

QUANT SECTION - : BY- SHUBHAM SIR

Direction (1-5): What will come in place of question mark (?) in the following series?

1) 54, 65, 78, ?, 114, 137

- (a) 80
- (b) 70
- (c) 95
- (d) 90
- (e) 98

2) ?, 20, 36, 56, 80, 108

- (a) 8
- (b) 7
- (c) 9
- (d) 6
- (e) 4

3) 22, 30, 41, 56, ?, 102

- (a) 78
- (b) 77
- (c) 76
- (d) 62
- (e) 48

4) 2, 5, 16, 65, ?

- (a) 378
- (b) 326
- (c) 336
- (d) 362
- (e) 448

5) ?, 105, 112, 122, 137, 159

- (a) 98
- (b) 86
- (c) 96
- (d) 22
- (e) 99

6. ?% of 135 = 282.15 - 270

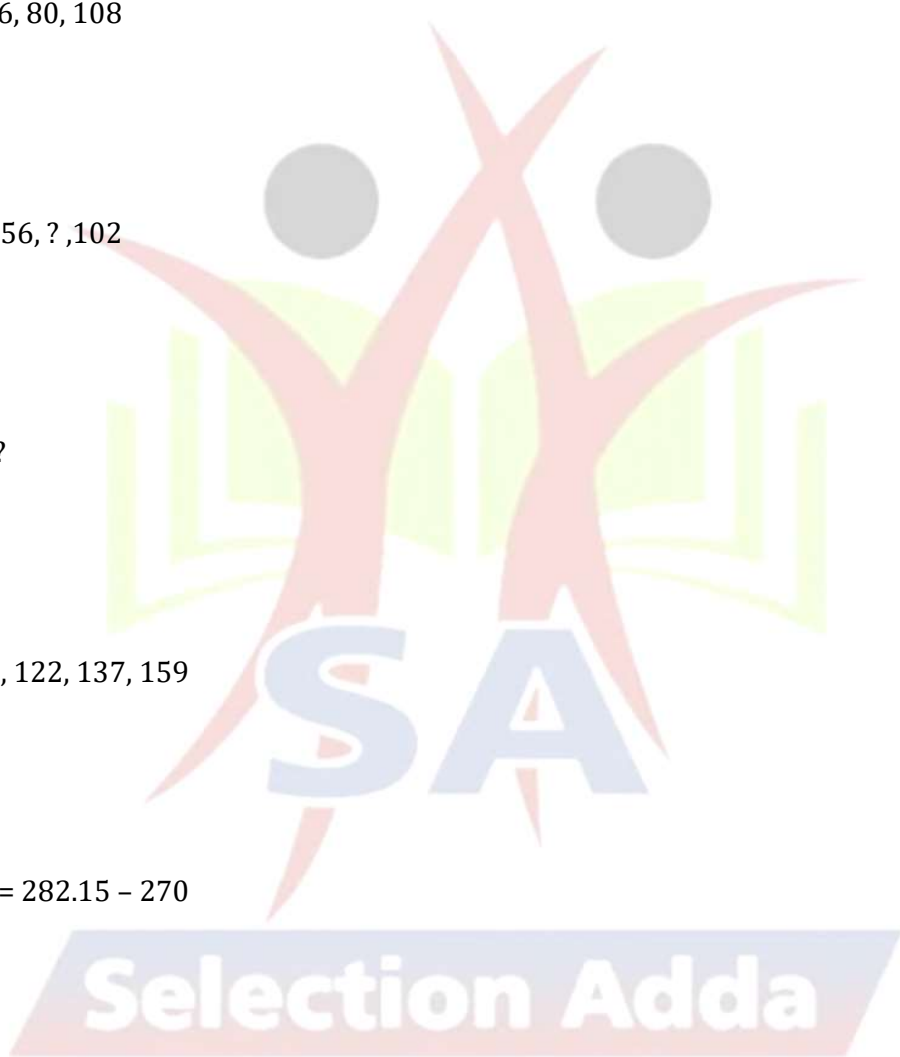
- (a) 9
- (b) 10
- (c) 11
- (d) 17
- (e) 8

