# HALF YEARLY EXAMINATION
# SAMPLE QUESTION PAPER

Class - VIII
Time – 3 Hours

Subject – Mathematics
Maximum Marks- 80

GENERAL INSTRUCTIONS:-

1. This question paper

contains two parts A and B

2. Both part A and B have internal choices.

Part-A:

1. It consists two sections I and II

2. Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.

3. Section II has 4 questions on case study. Each case study has 5 case-based sub-parts. An examinee is to attempt any 4 out of 5 sub-parts.

Part-B:

1. Question No 21 to 26 are very short answer Type questions of 2 marks each

2. Question No 27 to 33 are Short answer Type questions of 3 marks each.

3. Question No 34 to 36 are Long Answer Type questions of 5 marks each.

4. Internal choice is provided in 2 questions of 2 marks, 2 questions of 3 marks and 1 question of 5 marks.

PART-A

SECTION-I

Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.

1. Write the product of a non-zero rational number and its reciprocal.

## PART-A

## SECTION-I

**Section I has 16 questions of 1 mark each. Internal choice is provided in 5 questions.**

1. **Write the product of a non-zero rational number and its reciprocal.**

2. **Find $\frac{4}{7} \times \frac{14}{3} \div \frac{2}{3}$**

3. **Tanishka has a farm land which is hexagonal in shape. What is the sum of all the exterior angles taken in an order of the farm land?**

OR

**Draw a regular convex octagon showing all its diagonals**

4. Two-third of a number less than the original number by 10. find the original number.

OR

What is the maximum numbers of solutions of a linear equation in one variable?

5. Find the product of additive inverse and multiplicative inverse of $\frac{1}{7}$.

6. Is it possible to construct a right angled scalene triangle with sides 6cm,10cm and 8cm? Give reason.

7. How many natural numbers lie between $18^2$ and $19^2$ ?

8. Write a Pythagorean triplet whose greatest member is 5.

9. Express 121 as a sum of successive odd natural numbers.

OR

Find the sum of first 25 odd natural numbers.

10. Express 1729 as a sum of two cubes in two different ways. Who is founder of this number

OR

Write the total surface area of cube whose length of edge is 6 cm

11. Find the smallest multiple of 36 which is a perfect cube

12. Write in usual form: 100 X a+10 X b+1 X c

13. If the three- digit number 24x is divisible by 3,what are the possible values of x?

14. If a be the reciprocal of b,then find the reciprocal of $a^2$ in terms of b.

15. Vansh walks $\frac{2}{3}$ km from a place P,towards east and then from there $1\frac{5}{7}$ km towards west. Where will he be now from P?

16. Simplify: $\frac{8}{5} \times \frac{3}{7} \times \frac{15}{32} \times \frac{14}{9}$

OR

Express in standard form of the rational number $\frac{184}{207}$

SECTION-II

Case study based questions are compulsory. Attempt any 4 sub-parts out of 5 sub parts of each question. Each sub parts carries 1 mark

CASE STUDY BASED-I

THE GREATNESS OF A CULTURE CAN BE FOUND IN ITS FESTIVALS (HARE KRISHNA MOVEMENT)... ... ....

17. On the occasion of JANMASTAMI FESTIVAL Riya takes some flowers in a basket and visits four temples one by one. At each temple, she offers one half of the flowers from the basket. If she is left with a flower at the end,

(a) The number of flowers offered by her in first temple

(i) 8 (ii) 4 (iii) 2 (iv) 16

(b) The number of flowers offered by her in second temple

(i) 32 (ii) 16 (iii) 8 (iv) 4

(c) The number of flowers offered by her in third temple

(i) 64 (ii) 32 (iii) 16 (iv) 2

(d) The number of flowers offered by her in fourth temple

(i) 1 (ii) 2 (iii) 3 (iv) 4

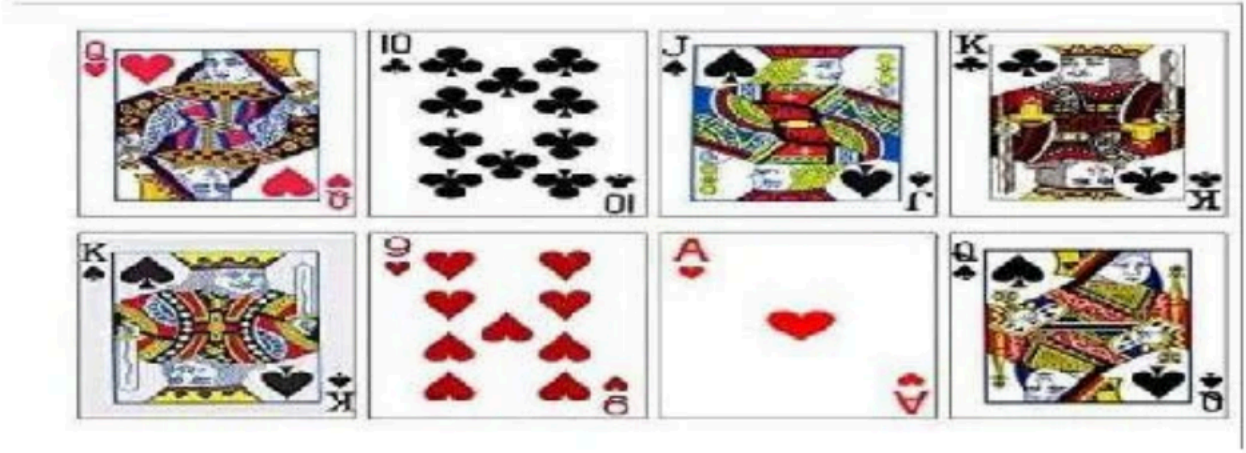
(e) The number of flowers she had in the beginning is

