

**> Solution**

1. (b) Here,

$$P_1 = \text{Rs. } 4500; R_1 = 12\%; T_1 = 2 \text{ yr}$$

$$SI = \frac{4500 \times 12 \times 2}{100} \\ = \text{Rs. } 1080$$

Again,

$$P_2 = \text{Rs. } 56000; R_2 = 9\%; T_2 = 2 \text{ yr}$$

$$SI = \frac{5600 \times 9 \times 2}{100} = 1008$$

∴ Required difference

$$= 1080 - 1008 = \text{Rs. } 72$$

2. (c) Here,

$$P = \text{Rs. } 3200; A = \text{Rs. } ; T = 2 \text{ yr}$$

$$SI = A - P = 3456 - 3200 = \text{Rs. } 256$$

$$R = \frac{SI \times 100}{P \times T}$$

$$R = \frac{256 \times 100}{3200 \times 2} R = 4\%$$

3. (d) Here,

$$T = 5 \text{ yr}; SI = \text{Rs. } 1575; R = 12.5\%$$

$$\therefore P = \frac{SI \times 100}{T \times R} = \frac{1575 \times 100}{12.5 \times 5} \\ = 126 \times 20 = \text{Rs. } 2520$$

4. (a) Here,

$$P = \text{Rs. } 11200; R = 8.5\%; T = 3 \text{ yr}$$

$$\therefore SI = \frac{11200 \times 8.5 \times 3}{100} \\ = 112 \times 8.5 \times 3 \\ = \text{Rs. } 2856$$

$$\therefore \text{Total amount} = 11200 + 2856 \\ = \text{Rs. } 14056$$

5. (a) Here,

$$SI = \text{Rs. } 1200$$

$$\text{Time} = 4 \text{ yr}$$

$$\text{Rate} = 8\%$$

$$\therefore P = \frac{SI \times 100}{\text{Time} \times \text{Rate}} \\ = \frac{1200 \times 100}{4 \times 8} \\ = \frac{300 \times 100}{8} = \text{Rs. } 3750$$

Again,

$$P = 3 \times 3750 = \text{Rs. } 11250$$

$$T = 3 \text{ yr}$$

$$R = 6\%$$

$$SI = \frac{P \times R \times T}{100}$$

$$SI = \text{Rs. } 2025$$

6. (c) Here,

$$\text{Principal} = \text{Rs. } 4000$$

$$\text{Time} = 2 \text{ yr}$$

$$\text{Rate} = 5\%$$

$$\therefore SI = \frac{4000 \times 2 \times 5}{100} = \text{Rs. } 400$$

$$\text{Amount} = 4000 + 400 = \text{Rs. } 4400$$

7. **Here, P = Rs. 2500; SI = Rs. 1875; T = 6 yr**

$$\therefore R = \frac{SI \times 100}{P \times T} = \frac{1875 \times 100}{2500 \times 6} \\ = \frac{12.5 \times 100}{100} = 12.5\%$$

8. **Here, SI = Rs. 8376, Rate = 8%**

$$\text{Time} = 6 \text{ yr}$$

$$\text{New Principal} = \frac{SI \times 100}{\text{Rate} \times \text{Time}} = \frac{8376 \times 100}{8 \times 6} \\ = 174.5 \times 100 = \text{Rs. } 17450$$

9. **Here,**

$$\text{Principal} = \text{Rs. } 5000, \text{ Amount} = \text{Rs. } 6050$$

$$\text{Time} = 2 \text{ yr} \quad \text{Rate} = ?$$

$$SI = 6050 - 5000 = \text{Rs. } 1050$$

$$\text{Rate} = \frac{SI \times 100}{P \times T} \\ = \frac{1050 \times 100}{5000 \times 2} = 10.5\%$$

10. **Let the invested sum be Rs. x**

$$\text{Then, } x + \frac{x \times 4 \times 8}{100} = 5280$$

$$x + \frac{8x}{25} = 5280$$

$$33x = 5280 \times 25$$

$$x = \frac{5280 \times 25}{33} = 160 \times 25$$

$$\text{Total sum} = 2 \times 4000 = \text{Rs. } 8000$$

11. **Let Vishwas borrowed Rs. x on 12% p.a. Then, Rs. (30000 - x) is borrowed on 10%****p.a.**

$$\text{Time} = 2 \text{ yr}$$

$$\therefore \frac{x \times 12 \times 2}{100} + \frac{(30000 - x) \times 10 \times 2}{100} = \text{Rs. } 6480$$

$$\frac{24x}{100} + \frac{60000 - 20x}{100} = 6480$$

$$24x - 20x = 648000 - 600000$$

$$4x = 48000$$

$$x = \frac{48000}{4} = \text{Rs. } 12000$$

Hence, money borrowed on 12% p.a. is Rs. 12000.

