

QUANTITATIVE APTITUDE

Directions (Qns. 1 – 5) : Read the following information carefully to answer the questions given below.

In a college, 150 students of MBA are enrolled. The ratio of boys and girls is 7 : 8 respectively. There are three disciplines namely marketing, HR and finance in the college. In marketing discipline there are 50% girls of their total number and the boys are 40% of their total number. In HR discipline, girls are 30% of their total number while boys are 30% of their total number. Finance discipline has girls 20% of their total number and boys 30% of their total number. 7 boys and 9 girls are in HR and marketing both. 6 boys and 7 girls are in HR and finance both. 5 boys and 8 girls are in marketing and finance both. 2 boys and 3 girls are enrolled in all three disciplines.

1. What percentage of students are enrolled in all three disciplines ?

- A) 3.3% B) 7.2%
C) 8.5% D) 9.32%
E) None of these

Explanation : **Ans : A)**

Required percentage

$$= \frac{5}{150} \times 100 = \frac{10}{3} = 3\frac{1}{3}\% = 3.3\%$$

2. What is the respective ratio of boys and girls only in marketing discipline ?

- A) 13 : 9 B) 9 : 13
C) 9 : 11 D) 11 : 9
E) None of these

Explanation : **Ans : B)**

Required ratio = 18 : 26 = 9 : 13

3. The ratio of number of boys in marketing and finance both and that of girls in finance only is

- A) 5 : 3 B) 3 : 5
C) 5 : 4 D) 4 : 7
E) None of these

Explanation : **Ans : C)**

Required ratio = 5 : 4

4. By what percent is the number of boys in marketing more than the number of girls in HR discipline ?

- A) $13\frac{1}{3}\%$ B) $33\frac{1}{3}\%$
C) $14\frac{2}{3}\%$ D) $16\frac{2}{3}\%$
E) None of these

Explanation : **Ans : D)**

Required percentage

$$= \frac{28 - 24}{24} \times 100 = \frac{50}{3} = 16\frac{2}{3}\%$$

5. The ratio of boys and girls enrolled in HR discipline only is respectively

- A) 10 : 11 B) 9 : 10
C) 7 : 5 D) 5 : 7
E) None of these

Explanation : **Ans : A)**

Required ratio = 10 : 11

Directions (Qns. 6-10) : Each of the following questions consists of a question followed by three statements I, II and III. You have to study the question and the statements and decide which of the statement(s) is/are necessary to answer the question.

6. What is the speed of boat in still water ?

- I. The boat covers 12 km in 2 hours in downstream.
II. The boat covers same distance in 4 hours in upstream.
III. The speed of stream is one third of that of boat in still water.

Select the correct answer :

- A) Both I and II
- B) I and either II or III
- C) All I, II and III
- D) Question cannot be answered even with the information in all three statements.
- E) None of these

Explanation : **Ans : B)**

From statements I and II, Rate downstream

$$= u + v = 6 \text{ kmph}$$

Rate upstream = $u - v = 3 \text{ kmph}$

$$u = \frac{1}{2} ((u+v) + (u - v))$$

$$= \frac{1}{2} (6+3) = \frac{9}{2} \text{ kmph}$$

From statements I and III, $u + v = 6 \text{ kmph}$

$$\Rightarrow u + \frac{u}{3} = 6 \Rightarrow 4u = 18$$

$$\Rightarrow u = \frac{18}{4} = \frac{9}{2} \text{ kmph}$$

7. What is the speed of train ?

- I. The length of train is 240 metre.
- II. The train crosses a pole in 24 seconds.
- III. The train crosses a platform in 48 seconds.

Select the correct answer :

- A) Both I and III
- B) Both I and II
- C) Both II and III
- D) Any two of three
- E) None of these

Explanation : **Ans : B)**

From statements I and II,

$$\text{Speed of train} = \frac{240}{24} = 10 \text{ m/sec}$$

8. What is the age of class teacher ?

- I. There are 11 students in the class.
- II. The average age of students and the teacher is 14 years.
- III. The average age of the teacher and students is 3 years more than that of students.

Select the correct answer :

- A) Both I and III
- B) Both I and II
- C) II and either I or III
- D) All I, II and III
- E) None of these

Explanation : **Ans : D)**

From all three statements,

Total age of 11 students + 1 teacher

$$= 14 \times 12 = 168 \text{ years}$$

Average age of 11 students + teacher

$$= \text{Average age of 11 students} + 3$$

\Rightarrow Average age of 11 students

$$= 14 - 3 = 11 \text{ years}$$

Their total age = $11 \times 11 = 121 \text{ years}$

Teacher's age = $168 - 121 = 47 \text{ years}$

9. Sri Gupta borrowed a sum at compound interest. What is the amount returned in 2 years ?

- I. The rate of interest is 5% per annum.
- II. The simple interest incurred on the sum in 1 year is ₹ 600.
- III. The borrowed sum is ten times the amount earned as simple interest in two years.

Select the correct answer :

- A) Only I
- B) Only III
- C) Both II and III
- D) Either I or III
- E) All I, II and III

Explanation : **Ans : E)**

From statements I, II and III,

SI for two years = ₹ 1200

$$\text{Principal} = 10 \times 1200 = ₹ 12000$$

Thus we can find C.I. and amount.

