Quiz Date: 20th August 2020

Q1. Some amount out of Rs. 6000 was lent out at 10% per annum and the rest amount @ at 20% per annum and thus in 4 years the total interest from both the amounts collected was Rs. 3400. What is the amount which was lent out at 10% per annum ?
(a) Rs. 2500
(b) Rs. 2800
(c) Rs. 3200
(d) Rs. 3500
(e) Rs. 3000

Q2. Rs. 69 were divided among 115 students so that each girl gets 50 paise less than each boy, and each boy received twice the paise as each girl received. The no. of girls in the class is :
(a) 92
(b) 42
(c) 33
(d) 23
(e) 102

Q3. The average age of boys in a class is 16.66 years, while the average age of girls is 18.75 years. Thus, the average age of all the 40 students of the class is 17.5 years. If the difference between the no. of boys and girls is 8, then the no. of girls in the class is :
(a) 12
(b) 16
(c) 18
(d) Data inadequate
(e) None of these

Q4. The ratio of expenditure and saving is 3 : 2. If the income increases by 15% and the savings increases by 6%, then by how much per cent should be expenditure increases ?
(a) 25
(b) 21
(c) 12
(d) 24
(e) 27

Q5. Aman can finish a piece of work by himself in 42 days. Mohit, who is 1/5 times more efficient as Aman, requires X days to finish the work by working all by himself. What is the value of X?
(a)39 days
(b)40 days
(c) 35 days
(d)42 days
(e) 37 days

Q6. A tap can fill a tank in 16 minutes and another can empty it in 8 minutes. If the tank is already ½ full and both the taps are opened together, will the tank be filled or emptied ? How long will it take before the tank is either filled or emptied completely as the case may be ?
(a) Emptied ; 16 min
(b) Filled ; 8 min
(c) Emptied ; 8 min
(d) Filled; 12 min
(e) None of these

Q7. Arun ordered 15 chapattis, 4 plates of rice, 6 plates of mixed vegetables and 5 ice-cream cups. The cost of one chapatti Rs. 5, one plate of rice is Rs. 50, one plate of mixed vegetables is Rs. 75 and one ice-cream cup is Rs. 20. How much amount did Arun pay to the cashier?
(a) Rs. 850
(b) Rs 795
(c) Rs 825
(d) Rs 750
(e) Rs. 975
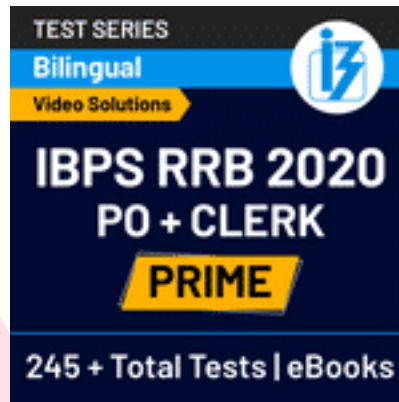
Q8. A dealer sold a radio at a loss of 5%. Had he sold it for Rs.350 more, he would have gained 12.5%. For what value should he sell it in order to gain 15%?
(a) Rs. 2120
(b) Rs. 1750
(c) Rs. 1825
(d) Rs. 2300
(e) Rs. 2400

Q9. A man has whisky worth Rs. 22 a litre and another lot worth Rs 18 a litre. Equal quantities of these are mixed with water to obtain a mixture of 50 litres worth Rs 16 a litre. Find how much water the mixture contains?
(a) 5 litres
(b) 10 litres
(c) 15 litres
(d) 20 litres
(e) 12 litres

Q10. Suresh's monthly income is 30% more than that of Vinod. Vinod's monthly income is 20% less than that of Vinay. If the difference between monthly income of Suresh and Vinay is Rs 800. What is monthly income of Vinod?
(a) Rs 16000
(b) Rs 20000
(c) Rs 12000
(d) Data Inadequate
(e) None of these

Q11. A spherical metal of radius 10 cm is melted and made into 1000 smaller spheres of equal sizes. In this process the surface area of the metal is increased by:
(a) 1000 times
(b) 100 times
(c) 10 times
(d) 50 times
(e) 9 times

Q12. A boatman rows 1 km in 5 min along the stream and 6 km in 1 hours against the stream. The speed of the stream is:
(a) 3 kmph
(b) 6 kmph
(c) 10 kmph
(d) 12 kmph
(e) 14 kmph

Q13. If the amount is 2.25 times of the sum after 2 years at compound interest (compound annually), the rate of interest per annum is:
(a) 25%
(b) 30%
(c) 45%
(d) 50%
(e) 55%

Q14. How many three digits number can be formed by using the digits 0, 2, 4, 6, 7 if repetition of digits is not allowed.
(a) 50
(b) 46
(c) 48
(d) 40
(e) 36

Q15. A coin is tossed successively three times. Find the probability of getting exactly one head or two head:
(a) 1/2
(b) 3/4
(c) 2/3

