SHIKSHA CLASSES

Sub. : Maths | **Question Paper** | **Total Marks : 30**

Std. IX (CBSE) | **7. Triangles** | **Time : 1 Hr.**

Section A (Each 1 Marks)

Multiple Choice Questions. (MCQs)

Q.1 : Which of the following is not a criterionfor congruence of triangles.

a) SAS b) SSA c) ASA d) SSS

Q.2 : Two equilateral triangles are congruent when :

a) their angles are equal b) their sides are equal

c) their sides are proportional d) their areas are proportional

Q.3 : If one angle of a triangle is equal to the sum of the other two angles then triangle is

a) an isosceles triangle b) an obtuse angled triangle

c) an equilateral triangle d) a right angled triangle

Q.4 : If ΔABC $\triangle ABC \cong \triangle FDE$ and AB = 5 cm, $\angle B = 40^0, \angle A = 80^0$. Then which of the following is true?

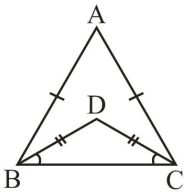
a) DF = 5 cm, $\angle F = 60^0$ b) DE = 5 cm, $\angle E = 60^0$

c) DF = 5 cm, $\angle E = 60^0$ d) DE = 5 cm, $\angle D = 40^0$

Q.5 : In fig., the ratio $\angle ABD : \angle ACD$ is

a) 1 : 1 b) 2 : 1

c) 1 : 2 d) 3 : 1



Q.6 : If E and F are the midpoints of equal sides AB and AC of a triangle ABC. Then:

a) BF=AC b) BF=AF c) CE=AB d) BF = CE

Q.7 : If ABC and DBC are two isosceles triangles on the same base BC. Then:

a) $\angle ABD = \angle ACD$ b) $\angle ABD > \angle ACD$

c) $\angle ABD < \angle ACD$ d) None of the above

Q.8 : In triangle ABC, if AB=BC and $\angle B = 70$, $\angle A$ will be:

a) 70 b) 110 c) 55 d) 130

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Q.9 : A triangle in which two sides are equal is called:

a) Scalene triangle b) Equilateral triangle

c) Isosceles triangle d) None of the above

For question number 10 to 11 two statement are given one labeled Assertion and other labeled Reason select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below

a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

c) Assertion (A) is true but reason (R) is false.

d) Assertion (A) is false but reason (R) is true.

Q.10 : **Assertion:** Two angles measures a – 60° and 123° – 2a. If each one is opposite to equal sides of an isosceles triangle, then the value of a is 61°.

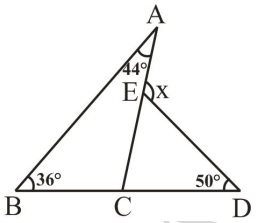
Reason: Sides opposite to equal angles of a triangle are equal.

Q.11 : **Assertion :** Angles opposite to equal sides of a triangle are not equal.

Reason : Sides opposite to equal angles of a triangle are equal.

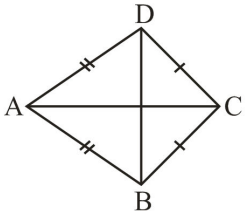
Section B (Each 2 Marks)

Q.12 : Find x in fig.



Q.13 : In fig. ΔABD and ΔBCD are isosceles triangle on same base BD.

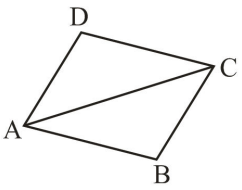
Prove that $\angle ABC = \angle ADC$.



OR

In fig. the diagonal AC of quadrilateral ABCD bisects $\angle BAD$ and $\angle BCD$.

Prove that BC = CD.



Section C (Each 3 marks)

Q.14 : AD is an altitude of an isosceles triangle ABC in which AB = AC. Show that AD bisects BC

OR

ΔABC is an isosceles triangle with AB = AC. Side BA is produced to D such that AB = AD.

Prove that $\angle BCD$ is a right angle.

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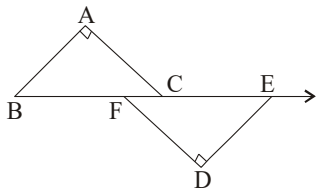
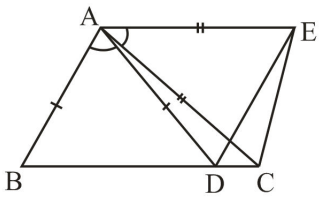
Q.15 : In fig., $BA \perp AC, DE \perp DF$ such that $BA = DE$ and $BF = EC$. Show that $\triangle ABC \cong \triangle DEF$.



Section - D (5 marks)

Q.16 : In fig., $AC = AE, AB = AD$ and $\angle BAD = \angle EAC$. Show that $BC = DE$.



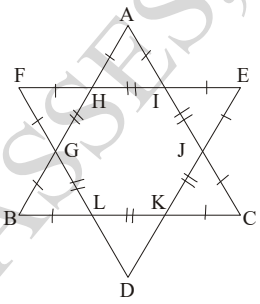
OR

BE and CF are two equal altitudes of a triangle ABC. Using RHS congruence rule prove that the triangle ABC is isosceles.

Section - E

Q.17 : Case Study : (Any Four) **4**

Rashmi made a star-shaped lantern for Diwali, by using two congruent equilateral triangles ABC and DEF as shown below.



Now using the information given answer the following questions.

i) Triangles ABC and DEF can be proved congruent using

a) SAS rule b) SSS rule c) ASA rule d) All of the above

ii) Triangle AIH is congruent to triangle...

a) EIJ b) IJE c) JEI d) IEJ

iii) $\angle DLK$ is equal to...

a) $\angle LBG$ b) $\angle BLG$ c) $\angle BLD$ d) $\angle GLK$

iv) $m\angle BLD = ...$

a) $\angle DKL - \angle LDK$ b) $\angle DKL + \angle LDK$

c) $\angle DLK + \angle LDK$ d) $\angle DKC + \angle LDK$

v) Which of the following is not a test of congruency for two triangles ?

a) SSS b) SAS c) AAA d) AAS

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