QUANTITATIVE APTITUDE

1. The difference between 42% of a number and 28% of the same number is 210. What is 59% of that numbe??

   A 630

   B. 885

   C. 420

   D. 900

   E. None of these

   > *Solution:B*
   >
   > Let the number be x,
   >
   > Then, $\dfrac{42}{100} \times x - \dfrac{28}{100} \times x = 210$
   >
   > $\Rightarrow \dfrac{14}{100} \times x = 210$
   >
   > $\therefore \dfrac{59}{100} \times x = \dfrac{210}{14} \times 59 = 885$
   >
   > Hence, 59% of that number = 885

2. What approximate value should come in place of the question mark (?) in the following questions?

   $4275 \div 496 \times (21)^2 = ?$

   A 3795

   B. 3800

   C. 3810

   D. 3875

   E. 3995

   > *Solution:B*
   >
   > $4275 \div 496 \times (21)^2 = 4275 \times \dfrac{1}{496} \times 441$
   >
   > $\simeq 4280 \times \dfrac{1}{500} \times 450$
   >
   > $= 3809.2$
   >
   > $\simeq 3800$

3. A canteen requires 112 kgs. of wheat for a week. How many kgs. of wheat will it require for 69 days?

A 1,204 Kgs.

B. 1,401 Kgs.

C. 1,104 Kgs.

D. 1,014 Kgs.

E. None of these

> Solution:C
>
> ∵ In 7 days 112 kgs of wheat required
>
> ∴ In 69 days $\frac{112}{7} \times 69$ kgs of wheat required
>
> = 1104 kgs.

4. If an amount of Rs. 41,910/- is distributed equally amongst 22 persons. How much amount would each person get?

A Rs. 1,905/-

B. 2,000/-

C. Rs. 1,885/-

D. 2,105/-

E. None of these

> Solution:A
>
> The share of each person
>
> $= \frac{41,910}{22}$ = Rs. 1905

5. The cost of 4 Cell-phones and 7 Digital cameras is Rs. 1, 25, 627/-. What is the cost of 8 Cell-phones and 14 Digital cameras?

A Rs. 2,51, 254/-

B. Rs. 2,52,627/-

C. Rs. 2,25,524/-

D. Cannot be determined

E. None of these

> Solution:A
>
> The cost of 4 Cell-phones and 7 Digital cameras = Rs. 1,25,627
>
> ∴ The cost of 8 Cell-phones and 14 Digital cameras
>
> = 2 × Rs. 1,25,627
>
> = Rs. 2,51,254

Directions (Q. 6 to 10) : *Each of the questions below consists of a questions and two statements numbered I and II are given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and –*

Give answer (A) if the data in Statement I alone are sufficient to answer the question, while the data in Statement II alone are not sufficient to answer the question.

Give answer (B) if the data in Statement II alone are sufficient to answer the question, while the data in Statement I alone are not sufficient to answer the question.

Give answer (C) if the data in Statement I alone or in Statement II alone are sufficient to answer the question.

Give answer (D) if the data in both the Statements I and II are not sufficient to answer the question.

Give answer (E) if the data in both Statements I and II together are necessary to answer the question.

6. What is the area of the circle?

    I Perimeter of the circle is 88 cms

    II. Diameter of the circle is 28 ems

    > *Solution:C*
    > From (*i*),
    >
    > Radius of the circle $= \dfrac{88}{2\pi} = \dfrac{88 \times 7}{2 \times 22} = 14$ cm
    >
    > Area $= \pi r^2 = \dfrac{22}{7} \times 14 \times 14 = 616$ cm^2
    >
    > From (*ii*),   Radius $= \dfrac{28}{2} = 14$ cm
    >
    > Area $= \pi r^2 = \dfrac{22}{7} \times 14 \times 14 = 616$ cm^2

7. What is the rate of interest?

    I. Simple interest accrued on an amount of Rs. 25,000/- in two years less than the compound interest for the same period by Rs. 250/-

    II. Simple interest accrued in 10 years is equal to the principal

    > *Solution:C*

From (i)

Here,　　C.I. − P.I. = Rs. 250

$$\Rightarrow 25000\left[\left(1+\frac{r}{100}\right)^2 - 1\right] - \frac{25000 \times r \times 2}{100}$$

= Rs. 250

$$\Rightarrow \left[1 + \frac{2r}{100} + \frac{r^2}{10000} - 1\right] - \frac{2r}{100} = \frac{250}{25000}$$

$$\Rightarrow \frac{r^2}{10000} = \frac{1}{100}$$

$$\Rightarrow r^2 = 100$$

$$\therefore r = \sqrt{100} = 10$$

$\therefore$　　Rate of interest = 10% p.a.

