

### Question Ten:

a)

$$(i) P \left(1 + \frac{r}{100}\right)^n$$
$$= 1000 \left(1 + \frac{6}{100}\right)^1$$

$$1st = 1060.$$

$$= 1000 \left(1 + \frac{12}{100}\right)^2$$

$$\therefore = 1254.40 - (144)$$

$$\therefore = \$1110.40$$

$$(ii) B_n = 1200 - 200 \times (1.06)^n.$$

$$(iii) B_{10} = 1200 - 200 \times (1.06)^{10}$$
$$= 841.83.$$

After 31st year the prize fund cannot be used.

$$B_{31} = 1200 - 200 \times (1.06)^{31}$$
$$= -17.62.$$

b) (i) ~~2500m~~

$$2000\text{m} = 15\text{m s}^{-1} \text{ } 8\text{am leave.}$$

$$15 \times 60 = 900 \text{ a minute.}$$

$$2000\text{m} \div 900 = 2.2 \text{ minutes } \textcircled{1}$$