Quiz Date: $6^{\text {th }}$ May 2020

Q1. Quantity I: Overall profit percentage if the cost prices of two shirts are equal. One shirt is sold for $20 \%$ profit and the other is sold for $10 \%$ loss.
Quantity II: Profit \% made in selling each meter if the profit made in selling 20 m of a cloth equals the cost price of 5 m of that cloth.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I $\geq$ Quantity II
(d) Quantity I $\leq$ Quantity II
(e) Quantity I = Quantity II or No relation

Q2. The largest possible right circular cylinder is cut out from a wooden cube of edge 7 cm .
Quantity I: volume of the cube left over after cutting out the cylinder
Quantity II: Surface area of cube remained after cutting out the cylinder.
Note: compare the magnitudes of both quantities.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I $\geq$ Quantity II
(d) Quantity I $\leq$ Quantity II
(e) Quantity I = Quantity II or No relation

Q3. Quantity I: Value of y. A vessel contains 2.5 liters of water and 10 liters of milk. $20 \%$ of the contents of the vessel are removed. To the remaining contents, $x$ liters of water are added to reverse the ratio of water and milk. Then $y$ liters of milk are added again to reverse the ratio of water and milk.
Quantity II: 120 ltr.

(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I $\geq$ Quantity II
(d) Quantity I $\leq$ Quantity II
(e) Quantity I = Quantity II or No relation

Q4. P can complete a piece of work in 16 days which Q can complete in 32 days. P and Q work on alternate days.
Quantity I: Time taken by them to complete the work if P starts on day 1.
Quantity II: time taken by them to complete the work if Q starts on day 1.
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I $\geq$ Quantity II
(d) Quantity I $\leq$ Quantity II
(e) Quantity I = Quantity II or No relation

Q5. Quantity I:Value of $\mathbf{p}, p^{2}-18 p+77=0$

Quantity II: Value of $\mathbf{q}, 3 q^{2}-25 q+28=0$
(a) Quantity I > Quantity II
(b) Quantity I < Quantity II
(c) Quantity I $\geq$ Quantity II
(d) Quantity I $\leq$ Quantity II
(e) Quantity I = Quantity II or No relation

Directions (6-10): What will come in place of the question mark (?) in the following number series?

Q6. 7, 20, 46, 98, 202,
(a) 420
(b) 410
(c) 310
(d) 320
(e) 450


Q7. 210, 209, 213, 186, 202, (?)
(a) 138
(b) 77
(c) 177
(d) 327
(e) 322

Q8. 567, 295, 159, 91, 57, (?)
(a) 27
(b) 29
(c) 30
(d) 39
(e) 40

Q9.45, 186, 283, 344, 377, (?)
(a) 397
(b) 387
(c) 390
(d) 380
(e) 405

Q10. 10, 6, 12, 35, (?), 591.75
(a) 130
(b) 129.5
(c) 127.25
(d) 133
(e) 224.25

Directions (11-15): Study the information given below in the passage and answer the questions that follow:
In a village there are certain number of population. $20 \%$ of population are between age group of ( $41-60$ ) years $25 \%$ of the remaining population are between the age group of below 20 years. Rest of the population are between age group of ( $20-40$ ) year. $80 \%$ of the total population of age group ( $20-40$ ) years and $60 \%$ of the age group ( $41-60$ ) years are graduate. $75 \%$ of total population of age group below 20 years are still studying in various classes from $1^{\text {st }}$ to $12^{\text {th }}$.

The total persons who are graduate also involved in other activities like music, sports, yoga. $40 \%$ of the age group (20-40) years are involved in music only, $25 \%$ in sports only and rest are involved in Yoga only. The total no. of population below age of 20 years is 10,000 . There is no person above 60 years. The persons of age group (41-60) are involved in yoga only.

