



**MM 20**

**Triangles**

**Time 45 Minutes**

**Section A 1Mark Each**

**Paper prepared by**

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1. If  $\triangle ABC \cong \triangle DEF$  and if  $AB = 7 = DE$  and  $BC = EF = 8$ , then necessary condition is  
(A)  $\angle A = \angle D$                       (B)  $\angle B = \angle E$                       (C)  $\angle C = \angle F$                       (D)  $\angle A = \angle F$
2.  $\triangle ABC \cong \triangle PQR$  . If  $AB = 7\text{cm}$ ,  $\angle B = 40^\circ$  and  $\angle A = 80^\circ$ , then which of the following is true?  
(A)  $QP = 7\text{cm}$ ,  $\angle P = 60^\circ$                       (B)  $QP = 7\text{cm}$ ,  $\angle R = 60^\circ$   
(C)  $QR = 7\text{cm}$ ,  $\angle R = 60^\circ$                       (D)  $QR = 7\text{cm}$ ,  $\angle Q = 40^\circ$
3. In  $\triangle ABC$  if  $AB = BC$  then:  
(A)  $\angle B > \angle C$                       (B)  $\angle A = \angle C$                       (C)  $\angle A = \angle B$                       (D)  $\angle A > \angle C$
4. In  $\triangle ABC$  if  $\angle A = 35^\circ$  and  $\angle B = 65^\circ$ , then the longest side of the triangle is  
(A) AC                      (B) AB                      (C) BC                      (D) None of these
5. In a  $\triangle ABC$ ,  $AB = 5\text{cm}$ ,  $AC = 5\text{cm}$ , and  $\angle A = 50^\circ$ , then  $\angle B =$   
(A)  $70^\circ$                       (B)  $65^\circ$                       (C)  $55^\circ$                       (D)  $50^\circ$

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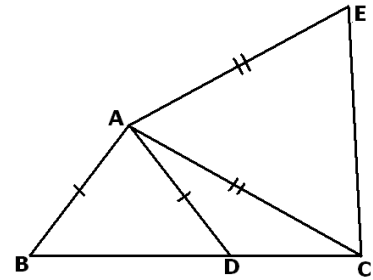
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6. In figure,  $\angle BAD = 40^\circ$ ,  $AC = AE$ ,  $AB = AD$ .  
Show that side  $BC = DE$ , if  $\angle EAC = \angle BAD = 40^\circ$
7.  $AD$ ,  $BE$  and  $CF$ , the altitudes of  $\triangle ABC$  are equal.  
Prove that  $\triangle ABC$  is an equilateral triangle.



**Section C 3 Marks Each**

8. In quadrilateral ABCD the line segment joining the mid-points P and Q of opposite sides AB and DC is perpendicular to both the sides. Prove that the other sides of the quadrilateral are equal.
9. S is any point in the interior of  $\triangle PQR$ . Show that  $OQ + OR < PQ + PR$ .

**Section D 4 Marks Each**

10. If the bisector of an angle of a triangle also bisects the opposite side, prove that the triangle is isosceles.

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