PRACTICE SET-2

DIRECTIONS (Qs. 1-5): *Each of the questions below consists of a question and three statements denoted A, B and C are given below it. You have to study the questions and all the three statements and decide whether the question can be answered with any one or two of the statements or all the statements are required to answer the question.*

1. What is R's share of profit in a joint venture?
   A. Q started business investing ₹ 80,000/
   B. R joined after 3 months
   C. P joined after 4 months with a capital of ₹ 1,20,000 and got ₹ 6,000 as his share of profit.
   (a) Only A and C are required
   (b) Only B and C are required
   (c) All A, B and C together are required
   (d) Even with all A, B and C the answer cannot be arrived at
   (e) None of these
2. What is the area of a right angled triangle?
   A. The perimeter of the triangle is 30 cm.
   B. The ratio between the base and the height of the triangle is 5 : 12.
   C. The area of the triangle is equal to the area of a rectangle of length 10 cms.
   (a) Only B and C together are required
   (b) Only A and B together are required
   (c) Only either A or B and C together are required
   (d) Only A and C together are required
   (e) None of these
3. What will be sum of two numbers?
   A. Among the two numbers, the bigger number is greater than the smaller number by 6.
   B. 40% of the smaller number is equal to 30% of the bigger number.
   C. The ratio between half of the bigger number and $\frac{1}{3}$rd of the smaller number is 2 : 1
   (a) Only B and C together are necessary
   (b) Only A and B together are necessary
   (c) Out of A, B and C any two together are necessary
   (d) All three A, B and C together are necessary
   (e) None of these
4. How much profit did Mahesh earn on the cost price of an article by selling it?
   A. He got 15% discount on the market price at the time of purchase.
   B. He sold it for ₹ 3060
   C. He earned 2% profit on the marked price
   (a) Only A and B both together are necessary
   (b) Only B and C both together are necessary
   (c) Only A or C and B together are necessary
   (d) Even A, B and C all together the question
   (e) All three A, B and C together are necessary
5. How much marks did Arun secure in English?
   A. The average marks obtained by Arun in four subjects including English is 60.
   B. The total marks obtained by him in English and Mathematics together is 170.
   C. The total marks obtained by him in Mathematics and Science together is 180.
   (a) All three A, B and C together are necessary
   (b) Only A and B together are necessary
   (c) Only B and C together are necessary
   (d) Only A and C together are necessary
   (e) None of these
6. In an exam, the average was found to be x marks. After deducting computational error, the average marks of 94 candidates got reduced from 84 to 64. The average thus came down by 18.8 marks. The numbers of candidates who took the exam were:
   (a) 100 (b) 90
   (c) 110 (d) 105
7. A bag contains 25 paise, 50 paise and 1 rupee coins. There are 220 coins in all and the total amount in the bag is ₹ 160. If there are thrice as many 1 rupee coins as there are 25paise coins, then what is the number of 50paise coins?
   (a) 60 (b) 40
   (c) 120 (d) 80
8. The area of a square is 196 sq cm whose side is half the radius of a circle. The circumference of the circle is equal to breadth of a rectangle, if perimeter of the rectangle is 712 cm. What is the length of the rectangle?
   (a) 196 cm (b) 186 cm
   (c) 180 cm (d) 190 cm
   (e) None of these
9. The respective ratio between the speeds of a car, a jeep and a tractor is 3 : 5 : 2. The speed of the jeep is 250% the speed of the tractor which covers 360 km in 12 h. What is the average speed of car and jeep together ?
   (a) 60 km/h (b) 75 km/h
   (c) 40 km/h (d) Cannot be determined
   (e) None of these

10. A man gets a simple interest of ₹1000 on a certain principal at the rate of 5% per annum in 4 yrs. What compound interest will the man get on twice the principal in two years at the same rate ?
(a) ₹ 1050 (b) ₹ 1005
(c) ₹ 11025 (d) ₹ 10125
(e) None of these

