

Quiz Date: 21st June 2020

Directions (1-5): Four traders sold four types of stationary items i.e., Pen, Pencil, Rubber and Disks. Satish sold 162 Pencils which is 12.5% more than pencils sold by Inder. Average of Pen, Pencil and disks sold by Inder is 162. Pen sold by Sanjeev and Inder is in the ratio 9 : 10. Rubber sold by Inder is 60% more than rubber sold by Rawat. Pencil sold by Rawat is same as Disks sold by Satish. Rawat sold $52\frac{4}{13}\%$ more pen then rubber. Total number of stationary items sold by Satish is same as pencils sold by all the four traders which is equal to 650. Average number of disk sold by Satish, Sanjeev and Inder is 192. Satish sold 192 rubbers which is 28% more than pen sold by Inder or 50% more than pen sold by Satish. Total number of stationary items sold by Sanjeev is 653 and Disks sold by Rawat is 50% more than rubber sold by Sanjeev. Total number of stationary items sold by Inder is 694.

Q1. Who among the following sold maximum number of stationary items?

- (a) Satish
- (b) Inder
- (c) Sanjeev
- (d) Rawat
- (e) both (a) and (c)

Q2. Disks sold by Inder is what percent more than pencil sold by Inder?

- (a) $66\frac{2}{3}\%$
- (b) $33\frac{1}{3}\%$
- (c) $38\frac{1}{3}\%$
- (d) 50%
- (e) $57\frac{1}{3}\%$

Q3. What is the ratio of Pencil sold by Rawat to disk sold by Sanjeev?

- (a) 5 : 9
- (b) 7 : 11
- (c) 4 : 9
- (d) 5 : 8
- (e) 7 : 9

Q4. Total number of disks sold by all the four traders is how much more then total number of rubber sold by all the four traders?

- (a) 99
- (b) 107
- (c) 109
- (d) 117
- (e) 97

Q5. Rubber sold by Sanjeev is what percent of the disks sold by Satish?

- (a) 37.5%
- (b) 50%
- (c) 62.5%
- (d) 75%
- (e) 87.5%

Directions (6 - 10) : In the following questions, two Equations I and II are given. You have to solve both the equations and

Give answer

- (a) If $x > y$
- (b) If $x \geq y$
- (c) If $x < y$
- (d) If $x \leq y$
- (e) If $x = y$ or the relationship cannot be established

Q6. I. $x^2 - 11x + 24 = 0$

II. $2y^2 - 9y + 9 = 0$

Q7. I. $x^3 \times 13 = x^2 \times 247$

II. $y^{1/3} \times 14 = 294 \div y^{2/3}$

Q8. I. $\frac{12 \times 4}{x^{4/7}} - \frac{3 \times 4}{x^{4/7}} = x^{10/7}$

II. $y^3 + 783 = 999$

Q9. I. $\sqrt{500x} + \sqrt{402} = 0$

II. $\sqrt{360y} + (200)^{1/2} = 0$

Q10. I. $14x^2 - 37x + 24 = 0$

II. $28y^2 - 53y + 24 = 0$

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Direction (11-15): Read the data carefully and answer the following questions.

There are four multiplexes in Gurgaon sector 29 i.e. (A, B, C & D) and each multiplex plays movie at two time slots i.e. 3 pm and 5 pm. Total people watching movie at 3 pm in B is $16\frac{2}{3}\%$ more than total number of people watching movie in A at the same time, while total number of people watching movie at 5 pm in A is 132 more than that of total number of people

watching movie in B at 3 pm. Total number of people watching movie in C at 3 pm is 300 more than the average number of people watching movie in A & B at 3 pm, while total number of people watching movie in B at 5 pm is 68 more than the total number of people watching movie in A at 5 pm & total number of people watching movie in C at 5 pm is 25% more than total number of people watching movie in B at 5 pm. Average number of people watching movie (in all four multiplexes) at 3 pm and at 5 pm is 4200 and ratio of total number of people at 3 pm in all four multiplex to total number of people at 5 pm in all four multiplex is 3 : 4. Total number of people watching movie in D at both time slots is 2448 and total number of people watching movie in D at 5 pm is 188 more than total number of people watching movie at same time in C.

Q11. If ratio of number of male to number of female watching movie at 3 pm in A is 5 : 3, then find total number of male watching movie at 3 pm in A is what percent of total number of people watching movie at 5 pm in C?

- (a) $30\frac{8}{13}\%$
- (b) $32\frac{8}{13}\%$
- (c) $28\frac{8}{13}\%$
- (d) $26\frac{8}{13}\%$
- (e) $34\frac{8}{13}\%$

Q12. Find the ratio of total number of people watching movie at 5 pm in B to total number of people watching movie at 3 pm in C?

