

SAMPLE PAPER 4: PAPER 1

QUESTION 3 (25 MARKS)

Question 3 (a)

Arithmetic sequence: $-11, x, 5$

$$\therefore x - (-11) = 5 - x$$

$$x + 11 = 5 - x$$

$$2x = -6$$

$$\therefore x = -3$$

$-11, -3, 5$

$$a = -11, d = -3 - (-11) = 8 \quad \boxed{T_n = a + (n-1)d}$$

$$T_n = -11 + (n-1)8$$

$$= -11 + 8n - 8$$

$$= 8n - 19$$

Question 3 (b)

$2, 4, 6, 8, 10, 12, \dots, 100$

$$a = 2, d = 2$$

$$T_n = 100 = 2 + (n-1)2$$

$$\therefore 100 = 2 + 2n - 2$$

$$100 = 2n$$

$$\therefore n = 50$$

Question 3 (c)

$2, 4, 6, 8, 10, 12, \dots$

$$a = 2, d = 2, n = 100$$

$$S_{100} = \frac{100}{2} [2(2) + (100-1)2]$$

$$= 50[4 + 99(2)]$$

$$= 50[202]$$

$$= 10\,100$$

$$\boxed{S_n = \frac{n}{2} [2a + (n-1)d]}$$