## Quiz Date: 25 ${ }^{\text {th }}$ March 2020

Directions (1-5): What will come in place of the question mark (?) in the following number series?
Q1. 12, 28, 51, 81, 118, ?
(a) 162
(b) 144
(c) 136
(d) 142
(e) 158

Q2. ?, 5, 18, 76, 385, 2316
(a) 2.5
(b) 1.5
(c) 1
(d) 2
(e) 0.5

Q3. 18, 34, 59, 95, ?, 208
(a) 151
(b) 142
(c) 144
(d) 148
(e) 152

Q4. $18,10,12, \quad 27,112$,
(a) 729
(b) 841
(c) 942
(d) 881
(e) 901

Q5. ?, 159, 183, 228, 302, 413
(a) 148
(b) 146
(c) 150
(d) 151
(e) 145

Q6. Vessels A and B contain mixtures of milk and water in the ratios $4: 5$ and $5: 1$ respectively. In what ratio should quantities of mixture be taken from A and B to form a mixture in which milk to water is in the ratio $5: 4$ ?
(a) $2: 5$
(b) $4: 3$
(c) $5: 2$
(d) $2: 3$
(e) None of these

Q7. The marked price of an article is Rs. 100. If the article is sold at a discount of $10 \%$, then $35 \%$ profit is realised. How much loss or profit will be made if it is sold for Rs. 30 less than market price?
(a) $5 \%$ loss
(b) $8 \%$ gain
(c) $5 \%$ gain
(d) $8 \%$ loss
(e) None of these

Q8. Neeraj and Gaurav started a business in partnership by investing Rs. 10,000 and Rs. 4000 respectively. Condition of partnership is that Gaurav got Rs. 100 per month for management of the business. After paying 5\% interest on the capital, annual profit is distributed in the ratio of their investment. Find the share of their profit, if the annual profit is Rs. 4000.
(a) Rs. 3000 and Rs1000
(b) Rs. 2500 and Rs1500
(c) Rs. 1500 each
(d) Rs. 2000 each
(e) None of these

Q9. Pankaj calculates his profit percentage on the selling price whereas Chandan calculates his profit on the cost price. They find that the difference of their profit is Rs. 135. If the selling price of both of them are the same, and Pankaj gets 30\% profit and Chandan gets 25\% profit, then find their selling price.
(a) Rs. 1250
(b) Rs. 1150
(c) Rs. 1450
(d) Rs. 1350
(e) none of these


Q10. A fruit seller has three types of mangoes i.e. type x , type y and type z and per kg price of these types of mangoes is Rs. 22.5, Rs. 25 and Rs. 'a'. If seller mixed all three type x, type y and type $z$ in the ratio of $2: 3: 3$ and sold the mixture at the rate of Rs. 30.8 per kg and made a profit of $12 \%$, then find the per kg price of type $z$ mangoes?
(a) Rs. $37 \frac{1}{2}$
(b) Rs. $33 \frac{1}{3}$
(c) Rs. $39 \frac{1}{3}$
(d) Rs. $41 \frac{1}{3}$
(e) Rs. $35 \frac{1}{3}$

Q11. Ten years ago, sum of age of mother \& son is 16 years less than present age of father and age of mother at the time of birth of son is 32 years less than father's present age. If after six years ratio of age of son and mother will be 6:11, then find average of present age of mother and father?
(a) 42 years
(b) 40 years
(c) 48 years
(d) 45 years
(e) 44 years

Q12. Ratio of age of A \& B three years ago was $7: 8$ and six years hence will be $10: 11$. C is two years older than $A$, while $D$ is four years younger than $B$. At the time when $A$ and $B$ completed their graduation, the ratio of their ages was 20:23 respectively, find sum of age of C \& D when A \& B completed their graduation?
(a) 39 years
(b) 43 years
(c) 45 years
(d) 41 years
(e) 47 years