Q11. Total no. of population who are graduate are what percent of total no. of graduate persons who are involved in only music and only sports together?
(a) $182 \frac{4}{13} \%$
(b) $192 \frac{4}{13} \%$

(c) $198 \frac{4}{13} \%$
(d) Can't be determined
(e) $188 \%$

Q12. Total no. of population who is still studying in various classes from $1^{\text {st }}$ to $12^{\text {th }}$ is what percent more or less than the total no. of population who is involved in yoga only (approximately)?
(a) $54 \%$ less
(b) $48 \%$ more
(c) $48 \%$ less
(d) $42 \%$ more
(e) $58 \%$ less

Q13. Total no. of persons who are involved in only music and only sports together are what percent of total population of the village?
(a) $3.12 \%$
(b) $28.2 \%$
(c) $31.2 \%$
(d) $38.2 \%$
(e) $37.2 \%$

Q14. If the ratio of male to female in the population of age group ( $20-40$ ) years and ( 41 60 ) years is $3: 2$ and $3: 1$ respectively and $35 \%$ of females of age group (20-40) years play hockey and $36 \%$ of females of age group (41-60) years play Ludo then what is the ratio of females who play hockey to the ratio of females who do not play Ludo?
(a) $8: 21$
(b) $11: 3$
(c) $23: 9$
(d) $21: 8$
(e) $14: 9$

Q15. Total no. of person who are involved in only music and only sports together are what percent more or less than the total no. of population who is involved in yoga only?
(a) $25 / 3 \%$ more
(b) $25 / 3 \%$ less
(c) $35 / 8 \%$ more
(d) $25 / 9 \%$ less
(e) $25 / 8 \%$ more


## Solutions

S1. Ans.(b)
Sol. Quantity 1: Let C.P. of both shirts be Rs. 100
Total C.P. = Rs. 200
Total S.P. of both shirts $=1.2 \times 100+0.9 \times 100=$ Rs. 210
Overall profit $=\frac{(210-200)}{200} \times 100=5 \%$
Quantity 2 : Let C.P. of one-metre cloth be Rs. $x$
And S.P. of one-metre cloth be Rs. $y$
Then,
$20 y-20 x=5 x$
$\Rightarrow 20 y=25 x$
$\Rightarrow \frac{y}{x}=\frac{5}{4}$
Profit\% $\frac{(5-4)}{4} \times 100=25 \%$
Quantity $2>$ Quantity 1

## S2. Ans.(b)

Sol. Quantity 1 : Volume of cube left $=7^{3}-\pi\left(\frac{7}{2}\right)^{2} \times 7$
$=343-\frac{22}{7} \times \frac{49 \times 7}{4}$
$=343-269.5$
$=73.5 \mathrm{~cm}^{3}$
Quantity 2 : Surface area of cube left $=6 \times 7^{2}-2 . \pi\left(\frac{7}{2}\right)^{2}+2 \pi\left(\frac{7}{2}\right) 7$
$=294-77+154$
$=371 \mathrm{~cm}^{2}$
Quantity 2 > Quantity 1
S3. Ans.(e)
Sol.
Quantity 1: Liters of milk removed $=\frac{1}{5} \times 10=2$ ltr.
Liters of water removed $=\frac{1}{5} \times 2.5=0.5 \mathrm{ltr}$.
$\frac{2+x}{8}=\frac{4}{1}$
$\Rightarrow x=30$
$\frac{32}{8+y}=\frac{1}{4} \Rightarrow y=128-8=120 \mathrm{ltr}$.
Quantity 2: 120 ltr
Quantity I = Quantity II.


S4. Ans.(b)
Sol.
Let, total units of work be 32 units
Then $P$ does 2 units per day.
\& Q does 1 unit per day.
Quantity 1:
3 units are done in 2 days.
30 units are done in 20 days.
On $21^{\text {st }}$ day P does 2 units and work gets completed.
Quantity 2 :
3 units are done in 2 days
30 units are done in 20 days.
On $21^{\text {st }}$ day Q does 1 unit work.
$P$ completes the remaining one unit in another $\frac{1}{2}$ day