- (a) 26 : 29
- (b) 25 : 27
- (c) 26 : 27
- (d) 26 : 31
- (e) None of these

Q13. Total number of people watching movie at 5 pm in D is what percent more than total number of people watching movie at 3 pm in C?

- (a) $35\frac{7}{9}\%$
- (b) $33\frac{7}{9}\%$
- (c) $31\frac{7}{9}\%$
- (d) $37\frac{7}{9}\%$
- (e) $39\frac{7}{9}\%$

Q14. Find the average number of people watching movie at 3 pm in B, C & D?

- (a) 960
- (b) 840
- (c) 640
- (d) 720

(e) 1080

Q15. Total number of people watching movie at 5 pm in A is what percent of total number of people watching movie in D at same time?

- (a) $63\frac{10}{31}\%$
 (b) $61\frac{10}{31}\%$
 (c) $59\frac{10}{31}\%$
 (d) $67\frac{10}{31}\%$
 (e) $65\frac{10}{31}\%$



Solutions

Sol (1-5):

Pencils sold by Satish = 162

Pencil sold by Inder = $\frac{162}{1125} \times 100 \times 10 = 144$

Pen, Pencil and disks sold by Inder = $162 \times 3 = 486$

Pen and disks sold by Inder = $486 - 144 = 342$

Total pencil sold = 650

Total stationary item sold by Satish = 650

Disks sold by Satish, Sanjeev and Inder = $192 \times 3 = 576$

Rubber sold by Satish = 192

Pen sold by Inder = $\frac{192}{128} \times 100 = 150$

Pen sold by Sanjeev = $\frac{150}{10} \times 9 = 135$

Pen sold by Satish = $\frac{192}{150} \times 100 = 128$

Stationary items sold by Sanjeev = 653

Disks sold by Satish = $650 - 128 - 162 - 192 = 168$

Disks sold by Inder = $486 - 150 - 144 = 192$

Pencil sold by Rawat = 168

Pencil sold by Sanjeev = $650 - 162 - 144 - 168 = 176$

Disks sold by Sanjeev = $192 \times 3 - 168 - 192 = 216$

Rubber sold by Sanjeev = $653 - 135 - 176 - 216$

$$= 126$$

$$\text{Disks sold by Rawat} = \frac{126}{100} \times 150 = 189$$

$$\text{Rubber sold by Inder} = 694 - 150 - 144 - 192 = 208$$

$$\text{Rubber sold by Rawat} = \frac{208}{160} \times 100 = 130$$

$$\text{Pen sold by Rawat} = \left(1 + \frac{680}{1300}\right) \times 130 = 198$$

	Pen	Pencil	Rubber	Disk	Total
Satish	128	162	192	168	650
Inder	150	144	208	192	694
Rawat	198	168	130	189	685
Sanjeev	135	176	126	216	653
Total	611	650	656	765	

S1. Ans.(b)

Sol.

According to table it's Inder.

S2. Ans.(b)

Sol.

$$\begin{aligned} \text{Rawat \%} &= \frac{192-144}{144} \times 100 \\ &= 33\frac{1}{3}\% \end{aligned}$$

S3. Ans.(e)

Sol.

$$\text{Required ratio} = \frac{168}{216} = \frac{7}{9}$$

S4. Ans.(c)

Sol.

$$\text{Required difference} = 765 - 656 = 109$$

S5. Ans.(d)

Sol.

$$\begin{aligned} \text{Required \%} &= \frac{126}{168} \times 100 \\ &= 75\% \end{aligned}$$

S6. Ans (b)

Sol.

$$\text{I. } x^2 - 11x + 24 = 0$$

$$x^2 - 8x - 3x + 24 = 0$$

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$$(x - 8)(x - 3) = 0$$

$$x = 3, 8$$

$$\text{II. } 2y^2 - 9y + 9 = 0$$

$$2y^2 - 6y - 3y + 9 = 0$$

$$(2y - 3)(y - 3) = 0$$

$$y = \frac{3}{2}, 3$$

$$\therefore x \geq y$$



S7. Ans (c)

Sol.

$$\text{I. } x^3 \times 13 = x^2 \times 247$$

$$x = \frac{247}{13} = 19$$

$$\text{II. } y^{\frac{1}{3}} \times 14 = 294 \div y^{\frac{2}{3}}$$

$$y = \frac{294}{14} = 21$$

$$\therefore x < y$$

S8. Ans (d)

Sol.

$$\text{I. } \frac{12 \times 4}{x^{\frac{4}{7}}} - \frac{3 \times 4}{x^{\frac{4}{7}}} = x^{\frac{10}{7}}$$

$$x^2 = 48 - 12$$

$$x = \pm 6$$

$$\text{II. } y^3 + 783 = 999$$

$$y^3 = 216$$

$$y = 6$$

$$x \leq y$$

S9. Ans (c)