7. $\frac{1}{200} + \frac{1}{400} + \frac{1}{600} + \frac{1}{800} = \frac{4}{x}$

- (a) 382
- (b) 380
- (c) 384
- (d) 386
- (e) 378

8. $?^2 = 512 \div 81 \div 72 \times 2916$

- (a) 9



- (b) 12
- (c) 16

- (d) 18
- (e) 20

9. $\frac{9}{2} + \frac{11}{3} + \frac{17}{6} = ? + \frac{12}{5} + \frac{21}{10}$

- (a) 6
- (b) $6\frac{1}{2}$
- (c) 7
- (d) $6\frac{2}{3}$
- (e) $7\frac{1}{2}$

10. $5^{7-2} = (5)^5 \div (25)^3 \times (125)^2 \div 625$

- (a) -1
- (b) 0
- (c) 1
- (d) 2
- (e) 3

11. $? \times 65 \div 72 = 195 \times 352 \div 192$

- (a) 369
- (b) 396
- (c) 594
- (d) 297
- (e) 376

12. $\sqrt[3]{256} \times (1728)^{\frac{1}{3}} = ? \times (4096)^{\frac{1}{4}}$

- (a) 16
- (b) 18
- (c) 24
- (d) 28
- (e) 32

13. $35\% \text{ of } 180 + 18^2 = (27)^{\frac{5}{3}} + ?^2$

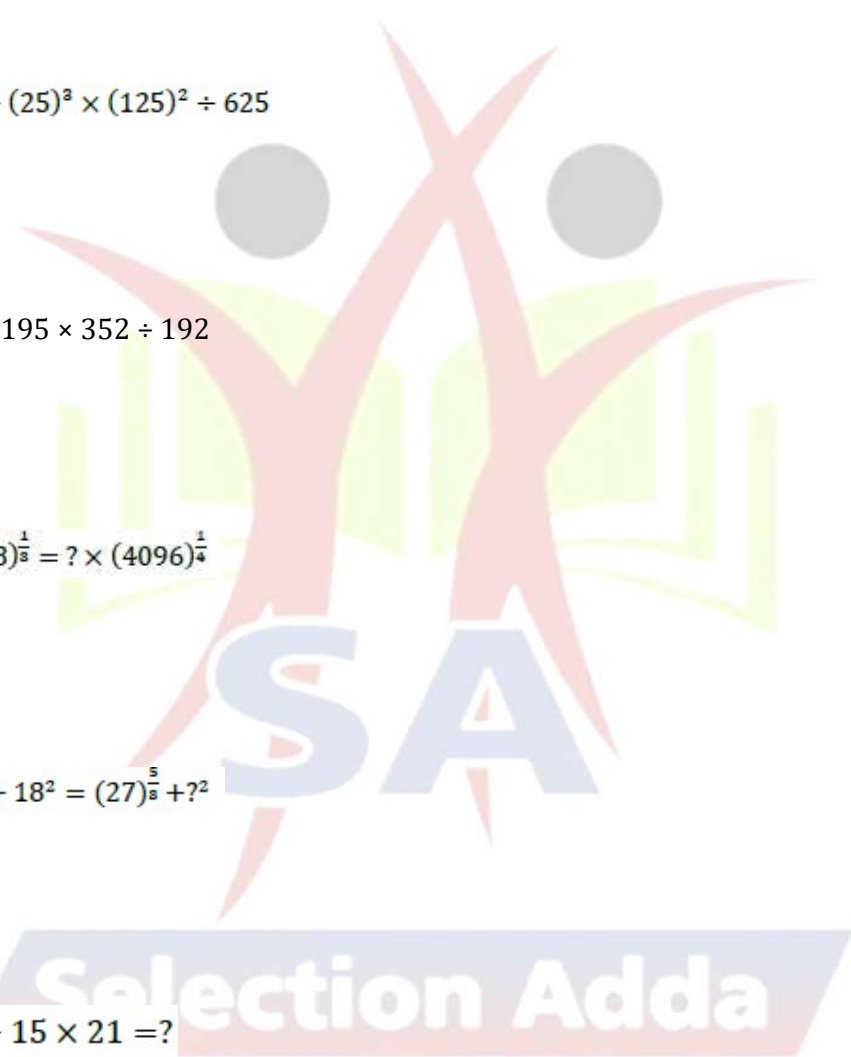
- (a) 16
- (b) 14
- (c) 8
- (d) 12
- (e) 18