(d) 1/4
(e) 3/8

Solutions

S1. Ans.(d)
Sol.
Let Rs. x was lent at the rate of 10 per annum

$$= \frac{x + 10 \times 4}{100} + \frac{(6000 - x) \times 20 \times 4}{100} = 3400$$

$\Rightarrow 4x = 14000$

$\Rightarrow x = Rs. \ 3500$

S2. Ans.(a)
Sol.
Let no. of girls = x
∴ No. of boys = (115 – x)
and each girl gets Rs. y

∴ each boy gets = Rs. $\left(y + \frac{1}{z}\right)$

Since $\left(y + \frac{1}{2}\right) = 2y$

$\Rightarrow y = \frac{1}{2}$ rupee

∴ each boy gets = Rs. 1

∴ $x \times \frac{1}{2} + (115 - x) \times 1 = 69$

$\Rightarrow \frac{x}{2} = 46$

$\Rightarrow x = 92$

S3. Ans.(b)
Sol.
Let no. of girls = x
∴ No. of boys = (x + 8)

$\frac{50}{3} \times (x + 8) + 18.75x = 40 \times 17.5$

$\Rightarrow \frac{50x}{3} + \frac{400}{3} + 18.75x = 700$

$\Rightarrow x = 16$

S4. Ans.(b)
Sol.

Let expenditure = 3x

Savings = 2x

∴ Income = 5x

Now, new expenditure = E_1

∴ $E_1 + 2x \times \dfrac{106}{100} = 5x \times \dfrac{115}{100}$

⇒ $E_1 = 3.63x$

∴ % increase in expenditure

$= \dfrac{0.63}{3} \times 100 = 21\%$

S5. Ans.(c)

Sol.

Efficiency Mohit : Aman

$= 1 + \dfrac{1}{5} : 1 = 6 : 5$

Given

5 → 42 days

∴ $6 \rightarrow \dfrac{42 \times 5}{6} = 35 \, days = x \, days$

S6. Ans.(c)

Sol.

Let both the taps work for 8 min

∴ Quantity of liquid in tank after 8 min

$= \dfrac{1}{2} + \left(\dfrac{8}{16} - \dfrac{8}{8} \right)$

$= 0$

i.e. tank is emptied in 8 min.

S7. Ans.(c)

Sol.

Total amount paid by Arun

= 15 × 5 + 4 × 50 + 6 × 75 + 5 ×20

= Rs. 825

S8. Ans.(d)
Sol.

Let selling price = Rs. x

$\therefore x \times \dfrac{100}{95} = (x + 35) \times \dfrac{100}{112.5}$

$\Rightarrow 7x = 350 \times 38$

$\Rightarrow x = 1900$

Cost price $= 1900 \times \dfrac{100}{95} = 2000$

Now, new selling price to obtain

15% gain $= 2000 \times \dfrac{115}{100} = 2300$

S9. Ans.(b)
Sol.

Let x l of each type is mixed then,

$22x + 18x = 50 \times 16$

$\Rightarrow x = \dfrac{800}{40} = 20l$

$\therefore$ Required quantity of water

$= 50 - 2 \times 20 = 10\, l$

S10. Ans.(a)
Sol.
Ratio of income of suresh to vinod=13:10
Ratio of income of vinod to vinay= 4:5
ratio of income of suresh, vinod and vinay= 26:20:25
Monthly income of vinod $= \dfrac{800}{26-25} \times 20 = 16000$

S11. Ans.(e)
Sol.

$\dfrac{4}{3}\pi R^3 = 1000 \dfrac{4}{3}\pi r^3$

Or, R = 10r $\Rightarrow$ r = 1 ($\because R = 10\, cm$)

Initial Surface area of sphere $= 4\pi R^2 = 400\pi$

Final surface area of 1000 smaller spheres

$= 1000 \times 4\pi r^2 = 4000\pi$

$\therefore$ Increase in S.A = 3600π i.e. 9 times.

S12. Ans.(a)
Sol.
Speed of stream $= \frac{1}{2} \times \left(\frac{60}{5} - \frac{6}{1} \right)$
$= 3$ kmph

S13. Ans.(d)
Sol.
Let rate of interest p.a. be R%
$\therefore 2.25 = \left(1 + \frac{R}{100} \right)^2$
$\Rightarrow \frac{15}{10} = 1 + \frac{R}{100} \Rightarrow R = 50\%$

S14. Ans.(c)
Sol.
$^5P_3 = total\ number\ formed$
$^4P_2 = number\ which\ are\ started\ with\ zero$
Total ways $= ^5P_3 - ^4P_2$
$= 60 - 12$
$= 48$

S15. Ans.(b)
Sol.
Favorable cases = (H, T, T) or (T, H, T) or
(T, T, H) or (H, H, T) or
(H, T, H) or (T, H, H)
$= \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
$= \frac{3}{4}$

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