

**A**  
**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.

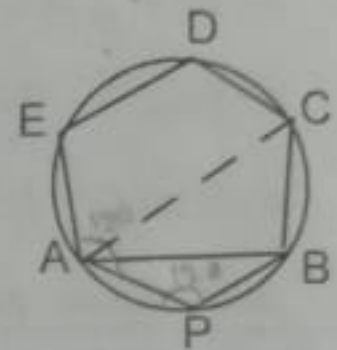
Answer any **THREE** questions from 1 to 5. Each question carries 2 scores. (3 x 2 = 6)

1. 8, 11, 14, ..... is an arithmetic sequence.

- a) Write its algebra.
- b) Check whether 121 is a term of this sequence?

2. The vertices of a regular pentagon ABCDE are points on a circle.

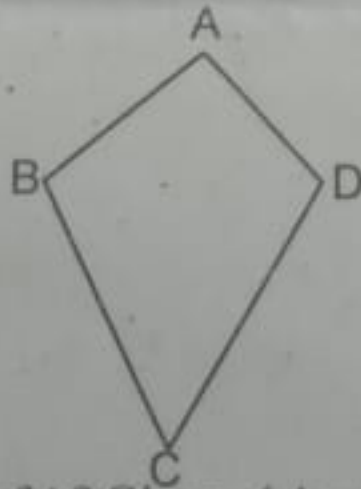
- a) How much is  $\angle BAC$ ?
- b) What is the measure of  $\angle P$ ?



3. The sum of first 9 terms of an arithmetic sequence is 135.

- a) Find its fifth term.
- b) What is the sum of the 4<sup>th</sup> and 6<sup>th</sup> terms?

4. ABCD is a cyclic quadrilateral. If we draw a circle with BD as the diameter,



- a) What is the position of A? Given  $\angle A = 135^\circ$ .
- b) If  $\angle A = 90^\circ$ , what is the position of C?

$$\begin{aligned} n - 2 \times 180 & \\ 6 - 2 \times 180 & \\ 4 \times 180 & \\ \hline 720 & \\ \frac{720}{6} & \end{aligned}$$

$$\begin{array}{r} 6 \overline{) 720} \\ \underline{120} \phantom{0} \\ 6 \overline{) 720} \\ \underline{720} \\ 0 \end{array}$$

5. The algebra of sum to 'n' terms of an arithmetic sequence is  $S_n = 3n^2 + 5n$ .

- a) Write its first term and its common difference.
- b) Write the algebraic form of the sequence.

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

6. In the figure  $QS = RS$ ,  $\angle SQR = 35^\circ$  and the point 'O' denotes the centre of the circle.

- a) Find the measure of  $\angle QSR$ .
- b) Find the measure of  $\angle QPR$ .
- c) What about  $\angle TQR$ ?



7. The 5<sup>th</sup> term of an arithmetic sequence is 30 and the 20<sup>th</sup> term is 75.
- What is its common difference?
  - Find its first term.
  - What number should be added to the first term to get the 31<sup>st</sup> term?

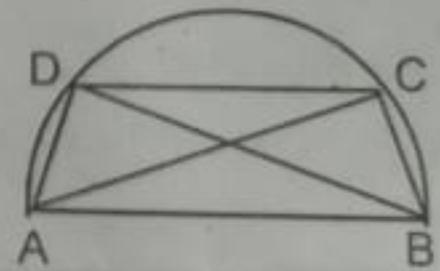
8. Draw a square of area  $15\text{cm}^2$ .

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

- 9.
- What is the 25<sup>th</sup> term of the arithmetic sequence 1, 3, 5, .....
  - Find  $1 + 3 + 5 + \dots + 49$ .
  - Find  $3 + 9 + 15 + \dots + 147$ .
  - Find  $6 + 12 + 18 + \dots + 153$ .

10. In the figure, the diameter AB is parallel to CD. Give reason for the following.

a) $\angle ADB = 90^\circ$	a. ....
b) $\angle ACD = \angle ABD$	b. ....
c) $\angle BAC = \angle ACD$	c. ....
d) $\angle BAC + \angle BAD = 180^\circ$	d. ....



11. Examine the number pattern given.

5  
 8    11  
 14   17   20  
 23   26   29   32  
 ....  
 ....

- Write the next line.
- How many numbers are there in the 10<sup>th</sup> line?
- What is the first and last number of the 10<sup>th</sup> line?