14. $\frac{323}{357} \times 441 - 15 \times 21 = ?$

- (a) 84
- (b) 63
- (c) 42
- (d) 21
- (e) 105

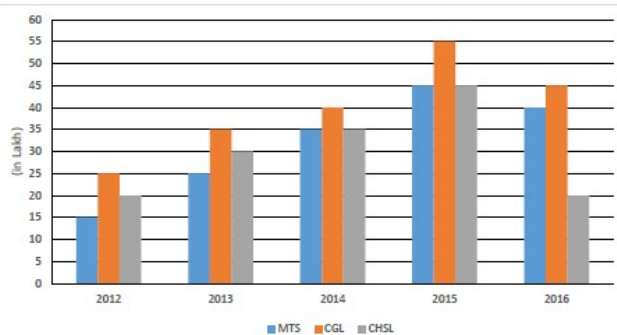
15. $? \times 4 - 40^2 = 14^2 - 36 \times 44$

- (a) 45
- (b) 51
- (c) 53
- (d) 55



(e) 57

Directions (16-20): Bar-chart given below shows students registered for three different exams in five different years. Study the data carefully and answer the following questions.



16. Total number of students registered for CGL in all the five years is what percent more than total number of students registered for CHSL in all the five years together?

- (a) 25%
- (b) $33\frac{1}{3}\%$
- (c) $66\frac{2}{3}\%$
- (d) 50%
- (e) $37\frac{1}{2}\%$

17. Find the ratio of total students registered for all the three exams in 2012 and 2013 together to total students registered for all the three exams in 2014 and 2015 together?

- (a) 9 : 17
- (b) 2 : 3
- (c) 3 : 5
- (d) 5 : 8
- (e) 10 : 17

18. Average number of students registered for MTS exam in all the five years together is how much less/more than average number of students registered for CHSL exam in all the five years together?

- (a) 4
- (b) 0
- (c) 2
- (d) 6
- (e) 8

19. Out of total students registered for all the exams in 2016, 80% appeared for exam. Students appeared in MTS, CGL and CHSL are in the ratio 3 : 3 : 1. Find how much percent of students appeared for exam MTS out of students registered for MTS exam in that year?

- (a) 90%
- (b) 80%
- (c) 60%
- (d) 10%
- (e) 20%

20. In 2013, out of total students registered for all the three exams, 80% appeared out of which only 25% qualified the exams. Find the number of students appeared in exam but disqualified. (in Lakh)

- (a) 18
- (b) 36
- (c) 72

(d) 54

(e) 63

21. A sum of 8000 invested in A at S.I at R% per annum and get some interest. Now he invested total amount received from A in B at S.I for same time period at 10% per annum and received 2080 interest. Find the value of R?

(a) 10%

(b) 12%

(c) 15%

(d) 20%

(e) 25%

22. The population of a city in 2017 increased by 12.5% from 2016 and in 2018 it decreased by 8% with respect to previous year and in 2019 it again increased by 15% with respect to previous year. If in 2019, the population of the city is 1190250, then what was the population of city in 2016?

(a) 900000

(b) 1000000

(c) 850000

(d) 950000

(e) 1050000

23. A filling tap can fill a tank in 10 hour. Two equivalent filling tap and one outlet tap are open simultaneously then tank is filled in $7\frac{1}{2}$ hour. In how much time outlet tap can empty the tank.

(a) 10

(b) 15

(c) 20

(d) 12

(e) 16

24. A and B invested Rs 5000 and Rs. 9000 for 12 months and 6 months respectively. Find profit share of B is how much percent more or less than profit share of A?

(a) 10% less

(b) 11.11% more

(c) 11.11% less

(d) 10% more

(e) 12.5 % more

25. A, B and C invested in a ratio of 7 : 8 : 5 in a business. They got an annual profit of Rs. 136800. If A and C withdrew their amount at the end of 3 months and 7 months respectively. Then find the difference between A and C's share of profit?

