

Quiz Date: 7th September 2020

Q1. In a solution of water and sugar, the ratio of sugar to water is 3 : 5. If 30% of this solution is taken out and 5% of the initial quantity of solution is added as water to the remaining quantity of the mixture then find the new ratio of sugar and water in the solution.

- (a) 6 : 13
- (b) 3 : 7
- (c) 7 : 13
- (d) 4 : 7
- (e) 1 : 2

Q2. A and B invest in the ratio of 3 : 5. After 6 months, C joins the business by investing some amount. At the end of the year, the profit share of B and C are equal. Find initial investment of A is what percent of the initial investment of C.

- (a) 24%
- (b) 36%
- (c) 60%
- (d) 45%
- (e) 30%

Q3. The ratio of speed of boat in still water to the speed of stream is 5 : 3. A boat takes total 12 hours to go 48 km in upstream and same distance in downstream. Find the speed of boat in still water.

- (a) 5 km/h
- (b) $7\frac{1}{2}$ km/h
- (c) 10 km/h
- (d) 15 km/h
- (e) $12\frac{1}{2}$ km/h

Q4. A cube of total surface area 1536 cm^2 is melted and re-casted into 'n' number of small cubes each of 96 cm^2 total surface area. Find the value of 'n'.

- (a) 56
- (b) 60
- (c) 64
- (d) 72
- (e) 80

Q5. Three pipes X, Y and Z can fill a tank in 12 minutes, 15 minutes and 18 minutes respectively. Only pipe Y is opened for the first 2.5 min. and then pipe Z is also opened. After 3.5 min. more pipe X is also opened. Find the **approximate** time taken to fill the tank?

- (a) 6 min
- (b) 8 min
- (c) 10 min
- (d) 5 min

(e) 7 min

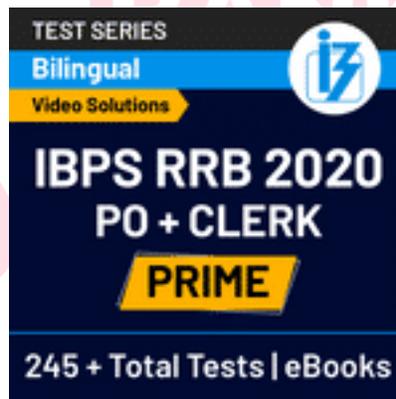
Q6. The simple interest received on a sum of Rs.12,600 at the rate of 8% in T years is Rs. 5040. Find the CI received on the same sum in $(T-3)$ years at the rate of $16\frac{2}{3}\%$ p.a.

compounded annually.

- (a) Rs. 4550
- (b) Rs. 4650
- (c) Rs. 4450
- (d) Rs. 4750
- (e) Rs. 4800

Q7. In a school, 65% of total students are passed in Math exam and 55% of total are passed in English exam while 55% are failed in both the exams. Find the probability of number of failed students.

- (a) $\frac{1}{5}$
- (b) $\frac{3}{10}$
- (c) $\frac{3}{8}$
- (d) $\frac{1}{4}$
- (e) $\frac{1}{2}$



Q8. Arun get a loss of Rs. 50 when he sold his watch at a discount of 20% on marked price. Find the cost price of article when percentage of mark up above cost price is equal to percentage discount given on M.P.

- (a) Rs. 1250
- (b) Rs. 950
- (c) Rs. 900
- (d) Rs. 1400
- (e) Rs. 800

Q9. Veer and Bhavya started a business by investing Rs 45,000 and Rs 50,000 respectively. At the end of the year, they decided to divide 50% of the total profit share equally and rest in the investment ratio. If they had divided entire profit share in investment ratio, Bhavya got Rs 1500 more profit than that of actual, then find the total profit share?

- (a) Rs 1,04,000

- (b) Rs 1,08,000
- (c) Rs 1,12,000
- (d) Rs 1,14,000
- (e) Rs 1,15,000

Q10. 16 years hence, the age of Rashmi will be $\frac{10}{13}$ th of the age of her friend Neha and 8 years ago, the ratio of their age (Rashmi : Neha) was 4 : 7. Present age of Neha is what percent more than the present age of Rashmi?

- (a) 50%
- (b) 40%
- (c) 60%
- (d) 45%
- (e) 75%

Q11. Neeraj invested Rs 10,000 at rate of interest 20% per annum. The interest was compounded yearly for the first two years and in the third year it was compounded half yearly. What will be the total interest earned at the end of the third year?

- (a) Rs 7224
- (b) Rs 7324
- (c) Rs 7424
- (d) Rs 7624
- (e) Rs 7824

Q12. The radius and height of a cylinder are increased by 12% and 17% respectively. Find the percentage increase in its curved surface area?