DIRECTIONS (Qs. 11-15) *Study the following table carefully and answer the questions given below*

Units of Garments Manufactured By Various Factories over the Years (units in Lakhs)

Year \ Factory	P	Q	R	S	T
2009	62.25	60.18	58.50	51.35	59.48
2010	63.36	62.16	60.00	59.50	59.75
2011	63.59	64.25	63.15	62.30	63.15
2012	64.26	64.70	64.20	63.75	64.18
2013	68.76	65.85	67.15	63.35	67.25
2014	70.00	68.32	68.20	70.15	70.35

11. What is the diference between the total number of units of garments manufactured by the various factories in the year 2011 and the total number of units of garments manufactured by various factories in the year 2013?
(a) ₹ 15.94 lakh (b) ₹ 18.22 lakh
(c) ₹ 17.92 lakh (d) ₹ 15.92 lakh
(e) None of these

12. What are the total units of garments manufactured by the Factory Q over the years?
(a) 38456000 (b) 34564000
(c) 36845000 (d) 38546000
(e) None of these

13. What is the approximate per cent increase in the units of garments manufactured by Factory T in the year 2011 from the previous year?
(a) 3 (b) 10
(c) 12 (d) 8
(e) 6

14. The units of garments manufactured by Factory S in the year 2010 are approximately, what per cent of the units of garments manufactured by the same factory in the year 2014?
(a) 88 (b) 85
(c) 79 (d) 75
(e) 71

15. What is the respective ratio of the units of garments manufactured by the Factory P in the year 2009 to the units of garments manufactured by Factory R in the same year?
(a) 29 : 26 (b) 28 : 27
(c) 27 : 26 (d) 29 : 27
(e) None of these

DIRECTIONS (Qs. 16-20) *What should come in place of question mark (?) in the following number series?*

16. 4, 8, 24 ,60, ? 224
(a) 178 (b) 309
(c) 96 (d) 141
(e) None of these

17. 8000, 1600,320,64,12.8 ?
(a) 2.56 (b) 3.5
(c) 3.2 (d) 2.98
(e) None of these

18. 1, 9, 125, 49 , 729, 121 ?
(a) 2197 (b) 729
(c) 125 (d) 1
(e) None of these

19. 6, 18, 90, 630, ? 62370
(a) 4900 (b) 4800
(c) 5400 (d) 5600
(e) None of these

20. 1250,500, 200 ?, 32, 12.8, 5.12
(a) 86 (b) 82
(c) 85 (d) 88
(e) None of these

21. A car covers its journey at the speed of 80 km/hour in 10 hours. If the same distance is to be covered in 4 hours, by how much the speed of car will have to increase?
(a) 8 km/hr (b) 10 km/hr
(c) 12 km/hr (d) 16 km/hr
(e) None of these

22. A grocer purchased 2 kg. of rice at the rate of ₹ 15 per kg. and 3 kg. of rice of the rate of ₹ 13 per kg. At what price per kg. should he sell the mixture to earn $33\frac{1}{3}$% profit on the cost price ?
(a) ₹ 28.00 (b) ₹ 20.00
(c) ₹ 18.40 (d) ₹ 17.40
(e) None of these

23. 12 men take 36 days to do a work while 12 women complete $\frac{3}{4}$th of the same work in 36 days. In how many days 10 men and 8 women together will complete the same work?
(a) 6 (b) 27
(c) 12 (d) Data inadequate
(e) None of these

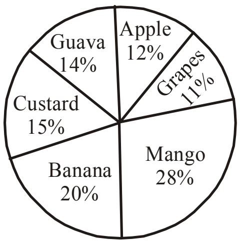
24. The difference between a two digit number and the number obtained by interchanging the positions of its digits is 36. What is the difference between the two digits of that number ?
(a) 4 (b) 9
(c) 3 (d) Cannot be determined
(e) None of these