(a) Rs. 12,600

(b) Rs. 11,500

(c) Rs. 13,500

(d) Rs. 10,500

(e) Rs. 13,000

Direction (26-30): the data given below shows the information of total students in class A, B and C which divided in three groups X, Y and Z.

Class A: Total no. of students are 90. 30 students are in group X. ratio of number of students in group Y and Z is 1: 2.

Class B: Total no. of students are 80. The ratio of no. of students in group X, Y and Z is 8: 5: 3.

Class C: the no. of students in group Y are half of that in group X. The no of students in group X of class C are 20 more than in group X of class A. no. of students in group Z of class C are 20% less than that in group X of same class.

26. No. of students in group X of class B are what percentage of no. of students in groups Y of class C.

- (a) 120%
- (b) 90%
- (c) 100%
- (d) 160%
- (e) 85%

27. Find the respective ratio between average students in group X in class A and B to total students in class C.

- (a) 4: 23
- (b) 7: 32
- (c) 4: 21
- (d) 7: 12
- (e) 7: 23

28. There is total 34 girls in class A. if 12 girls are in group X, then find the no. of boys in group Y and Z together in class A.

- (a) 50
- (b) 42
- (c) 48
- (d) 38
- (e) 60

29. What are the total no. of students in group Y of all the classes?

- (a) 95
- (b) 90
- (c) 100
- (d) 70
- (e) 80

29. Total no. of students in group X is how much more or less than that in group Z.

- (a) 20
- (b) 25
- (c) 15
- (d) 50

31. Area of square is how much percent it's perimeter of side 4m?

- (a) 50%
- (b) 150%
- (c) 100%
- (d) 20%
- (e) 25%

32. A shopkeeper sold an article A at 20% gain and another article B at 20% loss. Find her overall gain or loss percent if S.P. of both articles were same ?

- (a) 4% loss
- (b) 5% loss
- (c) 5% gain
- (d) 2.5% loss
- (e) 2.5% gain

33. Find the probability of selecting two red honor cards from a pack of 52 cards?

- (a) $\frac{132}{663}$
- (b) $\frac{28}{663}$
- (c) $\frac{14}{663}$
- (d) $\frac{61}{663}$
- (e) None of these

34. Abhinav is 25% more efficient than Satish while Alpa is 40% less efficient than Abhinav. If Satish alone can complete the work in 15 days then in how many days Abhinav and Alpa together can complete the work.

- (a) 8 days

- (b) 7.5 days
- (c) 6 days
- (d) 5 days
- (e) 5 days

35. A boat travels 28 km downstream and 24 km upstream in 5 hrs. The same boat travels 56 km, downstream and 16 km upstream in 6 hrs. Find the ratio between speed of boat in still water and speed of current?

- (a) 3 : 11
- (b) 4 : 5
- (c) 5 : 4
- (d) 11 : 3
- (e) 7 : 11

Answer Key & solution

1. Ans : c

11—13-----17----19----23

2. Ans: a

3. Ans: c

4. Ans: b

5. Ans: e

9. Ans: b

$$\text{Exp: } \frac{9}{2} + \frac{11}{3} + \frac{17}{6} = ? + \frac{12}{5} + \frac{21}{10}$$

$$4 + \frac{1}{2} + 3 + \frac{2}{3} + 2 + \frac{5}{6} = ? + 2 + \frac{2}{5} + 2 + \frac{1}{10}$$

$$9 + \frac{3+4+5}{6} = ? + 4 + \frac{4+1}{10}$$

$$9 + 2 = ? + 4 + \frac{1}{2}$$

$$11 - 4 - \frac{1}{2} = ?$$

$$\Rightarrow ? = 6\frac{1}{2}$$

6. Ans: a

$$\text{Exp: } \frac{x \times 135}{100} = 12.15$$

$$x = \frac{1215}{135} = 9$$

7. Ans: c

$$\text{Exp: } \frac{1}{12+6+4+3} + \frac{1}{200} + \frac{1}{400} + \frac{1}{600} + \frac{1}{800} = \frac{4}{x}$$

