TEST PAPER: MATHEMATICS

Time: 50 Minutes   **Class: 9th I.C.S.E.**

Max. Marks: 30 Marks   **Date: 4th July, 2018**

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. Represent the following numbers on a number line:
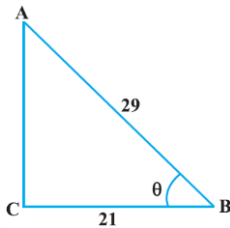
   i. $1\frac{4}{5}$

   ii. $-\frac{4}{9}$

b. Given tan A = 4/3, find:

   i.   Sin A
   ii.   Cos A
   iii.   Cot A

c. Consider Δ ACB, right-angled at C, in which AB = 29 units, BC = 21 units and ∠ ABC = θ.

   Determine the values of:
   (i) $\cos^2 \theta + \sin^2 \theta$,
   (ii) $\cos^2 \theta - \sin^2 \theta$.

Question 2:
a. Express the following decimals in p/q form:

   i. $0.4\overline{88}$
   ii. $0.\overline{81}$

b. i. If tan 2A = cot (A – 18°), where 2A is an acute angle, find the value of A.
   ii. If sec 4A = cosec (A – 20°), where 4A is an acute angle, find the value of A.

c. In Δ ABC, right-angled at B, AB = 24 cm, BC = 7 cm. Determine:
   (i) sin A, cos A
   (ii) sin C, cos C

Question 3:
a. Show that:
   (i) tan 48° tan 23° tan 42° tan 67° = 1
   (ii) cos 38° cos 52° – sin 38° sin 52° = 0

b. Given 15 cot A = 8, find sin A and sec A

c. Rationalise:

   i. $\frac{1}{\sqrt{3} - \sqrt{2}}$

   ii. $\frac{1}{\sqrt{12}}$