FIRST TERM EVALUATION 2014 - 2015

Mathematics

Std. 10

Time : 2½ hrs.
Score : 80

Instructions :

- The first 15 minutes of cool - off time.
- This time is to be spent for reading the question paper.
- You are not supposed to write anything during the cool - off time.
- Read the instructions carefully and attempt the questions.

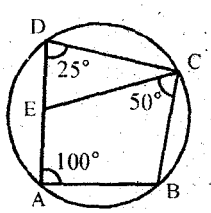
1. What is the algebaric form of the arithmetic sequence 23,27,31,35,..... find its 15th term ? **3**

2. How many number lies between 300 and 500, which are multiples of 7 **3**

3. The 2nd and 15th terms of an arithmetic sequence are 3:7. What is the ratio between the 8th and 19th terms? justify your answer **3**

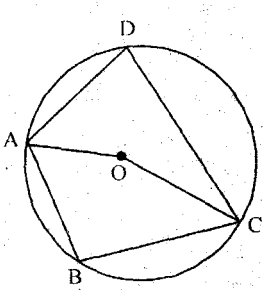
4 In the figune $\angle A = 100°$ $\angle BCE = 50°$ and $\angle D = 25°$

Find $\angle AEC$ and $\angle ABC$



3

5 In the figure 'O' is the centre of the circle and central angle of arc ADC is 210°



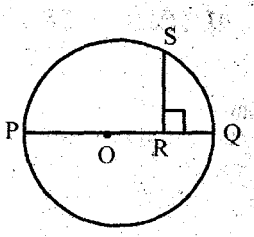
What is the central angle of arc ABC?

Find $\angle ABC$

Find $\angle ADC$ **3**

(P.T.O.)

6 In the figure PQ in the diameter and SR ⊥ PQ RQ = 4 cm and SR = $\sqrt{28}$ cm Find the radius of the circle 3

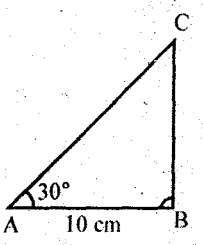


7. Find the value of X in the equation $2x^2+5x-3=0$ 3

8 Is it possible to design a rectangular park Whose length is twice its breadth and the area is 800m^2. If so, find its length and breadth 3

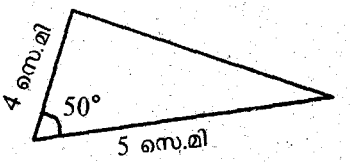
9 Among the three second degree equations $x^2-x-2=0$, $x^2-2x+1=0$, and $2x^2+5x-6=0$, one equation has only one solution. Which is the equation and find its solution 3

10 In ΔABC, $\angle A = 30^0$ and $\angle B = 90^0$ if AB= 10cm, find BC and AC 3



11. Two sides of a triangle are 5 cm and 4 cm and their included angle is 50^0. Find the area of the triangle

(Sin 50^0 = 0.77, Cos 50^0= 0.64) 3



12. Fill in the blance

a) Sin 30° ..... c) Sin 60° ..... e) Sin 45° .....

b) Cos 30°..... d) Cos 60°..... f) Cos 45°..... 3

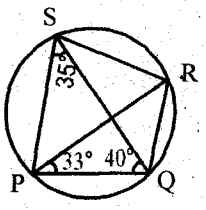
13. The 6th term of an arithmetic sequence is 62 and its 12th term is 104

a) Find its common difference

b) Find its 16th term?

ç) Write down the arithmetic sequence? **4**

14. In the figure $\angle QPR = 33^0$, $\angle PQS = 40^0$ and $\angle PSQ = 35^0$. Find all angles in the quadrilateral PQRS **4**



15. Draw a triangle with angles $35^0, 70^0, 75^0$. Within a circle of radius 3 centimeters **4**

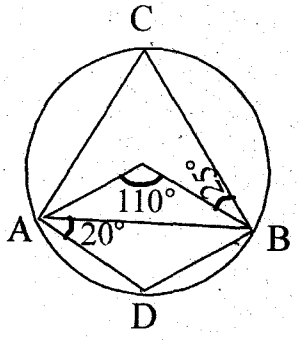
16. How many terms of the arithmetic sequence 4, 14, 24,..... should be added is get the sum 312

(Use second degree equation) **4**

17. A man 1.75 metre tall is 25 metre away from flagpost. The angle of elevation of the top of the flagpost from his eyes is 65^0. what is the height of the flagpost?

(Sin 65° = 0.91, Cos 65° = 0.42 , Tan 65° = 2.14) **4**

18. In the figure 'O' is the centre of the circle $\angle AOB = 110^0$ $\angle OBC = 25^0$ $\angle BAD = 20^0$. Find all angles in the quadrilateral ADBC? **4**



19A. Sum of first n terms of an arithmetic sequence is $2n^2+5n$. What is its algabaric form? Find its 10th term? What is the sum of its first 10 terms? **5**

OR

B. Find sum of first 15 terms of the arithmetic sequence 8,15,22..... Write its algabaric form? Find its 10 th term? **5**

20. In ΔABC AB=8cm, $\angle A = 55°$ and AC= 7 cm. Draw triangle ABC and then draw a square of the same area **5**

21. As observed from the top of a 150 metre tall building, the angles of depression of two ships' approaching it are 30^0 and 45^0. If one ship is directly behind the other, find the distance between the two ships? ($\sqrt{3}$=1.73) **5**

22. Sum of the areas of two squares is 468 m^2. If the differance of their perimeter is 24 metre/ Find the sides of the two squares.

(Use second degree equation) **5**