$$25x = 2400 \times 4$$

$$x = 384$$

8. Ans: c

$$\text{Exp: } ?^2 = \frac{512 \times 2916}{81 \times 72}$$

$$?^2 = 256$$

$$? = 16$$

10. Ans: e

$$\text{Exp: } 5^{7-2} = \frac{5^5}{25^3} \times \frac{125^2}{625}$$

$$5^{7-2} = \frac{5^5}{(5^2)^3} \times \frac{(5^3)^2}{5^4} = \frac{5^5 \times 5^6}{5^6 \times 5^4}$$

$$5^{7-2} = 5^1$$

$$? - 2 = 1$$

$$? = 3$$

11. Ans: b

$$\text{Exp: } ? \times \frac{65}{72} = \frac{195 \times 352}{192}$$

$$? = \frac{195 \times 352 \times 72}{192 \times 65}$$

$$? = 396$$

12. Ans: c

$$\begin{aligned} \text{Exp: } \sqrt[3]{256} \times (1728)^{\frac{1}{3}} &= ? \times (4096)^{\frac{1}{4}} \\ 16 \times (12^3)^{\frac{1}{3}} &= ? \times (8^4)^{\frac{1}{4}} \\ ? &= \frac{16 \times 12}{8} = 24 \end{aligned}$$

13. Ans: d

$$\begin{aligned} \text{Exp: } 35\% \text{ of } 180 + 18^2 &= (27)^{\frac{5}{3}} + ?^2 \\ \Rightarrow 63 + 324 &= 243 + ?^2 \\ \Rightarrow 387 - 243 &= ?^2 \\ \Rightarrow ?^2 &= 144 \\ \Rightarrow ? &= 12 \end{aligned}$$

14. Ans: a

$$\begin{aligned} \text{Exp: } \frac{323}{357} \times 441 - 15 \times 21 &=? \\ \Rightarrow \frac{19 \times 17}{17 \times 21} \times 441 - 15 \times 21 &=? \\ \Rightarrow ? &= 19 \times 21 - 15 \times 21 = 4 \times 21 = 84 \end{aligned}$$

15. Ans: c

$$\begin{aligned} \text{Exp: } ? \times 4 - 40^2 &= 14^2 - 36 \times 44 \\ ? \times 4 &= 196 + 40^2 - (40 - 4) \times (40 + 4) \\ ? \times 4 &= 196 + 40^2 - 40^2 + 4^2 = 212 \\ ? &= \frac{212}{4} = 53 \end{aligned}$$

16. Ans.(b)

$$\begin{aligned} \text{Total number of students registered for CGL} \\ &= 25 + 35 + 40 + 55 + 45 \\ &= 200 \end{aligned}$$

$$\begin{aligned} \text{Total number of students registered for CHSL} \\ &= 20 + 30 + 35 + 45 + 20 \\ &= 150 \end{aligned}$$

$$\begin{aligned} \text{Required \%} &= \frac{200 - 150}{150} \times 100 \\ &= \frac{50}{150} \times 100 = 33\frac{1}{3}\% \end{aligned}$$

17. Ans.(e)

$$\begin{aligned} \text{Total students registered for all the three exams in 2012 and 2013 together} \\ &= 15 + 25 + 20 + 25 + 35 + 30 \\ &= 150 \end{aligned}$$

$$\begin{aligned} \text{Total students registered for all the three exams in 2014 and 2015 together} \\ &= 35 + 40 + 35 + 45 + 55 + 45 \\ &= 255 \end{aligned}$$

$$\text{Required ratio} = \frac{150}{255} = \frac{10}{17}$$

Selection Adda

18. Ans.(c)

Average number of students registered for MTS exam

$$= \frac{15 + 25 + 35 + 45 + 40}{5} = \frac{160}{5} = 32$$

Average number of students registered for CHSL exam

$$= \frac{20 + 30 + 35 + 45 + 20}{5} \\ = \frac{150}{5} = 30$$

Required difference = $32 - 30 = 2$

19. Ans.(a)

Total students registered for all the three exams in 2016

$$= 40 + 45 + 20 \\ = 105$$

Number of appeared students

$$= \frac{80}{100} \times 105 \\ = 84$$

Students appeared for MTS exam

$$= \frac{84}{7} \times 3 \\ = 36$$

$$\text{Required \%} = \frac{36}{40} \times 100 = 90\%$$

20. Ans.(d)

Total number of students register for all exams

$$= 25 + 35 + 30 \\ = 90 \text{ Lakh}$$

Required number of students

$$= 90 \times \frac{80}{100} \times \frac{75}{100} = 54 \text{ Lakh}$$

21. 20%=2080

100%=10400

8000=100%

2400=30%

R=15%

22. Ans b

$$\text{Exp: population of city in 2016} = 1190250 \times \frac{100}{112.5} \times \frac{100}{92} \times \frac{100}{115} \\ = 1190250 \times \frac{8}{9} \times \frac{25}{23} \times \frac{20}{23} \\ = 1000000$$



