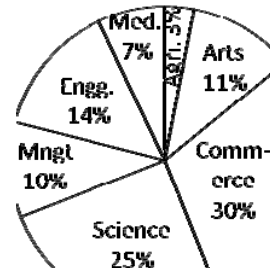
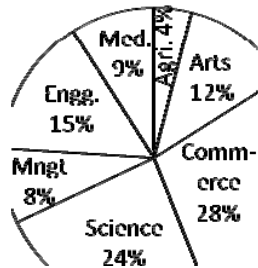


DATA INTERPRETATION-VII

Directions (Q. 1-5): These questions are based on the information given in the following graph.

Number of students studying various disciplines in an institute during the years 2009 and 2010
 Total no. of students in Year 2009 = 1800
 Total no. of students in Year 2010 = 2200



Agri. → Agriculture, Mngt → Management, Engg. → Engineering, Med. → Medicine

1. What is the ratio between number of students studying Agriculture in years 2009 and 2010 respectively?
 a) 11 : 12 b) 4 : 3 c) 12 : 11 d) 8 : 9 e) None of these

ANSWER: c

The ratio between total number of students of 2009 and 2010 = 1800 : 2200 = 9 : 11

∴ While solving the problems on ratios, percentages and percentage comparisons take the total number of students for 2009 and 2010 as 9 and 11 respectively.

Students studying Agriculture in 2009 = 4% × 9

Students studying Agriculture in 2010 = 3% × 11

∴ Required ratio = 4% × 9 : 3% × 11 = 36 : 33 = 12 : 11

2. What is the percentage of increase/decrease (rounded off to nearest integer) in number of students studying Science from year 2009 to 2010?
 a) 27% increase b) 27% decrease c) 21% increase d) 21% decrease e) 30% increase

ANSWER: a

Number of science students in 2009 = 24 × 9 = 216

Number of science students in 2010 = 25 × 11 = 275

Percentage increase = $\left(\frac{275 - 216}{216}\right) \times 100 = \frac{59}{216} \times 100 \approx 27$

3. The number of students studying Commerce and Science together in the year 2009 is what per cent of that number of students studying both disciplines in the year 2010?

- a) 79 b) 80 c) 75 d) 82 e) None of these

ANSWER: e

$$\begin{aligned} \text{Number of students studying commerce and science in 2009} &= (28 + 24) \times 9 = 52 \times 9 \\ &= 468 \end{aligned}$$

$$\begin{aligned} \text{Number of students studying commerce and science in 2010} &= (30 + 25) \times 11 \\ &= 55 \times 11 = 605 \end{aligned}$$

$$\text{Required percentage} = \frac{468}{605} \times 100 = 77.16$$

4. The number of students studying Arts in the years 2009 and 2010 is what per cent of the total number of students studying all disciplines during these two years?
 a) 12.25 b) 23 c) 11.5 d) 11.45 e) None of these

ANSWER: d

$$\text{Students studying Arts in 2009 and 2010} = 12\% \times 9 + 11\% \times 11 = 1.08 + 1.21 = 2.29$$

$$\text{Total number of students in 2009 and 2010} = 9 + 11 = 20$$

$$\text{Required percentage} = \frac{2.29}{20} \times 100 = 11.45$$

5. What is the ratio between the number of students studying Management in year 2009 and that of students studying Arts in year 2010?
 a) 11 : 12 b) 32 : 55 c) 8 : 11 d) 36 : 55 e) None of these

ANSWER: e

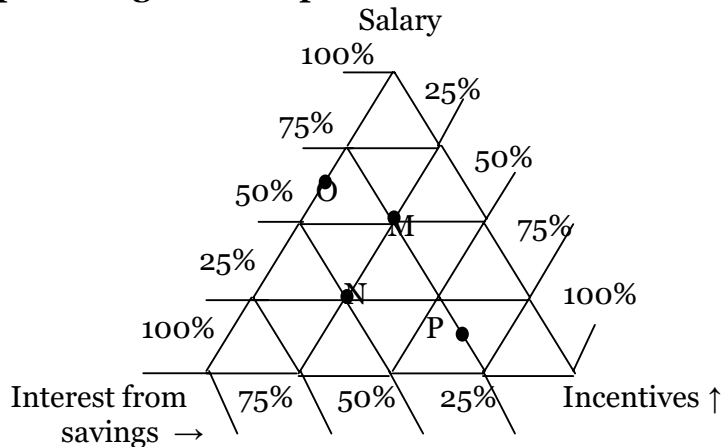
$$\text{Number of students studying management in 2009} = 8 \times 9 = 72$$

$$\text{Number of students studying arts in 2010} = 11 \times 11 = 121$$

$$\text{Required ratio} = 72 : 121$$

Directions (Q. 6-10): Refer to the diagram below and answer the questions that follow.

