COMPREHENSIVE REVISION TEST (UNIT TEST) SERIES - 2023

TEST No. 5

MUT
Std: X

MATHEMATICS - UNIT 1

[Chapters : 1. Arithmetic Sequence 2. Circles]

Time : 45 mts
Total Score : 20

Instructions :

- *Read the instructions carefully and answer the questions.*
- *Calculations, figures should be shown in the answersheet itself.*

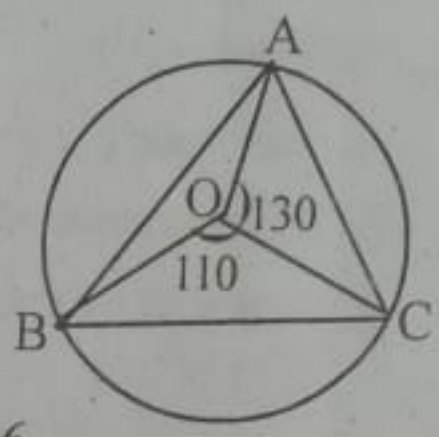
*Answer **any** **THREE** questions from 1 to 5. Each question carries 2 scores.* (3 x 2 = 6)

1. Consider the arithmetic sequence 7, 10, 18, ..., 67.

   a) Write its algebra.

   b) How many terms are there in this sequence?

2. In the figure, O is the centre of the circle. $\angle BOC = 110^0$, $\angle AOC = 130^0$.



   a) Find $\angle AOB$.

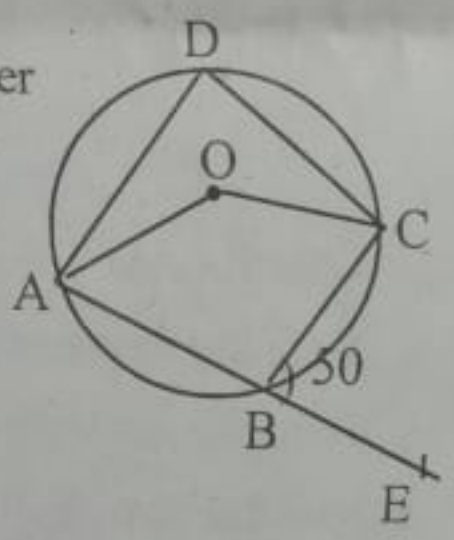
   b) Find the angles of ΔABC.

3. The 5^{th} term of an arithmetic sequence is 38 and its 9^{th} term is 66.

   a) What is its common difference?

   b) Find its 25^{th} term.

4. The figure shows a cyclic quadrilateral ABCD with its one outer angle $CBE = 50^0$.



   a) How much is $\angle ABC$?

   b) Find $\angle ADC$ and $\angle AOC$.

5. a) Find the sum of first 25 odd numbers.

   b) Find $\frac{1}{4}+\frac{3}{4}+\frac{5}{4}+....+\frac{49}{4}$.

*Answer **any** **TWO** questions from 6 to 8. Each question carries 3 scores.* (2 x 3 = 6)

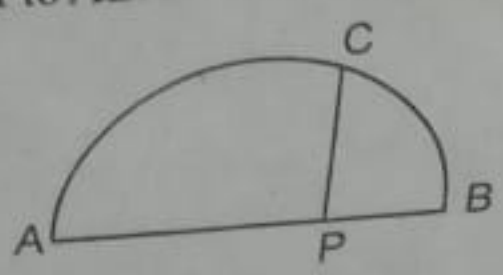
6. The 7^{th} term of an arithmetic sequence is 17 and 17^{th} term is 7.

   a) Find the common difference of the sequence.

   b) What about its 24^{th} term?

   c) Find the sum of the first 47 terms.

7. In the figure, AB is the diameter and PC is perpendicular to AB. PA : PB = 3 : 1 and $PC = 3\sqrt{3}$ cm.



   a) State the relation between PA, PB and PC.

   b) Find the length PA and PB.

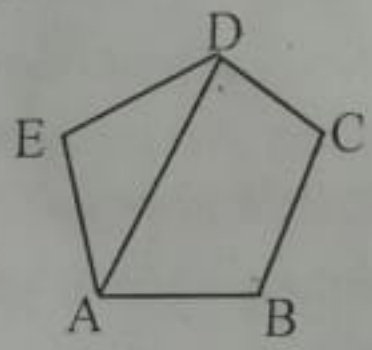
   c) What is the radius of the circle?

8. a) How many natural numbers between 200 and 300 leave remainder 1 on dividing by 6?

b) Find their sum.

*Answer **any** **TWO** questions from 9 to 11. Each question carries 4 scores.* (2 x 4 = 8)

9. In the figure, ABCDE is a regular pentagon.



a) How much is $\angle E$?

b) $\angle EAD = \angle EDA$. Why?

c) Prove that ABCD is a cyclic quadrilateral.

10. The first term of an arithmetic sequence is 17 and its last term is 350. If the common difference is 9.

a) How many terms are there in the sequence?

b) Find the sum of all these terms.

11. Examine the number pattern given.

3

7 11

15 19 23

27 31 35 39

....

....

a) Write the next line.

b) Write the first term of 20th line.

c) Write the last term of 20th line.

d) Find the sum of all numbers in the 20th line.