23. Ans: b

Exp: Inlet tap can fill in \rightarrow 10 hour

Two inlet to can fill in \rightarrow 5 hour

ATQ,

$$\frac{1}{5} + \frac{1}{x} = \frac{2}{15}$$

'x' hour take by outlet tap to empty the tank

$$x = 15$$

24. Ans: a

Exp: ratio between profit share of A to B = $5000 \times 12 : 9000 \times 6$
 $= 10 : 9$

Let profit of A and B are Rs. $10x$ and $9x$ respectively

$$\text{Required percentage} = \frac{(10x - 9x)}{10x} \times 100 = 10\% \text{ less}$$

25. Ans. a

Sol. Ratio of their profit sharing

$$A : B : C = 7 \times 3 : 8 \times 12 : 5 \times 7$$

$$= 21 : 96 : 35$$

Annual profit = 136800

Difference b/w A and C's share of profit

$$= 14\ 152 \times 136800$$

$$= \text{Rs } 12,600$$

Direction (26-30)

	Group X	Group Y	Group Z	Total
A	30	20	40	90
B	40	25	15	80
C	50	25	40	115
Total	120	70	95	285

26. Ans. (d)

Exp.

$$\text{Required percentage} = \frac{40}{25} \times 100 = 160\%$$

27. Ans. (e)

Exp.

$$\text{Average students in group X of class and B} = \frac{40+30}{2} = 35$$

$$\text{Required ratio} = \frac{25}{115} = \frac{5}{23}$$

28. Ans. (d)

Exp.

$$\text{Total girls in group Y and Z together} = 34 - 12 = 22$$

$$\text{Total boys in group Y and Z together on class A} = (90 - 30) - 22 = 38$$

29. Ans. (d)

Exp.

$$\text{Total students in group Y of all the classes} = 70$$

30. Ans. (b)

Exp.

$$\text{Required difference} = 120 - 95 = 25$$

31. Ans: c

$$\text{Exp: Required percentage} = \frac{4 \times 4}{4 \times 4} \times 100 = 100\%$$

32. Ans: a

Let S.P. of each article be Rs. 100.

Total S.P. = Rs. 200

$$\therefore \text{C.P. of article A} = \frac{100}{120} \times 100 = \text{Rs } \frac{250}{3}$$

$$\text{C.P. of article B} = \frac{100}{80} \times 100 = \text{Rs. } 125$$

$$\text{Total C.P.} = \text{Rs. } \frac{625}{3}$$

$$\text{Overall gain or loss percent} = \frac{\left(\frac{625}{3} - 200\right)}{\frac{625}{3}} \times 100 = 4\% \text{ loss}$$

Exp:

33. Ans: c

$$\text{Required probability} = \frac{{}^8C_2}{{}^{32}C_2} = \frac{14}{663}$$

Exp:

34. Ans. b

Sol.

$$\text{Abhinav can complete work in} = 15 \times \frac{100}{125} = 12 \text{ days}$$

$$\text{Alpa can complete work in} = 12 \times \frac{100}{60} = 20 \text{ days}$$

$$\text{Required days} = \frac{12 \times 20}{12 + 20} = \frac{240}{32}$$

$$= 7.5 \text{ days}$$

35. Ans. d

Sol. Let speed of boat in still water = x kmph.

and speed of current = y kmph.

$$\frac{28}{x+y} + \frac{24}{x-y} = 5 \dots\dots(1)$$

$$\frac{56}{x+y} + \frac{16}{x-y} = 6 \dots\dots(2)$$

Solving (1) & (2)

$$X = 11 \text{ km/h } y = 3 \text{ km/h}$$

required ration = 11: 3

Selection Adda