The percentage Break-up of the Total Income of four Salesmen



6. If the total income of O is ` 6000 and of N is ` 7000, find the difference in their salaries.

- a) ` 1500 b) ` 1750 c) ` 2000 d) ` 2250 e) None of these

ANSWER: e

The contribution of an item is equal to the percentage equivalent of line drawn through the person parallel to the corresponding vertex.

A line passing through 'O' and parallel to the vertex of the salary is equal to 62.5%. So the contribution of salary to the total income of O is 62.5%.

$$\therefore \text{O's salary} = 62.5\% \times 6000 = \frac{5}{8} \times 6000 = 3750$$

Similarly a line passing through 'N' and parallel to the vertex of the salary is equal to 25%. So the contribution of salary to the total income of N is 25%.

$$\therefore \text{N's salary} = 25\% \times 7000 = \frac{1}{4} \times 7000 = 1750$$

$$\text{Difference of salaries of O and N} = 3750 - 1750 = 2,000$$

7. If the total income of P is ` 8000, find the interest he earns from his savings.

- a) ` 1500 b) ` 1000 c) ` 3000 d) ` 2000 e) None of these

ANSWER: d

The line through P parallel to the vertex of interest on earnings represents 25%. So

contribution of interest on earnings to P's income is 25%

$$\therefore \text{Interest on earnings of P} = \frac{1}{4} \times 8000 = 2000$$

8. If the incentives of N amount to ` 2000, find his monthly salary.

- a) ` 8000 b) ` 4000 c) ` 6000 d) ` 2000 e) None of these

ANSWER: d

The line through N parallel to the vertex of incentives represents 25% and the line through N parallel to the vertex of salary represents 25%.

So the salary and incentive amounts are same for N.

$$\therefore \text{Salary of N} = 2,000$$

9. If the incentives of M are ` 3000, his salary is _____ of his total income.

- a) $\frac{1}{4}$ b) $\frac{1}{2}$ c) $\frac{2}{3}$ d) $\frac{3}{4}$ e) None of these

ANSWER: b

A line through M parallel to the vertex of salary represents 50%. Hence his salary is 50% of the total income.

$$\therefore \text{The salary is } 50\% = \frac{1}{2} \text{ of total income of M.}$$

Note: The incentives value given is redundant to answer this question.

10. Which of the following is true?
 I. The salary of M is more than that of P.
 II. The salary of N is equal to his incentives.
 III. The salary of M is equal to interest earned by N from his savings.
 a) Only I b) Only II c) Only III d) Only II and III e) None of these

ANSWER: b

The incomes of the four persons are not given. So salaries of two persons cannot be compared based on the percentages.

So statements I and III are not true.

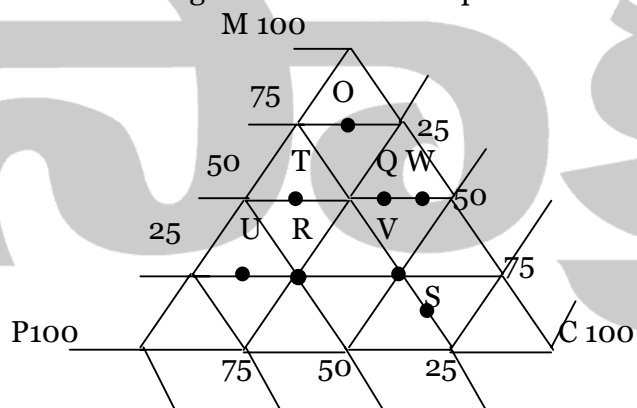
The salaries and the incentives contribute 25% each towards the total income of N.

So their values are same.

Hence statement II is true

PRACTICE QUESTIONS

Directions (Q. 11-15): The following triangular bar diagram represents the percentages of students offering Physics, Chemistry and Mathematics in various colleges. Refer to the diagram to answer the questions that follow.



11. If the total number of students in colleges O, Q, R, S are 600, 750, 900, 1200 respectively, which college had the largest number of students taking chemistry?
 a) O b) Q c) R d) S e) None of these
12. Among the colleges U, R, V and S, the college(s) where less than 50% of the students took Maths, is/are
 a) S b) V c) U and R d) U, R, V, S e) None of these
13. The total number of students in college R and V are 600 and 1000 respectively. How many students are studying Physics in R and V?
 a) 500 b) 600 c) 450 d) 550 e) None of these
14. College O and T have 600 students each. How many of these are studying Mathematics?
 a) 650 b) 750 c) 950 d) 800 e) None of these

15. If the total number of students in the five colleges O, Q, R, S, T are 400, 600, 800, 300, 1000 respectively, what is the average (per college) of students offering Chemistry in these colleges?

- a) 296 b) 81 c) 165 d) 68 e) None of these

KEY: (11) d (12) d (13) d (14) b (15) c

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