Quiz Date: 28 ${ }^{\text {th }}$ July 2020
Directions (1-5): In the following number series only one number is wrong. Find out the wrong number.
Q1.7, 12, 40, 222, 1742, 17390, 208608
(a) 7
(b) 12
(c) 40
(d) 1742
(e) 208608

Q2.6, 91, 584, 2935, 11756, 35277, 70558
(a) 91
(b) 70558
(c) 584
(d) 2935
(e) 35277

Q3. 9050, 5675, 3478, 2147, 1418, 1077, 950
(a) 3478
(b) 1418
(c) 5675
(d) 2147
(e) 1077

Q4. 1, $4, \quad 25, \quad 256, \quad 3125, \quad 46656, \quad 823543$
(a) 3125
(b) 823543
(c) 46653
(d) 25
(e) 256

Q5. 8424, 4212, 2106, 1051, 526.5, 263.25, 131.625
(a) 131.625
(b) 1051
(c) 4212
(d) 8424
(e) 263.25

Q6. In an examination 80\% of the boys passed in English and 85\% passed in Mathematics, while $75 \%$ passed in both. If 45 boys failed in both, the number of boys who appeared for the examination was:
(a) 400
(b) 450
(c) 200
(d) 150
(e) 250

Q7. A person gave $20 \%$ of his income to his elder son, $30 \%$ of the remaining to the younger son and $10 \%$ of the remaining balance, he donated to a trust. He is left with Rs. 10080. His income was:
(a) Rs. 50,000
(b) Rs. 40,000
(c) RS. 30,000
(d) Rs. 20,000
(e) Rs. 24,000

Q8. A and B invest Rs. 3000 and Rs. 4000, respectively in a business. A receives Rs. 10 per month out of the profit as a remuneration for running the business and the rest of the profit in divided is proportion to their investments. If in a year, A totally receives Rs. 390, what does B receive?
(a) Rs. 630
(b) Rs. 360
(c) Rs. 480
(d) Rs. 380
(e) Rs. 420


Q9. The monthly incomes of two persons are in the ratio 2:3 and their monthly expenses are in the ratio $5: 9$. If each of them saves Rs. 600 per month, then their monthly incomes are:
(a) Rs. 1500; Rs. 2250
(b) Rs. 1800; Rs. 2400
(c) Rs. 1600; Rs. 2400
(d) Rs. 1400; Rs. 2100
(e) Rs. 1200; Rs. 1800

Q10. Rs. 33,630 are divided among A, B and C in such a manner that the ratio of the amount of $A$ to that of $B$ is 3: 7 and the ratio of the amount of $B$ to that of $C$ is 6: 5. The amount of money received by $B$ is
(a) Rs. 14868
(b) Rs. 16257
(c) Rs. 13290
(d) Rs. 12390
(e) Rs. 10390

Q11. Speed of train ' $Y$ ' is $100 \%$ more than speed of train ' $X$ '. Length of train ' $Y$ ' is $150 \%$ of the length of train ' X '. If train ' X ' can cross a pole in 2 seconds, then find in how much time train ' Y ' can cross train ' X ' when they travel in same direction?
(a) 4 seconds
(b) 5 seconds
(c) 6 seconds
(d) 8 seconds
(e) 10 seconds

Q12. Average of five consecutive odd numbers is D. If the next five odd numbers are also included, then the average:
(a) remains unchanged
(b) Increases by 2
(c) Increases by 3
(d) Increases by 4
(e) Increases by 5

Q13. Satish invested Rs 4000 each in two schemes which offers same rate of interest but one at simple interest and other at compound interest. If difference between interest earned from these schemes after 2 years is Rs 360 then find the rate percentage?
(a) $10 \%$
(b) $15 \%$
(c) $20 \%$
(d) $25 \%$
(e) $30 \%$

Q14. A started a business with capital of Rs. 10000 Four months later B joined as a partner with a capital of Rs. 5000. What is the share of A out of total profit of Rs. 2000 at the end of the year.
(a) Rs. 500
(b) Rs. 1200
(c) Rs. 1500
(d) Rs. 800
(e) Rs. 850

Q15. If sum of area of square and rectangle is 644 sq. cm and perimeter of rectangle is 88 cm . If ratio of length to breadth of rectangle is $7: 4$, then find perimeter of square?
(a) 72 cm
(b) 81 cm
(c) 48 cm
(d) 64 cm
(e) 56 cm

## Solutions

S1. Ans.(d)
Sol.
The pattern of the number series is as follows:
$7 \times 2-2=12$
$12 \times 4-(2+6)=48-8=40$
$40 \times 6-(8+10)=240-18=222$
$222 \times 8-(18+14)=1776-32=1744 \neq 1742$
$1744 \times 10-(32+18)=17440-50=17390$

S2. Ans.(c)
Sol.
The pattern of number series is as follows:
$6 \times 7+7^{2}=42+49=91$
$91 \times 6+6^{2}=546+36=582 \neq 584$
$582 \times 5+5^{2}=2910+25=2935$
$2935 \times 4+4^{2}=11740+16=11756$
$11756 \times 3+3^{2}=35268+9=35277$

S3. Ans.(e)
Sol.
The pattern of number series is as follows:
$9050-15^{3}=9050-3375=5675$
$5675-13^{3}=5675-2197=3478$

$3478-11^{3}=3478-1331=2147$
$2147-9^{3}=2147-729=1418$
$1418-7^{3}=1418-343=1075 \neq 1077$

