CLASS VII (SAMPLE- PAPER) **TIME: -3 HRS**
MID TERM (2022– 2023) **M.M: - 80 MARKS**
SUBJECT: MATHEMATICS

General Instructions:
1. This question paper contains two parts, A and B.
2. Both Part A and Part B have internal choices.

Part – A:
1. It consists two sections- I and II.
2. Section I has 16 questions from Q1 to Q16 of 1 mark each. Internal choice is provided in 5 questions.
3. Section II has 4 questions of case study from Q17 to Q20 of 4 marks each. Each case study has 5 case-based sub-parts of 1 mark each. An examinee is to attempt any 4 out of 5 sub-parts.

Part – B:
1. Question No. 21 to 26 are short answer type -I questions of 2 marks each.
2. Question No. 27 to 33 are short Answer type- II 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 1question of 5 marks.

Part – A

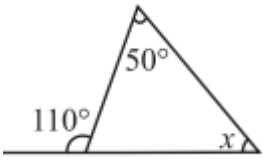
SECTION I (1 mark each)

Q1. Reduce to standard form: $\frac{36}{-24}$

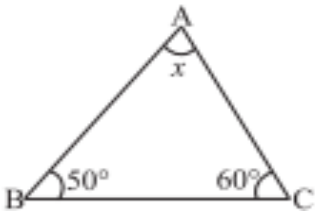
Q2. Express $3\frac{2}{5}$ as a decimal

Q3. If $\frac{5}{8} = \frac{20}{p}$, then find the value of p.

Q4. What is the measure of x?



OR



Q5. Find 2 examples from your surroundings where lines intersect at right angles.

OR

Does a median lie wholly in the interior of the triangle? If you think that this is not true, draw a figure to show such a case.

Q6. Find the measure of an angle which is 24°more than its complement?

OR

Among two supplementary angles the measure of the larger angle is 44° more than the measure of the smaller. Find their measures.

Q7. Is it possible to have a right triangle with the following sides:2 cm, 2 cm, 5 cm?

Q8. Write the given equation in statement form: $\frac{w}{5} - 2 = 6.$

Q9. Write a pair of integers whose sum gives an integer smaller than only one of the integers.

OR

Write a pair of integers whose difference gives a negative integer.

Q10. **Set up an equation**: The teacher tells the class that the highest marks obtained by a student in her class is twice the lowest marks plus 7. The highest score is 87.

Q11. Find the value of:

$3\frac{1}{2}$ of $\frac{8}{3}$

OR

Find the area of rectangle whose length is 5.7 cm and breadth is 3 cm.

Q12. If ABC and DEF are congruent triangles such that $\angle A$ =47° and $\angle E$ =83° then, find$\angle C$.

Q13. Which number is the multiplicative identity for rational numbers?

Q14. At which number will you reach if you move 7 steps to the left of 4 on number line?

Q15. Which is greater $\frac{-5}{2}, \frac{-2}{3}$?

Q16. Which side is included between the angles M and N of ΔMNP?

Part – A

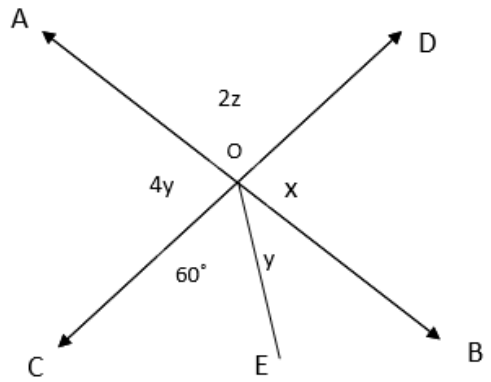
SECTION II

Case study-based questions are compulsory. Attempt any four sub parts of each question. Each subpart carries 1 mark.

Q17.Case study 1. Read the text given below and answer any four questions by observing the given figure carefully:

Maths's teacher draws a straight-line AB as shown in the given figure.

- Now he told Ravi to draw another line CD as in the figure
- The teacher told Ameeta to mark ∠AOD as 2z
- Suraj was told to mark ∠AOC as 4y
- Siya made an angle ∠COE = 60˚ as shown in the figure
- Preeti marked ∠BOE and ∠BOD as y and x respectively



