# INDIAN SCHOOL SOHAR FORMATIVE ASSESSMENT III 2015-2016 X – MATHEMATICS

**Duration :40 minutes** 

# Date : 16/11/15

General instructions

- All questions are compulsory
- Section A comprises3 questions of 1 mark each
- Section B comprises2 questions of 2 marks each

# **SECTION -A**

- 1. What is the nature of the roots of the quadratic equation  $4x^2 4\sqrt{3}x + 3 = 0$ ?
- 2. What is the length of the tangent to a circle of radius 5 cm drawn from an external point 8cm away from the circumference of the circle?
- 3. If four terms are inserted in between 1 and 31 to form an arithmetic progression ,what is the common difference

### SECTION B

- 4. Which is the first negative term of an AP 89,84,79...?
- 5. Find the value of 'k' if the following equation has equal roots  $(k+4)x^2+(k+1)x+1=0$

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	X – MATHEMATICS	
Date : 16/11/15	<b>Duration :40 minutes</b>	Max. Marks : 20
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- Section A comprises3 questions of 1 mark each
- Section C comprises3 questions of 3 mark each
- Section D comprises1 question of 4 marks
- Section B comprises2 questions of2 marks each

# SECTION A

- 1. If one root of the equation  $7x^2 50x k = 0$  is reciprocal of the other, find the value of 'k'.
- 2. If the tangents drawn from an external to a circle are inclined at an angle of 80°, what is the angle subtended by the line joining the point of contact at the centre of the circle ?
- 3.  $S_n$  denotes the sum of n terms of an AP. If  $S_5 = 65$  and  $S_6 = 83$ , what is the 6th term of the progression?

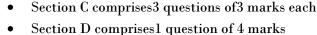
# **SECTION B**

- 4. Which is the first negative term of an AP 106, 99, 92...?
- 5. Find the value of 'k ' if the following equation has equal roots  $(k+1)x^2-2(k-1)x+1 = 0$



# р.т.о

SET II



Max. Marks: 20

### **SECTION C**

- 6. Find the roots of the equation  $5x^2 6x 2 = 0$  by the method of completing the square.
- 7. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.
- 8. The third term of an AP is 18 and the seventh term is 30. Find the sum of 17 terms.

### SECTION – D

9. A train travels a distance of 480 km at a uniform speed .If the speed had been 8 km/h less ,then it would have taken 3 hours more to cover the same distance .Find the speed of the train.

### [OR]

A motor boat takes 2 hours more to cover a distance of 30 km upstream than it takes to cover the same distance downstream. If the speed of the stream is 2 km/h, find the speed of the boat in still water.

#### SECTION C

- 6. Prove that the parallelogram circumscribing a circle is a rhombus.
- 7. The third term of an AP is 12 and the seventh term is 24 find the sum of 17 terms
- 8. Find the roots of  $2x^2$  5x + 3 = 0 by the method of completing the square.

### **SECTION D**

9. A fast train takes 3 hours less than a slow train for a journey of 600 km .If the speed of the slow train is 10km/h less than that of the fast train, find the speed of the two trains.

### [OR]

A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream.