THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

MATHEMATICS
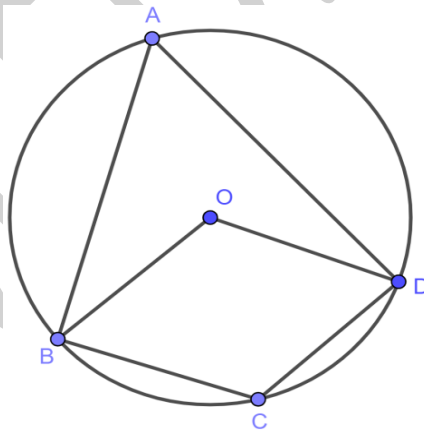
STD : 10   Time : 90 Minutes

Score : 40

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(Questions 1 and 2 carry two score each)

1. 3,7,11,... is an arithmetic sequence.
    a) Write the common difference of this arithmetic sequence

    b) What is the 16th term of this arithmetic sequence?

2. In the figure 'O' is the centre of the circle $\angle A = 70^0$

    a) What is the measure of $\angle BCD$?
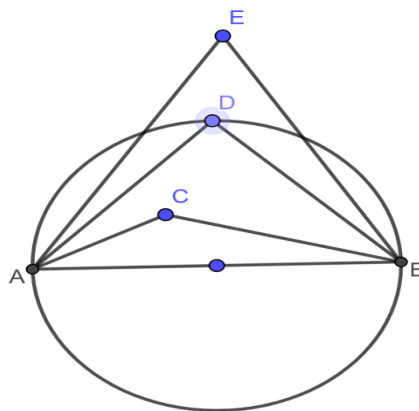
    b) What is the measure of $\angle BOD$?

(Questions from 3 to 5 carries 3 scores each)

3. a) Write the sequence got by adding one to the square of consecutive natural numbers starting from 1

b) What is the 10th term of this sequence?

c) Write the algebraic form of this sequence?

4. In the figure AB is the diameter and D is a point on the circle

If $\angle ACB + \angle ADB + \angle AEB = 270^0$ and measure of one angle among them is 110^0.

a) What is $\angle$ ADB

b) What is $\angle$ ACB

c) What is the measure of $\angle$ AEB?

5. 6th term of an arithmetic sequence is 38 and 11th term is 73. Then

a) What is the common difference of this arithmetic sequence?

b) What is the first term?

c) Write the algebraic form of this arithmetic sequence.

(Questions from 6 to 8 carries 4 scores each)

6. Draw a rectangle of sides 6 cm and 4 cm and draw a square of equal area to it.

7. Find the sum of

    a) $1+2+3+ \ldots\ldots +40$

    b) $2+4+6+ \ldots\ldots +80$

    c) $3+6+9+ \ldots\ldots +120$

    d) $5+8+11+ \ldots\ldots +122$

8. $2,7,12,\ldots\ldots$ is an arithmetic sequence

    a) What is the remainder leaves when the terms of this arithmetic sequence divided by 5?

    b) Check whether 122 is a term of this sequence.

    c) Is the difference of any two terms of this sequence 80. Why?

(Questions from 9 to 11 carries 5 score each)

9. Sum of 1st and 31st terms of an arithmetic sequence is 80.

    a) What is the sum of 2nd and 30th terms?

    b) What is the sum of 5th and 26th terms?

    c) What is the 16th term?

    d) What is the sum of first 31 terms?

10. Draw a circle of radius 3 cm and draw a triangle of angles 50◦, 60◦ and 70◦ with its vertices on the circle.

11. a) Write the first 3 digit number which leaves a remainder 2 on division by 5

    b) Which is the last such three digit number?

c) Write the sequence of three digit numbers which leaves a remainder 2 on division by 5

d) How many three digit numbers are there which leaves a remainder 2 on division by 5?