

(20)  $P = \text{Rs } 1800$ ,  $A = \text{Rs } 2178$ , rate = 10% p.a

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

$$\frac{2178}{1800} = \left(1 + \frac{10}{100}\right)^n$$

$$\Rightarrow \frac{121}{100} = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow \left(\frac{11}{10}\right)^2 = \left(\frac{11}{10}\right)^n$$

$$\Rightarrow n = 2$$

time = 2 years

(21)  $P = \text{Rs } 6250$ ,  $A = \text{Rs } 7290$ , rate = 8% p.a

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

$$\frac{7290}{6250} = \left(1 + \frac{8}{100}\right)^n$$

$$\Rightarrow \left(\frac{27}{25}\right)^2 = \left(\frac{27}{25}\right)^n$$

$$\Rightarrow n = 2$$

time = 2 years

(22) Population<sub>P</sub> = 125000, rate = 2% p.a,  
time = 3 years

$$\text{Population}_F = P_P \left(1 + \frac{r}{100}\right)^n$$

$$= 125000 \left(\frac{102}{100}\right)^3$$

$$= 125000 \times \frac{51}{50} \times \frac{51}{50} \times \frac{51}{50}$$

$$= 132651$$