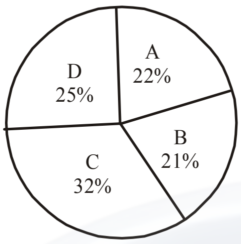
25. Deepa bought a calculator with 30% discount on the listed price. Had she not got the discount, she would have paid ₹ 82.50 extra. At what price did she buy the calculators?
(a) ₹ 192.50 (b) ₹ 275
(c) ₹ 117.85 (d) Cannot be determined
(e) None of these

DIRECTIONS (Qs. 26-30): *Study the following pie graph carefully and answer the questions given below.*

A survey conducted on 5800 villagers staying in various villages and having various favourite fruits

Favourite fruits **People staying in various villages**





26. Mango is the favourite fruit of 50% of the people from village C. People having their favourite fruit as mango from village C form approximately, what percent of the people having their favourite fruit as mango from all the villages together ?
(a) 48 (b) 53 (c) 61 (d) 57 (e) 45

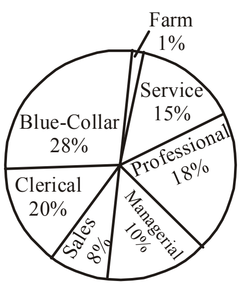
27. 20% of the people from village D have banana as their favourite fruit and 12% of the people from the same village have guava as their favourite fruit. How many people from that village like other fruits?
(a) 764 (b) 896
(c) 874 (d) 968
(e) None of these

28. How many people in all have custard as their favourite fruit ?
(a) 850 (b) 864
(c) 870 (d) 812
(e) None of these

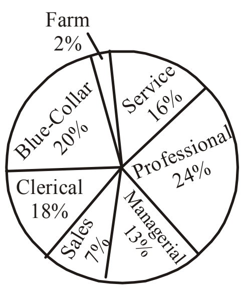
29. 50% of the people from village B have banana as their favourite fruit. How many people from other villages have the same favourite fruit ?
(a) 1160 (b) 551
(c) 1020 (d) 609
(e) None of these

30. What is the total number of people having their favourite fruit as apple and grapes together ?
(a) 1334 (b) 1286
(c) 1300 (d) 1420
(e) None of these

DIRECTIONS (Qs. 31-36) : *The piechart given below shows the distribution of work force by occupational category for country X in 1981 and 1995. Study the chart and answer the questions.*



Total workforce 150 million



Total workforce 175 million

31. The increase in the number of Clerical workers in the workforce of country X from 1981 to 1995 (in millions) is
(a) 0.5 (b) 1.25
(c) 0.75 (d) 1.5

32. The percentage decrease in the number of Blue – Collar workers in the workforce of country X from 1981 to 1995 is
(a) 20 (b) $16\frac{2}{3}$
(c) $42\frac{1}{2}$ (d) 35

33. In 1981, the number of Service workers in the workforce in millions, was
(a) 22.5 (b) 28.0
(c) 15.0 (d) 20.5

34. In 1981, the number of categories which comprised of more than 25 million workers each, is
(a) four (b) five
(c) two (d) three

35. The ratio of the number of workers in the Professional category in 1981 to the number of such workers in 1995 is
(a) 3 : 4 (b) 14 : 9
(c) 4 : 9 (d) 5 : 14

36. The price of a jewel, passing through three hands, rises on the whole by 65%. If the first and the second sellers earned 20% and 25% profit respectively, find the percentage profit earned by the third seller.
(a) 10% (b) 20%
(c) 30% (d) 40%

37. The salaries of A, B, C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be the new ratio of their salaries?
(a) 3 : 3 : 10 (b) 10 : 11 : 20
(c) 23 : 33 : 60 (d) Cannot be determined

