# THE VILLAGE
## INTERNATIONAL SCHOOL
### "We Nurture Dreams"

AIM HIGH, TOGETHER WE FLY

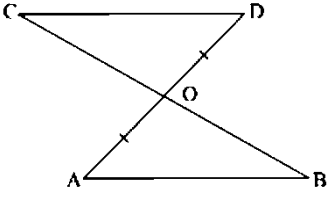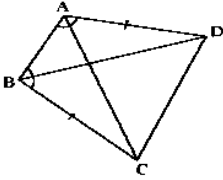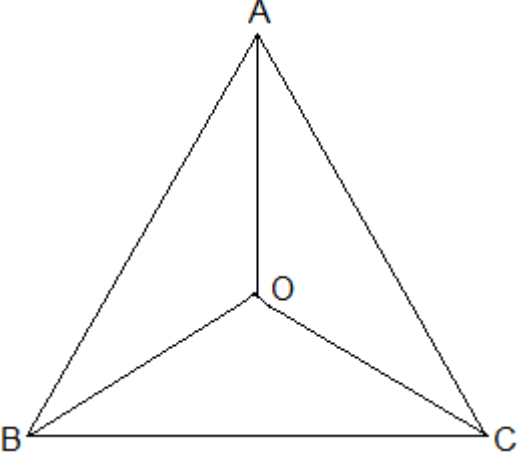| Date:04/11/24<br>GRADE: IX | MT - 02 (2024-25)<br>MATHEMATICS | Max marks: 20<br>Time: 50 Minutes |
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General Instructions:
1 All questions are compulsory.
2. Marks are indicated against each question.

| Qn. No | QUESTIONS 1 TO 5 CARRY ONE MARK EACH | Marks allocated |
|---|---|---|
| 1 | Which of the following is not a criterion for congruence of triangles?<br><br>a. SAS<br>b. ASA<br>c. SSA<br>d. SSS | 1 |
| 2 | In Δ PQR, ∠R = ∠P and QR = 4 cm and PR = 5 cm. Then the length of PQ is<br><br>a. 2 cm<br>b. 2.5 cm<br>c. 5 cm<br>d. 4 cm | 1 |
| 3 | Given three sticks of lengths 10cm, 5cm and 3cm. A triangle is formed using the sticks then area of the triangle will be<br><br>a. 57 cm$^2$<br>b. 25 cm$^2$<br>c. 15 cm$^2$<br>d. Unable to form a triangle, so no area can be calculated | 1 |
| 4. | If two sides of a triangle are 8cm and 11 cm and perimeter of triangle is 32 cm. Then value of third side is<br>a. 19cm<br>b. 13 cm<br>c. 21.5 cm<br>d. 16 cm | 1 |

| 5 | Assertion (A): If △ **ABC** ≅ △ RPQ, then BC = QR<br>Reason (R): Corresponding parts of congruent triangles are equal.<br><br>(a) Both the statements – A and R are true, and R is the right explanation for A<br>(b) Both the statements – A and R are true; R is not the correct explanation for A<br>(c)   A is false, but R is true<br>(d)   R is true, but A is false | 1 |
|---|---|---|
| | **QUESTIONS 6 AND 7 CARRY TWO MARKS EACH** | |
| 6 | Line-segment AB is parallel to another line-segment CD. O is the midpoint of AD.<br>Show that<br>(i) △AOB≅△DOC<br>(ii) O is also the midpoint of BC.<br><br><br><br>Or<br><br>ABCD is a quadrilateral in which AD = BC and ∠DAB = ∠CBA (See the given figure).<br>Prove that<br>(i) ΔABD ≅ ΔBAC<br>(ii) BD = AC<br>(iii) ∠ABD = ∠BAC.<br><br> | 2 |

| 7 | a. Find the area of an equilateral triangle with side 2 √3 cm.<br>b. If the base of a right angled triangle is 15cm and its hypotenuse is 25 cm, then find its area. | 2 |
|---|---|---|
| | **QUESTIONS 8 AND 9 CARRY THREE MARKS EACH** | |
| 8 | State and prove ASA congruence<br><br>Or<br><br>In an isosceles triangle ABC, with AB = AC, the bisectors of ∠B and ∠C intersect each other at O. Join A to O. Show that:<br><br>(i) OB = OC (ii) AO bisects ∠A<br><br> | 3<br><br>3 |
| 9 | A triangular field has vertices A, B and C and the length of sides are 130 m,140 m and 150 m. The farmer wants to fence his field all round leaving a space 5 m wide, with a gate on one side. The cost of fencing it with barbed wire is ₹ 20 per metre. After fencing, farmer cultivates carrot in the field. What is the total area of the field? Also find the total cost of fencing.<br><br>Or<br><br>The sides of a triangular plot are in the ratio 12:17:25 and its perimeter is 540 m. Find its area. If the farmer wants to have fencing all around it at the rate Rs 50 per metre find the cost of fencing. | 3<br><br>3 |

| 10 | Case Study: | |
|---|---|---|
| | While selling clothes for making flags, a shopkeeper claims to sell each piece of cloth in the shape of an equilateral triangle of each side 10 cm while actually he was selling the same in the shape of an isosceles triangle with sides 10 cm, 10 cm and 8 cm. | |
| | 1. Find the area of an equilateral triangular flag? | 1 |
| | 2. If the shopkeeper sells 500 equilateral triangular flags, then find its area. | 1 |
| | 3. What is the semi-perimeter of an isosceles triangular flag. | 1 |
| | 4. Find the area of an isosceles triangular flag. | 2 |