are to select **one** correct option out of the given four.

## Section A
### (Questions 1 to 8 carry 1 mark each)

1. The area of a square tile is 324 square units. What is the length of each side of the tile?
   A.   17 units
   B.  16 units
   C.  18 units
   D.  22 units

2. 718531 is divisible by:
   A.  7
   B.  5
   C.  3
   D.  11

3. Using graph, find the quantity when cost is Rs. 8.
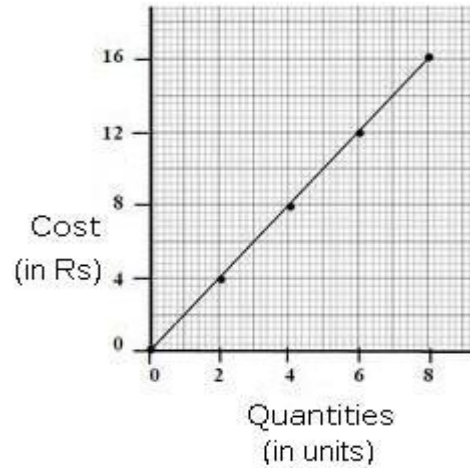


   A. 4 units
   B. 3 units
   C. 5 units
   D. 6 units

4. Cube root of (-8) × (-343) × (125) is
   A. -70
   B. 70
   C. -35
   D. 35

5. A linear graph is given by the relation 'y = 2x + 5'. Find the value of y if the value of x is 3.
   A. 9
   B. 10
   C. 11
   D. 14

6. For what value of k is $3^{k+1} \times 27^2 = 9^4$ true?
   A. 2
   B. 3
   C. $-1$
   D. 1

7. 20% of x stands for _____.

   A. $\dfrac{x}{3}$

   B. $\dfrac{x}{5}$

   C. $\dfrac{x}{6}$

   D. 0.02x
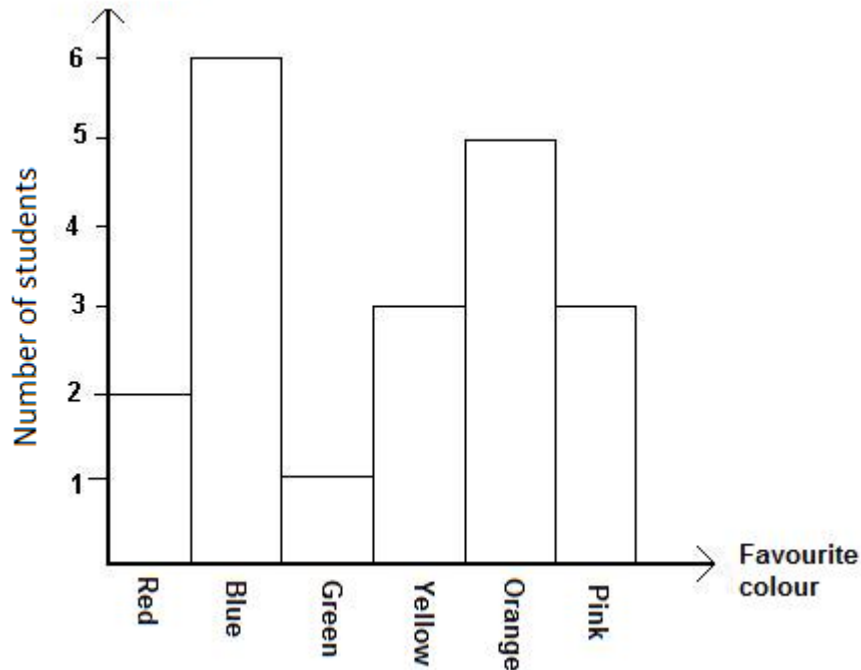
8. Number of edges in the following shape is

   

   A. 8
   B. 10
   C. 12
   D. 9

# Section B
## (Questions 9 to 14 carry 2 marks each)

9. Find the square of the number (-25), using the identity $(a + b)^2 = a^2 + b^2 + 2ab$.

10. The given bar graph shows the favourite colours of 20 students in a class. How many more students favour orange colour than green colour?

11. If 26% of a number is 65, then find the number.

12. What is the cube root of -4096?

13. In a hostel of 40 girls, there is a food provision for 30 days. If 20 more girls join the hostel, how long will the provisions of food last?

14. A polyhedron is having 8 vertices and 12 edges. Find the number of faces in this polyhedron.

# Section C
## (Questions 15 to 24 carry 3 marks each)

15. Find the cubes of the following numbers:

    i) $1\frac{2}{3}$ ii) 0.06 iii) $-\frac{2}{3}$

16. Find the number which when multiplied by itself gives 549081.

17. A person borrows Rs. 5000 for 2 years at 4% p.a. simple interest. He immediately lends it to another person at $6\frac{1}{4}$ p.a. for 2 years. Find his gain in the transaction per year.