38. If the ages of P and R are added to twice the age of Q, the total becomes 59 years. If the ages of Q and R are added to thrice the age of P, the total becomes 68 years. And if the age of P is added to thrice the age of Q and thrice the age of R, the total becomes 108 years. What is the age of P?
(a) 15 years (b) 19 years
(c) 17 years (d) 12 years

39. 12 men can complete a piece of work in 4 days, while 15 women can complete the same work in 4 days. 6 men start working on the job and after working for 2 days, all of them stopped working. How many women should be put on the job to complete the remaining work, if it is to be completed in 3 days?
(a) 15 (b) 18
(c) 22 (d) Data inadequate

40. Rajesh gave ₹ 1200 on loan. Some amount he gave at 4% per annum on simple interest and remaining at 5% per annum on simple interest. After two years, he got ₹ 110 as interest. Then the amounts given at 4% and 5% per annum on simple interest are, respectively

(a) ₹500, ₹700 (b) ₹400, ₹800
(c) ₹900, ₹300 (d) ₹1100, ₹1100

DIRECTIONS (Qs. 41-45) : *Study the following data carefully and answer the questions given below.*

Out of a total number of commuters commuting daily in a city, 17171 commuters commute only by trains. 7359 commuters commute only by bikes and 22077 commuters commute only by buses. 14718 commuters commute only by their private cars and 4906 commuters commute only by autos. 7359 commuters commute only by taxis. 26983 commuters commute by buses as well as trains. 9812 commuters commute only by autos as well as trains. 12265 commuters commute only by buses as well as autos.

41. The total number of commuters commuting by trains forms what per cent of the total number of commuters commuting daily?

(a) 22% (b) 44%
(c) 14% (d) 36%
(e) None fo these

42. The total number of commuters commuting by autos forms what per cent of the total number of commuters commuting daily?

(a) 10% (b) 18%
(c) 22% (d) 4%
(e) None of these

43. The total number of commuters commuting by bikes and taxis together forms what per cent of the total number of commuters commuting daily?

(a) 12% (b) 6%
(c) 8% (d) 16%
(e) None of these

44. What is the total number of commuters in the city commuting daily?

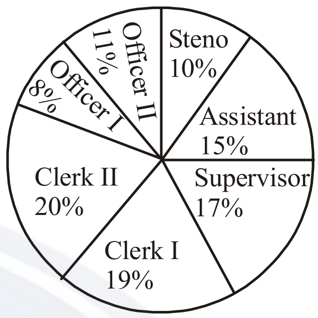
(a) 122650 (b) 126250
(c) 162250 (d) 152260
(e) None of these

45. The number of commuters commuting only by buses forms what per cent of the total number of commuters commuting daily ?

(a) 40% (b) 22%
(c) 32% (d) 18%
(e) None of these

DIRECTIONS (Qs. 46-50) : *Study the following graph and table to answer the given questions.*

Percentage of Different Types of Employees in an Organization



Total number of employees = 7000

Employees	Out of these per cent of	
	Direct Recruit	Promotees
Steno	30	70
Assistant	40	60
Supervisor	50	50
Clerk I	90	10
Clerk II	30	70
Officer I	90	10
Officer II	70	30

46. What is the difference between direct recruits and promotee assistant?

(a) 210 (b) 280
(c) 180 (d) 110
(e) None of these

47. The promotee clerk I is approximately what per cent of that of direct recruit clerk I?

(a) 10% (b) 9%
(c) 11% (d) 10.50%
(e) None of these

48. How many employees are supervisors?

(a) 1050 (b) 1019
(c) 1109 (d) 1290
(e) None of these

49. How many total direct recruits among all types of employees are there ?

(a) 4000 (b) 3885
(c) 3000 (d) 3115
(e) None of these

50. Which types of employees have maximum number of direct recruits?

(a) Clerk I and officer I (b) Officer I
(c) Clerk I (d) Clerk II
(e) None of these

SOLUTIONS

1. (d) The question cannot be answered because R's share in investment is not given.

