

**Class:- 8**

Time:- 2 Hours

Name of the student :

**Subject:- Mathematics**

Total :- 50 Marks

Roll:

Section:

**General Instructions-**

- 1) SECTION - A: Question No. 1 to 5 carries 1 mark each.
- 2) SECTION - B: Question No. 6 to 10 carries 1 marks each. (CASE STUDY)
- 3) SECTION - C: Question No. 11 to 15 carries 2 marks each.
- 4) SECTION - D: Question No. 16 to 21 carries 3 marks each.
- 5) SECTION - E: Question No. 22 to 24 carries 4 marks each.

**SECTION -A**

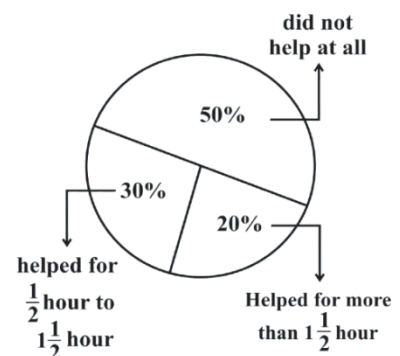
1. The one's digit of the cube of 53 is:  
a) 3                      b) 7                      c) 9                      d) None
2. The unit digit of the square of 81 is:  
a) 1                      b) 3                      c) 9                      d) None
3. \_\_\_\_ is a reduction given on marked price:  
a) VAT                      b) Loss                      c) Profit                      d) Discount
4. The ratio of the speed of a cycle 15km/hr to the speed of scooter 30km/hr is:  
a)1: 3                      b)2: 3                      c)1 : 2                      d) None
5.  $1 + 3 + 5 + 7 = \underline{\hspace{2cm}}$   
a)  $2^2$                       b)  $3^2$                       c)  $4^2$                       d)  $5^2$

**SECTION - B****Case Study:**

In a primary school, the parents were asked about the number of hours they spend per day in helping their children to do homework. There were 90 parents who helped for  $\frac{1}{2}$  hour to  $1\frac{1}{2}$  hours. The distribution of parents according to the time for which, they said they helped is given in the adjoining figure ; 20% helped for more than  $1\frac{1}{2}$  hours per day; 30% helped for  $\frac{1}{2}$  hours to  $1\frac{1}{2}$  per day ; 50% did not help at all.

Using this answer the following:

6. What percent of parents helped for more than 1hr 30min?  
a) 20%                      b) 30%                      c) 50%                      d) None
7. What percent of parents did not help their children?  
a) 20%                      b) 30%                      c) 50%                      d) None
8. What is the ratio of parents who helped their children to the parents who didn't help their children?  
a) 2:3                      b) 1:1                      c) 5:2                      d) None
9. How many parents helped their children in homework?  
a) 45                      b) 90                      c) 150                      d) None
10. How many parents were surveyed?  
a) 45                      b) 90                      c)300                      d) None



### SECTION - C

11. Area of a square is  $144 \text{ cm}^2$ . What could be the side of the square?
12. Find the ratio of the following :- 5 m to 10 km
13. How many numbers lie between the squares of 46 and 47 ?
14. Numbers like \_\_\_\_\_ and \_\_\_\_\_ are known as Hardy – Ramanujan Numbers
15. Find the smallest number by which 100 must be multiplied to obtain a perfect cube.

### SECTION - D

16. Find the smallest whole number by which 396 should be divided so as to get a perfect square.  
Also find the square root of the square number so obtained.
17. Find the cube root of 8000.
18. The cost of a pair of roller skates at a shop was ₹ 450. The sales tax charged was 5%. Find the bill amount.
19. Express 81 as the sum of consecutive odd numbers, starting with 1 (one).
20. Express  $13^2$  as the sum of two consecutive integers.
21. A picnic is being planned in a school for Class VII. Girls are 60% of the total number of students and are 18 in number. Find the ratio of the number of girls to the number of boys in the class?

### SECTION - E

#### **22. State true or false:**

- (i) A perfect cube does not end with two zeros.
  - (ii) There is no perfect cube which ends with 8.
  - (iii) The cube of a two-digit number may have seven or more digits.
  - (iv) The cube of a single digit number may be a single digit number.
23. In a Laboratory, the count of bacteria in a certain experiment was increasing at the rate of 2.5% per hour. Find the bacteria at the end of 2 hours if the count was initially 5,06,000.
  24. Write a Pythagorean triplet whose smallest member is 8.