Quiz Date: 11th March 2020

Directions (1 -5): Data given below shows number of persons travel in three type of vehicles (car, bus and train) from three cities (X, Y and Z) on a particular day.

• 32% of travelers of city X travel by car. Out of remaining 25% travel by bus and remaining by train. Number of persons who travel by car from city Y is 25% more than the persons travelling by car from city X. Ratio of no. of persons who travel by train from city X to that from city Y is 3 : 4. Total number of persons who travel form city Y is 40% more than that of city X.

• Number of persons who travel by car from city Z is 24% of the person who travel by bus and train together from city Y. Total number of persons who travel from city Z is 62.5% of persons who travel from city X. Number of person who travel from city X by bus and train together is 472 more than no. of person who travel from city Z by bus and train together.

Q1. What will be the minimum number of cars required so that total no. of person who travel by car from city X can travel, if maximum 4 people can sit together in a car?
(a) 128
(b) 256
(c) 384
(d) 512
(e) 640

Q2. Find the difference between the total travellers from city Y to total travellers from city X.
(a) 520
(b) 560
(c) 600
(d) 640
(e) 680

Q3. Number of persons who travel by train from city Y is what percent more than number of persons who travel by train from city X.
(a) 20%
(b) $33\frac{1}{3}\%$
(c) 50%
(d) $66\frac{2}{3}\%$
(e) 75%

Q4. Number of person who travel by train from city Z is 20% more than number of person who travel by bus from same city. Find the number of person who travel by train from city Z.

(a) 280
(b) 336
(c) 300
(d) 360
(e) 356

Q5. Find the average number of person who travel by car from all cities together?
(a) 460
(b) 486
(c) 512
(d) 538
(e) 564

Direction (6-10): What approximate value will come in place of the question mark (?) in the following question? (Note: You are not expected to calculate the exact value.)

Q6. $\sqrt{483} + (3.03)^5 = 24.78\%$ of $161 + 29.9\%$ of ?

(a) 210

(b) 750

(c) 420

(d) 500

(e) 650

Q7. $\sqrt{2260} \div 6.07 \times \sqrt{2550} = ? \times (4.02)^2$

(a) 100

(b) 12

(c) 15

(d) 20

(e) 25

Q8. $86.78 + (9.01)^{\frac{1}{2}} + ? = (4.02)^3 + (2.01)^4 \times (3.1)^2$

(a) 78

(b) 32

(c) 64

(d) 118

(e) 138

Q9. 15.999% of 63.01% of $(5.001)^{5.001} = ? \times 6.99$

(a) 315

(b) 60

(c) 45

(d) 420

(e) 30

Q10. $\sqrt{5621} \times 224.78 \times 20.92 = ? \times \sqrt{1224} \times 44.89$

(a) 175

(b) 225

(c) 125

(d) 275

(e) 300

Direction (11 – 15): Data regarding number of students in different streams in a school is as follows:

Total number of students in school X is 1500. Out of total boys 25% are in Commerce which is 40 more than number of girls in same stream. Number of girls in Non-medical stream is 30% of total number of girls in school. Number of girls in Medical stream is 15% of total number of boys in school. Total number of students in Arts stream is 26% of the total number

of students in school. Ratio between total number of students in Commerce to total number of students in Arts is 12 : 13. Number of boys in Medical stream is 150% more than number of girls in same stream.

Q11. Find the ratio between total number of students in Medical stream to total number of students in Commerce stream?

(a) 5 : 6

(b) 7 : 6

(c) 7 : 8

(d) 6 : 7

(e) 7 : 5

Q12.Total number of girls in Medical and Non-Medical stream together is what percent more/less than total number of boys in Non-Medical and Arts stream together?

(a) 30%

(b) 20%

(c) 10%

(d) 15%

(e) 5%

Q13. In school Y, number of boys in Arts stream is 45% of total number of boys in school 'Y'. If total number of boys in school 'Y' is 35% more than total number of boys in school X, then find number of boys in Arts stream in school 'Y' is what percent of the number of boys in Medical stream in school 'X'?

(a) 162%

(b) 158%

(c) 152%

(d) 148%

(e) 142%

Q14. Average number of boys in Medical, Non-Medical and Arts stream together is how much more/less than average number of girls in same streams together?

(a) 40

(b) 30

(c) 0

(d) 10

(e) 20

Q15. In which stream total number of students is second highest?

(a) Medical

(b) Non-Medical

(c) Commerce

(d) Arts

(e) None of these

Solutions

S (1-5)
Let total no. of travelers for city X =100x
No. of persons travel by car from city X = 32x
No. of persons travel by bus from city X $= 68x \times \frac{1}{4}$
= 17x
No. of persons travel by train from city X $= 68x \times \frac{3}{4}$
= 51x
No. of persons travel by car from city Y $= 32x \times \frac{125}{100}$
= 40x

No. of person travel by train from city Y $= \frac{51x}{3} \times 4 = 68x$

Total no. of travelers from city Y $= 100x \times \frac{140}{100} = 140x$

No. of person travel by bus from city Y = 140x – 68x – 40x = 32x

No. of persons who travel by car from city Z $= \frac{24}{100} \times (68x + 32x)$

= 24x

Total number of person who travel from city Z $= \frac{62.5}{100} \times 100x$

= 62.5x

Total no. of person who travel by bus and train together from city Z = 62.5 – 24x = 38.5x

City \ Vehicle	X	Y	Z
Car	32x	40x	24x
Bus	17x	32x	
Train	51x	68x	38.5x
Total	100x	140x	62.5x

According to last statement

17x + 51x – 38.5x = 472

29.5x = 472 ⇒ x = 16

City \ Vehicle	X	Y	Z
Car	512	640	384
Bus	272	512	
Train	816	1088	616
Total	1600	2240	1000

S1. Ans.(a)

Sol.