Q13. Three taps P, Q, R when opened alternatively for 1 minute each, can fill a tank in 18 minutes. Time taken by P alone is 5 minutes more than Q and R take when working together. Find the time taken by Q alone to fill the tank, if R is $20 \%$ less efficient than Q .
(a) 16 minutes
(b) $22 \frac{1}{2}$ minutes
(c) 18 minutes
(d) 15 minutes
(e) 27.5 minutes

Q14. Amit borrowed a certain sum of money for 2 years at $8 \%$ per annum on simple interest and immediately lent it to Ravi at compound interest at the same rate of interest and for the same time period and gained by Rs 16 . What amount did Amit borrow?
(a) Rs 1600
(b) Rs 2500
(c) Rs 2400
(d) Rs 1800
(e) Rs 2200

Q15. A box contains 2 blue caps, 4 red caps, 5 green caps and 1 yellow cap, If one cap is picked at random, what is the probability that it is either blue or yellow?
(a) $\frac{2}{9}$
(b) $\frac{1}{4}$
(c) $\frac{3}{8}$
(d) $\frac{6}{11}$
(e) $\frac{2}{5}$

## Solutions

S1. Ans.(a)
Sol.


S2. Ans.(b)
Sol.


S3. Ans.(c)
Sol.


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S4. Ans.(e)
Sol.


S5. Ans.(a)
Sol.


S6. Ans.(c)
Sol. Quantity of milk in vessel $A=\frac{4}{9}$
Quantity of milk in vessel $B=\frac{5}{6}$
Quantity of milk in vessel $C=\frac{5}{9}$


Required ratio $=5: 2$
S7. Ans.(c)
Sol. Here (100 + Profit) \% of CP
= Rs. (MP - 10\% of MP)
(100 + 35) \% CP = Rs. (100-10)
$135 \%$ CP = Rs. $90 \rightarrow \mathrm{CP}=$ Rs. $\frac{200}{3}$
SP of article (at Rs. 30 less than MP) = Rs. 70
Profit $\%=\frac{70-\frac{200}{3}}{\frac{200}{3}} \times 100=5 \%$
S8. Ans.(d)
Sol.
Gaurav profit share in 1 year $=12 \times 100=$ Rs. 1200
Interest of Neeraj $=\frac{10,000 \times 5 \times 1}{100}=$ Rs. 500
Interest of Gaurav $=\frac{4000 \times 5 \times 1}{100}=$ Rs. 200

Total profit of Neeraj and Gaurav $=(1200+500+200)=$ Rs. 1900
Remaining profit $=4000-1900=$ Rs. 2100

| Neeraj: | Gaurav |
| :--- | :--- |
| 10000 | 4000 |
| $5:$ | 2 |

Share of Neeraj in remaining profit $=\frac{5}{7} \times 2100=$ Rs. 1500
Share of Gaurav in remaining profit $=\frac{2}{7} \times 2100=$ Rs. 600
Total profit of Neeraj $=500+1500=$ Rs. 2000
Total profit of Gaurav $=1200+600+200=$ Rs. 2000
S9. Ans.(d)
Sol.

|  | C.P. | S.P. |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Pankaj | 70 | $100_{\times 5}$ | 350 | 500 |
| Chandan | 100 | $125_{\times 4}$ | 400 | 500 |

Difference of their profit $=150-100=50$ $\therefore 50 \rightarrow 135$
$500 \rightarrow \frac{135}{50} \times 500=1350$ Rs.
S10. Ans(b)
Sol.
Cost price of mixture per $\mathrm{kg}=30.8 \times \frac{100}{112}=R s .27 .5$
ATQ -
$22.5 \times 2+25 \times 3+3 a=27.5 \times 8$
$3 \mathrm{a}=220-45-75$
$3 \mathrm{a}=100$
$\mathrm{a}=R s .33 \frac{1}{3}$