2. (b) Hypotenuse = $\sqrt{5^2+12^2}$

$= \sqrt{25+144} = \sqrt{169} = 13$

Base : Height : Hypotensuse

= 5 : 12 : 13

Base + Height + Hypotenuse = 30 cm

$\therefore$ Base $= \dfrac{12}{5+12+13}\times 30 = 5$ cm

Height $= \dfrac{12}{5+12+13}\times 30 = 12$ cm

Area $= \dfrac{1}{2} \times$ base $\times$ height

$= \dfrac{1}{2} \times 5 \times 12 = 30\text{ cm}^2$

3. (b) A. $x - y = 6$

B. $0.4y = 0.3x$;

$\dfrac{x}{y} = \dfrac{4}{3}$

C. $\dfrac{x}{y} : \dfrac{y}{3} = 2:1$;

$\dfrac{x}{y}\times\dfrac{3}{2} = \dfrac{2}{1}$; $\dfrac{x}{y} = \dfrac{4}{3}$

Statement B and C give the same expression/information and hence are equivalent.

$x = \dfrac{4}{3}y$

$x - y = 6$

$\dfrac{4}{3}y - y = 6$

$\dfrac{y}{3} = 6$; $y = 18$

$x = \dfrac{4}{3}\times 18 = 24$

4. (e) Let the marked price be ₹ x

A. cost price = $(1 - 0.15)x$

= ₹ $0.85x$

B. S.P. = ₹ 3060

C. Profit = 2% of $x = 0.02x$

Profit earned on the cost price

$\dfrac{0.02x}{0.85x}\times 100 \approx 2.35\%$

$0.02x = 3060 - 0.85x$

$0.87x = 3060$

$x = \dfrac{3060}{0.87}$

Actual profit = $0.02x$

$= 0.02\times\dfrac{3060}{0.87} =$ ₹ 70.34.

5. (e) A. Total marks in 4 subjects including English = 4 × 60 = 240

B. Total marks in English and Maths = 170

C. Total marks in Maths and Science = 180

The question can't be answered because nothing has been said about the marks in the fourth subject. Also, there are four unknowns but only three equations can be formed with given data.

6. (a) $\dfrac{84 - 64 \quad \times 94}{18.8} \quad 100$

7. (a) The no. of coins of 1 rupee = 3x and 25p = x.

Conventionally, we can solve this using equations as follows.

$A + B + C = 220$ ...(1)

$A = 3C$ ...(2)

$A + 0.5\,B + 0.25C = 160$ ...(3)

We have a situation with 3 equations and 3 unknowns and we can solve for

A (no. of 1 rupee coins),

B (no. of 50 paise coins)

and C (no. of 25 paise coins)

However, a much smarter approach would be to go through the options. If we check option (a) – no. of 50 paise coins = 60 we would get the number of 1 rupee coins as 120 and the number of 25 paise coins as 40.

$120 \times 1 + 60 \times 0.5 + 40 \times 0.25 = 160$

This fits the conditions perfectly and is hence the correct answer.

8. (c) Area of square = $(a)^2 = 196$

$a = \sqrt{196} = 14$ cm

Radius of a circle = 14 × 2 = 28 cm

$\therefore$ Circumference $= \dfrac{22}{7}\times 2\times 28 = 176$ cm

Now, according to question,

$b = 176$ cm

Also, $2(l + b) = 712$

$2(l + 176) = 712$
$l + 176 = 356$
$\therefore \quad l = 356 - 176$
$\therefore \quad l = 180$ cm

9. (a) Speed of tractor $= \frac{360}{12} = 30$ km/h
Speed of jeep = 30 × 250% = 75 km/h
Speed of car $= \frac{3}{5} \times 75 = 45$ km/h
Average speed of car and jeep together $= \frac{75+45}{2}$
$= 60$ km/h