From (ii)　　$25000 = \frac{25000 \times r \times 10}{100}$

$$\Rightarrow r = \frac{100}{10} = 10$$

$\therefore$　　Rate of interest = 10% p.a.

8. What is the number of trees planted in the field in rows and columns?

I. Number of columns is more than the number of rows by 4

II. Number of trees in each column is an even number

Solution:D

Here either number of rows or number of columns are not given in the both the statements. So both the statements are not sufficient to answer the question.

9. What is the area of the right-angled triangle?

I. Height of the triangle is three-fourth of the base

II. Diagonal of the triangle is 5 metres

Solution:E

From the statements I & II,

Let base be x m then height will be $\frac{3}{4}x$ m

Now, $\quad\quad\quad x^2 + \left(\frac{3}{4}x\right)^2 = 5^2$

$\Rightarrow \quad\quad\quad x^2 + \frac{9}{16}x^2 = 25$

$\Rightarrow \quad\quad\quad \frac{25}{16}x^2 = 25$

$\Rightarrow \quad\quad\quad x^2 = 16$

$\therefore \quad\quad\quad x = 4$

Now, $\quad\quad$ base $= x$ m $= 4$ m

Height $= \frac{3}{4}x = \frac{3}{4} \times 4 = 3$ m

Area of the triangle $= \frac{1}{2} \times 4 \times 3 = 6$ m^2

10. What is the father's present age?

I. Father's present age is five times the son's present age

II. Five years ago the father's age was fifteen times the son's age that time

Solution:E

From the statements I & II,

Let the son's present age be x years, then the present age of father will be $5x$ years;

Now from the question,

$$\frac{5x-5}{x-5} = 15$$

$\Rightarrow \quad\quad\quad \frac{x-1}{x-5} = 3$

$\Rightarrow \quad\quad\quad x - 1 = 3x - 15$
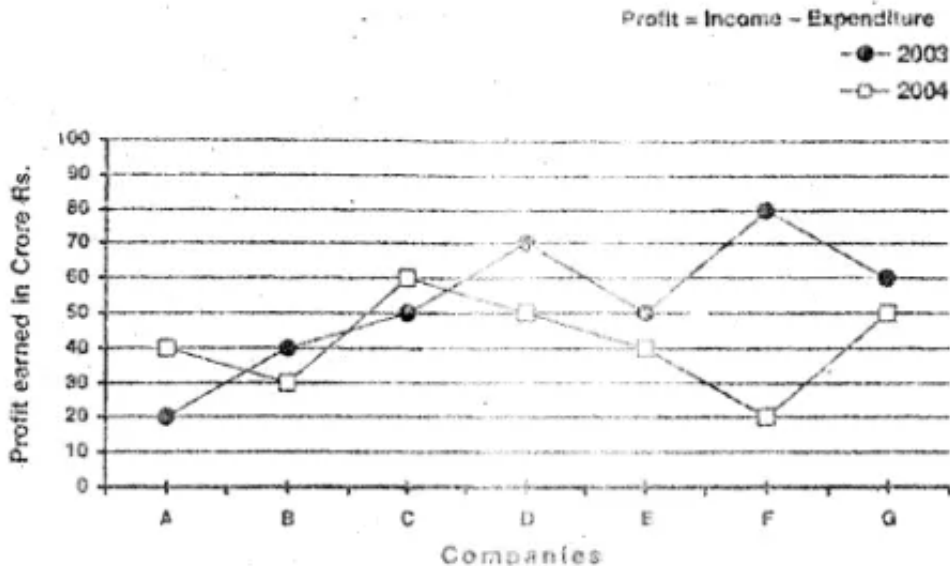
$\Rightarrow \quad\quad\quad 2x = 14$

$\therefore \quad\quad\quad x = 7$

Hence, present age of father

$= 5x = 5 \times 7 = 35$ years.

Directions (Q. 11 to 15) : *Study the following graph carefully to answer these questions:*

Profit earned (in Crore Rs.) by Seven Companies during 2003-2004

Profit = Income – Expenditure

-●- 2003
-○- 2004

11. What is the ratio between the profit earned .by Company A in 2004 and the profit earned by Company B in 2003 respectively?