Sol.

$$\text{I. } 22.36x + 20.05 = 0$$

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$$x = -0.89$$

$$\text{II. } 18.97y + 14.14 = 0$$

$$y = -0.74$$

Alternately,

$$\text{I. } 10\sqrt{5}x + 6\sqrt{67} = 0$$

$$x = -\frac{6\sqrt{67}}{10\sqrt{5}} = -\frac{3\sqrt{67}}{5\sqrt{5}} = -\frac{9\sqrt{67}}{15\sqrt{5}}$$

$$\text{II. } 6\sqrt{10}y + 10\sqrt{2} = 0$$

$$y = -\frac{10\sqrt{2}}{6\sqrt{10}} = -\frac{\sqrt{10}}{3\sqrt{2}} = -\frac{25}{15\sqrt{5}}$$

$$\therefore x < y$$

S10. Ans (b)

Sol.

$$\text{I. } 14x^2 - 37x + 24 = 0$$

$$14x^2 - 21x - 16x + 24 = 0$$

$$(7x - 8)(2x - 3) = 0$$

$$x = \frac{8}{7}, \frac{3}{2}$$

$$\text{II. } 28y^2 - 53y + 24 = 0$$

$$28y^2 - 21y - 32y + 24 = 0$$

$$(7y - 8)(4y - 3) = 0$$

$$y = \frac{8}{7}, \frac{3}{4}$$

$$\therefore x \geq y$$

Sol (11 - 15)

Let total number of people watching movie at 3 pm in A = a

So, total number of people watching movie at 3 pm in B = $\frac{7a}{6}$

Total number of people watching movie at 5 pm in A = $\frac{7a}{6} + 132 = \left(\frac{7a+792}{6}\right)$

Total number of people watching movie at 3 pm in C = $\frac{a+7a}{2} + 300 = \left(\frac{13a+3600}{2}\right)$

Total number of people watching movie at 5 pm in B = $\left(\frac{7a+792}{6}\right) + 68$

$$= \frac{(7a+1200)}{6}$$

Total number of people watching movie at 5 pm in C = $\frac{(7a+1200)}{6} \times \frac{5}{4}$

$$= \frac{(35a+6000)}{24}$$

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$$\begin{aligned} \text{Total number of people watching movie at 3 pm in all the four multiplexes} &= 4200 \times 2 \times \frac{3}{7} \\ &= 3600 \end{aligned}$$

$$\begin{aligned} \text{Total number of people watching movie at 5 pm in all the four multiplexes} &= 4200 \times 2 \times \frac{4}{7} \\ &= 4800 \end{aligned}$$

Given,

$$\left[a + \frac{7a}{6} + \frac{13a+3600}{12} + \frac{7a+792}{6} + \frac{7a+1200}{6} + \frac{35a+6000}{24} \right] = 8400 - 2448$$

$$\frac{24a+28a+26a+7200+28a+3168+28a+4800+35a+6000}{24} = 5952$$

$$169a + 21168 = 142848$$

$$169a = 121680$$

$$a = 720$$

$$\text{Total number of people watching movie at 5 pm in D} = \frac{35 \times 720 + 6000}{24} + 188 = 1488$$

$$\begin{aligned} \text{Total number of people watching movie in D at 3 pm} &= 2448 - 1488 \\ &= 960 \end{aligned}$$

Multiplexes	3 pm	5 pm
A	$a = 720$	$\frac{7 \times 720}{6} + 132 = 972$
B	$\frac{7 \times 720}{6} = 840$	$972 + 68 = 1040$
C	$\left(\frac{720 + 840}{2} \right) + 300 = 1080$	$1040 \times 1.25 = 1300$
D	960	1488

S11. Ans(e)

Sol.

$$\text{Total number of male watching movie at 3 pm in A} = 720 \times \frac{5}{8} = 450$$

$$\begin{aligned} \text{Required percentage} &= \frac{450}{1300} \times 100 \\ &= 34 \frac{8}{13} \% \end{aligned}$$

S12. Ans(c)

Sol.

$$\text{Required ratio} = \frac{1040}{1080} = 26 : 27$$

S13. Ans(d)

Sol.

$$\begin{aligned} \text{Required percentage} &= \frac{1488-1080}{1080} \times 100 \\ &= \frac{408}{1080} \times 100 \\ &= 37 \frac{7}{9} \% \end{aligned}$$

S14. Ans(a)

Sol.

$$\begin{aligned}\text{Required average} &= \frac{840+1080+960}{3} \\ &= \frac{2880}{3} \\ &= 960\end{aligned}$$

S15. Ans(e)

Sol.

$$\begin{aligned}\text{Required percentage} &= \frac{972}{1488} \times 100 \\ &= 65 \frac{10}{31}\%\end{aligned}$$