10. (e) Principal $= \frac{1000\times100}{5\times4} = ₹\,5000$
Compound interest $= 10000\left[\left(1+\frac{5}{100}\right)^2 - 1\right]$
$= 10000\times\frac{41}{400} = ₹\,1025$

11. (d) Total number of units of garments manufactured by the various factories in:
Year 2011 $\rightarrow (63.59 + 64.25 + 63.15 + 62.30 + 63.15)$ lakh
$= 316.44$ lakh
Year 2013 $\rightarrow (68.76 + 65.85 + 67.15 + 63.35 + 67.25)$ lakh
$= 332.36$ lakh
$\therefore$ Required difference $= (332.36 - 316.44)$ lakh
$= 15.92$ lakh

12. (d) Total units of garments manufactured by the factory Q
$= (60.18 + 62.16 + 64.25 + 64.70 + 65.85 + 68.32)$ lakh
$= 385.46$ lakh
$= 38546000$

13. (e) Percentage increase
$\frac{63.15 - 59.75}{59.75}\times100 = \frac{3.4\times100}{59.75} \approx 6$

14. (b) Required percentage $= \frac{59.5}{70.15}\times100 \approx 85\%$

15. (a) Required ratio = 62.25 : 58.50 = 249 : 235

16. (e)
$$4 \xrightarrow{+2^2} 8 \xrightarrow{+4^2} 24 \xrightarrow{+6^2} 60 \xrightarrow{+8^2} \overset{\boxed{124}}{?} \xrightarrow{+10^2} 224$$
Hence, the answer will be 124.

17. (a)
$$8000 \xrightarrow{\div5} 1600 \xrightarrow{\div5} 320 \xrightarrow{\div5} 64 \xrightarrow{\div5} 12.8 \xrightarrow{\div5} \overset{\boxed{2.56}}{?}$$
Hence, the answer will be 2.56.

18. (a) $1^3 \rightarrow 3^2 \rightarrow 5^3 \rightarrow 7^2 \rightarrow 9^3 \rightarrow 11^2 \rightarrow 13^3$
So 1, 9, 125, 49, 729, 121, $\boxed{2197}$

19. (e) The given pattern is × 3, × 5, × 7, × 9, × 11
So, the missing term is 630 + 9 = 5670

20. (e) The pattern is × 0.4
So, the missing term is 200 × 0.4 = 80

21. (e) Initial speed = 80 km/hr
Total distance = 80 × 10 = 800 km.
New speed $= \frac{800}{4} = 200$ km/hr
Increase in speed
= 200 – 80 = 120 km/hr.

22. (c) Mixture : 2 kg of rice at ₹ 15/kg + 3 kg of rice at ₹ 13/kg
Total weight = 2 + 3 = 5 kg
Total cost price
= (2 × 15) + (3 × 13)
= 30 + 39 = ₹ 69
Cost price per kg of the mixture $\frac{69}{5} = ₹\,13.80$
Selling price to get $33\frac{1}{3}\%$ profit
$= 100 + 33\frac{1}{3} \times ₹\,13.80$
$= \frac{400}{3\times100} \times ₹\,13.80$
$= \frac{4}{3} \times 13.80 = ₹\,18.40$

23. (b) In 36 days 12 men can do 1 complete work.
In 36 days 12 women can do $\frac{3}{4}$th of the work
Since time and the no. of persons is the same in both cases,
1 women's daily work $= \frac{3}{4}$th of 1 man's daily work
8 women's daily work
$= \frac{3}{4} \times 8 = 6$ men's daily work
(10 men + 8 womens daily work)
= (10 men + 6 men)
= 16 men's daily work.
12 men can do the work is 36 days
$\therefore$ 16 men can do the work is $36\times\frac{12}{16} = 27$ days.