A 4 : 3

B. 3 : 2

C. 3 : 4

D. 2 : 3

E. None of these

Solution:E

Required ratio = $\frac{40}{40}$ = 1 : 1

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12. What is the difference (in Crore Rs.) between the total profit earned by Companies E, F and G together in 2003 and the total profit earned by these companies in 2004?

A 70

B. 75

C. 78

D. 82

E. None of these

Solution:E

Profit earned by companies E, F & G in 2004

= 40 + 20 + 50 = Rs. 110 crores

Profit earned by companies E, F & G in 2003

= 50 + 80 + 60

= Rs. 190 crores.

Their difference =190 – 110 = Rs. 80 crores.

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13. What is the ratio between the total profit earned by Company C in 2003 & 2004 together and the total profit earned by Company E in these two years respectively?

A. 11 : 9

B. 9 : 10

C. 10 : 11

D. 11 : 10

E. None of these

> *Solution:A*
> The profit earned by company C in 2003 & 2004
>
> = 50 + 60 = Rs. 110 crores.
> The profit earned by company E in 2003 & 2004
>
> = 40 + 50 = Rs. 90 crores.
>
> Hence, their required ratio = $\dfrac{110}{90}$ = 11 : 9

14. What was the average profit earned by all the companies in 2003? (In Crore Rs. Rounded-Off to two digits after decimal).

A 52.75

B. 53.86

C. 52.86

D. 53.75

E. None of these

> *Solution:C*
> The average profit earned by all companies in 2003
>
> $= \dfrac{20 + 40 + 50 + 70 + 50 + 80 + 60}{7}$
>
> $= \dfrac{370}{7}$ = Rs. 52.85 crores.

15. Profit earned by Company B in 2004 is what percent of the profit earned by the same company in 2003 ?

A 133.33

B. 75

C. 67.66

D. 75.25

E. None of these

Solution:B

Here, $40 \times \dfrac{x}{100} = 30$

$\Rightarrow$ $x = \dfrac{30 \times 100}{40} = 75$

Hence, required percentage = 75%

Direction (Q. 16 to 20) : *Study the following table carefully to answer these questions.*

Table giving percentage of unemployed male and female youth and the total population for
different states in 2005 and 2006

State	2005			2006		
	M	F	T	M	F	T
A	12	15	32	7	8	35
B	8	7	18	10	9	20
C	9	10	28	10	12	34
D	10	6	24	8	8	30
E	6	8	30	7	6	32
F	7	5	28	8	7	35

M = Percentage of unemployed Ma e youth over total population.

F = Percentage of unemployed female youth over total population.

T = Total population of the state in lakhs.

16. What was the total number of unemployed youth in State A in 2006?

A 2,20,000

B. 3,25,000

C. 5,20,000

D. 5,25,000

E. None of these

Solution:D

Total number of unemployed youth in state
A in 2006

$= \dfrac{15}{100} \times 35,00,000 = 5,25,000$

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17. How many female youth were unemployed in State D in 2005?

A 14,400

B. 1,44,000

C. 1,40,000

D. 14,000

E. None of these

> *Solution:B*
> The number of unemployed youth in state D
> in 2005
>
> $$= \frac{6}{100} \times 24,00,000 = 1,44,000$$

18. Number of unemployed male youth in State A in 2005 was what percent of the number of unemployed female youth in State E in 2006?

A 66

B. 50

C. 200

D. 133

E. None of these

> *Solution:C*
> The number of unemployed male youth in state A in 2005
>
> $$= \frac{12}{100} \times 32,00,000 = 3,84,000$$
>
> The number of unemployed female youth in state E in 2006
>
> $$= \frac{6}{100} \times 32,00,000 = 1,92,000$$
>
> Required percentage $= \dfrac{382000}{192000} \times 100$
>
> $= 200\%$

19. What was the difference between the number of unemployed male youth in State F in 2005 and the number of unemployed male youth in State A in 2006?

A 70,000

B. 45.000

C. 68,000

D. 65,000

E. None of these

20. What was the respective ratio between unemployed male youth in State D in 2005 and the unemployed male youth in State D in 2006?

