ANSWERS AND EXPLANATIONS

EXERCISE 1

1. (b) Number of transferred employees

= 40% of 1225

$= \frac{1225\times 40}{100} = 490$

2 (b) Let the original fraction is $\frac{x}{y}$.

Then, $\frac{x+5x}{y+3y} = 2\frac{4}{7}$

$\Rightarrow \quad \frac{6x}{4y} = \frac{18}{7}$

$\Rightarrow \quad \frac{x}{y} = \frac{72}{42} = \frac{12}{7}$

3. (c) Let the income of Shilpa be = ₹x

$\therefore$ Expenditure on school fees, rent and furniture

= (8 + 25 + 17)% = 50%

Remaining = ₹$\frac{x}{2}$

Expenditure on medical bills = ₹$\frac{x}{2}\times\frac{1}{4} = \frac{x}{8}$

Remaining amount = $\frac{x}{2} - \frac{x}{8} = \frac{3x}{8}$

= ₹$\frac{4x-x}{8} = \frac{3x}{8}$

$\therefore \quad \frac{3x}{8} = 6000$

$\Rightarrow \quad x = \frac{6000\times 8}{3} =$ ₹16000

$\therefore$ Expenditure on rent = $16000 \times \frac{25}{100} =$ ₹4000

4. (b) Let the number be = x

$\therefore$ (89 – 73)% of x = 448

$\Rightarrow \quad \frac{x\times 16}{100} = 448$

$\Rightarrow \quad x = \frac{448\times 100}{16} = 2800$

$\therefore \quad 49\%$ of $2800 = \frac{2800\times 49}{100} = 1372$

5 (e) Required production = $70\left(1+\frac{8}{100}\right)^2$ lakh tonnes

$= 70\left(1+\frac{2}{25}\right)^2$ lakh tonnes

$= 70 \times \frac{27}{25}\times\frac{27}{25} = 81.648$ lakh tonnes

6. (b) Let the number be = x

Accoring to the question,

(58 – 39)% of x = 247

or, $x \times \frac{19}{100} = 247$

or, $x = \frac{247\times 100}{19} = 1300$

$\therefore$ 62% of $1300 = 1300\times\frac{62}{100} = 806$

7. (c) Population at the end of 2nd year

$= 126800 \times \left(1+\frac{15}{100}\right)\times\left(1-\frac{20}{100}\right)$

$= 126800 \times \frac{115}{100} \times \frac{80}{100} = 116656$

8. (a) Let the number be x.

$\therefore \quad \frac{75x}{100} - \frac{20x}{100} = 378.4$

or, $x = \frac{378.4 \times 100}{55}$

$\therefore \quad \frac{40x}{100} = \frac{378.4 \times 100}{55} \times \frac{40}{100} = 275.2$

9. (e) Fraction is $\frac{x}{y}$

$\therefore \quad \frac{x + \frac{200}{100}x}{y + \frac{150}{100}y} = \frac{9}{35}$

$\Rightarrow \quad \frac{x + 2x}{y + 1.5y} = \frac{9}{35}$

$\Rightarrow \quad \frac{3x}{2.5y} = \frac{9}{35}$

$\therefore \quad \frac{x}{y} = \frac{9 \times 2.3}{3 \times 35} = \frac{3}{14}$

10. (b) Let the number be = x

According to the question,

(42 – 35)% of x = 110.6

or, $x \times \frac{7}{100} = 110.6$

or, $x = \frac{110.6 \times 100}{7} = 1580$

$\therefore$ 60% of 1580 = $\frac{1580 \times 60}{100} = 948$

11. (c) Let the original fraction be = $\frac{x}{y}$

According to the question,

$\frac{x \times \frac{350}{100}}{y \times \frac{400}{100}} = \frac{7}{9}$

$\Rightarrow \frac{7x}{8y} = \frac{7}{9} \Rightarrow \frac{x}{y} = \frac{7}{9} \times \frac{8}{7} = \frac{8}{9}$

12. (a) Weight of low quality of wheat in 150 kgs of wheat

$= \frac{150 \times 10}{100} = 15$ kg.

Suppose that x kgs of good quality wheat is mixed.

According to the question,

$\frac{(x + 150) \times 5}{100} = 15$

or, x = 150 kg.