Required number of cars $= \frac{512}{4} = 128$

S2. Ans.(d)

Sol.

Required difference = 2240 – 1600

= 640

S3. Ans.(b)

Sol.

Required % $= \frac{1088-816}{816} \times 100$

$= \frac{272}{816} \times 100 = 33\frac{1}{3}\%$

S4. Ans.(b)

Sol.
Let, no. of person who travel by bus from city Z = x
ATQ,
x + 1.2x = 616
⇒ x = 280
Required value = 280 × 1.2 = 336

S5. Ans.(c)
Sol.
Required average $= \frac{512+640+384}{3} = \frac{1536}{3} = 512$

S6. Ans.(b)

Sol.

$\simeq \sqrt{484} + (3)^5 = 25\% \times 160 + 30\%$ of ?

$\simeq 22 + 243 - 40 = \frac{30}{100} \times$?

$\simeq$? $\frac{225}{3} \times 10 = 750.$

S7. Ans.(e)

Sol.

$\simeq \sqrt{2260} \div 6.07 \times \sqrt{2550} = ? \times (4.02)^2$

$\simeq \frac{\sqrt{225} \times \sqrt{256} \times \sqrt{100}}{6} \simeq ? \times (4)^2$

$? \simeq \frac{15 \times 16 \times 10}{6 \times 16} = 25$

S8. Ans.(d)

Sol.

$86.78 + (9.01)^{\frac{1}{2}} + ? \simeq (4.02)^3 + (2.01)^4 \times (3.1)^2$

$\simeq 87 + 3 + ? = 64 + 16 \times 9$

$\simeq ? = 64 + 144 - 90 = 118.$

S9. Ans.(c)

Sol.

$15.999\% \times 63.01\% \times (5.001)^{5.001} = ? \times 6.99$

$\Rightarrow ? \times 7 \simeq \frac{16}{100} \times \frac{63}{100} \times 5^5$

$\Rightarrow ? \simeq \frac{16}{100} \times \frac{9}{100} \times 3125 = 45$

S10. Ans.(b)

Sol.

$\sqrt{5621} \times 224.78 \times 20.92 = ? \times \sqrt{1224} \times 44.89$

$\Rightarrow \sqrt{5625} \times 225 \times 21 \simeq ? \times \sqrt{1225} \times 45$

$\Rightarrow ? \simeq \frac{75 \times 225 \times 21}{45 \times 35} = 225$

S (11 -15):

Let total number of boys and girls in school X be 'a' and 'b' respectively.

Total number of boys in commerce = 0.25a

Total number of girls in commerce = 0.25a – 40

Total number of girls in Non-Medical stream = 0.3b

Total number of girls in Medical stream = 0.15a

Total number of students in Arts stream = $\frac{26}{100} \times 1500 = 390$

Total number of students in Commerce stream = $\frac{390}{13} \times 12 = 360$

ATQ,

$0.25a + 0.25a - 40 = 360$

$0.5a = 400$

$a = 800$

Total number of boys in school = 800

Total number of girls in school = $1500 - 800 = 700$

Total number of girls in Non-Medical stream = $\frac{30}{100} \times 700 = 210$

Total number of boys in commerce = 0.25a = $\frac{25}{100} \times 800 = 200$

Total number of girls in commerce = 0.25a – 40 = $200 - 40 = 160$

Total number of girls in Medical stream = 0.15a = $\frac{15}{100} \times 800 = 120$

Number of boys in Medical stream = $\frac{250}{100} \times 120 = 300$

Number of girls in Arts stream = $700 - 120 - 210 - 160 = 210$

Number of boys in Arts stream = $390 - 210 = 180$

Number of boys in Non-Medical stream = $800 - 300 - 200 - 180 = 120$

Stream	Boys (800)	Girls (700)
Medical	300	120
Non-medical	120	210
Commerce	200	160
Arts	180	210

S11. Ans (b)

Required ratio = $\frac{300+120}{200+160} = \frac{420}{360} = \frac{7}{6}$

S12. Ans(c)

Required percentage = $\frac{120+210- 120-180}{120+180} \times 100 = \frac{30}{300} \times 100 = 10\%$

S13. Ans(a)

Total number of boys in school 'Y' = $\frac{135}{100} \times 800 = 1080$

Total number of boys in Arts stream in school 'Y' = $1080 \times \frac{45}{100} = 486$

Required % = $\frac{486}{300} \times 100 = 162\%$

S14. Ans(e)

Average number of boys in Medical, Non-Medical and Arts stream together

$= \frac{300+120+180}{3} = 200$

Average number of girls in Medical, Non-Medical and Arts stream together

$= \frac{120+210+210}{3} = 180$

Required difference = $200 - 180 = 20$

S15. Ans(d)

Total number of students in Medical stream = $300 + 120 = 420$

Total number of students in Non-Medical stream = $120 + 210 = 330$

Total number of students in Commerce stream = $200 + 160 = 360$

Total number of students in Arts stream = $180 + 210 = 390$

Total number of students in Arts stream is second highest

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