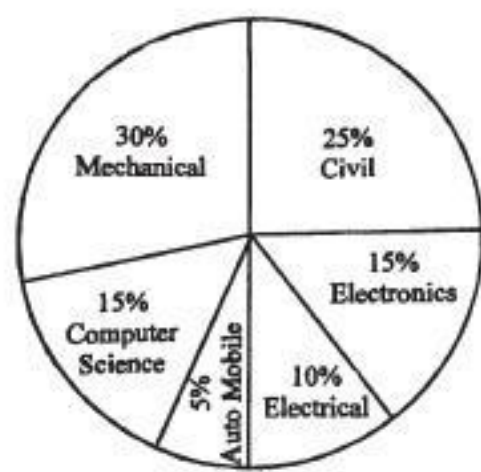


QUANTITATIVE APTITUDE

- The average age of 30 boys in a class is 15 years. One boy, aged 20 years, left the class, but two new boys came in his place whose ages differ by 5 years. If the average age of all the boys now in the class becomes 15 years, the age of the younger newcomer is:
A) 20 years B) 15 years
C) 10 years D) 8 years
- If the price of rice is reduced by 20%, one can buy 2 kg more for Rs. 100. The reduced price of rice is:
A) Rs. 50 per kg B) Rs. 10 per kg
C) Rs. 40 per kg D) Rs. 5 per kg
- If 5 men or 8 women can do a piece of work in 12 days, how many days will be taken by 2 men and 4 women to do the same work?
A) 15 days B) $13\frac{1}{2}$ days
C) $13\frac{1}{3}$ days D) 10 days
- Which of the following fractions is the smallest?
A) $\frac{8}{15}$ B) $\frac{7}{13}$ C) $\frac{11}{13}$ D) $\frac{14}{33}$

Direction (5 - 9): Answer the following questions referring to the Pie chart given below.



The Pie chart shows the no. of seats in various Engineering branch of Delhi Engineering College. The seats in Delhi Engineering college is 400.

- Number of seats in Mechanical branch is:
A) 180 B) 200 C) 120 D) 160
- How many degrees represents the Mechanical and the Civil branches together in Pie chart?
A) 204° B) 200° C) 198° D) 188°
- No. of seats in civil branch is what per-

centage of total no. of seats in Mechanical branch approximately.

- A) 90% B) 84% C) 76% D) 80%
- No. of students in mechanical branch is what percentage of sum of total seats in Computer Science, Automobile Electrical and Electronics approximately?
A) 77% B) 87% C) 65% D) 67%
 - No. of seats in automobile branch represents how much degree in Pie chart?
A) 188° B) 78° C) 18° D) 28°
 - A dishonest dealer professes to sell his goods at C.P. but uses a weight of 875 grams for a kilogram weight. Find his gain percent?
A) $14\frac{2}{7}\%$ B) $14\frac{1}{7}\%$ C) $12\frac{1}{7}\%$ D) $12\frac{2}{7}\%$
 - From a cask of milk, containing 40 litres, 8 litres are drawn out and the cask is filled up with water. If the same process is repeated a second then a third time, what will be the number of litres of milk left in the cask:
A) 20.48 B) 20 C) 19.48 D) 21.58
 - A 4-digit number is formed by repeating a 2-digit number such as 2525, 3232, etc. Any number of this form is always exactly divisible by:

A) 7 B) 11 C) 13
D) Smallest 3-digit prime number

- A man and a boy received Rs. 800 as wages for 5 days for the work they did together. The man's efficiency in the work was three times that of the boy. What are the daily wages of the boy?
A) Rs. 76 B) Rs. 56 C) Rs. 44 D) Rs. 40
- Perimeter of rectangular field is 160 metres and the difference between its two adjacent sides is 48 metres. The side of a square field, having the same area as that of the rectangle, is:
A) 32 metres B) 8 metres
C) 4 metres D) 16 metres
- A cistern has two pipes. One can fill it with water in 8 hours and other can empty it in 5 hours. In how many hours will the cistern be emptied if both the pipes are opened together when $\frac{3}{4}$ of the cistern is already full of water?
A) $13\frac{2}{7}$ hours B) 10 hours
C) 6 hours D) $3\frac{1}{3}$ hours

SOLUTIONS

- B**
Total age of 30 boys
= $30 \times 15 = 450$ years
One boy, aged 20 years, left the class
Now total age of 29 boys
= $450 - 20 = 430$ years
Again, two new boys join the class
Then, the total age of 31 boys
= $15 \times 31 = 465$ years
 $\therefore x + y = 35$
 $x - y = 5$ (According to the question)
 $\therefore 2x = 40$
 $x = \frac{40}{2} = 20$ years
 $\therefore y = 15$ years
 \therefore Age of the younger new comer = 15 years
- B**
Let the original price of rice be Rs. x per kg.
New price = Rs. $(x - 20\% \text{ of } x)$
= Rs. $(x - 0.20x) = \text{Rs. } 0.80x$
Saving on Rs. 100
= $20\% \text{ of } 100 = \text{Rs. } 20$
New price of 2 kg rice
= $2 \times 0.80 = \text{Rs. } 1.6x$
These additional 2 kg of rice bought out of saving due to reduction in price of the rice,
So, $1.6x = 20$
 $\therefore x = \frac{20}{1.6} = \frac{200}{16} = \text{Rs. } 12.5$
Old price of rice per kg = Rs. 12.5
New price of rice per kg
= $12.5 \times 0.80 = \text{Rs. } 10$
- C**
According to the question
5 men = 8 women
 $\therefore 2 \text{ men} = \frac{8}{5} \times 2 = 16 \text{ women}$
 \therefore Total women = $\frac{16}{5} + 4$