S11. Ans(d)
Sol.
Let present age of father, mother \& son be ' $f$ ' , 'm' \& 's' years respectively ATQ -
$(\mathrm{m}-10)+(s-10)=\mathrm{f}-16$
$\mathrm{m}+\mathrm{s}=\mathrm{f}+4$
$\mathrm{f}=\mathrm{m}+\mathrm{s}-4$
Mother's age when son is born $=\mathrm{m}-\mathrm{s}$
Given, m-s = f - 32
$\mathrm{f}=\mathrm{m}-\mathrm{s}+32$
From (i) and (ii)
$\mathrm{m}+\mathrm{s}-4=\mathrm{m}-\mathrm{s}+32$
$2 \mathrm{~s}=36$
$\mathrm{s}=18$ years

Given, $\frac{(s+6)}{(m+6)}=\frac{6}{11}$
$6 \mathrm{~m}+36=264$
$6 \mathrm{~m}=228$
$\mathrm{m}=38$ years
From (i) we get -
$\mathrm{f}=52$ years
Required average $=\frac{38+52}{2}=45$ years
S12. Ans(d)
Let age of A \& B three years ago be 7x \& 8x years respectively.
ATQ,
$\frac{7 x+9}{8 x+9}=\frac{10}{11}$
$77 \mathrm{x}+99=80 \mathrm{x}+90$
$3 x=9$
$\mathrm{x}=3$
Present age of $\mathrm{A}=3 \times 7+3=24$ years
Present age of $B=3 \times 8+3=27$ years
Let $A$ and $B$ completed their graduation ' $n$ years' ago.
So, $\frac{24-n}{27-n}=\frac{20}{23}$
$552-23 n=540-20 n$
$\mathrm{n}=4$ years
Age of C when A completed his graduation $=26-4=22$ years
Age of D when B completed his graduation $=23-4=19$ years
Required sum $=22+19=41$ years

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S13. Ans.(c)
Sol.
When $\mathrm{P}, \mathrm{Q}$ and R are opened alternatively for 1 minutes each, time taken by them is 18 minutes. If all of them are opened simultaneously, they will fill tank 3 times faster. Hence time taken by each of them $=\frac{18}{3}=6$ minutes.
Tank filled by them in 1 minute when all of them are opened together $=\frac{1}{6}$ units
Let Q and R together takes x minutes
$\therefore \mathrm{P}$ will take $\mathrm{x}+5$ minutes

Now
$\frac{1}{x}+\frac{1}{x+5}=\frac{1}{6}$
$\frac{2 x+5}{x(x+5)}=\frac{1}{6}$
$12 \mathrm{x}+30=\mathrm{x}^{2}+5 \mathrm{x}$
$\Rightarrow \mathrm{x}=10$ minutes
Hence time taken by $Q$ and $R$ together is 10 minutes.
Given,
R is $20 \%$ less efficient than Q .
Let R takes 5K minutes
Q takes 4 K minutes
Then
$\frac{1}{5 \mathrm{~K}}+\frac{1}{4 \mathrm{~K}}=\frac{1}{10}$
$\frac{9}{20 \mathrm{~K}}=\frac{1}{10}$
$\mathrm{K}=\frac{9}{2}$
$\therefore \mathrm{Q}$ takes $=\frac{4 \times 9}{2}=18$ minutes
S10. Ans.(b)
Sol.
Let Amit borrowed an amount of Rs. P.
$\mathrm{P}\left[\left(1+\frac{8}{100}\right)^{2}-1\right]-\frac{\mathrm{P} \times 8 \times 2}{100}=16$
$\Rightarrow \mathrm{P}\left[\frac{27^{2}-25^{2}}{625}-\frac{4}{25}\right]=16$
$\Rightarrow P=$ Rs. 2,500
S15. Ans. (b)
Sol. Reqd. Probability $=\frac{2 c_{1}+1 c_{1}}{12 c_{1}}=\frac{3}{12}=\frac{1}{4}$