13. (b) Let the number be = x

Difference in % = 42 – 28 = 14%

or $x = \frac{210 \times 100}{14} = 1500$

$\therefore$ Required answer = $\frac{59}{100} \times 1500 = 885$

14. (e) Let the maximum aggregate marks = x

According to the question,

40% of x – 4% of x = 261

or $x \times \frac{(40 - 4)}{100} = 261$

$\therefore x = \frac{261}{36} \times 100 = 725$

15. (b) Let the number be x.

$$\therefore \frac{x\times 58}{100}-\frac{x\times 39}{100}=247$$

$$\Rightarrow x=\frac{247\times 100}{19}=1300$$

$$\therefore x\times\frac{82}{100}=1300\times\frac{82}{100}=1066$$

16. (a) The monthly salary of Manish will be

$$=\frac{3818\times 100}{20}=₹19090$$

17. (e) Required number of trans ferred employees

$$=\frac{1556\times 25}{100}=389$$

18. (d) Required % $=\frac{555\times 100}{850}=65.294\%$

= 65% (approx.)

19. (d) Total marks obtained by the student

$$=6\times\frac{64}{100}\times 150=576$$

Marks obtained in Hindi and English

= 25% of 576

$$=576\times\frac{25}{100}=144$$

20. (b) Required percentage $=\frac{1012}{1150}\times 100=88$

21. (b) Polulation of the town after 2 years

$$=198000\left(1+\frac{7}{100}\right)\left(1-\frac{5}{100}\right)$$

$$=\frac{198000\times 107\times 95}{100\times 100}=201267$$

22. (d) Let the number be x.

According to the question,

(38 – 24%) of x = 135.10

or, $x\times\frac{14}{100}=135.10$

or, $x=\frac{135.10\times 100}{14}=965$

∴ 965 of 40%

$$=965\times\frac{40}{100}=386$$

23. (b) Let the number of girls in the school be = x

$$\therefore \text{Number of boys}=\frac{124x}{100}$$

$$\therefore \text{Required ratio}=\frac{124x}{100}:x$$

= 124 : 100 = 31 : 25

24. (d) Let the number be = x

According to the question,

(58 – 37)% of x = 399

or, $x\times\frac{21}{100}=399$

$$\therefore x=\frac{399\times 100}{21}=1900$$

$$\therefore 72\%\text{ of }1900=1900\times\frac{72}{100}=1368$$

25. (c) Let the maximum marks be = x

According to the question,

x or 5% = 296 – 259

or, $\frac{x\times 5}{100}=37$

$$\therefore x=\frac{3700}{5}=740$$

26. (b) Let the number be = x

According to the question,

$$\frac{58x}{100}-\frac{28x}{100}=225$$

or, $\frac{30x}{100} = 225$

or, $x = \frac{225\times100}{30} = 750$

$\therefore$ Required answer $= 750 \times \frac{38}{100} = 285$

27. (c) Let the number be x

$\because \frac{67x}{100} - \frac{42x}{100} = 214$

$\Rightarrow x = \frac{214\times100}{25}$

$\therefore \frac{75x}{100} = \frac{214\times100}{25} \times \frac{75}{100} = 642$

28. (c) Required number of employees

$= \frac{1850\times38}{100} = 703$

29. (c) Required maximum aggregate marks

$= (256 - 192) \times \frac{100}{10} = 640$

30. (a) Required monthly income

$= \frac{3960\times100}{30} = ₹13200$

31. (e) Required approximate percentage

$= \frac{654\times100}{950}\%$

$= 68.84\%$

$\approx 69\%$

32. (b) Total amount spent

$= 44620 + 32764 = ₹ 77384$

Percentage of amount spent

$= 100 - 32 = ₹ 68\%$

$\therefore 68\% = 77384$

$\therefore 100\% = \frac{77384\times100}{68}$

$= ₹ 113800$

33. (c) Required amount

$= \frac{2100}{6} \times (6 + 8 + 9)$

$= \frac{2100}{6} \times 23 = ₹ 8050$

34. (a) Let the maximum marks be x

$\therefore (265 + 55) = \frac{40x}{100}$

or $320 \times 100 = 40x$

$\therefore x = \frac{320\times100}{40} = 800$

35. (a) Let the original fraction $= \frac{x}{y}$

According to the question,

$\frac{\frac{300x}{100}}{\frac{260y}{100}} = \frac{7}{13}$

or $\frac{30x}{26y} = \frac{7}{13}$

$\therefore \frac{x}{y} = \frac{7}{13} \times \frac{26}{30} = \frac{7}{15}$

36. (b) 60% of 250 = 150

40% of 125 = 50

No. of correct answers in remaining 125 questions
= 150 – 50 = 100

$\therefore$ Percentage $= \frac{100\times100}{125} = 80\%$

37. (a) Let the original fraction be $\frac{x}{y}$, then, $\frac{x\times320}{y\times250} = \frac{4}{5}$