(a) 13 (ii) 14 (iii) 15 (iv) 16

CASE STUDY BASED-2

NEVER TAKE YOUR EYES OFF THE TARGET

18. One card is drawn from a pack of 52 cards, each of the 52 cards being equally likely to be drawn.



(a) What is the probability that the card drawn is an ace?

(i) $\frac{1}{4}$ (ii) $\frac{1}{13}$ (iii) $\frac{1}{2}$ (iv) $\frac{7}{8}$



(b) What is the Probability that the card drawn is red?

(i) 2 (ii) $\frac{3}{4}$ (iii) $\frac{1}{4}$ (iv) $\frac{1}{2}$

(c) What is the probability that the card drawn is a face card?

(i) 0 (ii) $\frac{3}{13}$ (iii) sure event (iv) $\frac{1}{2}$

(d) What is the probability that the card drawn is '2' of spade ?

(i) $\frac{1}{52}$ (ii) $\frac{1}{13}$ (iii) Impossible event (iv) $\frac{1}{2}$

(e) What is the probability that card drawn is '10' of a black suit?

(i) $\frac{1}{13}$ (ii) $\frac{2}{13}$ (iii) $\frac{1}{2}$ (iv) $\frac{1}{26}$

CASE STUDY BASED-3.

'NUMBER RULES THE UNIVERSE'

YOU HAVE TO BE ODD TO BE NUMBER ONE

PLAYING WITH THREE DIGIT NUMBERS BY REVERSING THE DIGITS... ...

19. Three digit number starts from 100 and ends at 999. We are able to form two more three-digit number in each case, like this if you choose abc, then the first number is cab and other number is bca. Then add the three numbers. then answer the following

(a) The quotient obtained by dividing the sum (417+174+741) by 111 we get

(i) 11 (ii) 12 (iii) 13 (iv) 36

(b) The remainder obtained by dividing the sum(632+263+326) by 37 we get

(i) 0 (ii) 33 (iii) 11 (iv) 37

(c) If abc is a three digit number, then the number abc-a-b-c is divisible by

(i) 9 (ii) 11 (iii) 10 (iv) 90

(d) The resulting number obtained (abc+cab+bca) must be exactly divisible by

(i) 37 (ii) 27 (iii) 47 (iv) 57

(e) How many three –digit numbers are there in all?

