TEST PAPER: MATHEMATICS

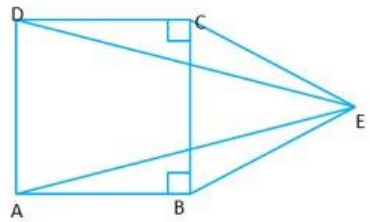
Time: 60 Minutes **Class: 9th I.C.S.E.**

Max. Marks: 40 Marks **Date: 6th February, 2019**

Marking Scheme: *Four questions carry 10 marks each. Questions have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.*

Question 1:

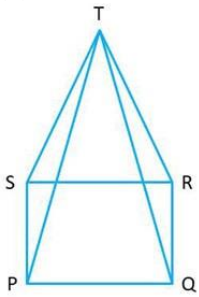
a. In the adjoining figure, ABCD as a square and CEB is an isosceles triangle in which EC = EB show:
   (a) ΔDCE ≅ ΔABE
   (b) AE = DE



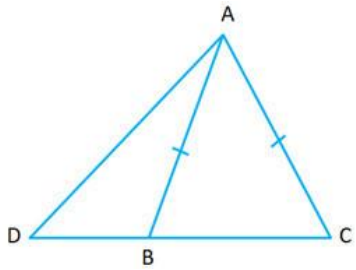
b. A cone is 8.4 cm high and the radius of its base is 2.1 cm. It is melted and recast into a sphere. Find the radius of the sphere. (Use π = 22/7).

Question 2:

a. In the adjoining figure, PQRS is a square and SRT is an equilateral triangle. Prove that
   (i) PT=QT
   (ii) ∠TQR = 15°



a. If D is any point on the base BC produced, of an isosceles triangle ABC, prove that AD > AB.



Question 3:

a. The following table shows the number of plants in 20 houses in a group:

Number of Plants	0 - 2	2 - 4	4 - 6	6 - 8	8 - 10	10 - 12	12 - 14
Number of Houses	1	2	2	4	6	2	3

Find the mean number of plans per house.

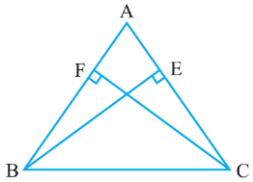
b. Answer the following questions:
   (i) Use the distance formula to show the points (2, 3), (8, 11) and (-1, -1) are collinear.
   (ii) The co-ordinates of points on the x-axis which are at a distance of 5 units from the point (6, -3).

Question 4:

a. ABC is a triangle in which altitudes BE and CF to sides AC and AB are equal. Show that:

(a) Δ ABE ≅ Δ ACF

(b) AB = AC, i.e., ABC is an isosceles triangle.



b. A girl fills a cylindrical bucket 32 cm in height and 18 cm in radius with sand. She empties the bucket on the ground and makes a conical heap of the sand. If the height of the conical heap is 24 cm. Find:

(i) Its radius and

(ii) Its slant height. (Leave your answer in square root form).