24. (a) Let the unit's digit be x and ten's digits be y.
Also let $y > x$

$\therefore$ Number = $10y + x$ and number obtained by interchanging the digits = $10x + y$

$\therefore$ $10y + x - 10x - y = 36$

$\Rightarrow$ $9y - 9x = 36$

$\Rightarrow$ $9(y - x) = 36$

$\Rightarrow$ $y - x = 4$

25. (a) Let the listed price be ₹ x.

$\therefore$ Discount = 30% of x

$= \frac{30x}{100} = ₹\frac{3x}{10}$

According to the question,

$\frac{3x}{10} = 82.5$

$\Rightarrow$ $x = \frac{82.5 \times 10}{3} = ₹\ 275$

$\therefore$ Required cost price of calculator = 70% of 275

$= ₹\ \frac{70 \times 275}{100} = ₹\ 192.50$

26. (d) Number of people liking mango from all the villages

$= \frac{28}{100} \times 5800 = 1624$

Number of people liking mango from villages C

$= \frac{50}{100} \times 1856 = 928$

Hence, required percentage = $\frac{928}{1624} \times 100 = 57$

27. (e) Percentage of people liking banana and guava from village D = 32

Hence, number of people who like other fruits

= 68% of 1450 = $\frac{68}{100} \times 1450 = 986$

28. (c) Number of people who like custard

= 15% of 5800 = $\frac{15}{100} \times 5800 = 870$

29. (b) Number of people who like banana from all villages

$= \frac{201}{100} \times 5800 = 1160$

Number of people liking bananas from village B

$= \frac{50}{100} \times 1218 = 609$

Hence, required number of people = 1160 – 609 = 551

30. (a) Number of people who like apple and grapes together

= (12 + 11)% of 5800

$= \frac{23}{100} \times 5800 = 1334$

31. (d) Number of clerical workers in 1981

$= \frac{150 \times 20}{100} = 30$ million

Number of clerical workers in 1995

$= \frac{175 \times 18}{100} = 31.5$ million

Difference = 31.5 – 30 = 1.5 million

32. (b) Number of blue-collar workers in 1981

$= \frac{150 \times 28}{100} = 42$ million

Number of blue-collar workers in 1991

$= \frac{175 \times 20}{100} = 35$ million

Percentage decrease

$= \frac{42 - 35}{42} \times 100$

$= \frac{50}{3} = 16\frac{2}{3}$

33. (a) Services workers in 1981

$= \frac{150 \times 15}{100}$

= 22.5 million

34. (d) $\frac{150 \times x}{100} = 25$

$\Rightarrow$ $x = \frac{25 \times 100}{150} = 16\frac{2}{3}\%$

Required answer = blue-collar, professional and clerical workers.

35. (a) Required ratio

18 : 24

3 : 4

36. (a) Let the original price of the jewel be ₹ P and let the profit earned by the third seller be x%.

Then, (100 + x)% of 125% of 120% of P = 165% of P

$\Rightarrow \left[\frac{(100 + x)}{100} \times \frac{125}{100} \times \frac{120}{100} \times P\right] = \left(\frac{165}{100} \times P\right)$

$\Rightarrow (100 + x) = \left(\frac{165 \times 100 \times 100}{125 \times 120}\right) = 110$

$\Rightarrow x = 10\%$

OR

$100 \xrightarrow[+65]{65\% \uparrow} 165$

$100 \xrightarrow[+20]{20\% \uparrow} 120 \xrightarrow[30]{25\% \uparrow} 150$

So, third seller profit $= \frac{165 - 150}{150} \times 100 = 10\%$

37. (c) Let A = 2k, B = 3k and C = 5k.

A's new salary $= \frac{115}{100}$ of $2k = \left(\frac{115}{100} \times 2k\right) = \frac{23}{10}k$

B's new salary $= \frac{110}{100}$ of $3k = \left(\frac{110}{100} \times 3k\right) = \frac{33}{10}k$

C's new salary $= \frac{120}{100}$ of $5k = \left(\frac{120}{100} \times 5k\right) = 6k$

$\therefore$ New ratio $= \frac{23k}{10} : \frac{33k}{10} : 6k = 23 : 33 : 60.$

38. (d) P + R + 2Q = 59;
Q + R + 3P = 68
and P + 3(Q + R) = 108
Solving the above two equations, we get P = 12 years.