S4. Ans.(d)
Sol.
The pattern of number series is as follows :
$1^{1}=1 ; 2^{2}=4 ; 3^{3}=27 \neq 25 ; 4^{4}=256 ; 5^{5}=3125 ; 6^{6}=46656 ; 7^{7}=823543$

S5. Ans.(b)
Sol.
The pattern of number series is as follows:
$8424 \div 2=4212$
$4212 \div 2=2106$
$2106 \div 2=1053 \neq 1051$
$1053 \div 2=526.5$
$526.5 \div 2=263.25$
$263.25 \div 2=131.625$
S6. Ans.(b)
Sol.
Passed boys in English or Math or both
$=80+85-75$
= 90\%
failed boys in both subject = 10\%
$\therefore$ Total number of boys
$=\frac{100}{10} \times 45$
$=450$

S7. Ans.(d)
Sol.
Let the total income be Rs. $x$
$\mathrm{x} \times \frac{80}{100} \times \frac{70}{100} \times \frac{90}{100}=10080$
$\mathrm{x}=$ Rs. 20,000

S8. Ans.(b)
Sol.
As, A receives Rs. 10 per month out of profit.
Therefore, A gets $12 \times 10=$ Rs. 120
Here, A totally receives Rs. 390.
Therefore $390-120=$ Rs. 270 was
paid for A's capital
Ratio of profit $=3: 4$


Profit of $B=\frac{270}{3} \times 4=360$

S9. Ans.(c)
Sol.
Let monthly income be $2 x$ and $3 x$
And monthly expense be 5y and 9y
$2 \mathrm{x}-5 \mathrm{y}=600$
$3 \mathrm{x}-9 \mathrm{y}=600$
$2 \mathrm{x}-5 \mathrm{y}=3 \mathrm{x}-9 \mathrm{y}$
$\mathrm{x}=4 \mathrm{y}$
Put this in equation (i)
$8 y-5 y=600$
$3 y=600=y=200 \Rightarrow x=800$
A's income $=1600$
B's income $=2400$

S10. Ans.(a)
Sol.
A: $\mathrm{B}=3: 7$
B: C = 6:5
A:B:C=3×6:7×6:7×5
= $18: 42: 35$
Sum of the ratios $=18+42+35=95$
$\therefore$ B's share $=$ Rs. $\left(\frac{42}{95} \times 33630\right)=$ Rs. 14868

S11. Ans.(b)
Sol.
Let speed of Train ' X ' = x
$\Rightarrow$ Speed of train ' $\mathrm{Y}^{\prime}=\frac{(100+100)}{100} \times \mathrm{x}=2 \mathrm{x}$
Let, length of train ' X ' $=\mathrm{y}$
$\Rightarrow$ Length of train ' $\mathrm{Y}^{\prime}=\frac{150}{100} \times \mathrm{y}=1.5 \mathrm{y}$
ATQ,
$2=\frac{y}{x}$
$\Rightarrow \mathrm{y}=2 \mathrm{x}$
Required time $=\frac{1.5 y+y}{2 x-x}=\frac{2.5 y}{x}=\frac{2.5 \times 2 x}{x}=5$ seconds

S12. Ans.(e)
Sol.
Average of five consecutive odd numbers is D
$\Rightarrow$ Middle number $=$ D
other numbers are $=D-4, D-2, D+2, D+4$
Next 5 odd numbers are $=D+6, D+8, D+10, D+12, D+14$
Total average
$=\frac{(\mathrm{D}-4)+(\mathrm{D}-2)+\mathrm{D}+(\mathrm{D}+2)+(\mathrm{D}+4)+(\mathrm{D}+6)+(\mathrm{D}+8)+(\mathrm{D}+10)+(\mathrm{D}+12)+(\mathrm{D}+14)}{10}$
$=\frac{10 \mathrm{D}+50}{10}=\mathrm{D}+5$
Average increases by ' 5 '

S13. Ans.(e)
Sol.

Let, ratio $=r \%$
ATQ,
$4000\left[\left(1+\frac{r}{100}\right)^{2}-1\right]-\frac{4000 \times r \times 2}{100}=360$
$4000\left[\frac{r^{2}}{100^{2}}+\frac{\mathrm{r}}{50}\right]-80 \mathrm{r}=360$
$0.4 \mathrm{r}^{2}+80 \mathrm{r}-80 \mathrm{r}=360$
$\Rightarrow \mathrm{r}^{2}=900$
$r= \pm 30$
$\Rightarrow \mathrm{r}=30 \%$


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S14. Ans. (c)
Sol.
Investment of $\mathrm{a}=10000 \times 12$
Investment of $B=5000 \times 8$
So, the ratio of investment of $A$ and $B$ is $12 \times 10000: 8 \times 5000$
= $3: 1$
Profit of $A=\frac{3}{4} \times 2000=$ Rs. 1500

S15. Ans.(e)
Sol.
Perimeter of rectangle $=2(\ell+\mathrm{b})$
$2(7 X+4 X)=88 \mathrm{~cm}$
$11 \mathrm{X}=44$
$\mathrm{X}=4$
$\ell=28, \mathrm{~b}=16$
Area of rectangle $=28 \times 16=448$ sq.
Area of square $=644-448=196$ sq. cm
$a^{2}=196$
$a=14$
perimeter of square $=4 \times 14=56 \mathrm{~cm}$

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