A 1 : 1

B. 2 : 3

C. 3 : 2

D. 4 : 5

E. None of these

Direction (Q. 21 to 25) : *What should come in place of question mark (?) in the following questions?*

21. 92.5% of 550 = ?

A 506.45

B. 521.65

C. 518.55

D. 508.75

E. None of these

22. $12^4 \times 12^{13} = ?$

A 12^7

B. 12^{39}

C. 12^{17}

D. 12^{-7}

E. None of these

Solution:C

$12^4 \times 12^{13} = 12^{4 + 13} = 12^{17}$

23. $12.22 + 22.21 + 221.12 = ?$

A. 250.55

B. 255.50

C. 250.05

D. 255.05

E. None of these

Solution:E

$12.22 + 22.21 + 221.12 = 255.55$

24. $464 \div (16 \times 2.32) = ?$

A 12.5

B. 14.5

C. 10.5

D. 8.5

E. None of these

Solution:A

$464 \div (16 \times 2.32)$

$= 464 \times \dfrac{1}{37.12} = \dfrac{46400}{3712} = \dfrac{25}{2} = 12.5$

25. $78 \div 5 \div 0.5 = ?$

A 15.6

B. 31.2

C. 7.8

D. 20.4

E. None of these

> *Solution:B*
>
> $$78 \div 5 \div 0.5 = 78 \times \frac{1}{5} \times \frac{1}{0.5} = \frac{780}{5 \times 5} = 31.2$$

26. A bus covers a distance of 2,924 kms. in 43 hours. What is the speed of the bus?

A 72 Kms./Hr.

B. 60 Kms./Hr.

C. 68 Kms./Hr.

D. Cannot be determined

E. None of these

> *Solution:C*
>
> $$\text{Speed} = \frac{2924}{43} = 68 \text{ km/hr}$$

27. If $(9)^3$ is substracted from the square of a number. the answer so obtained is 567. What is the number?

A 36

B. 28

C. 42

D. 48

E. None of these

> *Solution:A*
>
> Let the required number be x,
> Then $\quad x^2 - 9^3 = 567$
> $\Rightarrow \quad x^2 = 567 + 729$
> $\Rightarrow \quad x^2 = 1296$
> $\therefore \quad x = \sqrt{1296} = 36$

28. What would be the simple interest obtained on an amount of Rs. 5,760/- at the rate of 6 p.c.p.a. after 3 years?

A Rs. 1,036.80

B. Rs. 1,666.80

C. Rs. 1,336.80

D. Rs. 1,063.80

E. None of these

> *Solution:A*
>
> $$S.I. = \frac{5760 \times 6 \times 3}{100} = \frac{5184}{5} = Rs. \ 1036.80$$

29. What is 333 times 131?

   A 46,323

   B. 43,623

   C. 43,290

   D. 42,957

   E. None of these

   > *Solution:B*
   >
   > $131 \times 333 = 43,623$

30. The product of two successive numbers is 8556. What is the smaller number?

   A 89

   B. 94

   C. 90

   D. 92

   E. None of these

   > *Solution:D*
   >
   > Let two successive numbers be x and $(x + 1)$
   >
   > Then, $\qquad x(x + 1) = 8556$
   >
   > $\Rightarrow \qquad x^2 + x - 8556 = 0$
   >
   > $\Rightarrow x^2 + 93x - 92x - 8556 = 0$
   >
   > $\Rightarrow x(x + 93) - 92(x + 93) = 0$
   >
   > $\Rightarrow \qquad (x - 92)(x + 93) = 0$
   >
   > Hence, either $x = 92$ or, $x = -93$
   >
   > (Impossible)
   >
   > So, smallest number = 92

31. The owner of an electronics shop charges his customer 22% more than the cost price. If a customer paid Rs. 10,980/- for a DVD Player, then what was the cost

price of the DVD Player?

A Rs. 8,000/-

B. Rs. 8,800/-

C. Rs. 9.500/-

D. Rs. 9,200/-

E. None of these

Solution:E

Let cost price be Rs. x

Then, $x + \dfrac{22}{100} \times x = 10{,}980$

$\Rightarrow \qquad \dfrac{122x}{100} = 10{,}980$

$\therefore \qquad x = \dfrac{10{,}980 \times 100}{122}$

$\qquad = 90 \times 100 = \text{Rs. } 9000$

Hence, \qquad C.P. = Rs. 9000

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32. What would be the compound interest obtained on an amount of Rs. 3,000/- at the rate of 8 p.c.p.a. after 2 years?