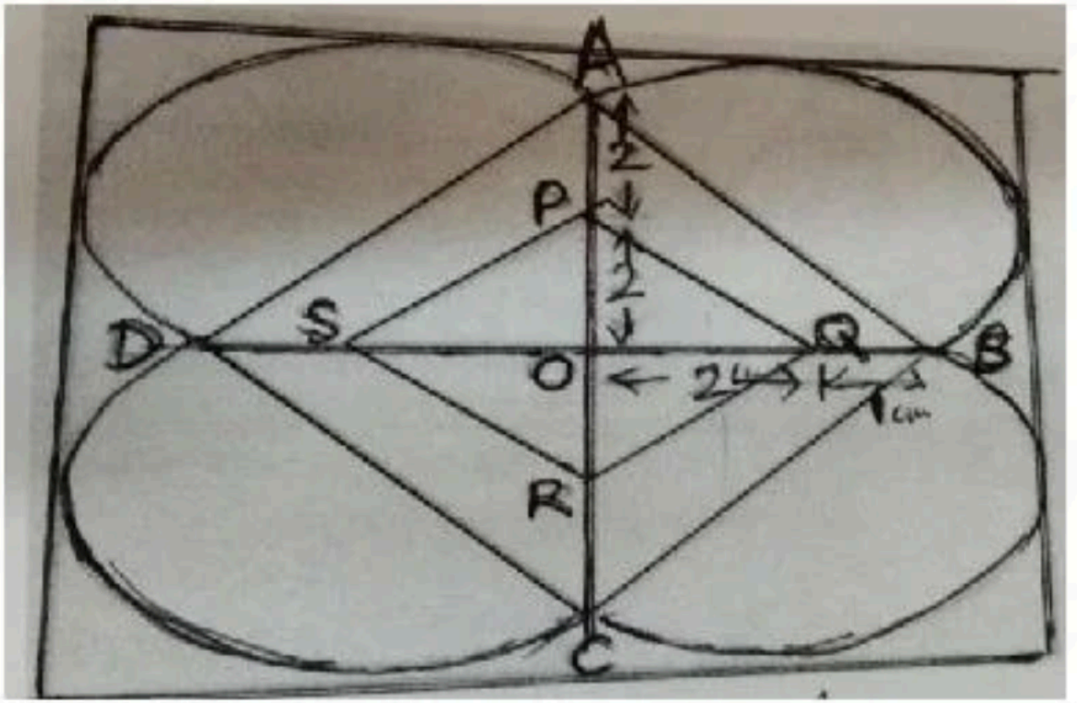
(i) 999 (ii) 998 (iii) 899 (iv) 900

CASE STUDY BASED-4

LIKE THE COLOURS OF RANGOLI MAY, COMING PUJA BRIGHTENS UP YOUR LIFE

Rangoli resembles life all you have to do is connect the right dots to make them perfect.

20. A Rangoli has been drawn on a floor of a house. ABCD and PQRS both are in the shape of a rhombus.




(a) The diagonals of the rhombus bisect each other at

(i) Acute angle (ii) Right angle (iii) Obtuse angle (iv) Reflex angle

(b) The length of diagonal AC is

(i) 8cm (ii) 4cm (iii) 2cm (iv) 1cm

(c) The length of diagonal BD is

(i) 3cm (ii) 4cm (iii) 5cm (iv) 6cm

(d) The length of the diameter AB of semi-circle is

(i) 7cm (ii) 6cm (iii) 5cm (iv) 4cm

(e) The perimeter of rhombus ABCD is

(i) 28cm (ii) 24cm (iii) 20cm (iv) 16cm

## PART-B

All questions are compulsory. In case of internal choices, attempt any one.

Qnos 21 to 26 each carries 2 marks (2x6=12)

21. Multiply the number 137592 by the smallest number so that the product is a perfect cube. Also, find the cube root of the product.

22. Find the smallest square number divisible by each one of the number 6,9,15 and 20.

OR

The product of two numbers is 1296 and their quotient is 16 .Find the numbers.

23. The interior angle of a regular polygon is $108^0$.Find the number of sides of the polygon.

24. Evaluate: $\frac{6}{7} - 2 + \frac{-7}{9} + \frac{19}{21}$

OR

What should be added to $\left(\frac{1}{2} + \frac{1}{3} + \frac{1}{6}\right)$ to get 6?

25. Find the square root of 361 by the method of repeated subtraction.

26. The sum of two numbers is 120 and their ratio is 7:8.Find the numbers.

Qnos 27 to 33 each carries 3 marks (3x7=21)

27. Represent $-\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$ on the same number line.

28. A steamer goes down stream from the one point to another in 9 hours. It covers the same distance upstream in 10 hours. If the speed of the stream be 1 km/hr, find the speed of the steamer in still water and the distance between the ports.

OR

OR

A number is 56 greater than the arithmetic mean of its third, quarter and one-twelfth. Find it

29. Construct a quadrilateral REST in which RE=2.7cm, ES=3.5cm ,ST=4cm,RT=6cm and angle E= $90^0$.

30. Draw a pie chart of the data given below.

The number of students admitted in different faculties of a college are given below:

| Faculty | Science | Arts | Commerce | Law | Education | Total |
|---|---|---|---|---|---|---|
| Number of students | 1000 | 1200 | 650 | 450 | 300 | 3600 |

31. A 13m long ladder is leaned against a wall.The ladder reaches the wall to a height of 12m.Find the distance between the wall and the foot of the ladder.

32. Three numbers are in the ratio 1:2:3. The sum of their cubes is 7776.Find the numbers

OR

Evaluate: $\frac{\sqrt[3]{\sqrt[3]{8000}+\sqrt[3]{343}}}{\sqrt[3]{\sqrt{441}+\sqrt{16}+\sqrt{4}}}$

33. Solve the Cryptarithm: $\overline{AB} \times \overline{AB} = \overline{ACB}$

Qnos 34 to 36 carries 5 marks each. (5x3=15)

34. ABCD is a Rhombus and ABE is an equilateral triangle. E and D lie on opposite sides of AB. If ∠BCD=78°,calculate $\angle ADE$ *and* $\angle BDE$

35. Construct a quadrilateral COPE where CO=3.5cm OP=6.5cm,∠ C=75$^0$,∠O=105$^0$ and ∠P =120$^0$ by using ruler and compass.Also write steps of construction.

OR

Construct a Rhombus BOLD whose diagonals BL and OD measures 6cm and 8cm also write steps of construction. Verify by actual measurement perimeter is 20cm

36. In a hypothetical sample of 20 people,the amount of money ( in thousands of rupees) with each was found to be as follows:

114,108,100,98,101,109,117,119,126,131,136,143,156,169,182,195,207,219,235,118.

Draw a histogram of the frequency distribution,taking one of the class interval as 50-100.