Total days $=21 \frac{1}{2}$
Quantity 2 > quantity 1
S5. Ans.(c)
Sol. Quantity 1: $p^{2}-18 p+77=0$
$\Rightarrow p^{2}-11 p-7 p+77=0$
$\Rightarrow(p-11)(p-7)=0$
$\Rightarrow p=11,7$
Quantity 2: $3 q^{2}-25 q+28=0$
$\Rightarrow 3 q^{2}-21 q-4 q+28=0$
$\Rightarrow(3 q-4)(q-7)=0$
$\Rightarrow q=7, \frac{4}{3}$
Quantity $1 \geq$ quantity 2
S6. Ans.(b)
Sol.
The pattern of the number series is :

$$
\begin{aligned}
& 7 \times 2+6=20 \\
& 20 \times 2+6=46 \\
& 46 \times 2+6=98 \\
& 98 \times 2+6=202 \\
& 202 \times 2+6=404+6=410
\end{aligned}
$$

S7. Ans. (b)
Sol.
The pattern of the number series is :


$$
\begin{aligned}
& 210-1^{3}=209 \\
& 209+2^{2}=213 \\
& 213-3^{3}=186 \\
& 186+4^{2}=202 \\
& 202-5^{3}=202-125=77
\end{aligned}
$$

S8. Ans.(e)
Sol.
Pattern is $-272,-136,-68,-34,-17$
$\therefore$ ? $=57-17=40$

S9. Ans.(c)
Sol.

Series is


S10. Ans.(b)
Sol.
The pattern is:

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\(\times 0.5+1, \times 1.5+3, \times 2.5+5, \times 3.5+7 \ldots \ldots\).
\(\Rightarrow 35 \times 3.5+7=129.5\)
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## S (11-15):

Let total population of village $=\mathrm{x}$
$\therefore x \times \frac{80}{100} \times \frac{25}{100}=10,000$
$\Rightarrow \mathrm{x}=50,000$
Population of age group ( $41-60$ ) years
$=\frac{20}{100} \times 50,000$
$=10,000$
Population of age group ( $20-40$ ) years
$=50,000-(10,000+10,000)$
$=30,000$

S11. Ans.(b)
Sol.
Total no. of population who are graduate
$=\frac{80}{100} \times(30,000)+10,000 \times \frac{60}{100}$
$=30,000$
Total no. of persons who are involved in music and sports only
$=\frac{80}{100} \times 30,000 \times \frac{65}{100}$
$=15,600$
$\therefore$ Required percentage $=\frac{30,000}{15,600} \times 100$
$=192 \frac{4}{13} \%$

S12. Ans.(c)
Sol.

Total no. of persons who are still studying in various classes from $1^{\text {st }}$ to $12^{\text {th }}$
$=\frac{75}{100} \times 10,000$
$=7,500$
Total persons who involved in yoga
$=\frac{80}{100} \times 30,000 \times \frac{35}{100}+\frac{60}{100} \times 10,000$
$=8,400+6,000$
$=14,400$
$\therefore$ Required percentage $=\frac{14,400-7500}{14,400} \times 100$
$=\frac{575}{48} \simeq 48 \%$ less


S13. Ans.(c)
Sol.
Total person who involved in music and sports only
$=\frac{40}{100} \times \frac{80}{100} \times 30,000+\frac{25}{100} \times \frac{80}{100} \times 30,000$
$=15,600$
$\therefore$ Required percent age $=\frac{15,600}{50,000} \times 100$
= $31.2 \%$

S14. Ans.(d)
Sol.
Total females of age group (20-40)
years who play hockey
$=\frac{2}{5} \times \frac{35}{100} \times 30,000$
$=4,200$
Total females of age group (41-60)
years who do not play
Ludo $=\frac{1}{4} \times \frac{64}{100} \times 10,000$
= 1,600
$\therefore$ Required ratio $=\frac{42}{16}=\frac{21}{8}$

S15. Ans.(a)
Sol.
Total persons who involved in music and
sports only $=15,600$
Total persons who involved in yoga only
$=\frac{35}{100} \times \frac{80}{100} \times 30,000+\frac{60}{100} \times 10,000$
$=14,400$
$\therefore$ Required percentage $=\frac{15,600-14,400}{14,400} \times 100$
$=8 \frac{1}{3} \%$ more

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