18. The area of rhombus and that of a square are equal. The side of the square is 6 cm. If one of the diagonal of the rhombus is 4 cm then find the length of the other diagonal.

19. A field is in a shape of quadrilateral whose angles are in the ratio 2:3:5:8. Find the measure of angles.

20. Construct a square PQRS in which PQ = 4.4 cm.

21. Simplify:

    $20x - [15x^3 + 5x^2 - \{8x^2 - 4(4 - 2x - x^3) - 5x^3\} - 2x]$.

22. If $3^{5x-1} \times 3^{2x+15}$, find the value of x.

23. What will be the value of a if y + 2 is a factor of $4y^4 + 2y^3 - 3y^2 + 8y + 5a$.

24. Find a number such that one-fourth of it is less than one-third of it by 4

## Section D
### (Questions 25 to 34 carry 4 marks each)

25. The following data give the number of students using different modes of transport:

| Mode of transport | Bicycle | Bus | Walk | Train | Car |
|---|---|---|---|---|---|
| Number of students | 800 | 300 | 100 | 100 | 140 |

Represent the above data using pie diagram.

26. Read the bar graph given below and answer the following questions:

   I)   Find the year in which there was a minimum number of admissions.
   II)  Find the number of students in $3^{rd}$ year.
   III) How many students were admitted in $2^{nd}$ year in total?
   IV) Find the year in which there was maximum number of admissions.
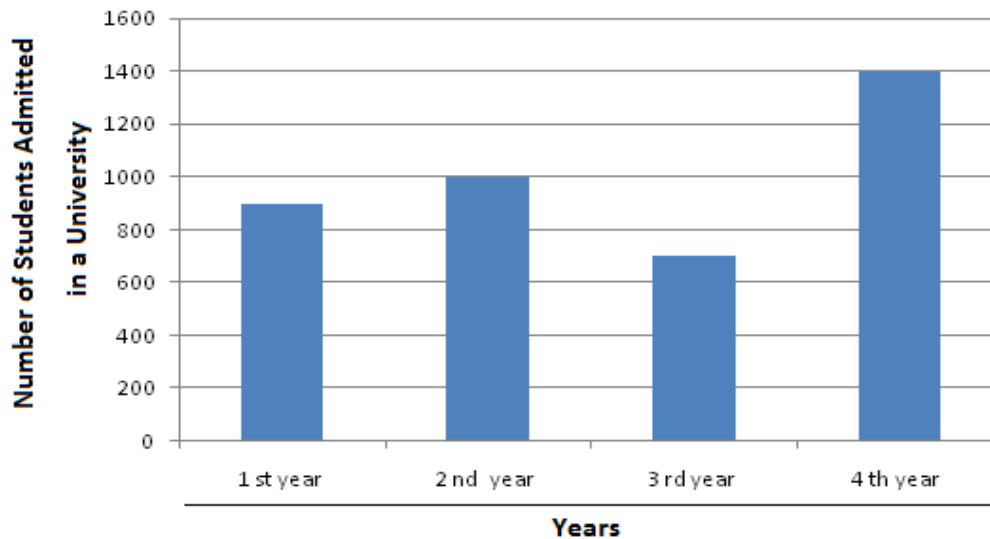


27. The smallest side of a triangle is 5 cm less than one-third of the biggest side. The smallest side is also 3 cm less than half of the third side. If the perimeter of the triangle is 39 cm, then find the three sides of the triangle.

28. The foot of a ladder is placed 6 feet away from a wall. The top of the ladder rests 10 feet up on the wall. Find the whole number to which the length of the ladder can be approximated?

29. Construct a quadrilateral ABCD in which AB = 3 cm, BC = 3.5 cm, CD = 4.1 cm, AD = 3.8 cm and diagonal BD = 5 cm.

30. The cost of 6 balls is Rs. 42. What would be the cost of 10 balls, 15 balls and 20 balls? Write them in the form of a table.

31. X and Y can paint the house in 18 days, Y and Z in 24 days and X and Z in 36 days. In how many days will Y finish it separately?

32. A rectangular park is 38 m long and 15 m wide. A path 3.5 m wide is constructed outside the park. Find the perimeter of the path.

33. A solid iron pole consists of a cylinder of height 220 cm and base diameter 24 cm, which is surmounted by another cylinder of height 60 cm and radius 8 cm. Find the mass of the pole, given that 1 cm³ of iron has approximately 8g mass. (Use $\pi$ = 3.14)

34. Construct a quadrilateral ABCD in which AB = 3.8 cm, BC = 3.4 cm, CD = 4.5 cm, AD = 4 cm and ∠B = 80°. Write the steps of construction.