$$= \frac{36}{5} \text{ women}$$

\therefore No. of days to do the same work

$$= \frac{8 \times 12}{\frac{36}{5}} = \frac{8 \times 12 \times 5}{36}$$

$$= \frac{40}{3} = 13\frac{1}{3} \text{ days}$$

4. **D**

$$\frac{8}{15}, \frac{14}{33}, \frac{7}{13}, \frac{11}{33}$$

$$\frac{8}{15} = 0.533$$

$$\frac{14}{33} = 0.42$$

$$\frac{7}{13} = 0.538$$

$$\frac{11}{33} = 0.846$$

$$\therefore \frac{11}{13} > \frac{7}{13} > \frac{8}{15} > \frac{14}{33}$$

5. **C**

Number of seats in Mechanical branch
= $\frac{400 \times 30}{100} = 120$

6. **C**

Mechanical + Civil = $(30 + 25) = 55\%$
100% seats are shown by
 $\frac{360}{100} \times 55 = 198^\circ$

7. **B**

Seats in Civil branch
= $\frac{400 \times 25}{100} = 100$

and seats in Mechanical branch

$$= \frac{400 \times 30}{100} = 120$$

Now let the no. of seats in Civil branch is $x\%$ of Mechanical branch

$$\text{i.e. } \frac{120 \times x}{100} = 100$$

$$x = \frac{100 \times 100}{120} = 83.33 = 84\%$$

8. **D**

Percentage seats in (Computers + Automobiles + Electrical + Electronics)

$$= (15 + 5 + 10 + 15) = 45\%$$

\therefore No. of seats in above branches

$$= \frac{400 \times 45}{100} = 180$$

No. of students in Mechanical branch

$$= \frac{400 \times 30}{100} = 120$$

Now let the Mechanical students are $x\%$ of (Computer + Electrical + Electronics + Automobiles)

$$\text{i.e. } \frac{180 \times x}{100} = 120$$

$$x = \frac{120 \times 100}{180} = 66.66 \approx 67\%$$

9. **C**

$$100\% \text{ seats} \Rightarrow 360^\circ$$

$$\therefore 5\% \text{ seats} \Rightarrow \frac{360}{100} \times 5 = 18^\circ$$

10. **A**

Gain %
= $\frac{\text{Error}}{\text{True value} - \text{error}} \times 100$

$$= \frac{125}{(1000 - 125)} \times 100 = \frac{125}{875} \times 100$$

$$= 14\frac{2}{7}\%$$

11. **A**

Rule: After n such operations,

Milk left in vessel after n operations

= Whole quantity of milk in vessel

$$\times [(x - y) / x]^n$$

Where x = total milk

y = quantity of milk withdrawn Here

$$x = 40, y = 8, n = 3$$

\therefore Required answer

$$\{(40 - 8) / 40\}^3 \times 40 = (4/5)^3 \times 40$$

$$= \frac{64}{125} \times 40 = 20.48 \text{ litres}$$

12. **D**

Let the unit digit be x and ten's digit be y .

\therefore Number

$$= 1000y + 100x + 10y + x$$

$$= 1010y + 101x$$

$$= 101(10y + x)$$

Clearly, this number is divisible by 101, which is the smallest three-digit prime number.

13. **D**

Man : boy = 3 : 1

$$\therefore \text{Boy's share} = \frac{1}{4} \times 800 = \text{Rs. } 200$$

\therefore The daily wages of boy

$$= \text{Rs. } \frac{200}{5} = \text{Rs. } 40$$

14. **A**

Let the length and breadth of rectangle be x and y metres respectively. Then,

$$2(x + y) = 160$$

$$\Rightarrow x + y = 80 \dots (i)$$

$$\text{and } x - y = 48 \dots (ii)$$

Adding equations (i) and (ii),

$$2x = 128$$

$$\Rightarrow x = \frac{128}{2} = 64$$

From equation (i),

$$y = 80 - 64 = 16$$

$$\therefore \text{Area} = 64 \times 16 \text{ sq.m}$$

\therefore Area of square

$$= \sqrt{(64 \times 16)} = 8 \times 4 = 32 \text{m.}$$

15. **B**

Part of cistern emptied in 1 hour

$$= \frac{1}{5} - \frac{1}{8} = \frac{8 - 5}{40} = \frac{3}{40}$$

$$\therefore \frac{3}{40} \text{ part is emptied in 1 hour}$$

$$\therefore \frac{3}{4} \text{ part is emptied in}$$

$$\frac{40}{4} \times \frac{3}{4} = 10 \text{ hours.}$$