39. (a) 1 man's 1 day's work $= \frac{1}{48}$;

1 woman's 1 day's work $= \frac{1}{60}$.

6 men's 2 day's work $= \left(\frac{6}{48} \times 2\right) = \frac{1}{4}$.

Remaining work $= \left(1 - \frac{1}{4}\right) = \frac{3}{4}$.

Now, $\frac{1}{60}$ work is done in 1 day by 1 woman.

So, $\frac{3}{4}$ work will be done in 3 days by

$\left(60 \times \frac{3}{4} \times \frac{1}{3}\right) = 15$ women.

40. (a) Let the amount given 4% per annum be ₹ x.
then, amount given at 5% per annum = ₹ (1200 – x)

Now, $\frac{x \times 4 \times 2}{100}$ $\frac{(1200 - x) \times 5 \times 2}{100}$ 110

$\Rightarrow$ x = ₹ 500
And, the amount given at 5% per annum
= ₹ (1200 – x) = ₹ (1200 – 500) = ₹ 700

41. (b) Total number of commuters
= 17171 + 7359 + 22077 + 14718 + 4906 + 7359 + 26983 + 9812 + 12265 = 122650
Number of commuters commuting by train
= 17171 + 26983 + 9812 = 53966

Hence, required percentage $= \frac{53966}{122650} \times 100\% = 44\%$

42. (c) Total number of commuters commuting by autos
= (4906 + 9812 + 12265) = 26983

$\therefore$ Required percentage $= \frac{26983}{122650} \times 100\% = 22\%$

43. (a) Total number of commuters commuting by bikes and taxies = 7359 + 7359 = 14718

Hence, required percentage $= \frac{14718}{122650} \times 100\% = 12\%$

44. (a) Total number of commuters = 122650

45. (d) Number of commuters commuting by buses only = 22077

$\therefore$ Required percentage $= \frac{22077}{122650} \times 100\% = 18\%$

46. (a) Total number of assistants = 15% of 7000

$= \frac{15}{100} \times 7000 = 1050$

Number of direct recruits = 40% of 1050

$= \frac{40}{100} \times 1050 = 420$

Now, number of promotee assistants = 1050 – 420 = 630
Hence, required difference = 630 – 420 = 210

47. (c) Number of clerk I = 19% of 7000 $= \frac{19}{100} \times 7000 = 1330$

Number of direct recruits = 90% of 1330

$= \frac{90}{100} \times 1330 = 1197$

Now, number of promotees = 1330 – 1197 = 133

Hence, required percentage $= = \frac{133}{1197} \times 100\% = 11\%$

48. (e) Number of supervisors = 17% of 7000 $= \frac{17}{100} \times 7000$
= 1190

49. (b)

Number of direct recruits	Type of employees
Steno	$\frac{10}{100} \times \frac{30}{100} \times 7000 = 210$
Assistant	$\frac{15}{100} \times \frac{40}{100} \times 7000 = 420$
Supervisor	$\frac{17}{100} \times \frac{50}{100} \times 7000 = 595$
Clerk I	$\frac{19}{100} \times \frac{90}{100} \times 7000 = 1197$
Clerk II	$\frac{20}{100} \times \frac{30}{100} \times 7000 = 420$
Officer I	$\frac{8}{100} \times \frac{90}{100} \times 7000 = 504$
OfficerII	$\frac{11}{100} \times \frac{70}{100} \times 7000 = 539$

Total direct recruits
= 210 + 420 + 595 + 1197 + 420 + 504 + 539 = 3885

50. (c) From the table, it is clear that clerk I has highest number of direct recruits.

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