10. What is the area of the given right angled triangle ?

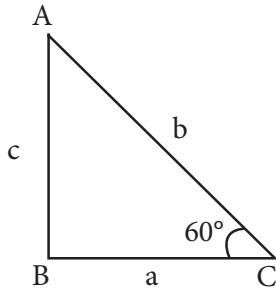
- I. The length of hypotenuse is 5 cm.
- II. The perimeter of triangle is four times of its base.
- III. One of the angles of triangle is 60°

Select the correct answer :

- A) Only II B) Only III
 C) Either II or III D) Both I and III
 E) Question cannot be answered even with the information in all three statements

Explanation : Ans : D)

From statements I and III,



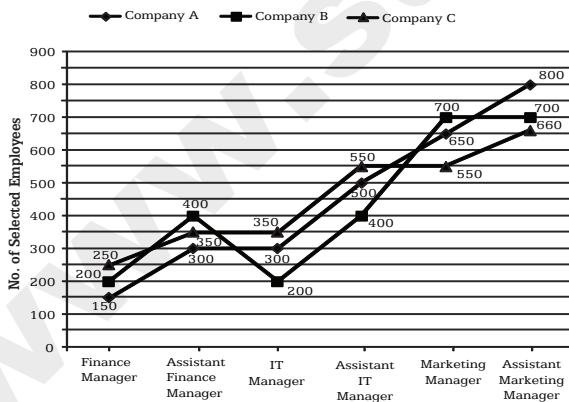
$$\frac{AB}{AC} = \cos 60^\circ \Rightarrow BC = \frac{5}{2}$$

$$a = \frac{5}{2}, b = 5 \text{ and } \theta = 60^\circ$$

$$\therefore \text{We get area by } A = \frac{1}{2} ab \sin C$$

Directions (Qns. 11 – 15) : Study the following graph carefully to answer the questions given below.

Number of selected employees in different grades/ranks by three companies during 2012



11. What is the average number of selected employees by company A in all grades taken together ?

- A) 450 B) 460
 C) 475 D) 375
 E) None of these

Explanation : Ans : A)

$$\text{Required average} = \frac{2700}{6} = 450$$

12. What is the respective ratio of selected employees for the post of assistant IT managers by all the companies A, B and C together ?

- A) 8 : 10 : 11 B) 10 : 8 : 11
 C) 11 : 10 : 8 D) 10 : 11 : 8
 E) None of these

Explanation : Ans : B)

$$\text{Required average} = 500 : 400 : 550 = 10 : 8 : 11$$

13. By what percent is the number of selected employees for finance managers by company C more than that of selected employees by company B for the same post ?

- A) 35% B) 30%
 C) 25% D) 40%
 E) None of these

Explanation : Ans : C)

$$\text{Required percentage} = \frac{250 - 200}{200} \times 100 = 25\%$$

14. What is the average number of selected employees for the post of assistant marketing managers by all companies taken together ?

- A) 570 B) 520
 C) 620 D) 720
 E) None of these

Explanation : Ans : D)

$$\text{Required average} = \frac{800 + 700 + 660}{3} = \frac{2160}{3} = 720$$

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Explanation :

Ans : C)

$$n(A) = 35, n(B) = 45, n(A \cap B) = 20$$

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$= 35 + 45 - 20 = 60$$

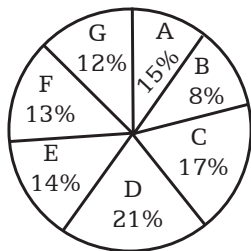
∴ Percentage of failed students in Hindi or English or both = 60%

∴ Successful students = 40%

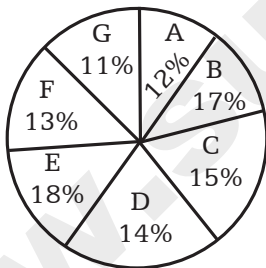
Directions (Qns. 21-25) : The following questions are based on the pie-charts given below.

Percentage wise Distribution of students studying in Arts and commerce in seven different institutions

Different institutions – A, B, C, D, E, F and G
Total number of students studying Arts = 3800



Total number of students studying commerce = 4200



21. What is the total number of students studying Arts in institutes A and G together ?

- A) 1026 B) 1126
C) 1226 D) 1206
E) 1306

Explanation :

Ans : A)

$$\text{Required answer} = 3800 \times \frac{27}{100} = 1026$$

22. How many students from institute B study Arts and Commerce ?

- A) 1180 B) 1108
C) 1018 D) 1208
E) 1408

Explanation :

Ans : C)

$$\text{Required answer} = \frac{3800 \times 8}{100} + \frac{4200 \times 17}{100}$$

$$= 304 + 714 = 1018$$

23. The respective ratio between the number of students studying Arts and Commerce from institute E is

- A) 27 : 14 B) 19 : 27
C) 19:16 D) 19: 28
E) None of these

Explanation :

Ans : B)

$$\text{Required ratio} = \frac{3800 \times 14}{100} : \frac{4200 \times 18}{100}$$

$$= 38 \times 14 : 42 \times 18 = 19 : 27$$

24. The ratio between the number of students studying Arts from institute E and that of students studying Commerce from institute D is

- A) 12 : 17 B) 12 : 7
C) 19 : 21 D) 17 : 19
E) None of these

Explanation :

Ans : C)

Required ratio

$$= \frac{3800 \times 14}{100} : \frac{4200 \times 14}{100} = 19 : 21$$

25. How many students from institutes B and D together study Commerce ?

- A) 1320 B) 1302
C) 1202 D) 1220
E) None of these

Explanation :

Ans : B)

$$\text{Required answer} = \frac{4200 \times 17}{100} + \frac{4200 \times 14}{100}$$

$$= 714 + 588 = 1302$$