i. What is the value of x?
   a) 48˚
   b) 96˚
   c) 100˚
   d) 120˚

ii. What is the value of y?
   a) 48˚
   b) 96˚
   c) 100˚
   d) 24˚

iii. What is the value of z?
   a) 48˚
   b) 96˚
   c) 42˚
   d) 120˚

iv. What should be the value of x + 2z?
   a) 148˚

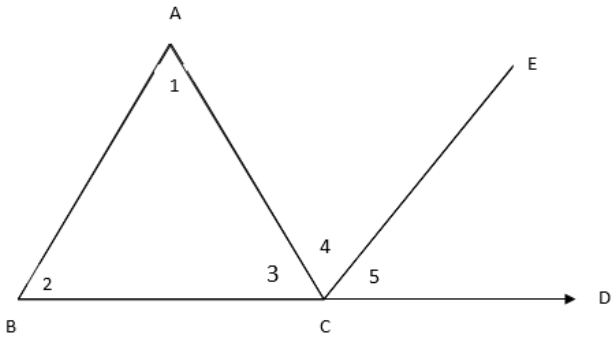
b) 360˚
c) 180˚
d) 120˚

v. What is the relation between y and z?

a) 2y + z = 90˚
b) 2y + z = 180˚
c) 4y + 2z = 120˚
d) Y = 2z

Q18.Case study 2. Read the text given below and answer any four questions by observing the given figure carefully:

The mathematics teacher of class VII told the students to draw any triangle ABC and extend side BC to D.



Then the teacher asked them to draw CE ∥ BA and mark angles as shown in the figure.

Read the text given above and answer any four questions by observing the given figure carefully:

i. BA ll CE and AC is the transverse line, so ∠1 is equal to which angle?

a) ∠2
b) ∠3
c) ∠4
d) ∠5

ii. ∠2 is equal to which angle?

a) ∠2
b) ∠3
c) ∠4
d) ∠5

iii. What is the value of ∠3 + ∠4 + ∠5?

a) 180°
b) 120°
c) 200°
d) 360°

iv. What is the value of ∠ACD = ∠4 + ∠5?

a) ∠3 + ∠5
b) ∠1 + ∠2
c) ∠2 + ∠3
d) ∠3 + ∠4

v. What is the value of ∠1 + ∠2 + ∠3?

a) ∠3 + ∠4 + ∠5 = 180°
b) 360°
c) ∠3 + ∠4 = 100°
d) 280°

Q19. Case study 3. Read the text given below and answer any four questions:

Take Rita's present age to be 'a' years and her mother's age to be '2b' years.

i. What was Rita's age 5 years back?

(a) a + 5 (b) 5a (c) a – 5 (d) $\frac{a}{5}$

ii. What will be Rita's age 3 years from now?

(a) 3a (b) a + 3 (c) $\frac{a}{3}$ (d) 3 – a

iii. Rita's brother is 2 times her age. What is the age of her brother?

(a) 2 + a (b) $\frac{a}{2}$ (c) 2a (d) a – 2

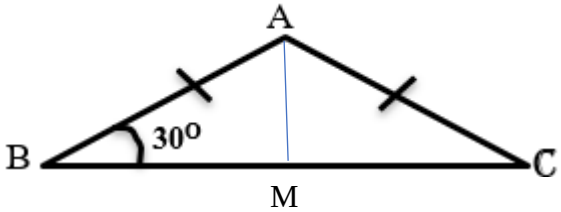
iv. Rita's father is 6 years older than her mother. What is her father's age?

(a) 2b - 6 (b) 12b (c) 2b + 6 (d) $\frac{2b}{6}$

v. Rita's grandfather's age is 10 years more than 4 times Rita's age. What is her grandfather's age?

(a) $\frac{4a}{10}$ (b) 10 - 4a (c) 40a (d) 4a + 10

Q20. Case study 4. Answer any four questions by observing the given figure carefully:



i. Name the type of triangle ABC by looking at the figure given above:
a) Equilateral Triangle
b) Isosceles Triangle
c) Scalene Triangle
d) Right Angled Triangle

ii. The angles opposite to equal sides of a triangle are:
a) Equal
b) Unequal
c) Supplementary Angles
d) Complementary Angles

iii. In the above given triangle ABC, if AM is the median, then ΔAMB ≅ ΔAMC by which of the following Congruency rule?
a) SSS
b) ASA
c) RHS
d) AAA

iv. For two triangles, if two sides and the included angle of one triangle are equal to two sides and the included angle of another triangle. Then the congruency rule is:
a) SSS
b) ASA
c) SAS
d) AAA

V. Which of the following is not a criterion for congruence of triangles?
a) SSS
b) ASA
c) SAS
d) SSA

Part –B

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

2 marks each

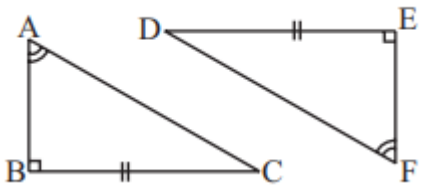
Q21. Arrange the following in descending order:

$\frac{2}{9}, \frac{2}{3}, \frac{8}{21}$

OR

The side of an equilateral triangle is 3.5 cm. Find its perimeter

Q22. Explain, why ΔABC ≅ ΔFED.