A Rs. 501.50

B. Rs. 499.20

C. Rs. 495/-

D. Rs. 5101-

E. None of these

Solution:B

$$C.I. = P\left[\left(1 + \frac{r}{100}\right)^{n} - 1\right]$$

$$= 3000\left[\left(1 + \frac{8}{100}\right)^{2} - 1\right]$$

$$= 3000\left[\left(\frac{27}{25}\right)^{2} - 1\right]$$

$$= 3000\left[\frac{729}{625} - 1\right]$$

$$= 3000 \times \frac{104}{625}$$

$$= \frac{2496}{5} = \text{Rs. } 499.20$$

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33. What is least number to be added to 4321 to make it a perfect square ?

A 32

B. 34

C. 36

D. 38

E. None of these

Solution:E

```
   6 | 43 21 (66
     |  36
     |_____
 126 |  721
     |  756
     |_____
     |  − 35
```

Hence, required number = 35

---

34. 45% of a number is 255.6. What is 25% of that number?

A 162

B. 132

C. 152

D. 142

E. None of these

Solution:D

Let number be x,

Then, $x \times \dfrac{45}{100} = 255.6$

$\therefore \ x \times \dfrac{25}{100} = \dfrac{255.6}{45} \times 25 = 28.4 \times 5 = 142.0$

Hence, 25% of that number = 142

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35. Find the average of the following Set of Scores?

221, 231, 441, 359, 665, 525

A 399

B. 428

C. 407

D. 415

E. None of these

Solution:C

Average scores =
$$\frac{221 + 231 + 441 + 359 + 665 + 525}{6}$$
$$= \frac{2442}{6} = 407$$

36. If $(78)^2$ is subtracted from the square of the number, the answer so obtained is 6,460. What is the number?

A. 109

B. 111

C. 113

D. 115

E. None of these

> *Solution:E*
> Let the required number be x ;
> Then, $x^2 - 78^2 = 6460$
> $\Rightarrow \qquad x^2 = 6460 + 6084$
> $\Rightarrow \qquad x = \sqrt{12544} = 112$
> Hence, required number = 112

37. In an examination, it is required to get 40% of the aggregate marks to pass. A student gets 261 marks and is declared failed by 4% marks. What are the maximum aggregate marks a student can get?

A 700

B. 730

C. 745

D. 765

E. None of these

> *Solution:E*
> Let the maximum aggregate marks be x ;
> Then, $261 + \dfrac{4}{100} \times x = \dfrac{40}{100} \times x$
> $\Rightarrow \qquad \dfrac{36x}{100} = 261$
> $\therefore \qquad x = \dfrac{261 \times 100}{36} = 725$
> Hence, maximum aggregate marks = 725

38. Pinku, Rinku and Tinku divide an amount of as. 4,200/- amongst themselves in

the ratio of 7 : 8 ; 6 respectively. If an amount of Rs. 200/- is added to each of their shares, what will be the new respective ratio of their shares of amount?

A 8 : 9 : 6

B. 7 :9 : 5

C. 7 : 8 : 6

D. 8 : 9 : 7

E. None of these

Solution:D

The share of Pinku = $\frac{4200}{21} \times 7$ = Rs. 1400

The share of Rinku = $\frac{4200}{21} \times 8$ = Rs. 1600

The share of Tinku = $\frac{4200}{21} \times 6$ = Rs. 1200

Now, their new shares will be,

Rs. 1600, Rs. 1800 and Rs. 1400

Hence, their new ratio will be, 8 : 9 : 7

39. Ms. Suchi deposits an amount of Rs. 24,000/ – to obtain a simple interest at the rate of 14 p.c.p.a. for 8 years. What total amount will Ms. Suchi get at the end of 8 years?

A Rs. 52,080/-

B. Rs. 28,000/-

C. Rs. 50,880/-

D. Rs. 26,880/-

E. None of these

Solution:C

S.I. = $\frac{24000 \times 14 \times 8}{100}$ = 240 × 14 × 8

= Rs. 50,880

= Rs. 26,880

The, Amout after 8 years

= 24000 + 26880 = Rs. 50,880

40. The average of 5 consecutive even numbers A, B, C, D and E is 52, What is the product of B & E?

A 2912

B. 2688

C. 3024

D. 2800

E. None of these