12. **Let the two different rates be x and y, respectively**

$$\therefore \frac{2200 \times x \times 4}{100} - \frac{2200 \times y \times 4}{100} = 202.4$$

$$88x - 88y = 202.40$$

$$88(x - y) = 202.40$$

$$(x - y) = \frac{202.40}{88} \\ = 2.3\%$$

**13. Let Rs.  $x$  is lend at 6% p.a.**

and Rs.  $(16800 - x)$  at 8% p.a.

$$\frac{x \times 2 \times 6}{100} + \frac{(16800 - x) \times 8 \times 2}{100} = 2200$$

$$\frac{12x}{100} + \frac{268800 - 16x}{100} = 2200$$

$$12x - 16x + 268800 = 2200 \times 100$$

$$-4x = 220000 - 268800$$

$$4x = 48800$$

$$x = \frac{48800}{4} = \text{Rs. } 12200$$

**14. Let the sum invested be Rs.  $x$**

$$\text{Then, } \frac{x \times 10 \times 1}{100} + \frac{x \times 12 \times 1}{100} = 1650$$

$$\frac{10x}{100} + \frac{12x}{100} = 1650$$

$$22x = 1650 \times 100$$

$$x = \frac{1650 \times 100}{22}$$

$$x = \text{Rs. } 7500$$

**15. Here,**

Total paid interest = Rs. 3375.

Rate = 6% and increasing by 0.5% every year.

Let total taken amount =  $P$  (say)

$$\text{Then } P = \frac{3375 \times 100}{(6 \times 1 + 6.5 \times 1 + 7 \times 1 + 7.5 \times 1)}$$

$$P = \frac{3375 \times 100}{13 + 14}$$

$$= \frac{3375 \times 100}{27} = 125 \times 100 = \text{Rs. } 12500$$

12500

**16. Here,**

Total paid interest = Rs. 8190

Rate = 6% and increasing by 1.5% every year.

Time = 3 yr

$$\therefore P = \frac{SI \times 100}{R_1 + R_2 + R_3} \quad [\because t_1, t_2 \text{ and } t_3 = 1 \text{ yrs}]$$

$$= \frac{8190 \times 100}{6 + 7.5 + 9} = \frac{8190 \times 100}{22.5} = \text{Rs. } 36400$$

36400

**17. Here, Total paid interest = Rs. 19550**

$$\therefore P = \frac{SI \times 100}{R_1 t_1 + R_2 t_2 + R_3 t_3 + \dots}$$

$$= \frac{19550 \times 100}{4 \times 3 + 8 \times 2 + 9 \times 2}$$

$$= \frac{19550 \times 100}{12 + 16 + 18} = \frac{19550 \times 100}{46}$$

$$= 425 \times 100 = \text{Rs. } 42500$$

**18. Here,**

Simple interest = Rs. 1750

Time = 7 yr

$R = ?$ ,  $P = ?$

So, from the given information, we can't determine the required value.

**19. Here,**

$P = \text{Rs. } 800$ ,  $A = \text{Rs. } 956$

$$SI = 956 - 800 = \text{Rs. } 156$$

Time = 3 yr

$$R = \frac{SI \times 100}{P \times T}$$

$$R = \frac{156 \times 100}{800 \times 3} = 6.5\%$$

Now, new rate =  $6.5 + 4 = 10.5\%$

$$SI = \frac{800 \times 10.5 \times 3}{100} = 84 \times 3 = \text{Rs. } 252$$

252

Amount = Principal + Simple interest

$$= 800 + 252 = \text{Rs. } 1052$$

**20. Here,  $P = \text{Rs. } 6000$**

So, principal is divided in the ratio as

$$P_1 : P_2 = \frac{1}{R_1 t_1} : \frac{1}{R_2 t_2}$$

$$P_1 : P_2 = \frac{1}{2 \times 6} : \frac{1}{3 \times 8}$$

$$P_1 : P_2 = \frac{1}{12} : \frac{1}{24}; P_1 : P_2 = 2 : 1$$

$$\therefore P_1 = \frac{2}{3} \times 6000 = \text{Rs. } 4000$$

$$P_2 = \frac{1}{3} \times 6000 = \text{Rs. } 2000$$

**21. (a)**

**22. (b)**

**23. (c)**

**24. (d)**

**25. (a)**

**26. (b)**

**27. (c)**

**28. (d)**

**29. (b)**

**30. (d)**

**31. (d)**

**32. (a)**

**33. (a)**

**34. (b)**

**35. (a)**

**36. (b)**

**37. (d)**

**38. (a)**

**39. (b)**

**40. (c)**