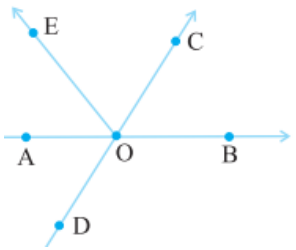


Q23. List four rational numbers between: –2 and –1

OR

Find: $\frac{-2}{9} \div \frac{8}{54}$

Q24. In Fig identify: (i) Two pairs of adjacent angles. (ii) Two pairs of vertically opposite angles.



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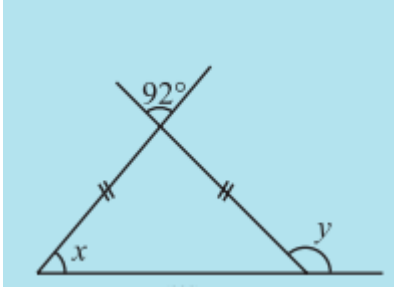
Q25. Find the values of the unknowns x and y in the following figure:



Q26.

Complete the last column of the table.

S. No.	Equation	Value	Say, whether the equation is satisfied. (Yes/ No)
(i)	$x + 3 = 0$	$x = 3$	
(ii)	$x + 3 = 0$	$x = 0$	

3 marks each

Q27.

Find the product, using suitable properties:

i) $8 \times 53 \times (-125)$

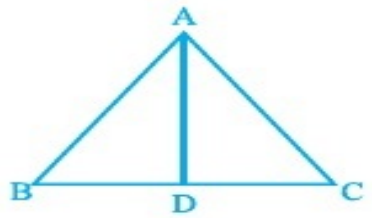
ii) $(-625) \times 25 + (-625) \times 75$

Q.28. In a class of 40 students $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study mathematics and the remaining students like to study Science. (i)How many students like to study English? (ii) How many students like to study Mathematics? (iii) What fraction of the total number of students like to study Science?

Q29. Represent the following rational numbers on the same number line.

$\frac{3}{2}, \frac{1}{3}, \frac{-1}{6}$

Q.30. In the figure given below, AB = AC and D is the mid-point of BC.



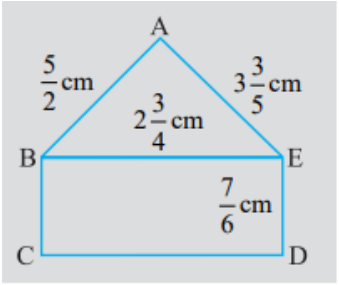
(i) State the three pairs of equal parts in ΔADB and ΔADC with reasons.

(ii) Is ΔADB ≅ ΔADC? Give reason. (2+1)

Q.31. Salil wants to put a picture in a frame. The picture is $7\frac{3}{5}$ cm wide. To fit in the frame the picture cannot be more than $7\frac{3}{10}$ cm wide. How much should the picture be trimmed?

OR

Find the perimeters of (i) Δ ABE (ii) the rectangle BCDE in the given figure below:



Q32. A tree is broken at a height of 5m from the ground and its top touches the ground at a distance of 12 m from the base of the tree. Find the original height of the tree. (Draw figure)

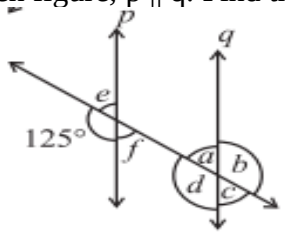
Q33. Reema's mother is four times as old as Reema. After 5 years, her mother will be three times as old as she will be then. Find their present ages.

OR

There are two types of boxes containing mangoes. Each box of the larger type contains 4 more mangoes than the number of mangoes contained in 8 boxes of the smaller type. Each larger box contains 100 mangoes. Find the number of mangoes contained in the smaller box?

5 **marks each**

Q34. In the given figure, p || q. Find the unknown angles with reasons.



Q35. Answer the following: (i) An elevator descends into a mine shaft at the rate of 5 metre per minute. What will be its position after one hour? (ii) If it begins to descend from 15 m above the ground, what will be its position after 45 minutes?

OR

In a test (+5) marks are given for every correct answer and (–2) marks are given for every incorrect answer. (i) Reena answered all the questions and scored 30 marks though she got 10 correct answers. (ii) Jimmy also answered all the questions and scored (–12) marks though he got 4 correct answers. How many incorrect answers had they attempted?

Q36. (i) What should be added to $(\frac{1}{4}+\frac{1}{5}+\frac{1}{6})$ to get 8?

(ii) The product of two rational numbers is $\frac{18}{35}$. If one of them is $\frac{-8}{7}$,find the other.