- (a) 35.41%
- (b) 28.64%
- (c) 31.04%
- (d) 26.04%
- (e) 25.04%

Q13. Find sum of money invested by a man in scheme which offers CI at 5% rate of interest per annum if CI for 2nd year is Rs. 3150

- (a) Rs. 55,000
- (b) Rs. 30,000
- (c) Rs. 40,000
- (d) Rs. 60,000
- (e) Rs. 65,000

Q14. The average weight of boys in a class of total strength 50 is 40 kg while average weight of girls is 35 kg. Find number of girls in class if average weight of class is 38 kg.

- (a) 10
- (b) 30
- (c) 20
- (d) 40
- (e) 15

Q15. 'A' has a certain average for 9 innings. In the tenth innings he scores 100 runs thereby increasing his average by 8 runs. His new average is

- (a) 20
 (b) 24
 (c) 28
 (d) 32
 (e) None of these

Solutions

S1. Ans. (c)

Sol. Let the initial quantity of solution be x lit

$$\frac{\text{Sugar}}{\text{water}} = \frac{\frac{x \times 3}{8} - \frac{30x}{100} \times \frac{3}{8}}{\left(\frac{x \times 5}{8} - \frac{30x}{100} \times \frac{5}{8}\right) + \frac{5x}{100}}$$

$$= \frac{21x \times 80}{80 \times 39x} = 7:13$$

S2. Ans. (e)

Sol. Let the investment of A, B and C be Rs. 3x, Rs. 5x and Rs. y, respectively

Therefore,

A	B	C
3x × 12	5x × 12	y × 6
36x	60x	6y

ATQ,

$$60x = 6y \Rightarrow y = 10x$$

$$\text{Required percentage} = \frac{3x}{10x} \times 100 = 30\%$$



S3. Ans. (e)

Sol. Let the speed of boat in still water be 5x km/hr and that of stream be 3x km/hr.

$$\text{ATQ,}$$

$$\frac{48}{8x} + \frac{48}{2x} = 12$$

$$\Rightarrow \frac{48 + 192}{8x} = 12$$

$$\Rightarrow x = 2.5$$

$$\begin{aligned}\text{Speed of boat in still water} &= 5x \\ &= 12.5 \text{ km/hr}\end{aligned}$$

S4. Ans. (c)

Sol.

$$\text{Surface area of cube} = 6(\text{side})^2$$

$$\text{Side of bigger cube} = a = \sqrt{\frac{1536}{6}} = 16 \text{ cm}$$

$$\text{Side of smaller cube} = \sqrt{\frac{96}{6}} = 4 \text{ cm}$$

$$\begin{aligned}n &= \frac{\text{volume of bigger cube}}{\text{volume of one smaller cube}} \\ &= \frac{16 \times 16 \times 16}{4 \times 4 \times 4} = 64\end{aligned}$$

S5. Ans. (b)

Sol.

	time	Efficiency	
X	12	15	
Y	15	12	= 180unit (capacity of tank)
Z	18	10	

$$\text{In 2.5 min} = 2.5 \times 12 = 30 \text{ unit}$$

$$\text{In 3.5 min} = 3.5 \times (12+10) = 77 \text{ unit}$$

Total time taken to fill the tank

$$= 2.5 + 3.5 + \frac{180-107}{37}$$

$$\approx 8 \text{ min}$$

S6. Ans. (a)

$$\text{Sol. SI} = \frac{\text{principle} \times \text{rate} \times \text{time}}{100}$$

$$T = \frac{5040 \times 100}{12600 \times 8} = 5 \text{ year}$$

$$\text{Amount in 2 year at CI} = 12600 \times \frac{7}{6} \times \frac{7}{6} = \text{Rs. } 17150$$

$$\text{CI} = \text{Rs. } 17150 - \text{Rs. } 12600 = \text{Rs. } 4550$$

S7. Ans. (d)

$$\text{Sol. Total passed percentage} = 65\% + 55\% - 45\% = 75\%$$

$$\text{Failed precentage} = 25\%$$

$$\text{Probability} = \frac{1}{4}$$

S8. Ans.(a)

Sol.

We know, % Discount = 20% = % mark up

Let cost price be Rs. 100x.

$$\therefore \text{marked price} = 120x$$

$$\& \text{selling price} = 96x$$

ATQ,

$$100x - 96x = 50$$

$$\therefore x = 12.5$$

$$\therefore \text{cost price} = 12.5 \times 100 = \text{Rs. } 1250$$

S9. Ans(d)

Sol. Investment ratio of Veer : Bhavya = 9 : 10

Let total profit be Rs 76x

$$\text{Share of Bhavya} = \frac{76x \times 50}{100} \times \frac{1}{2} + \frac{38x \times 10}{19} = \text{Rs } 39x$$

But, if profit was divided in investment ratio, then

$$\text{Bhavya's share} = \frac{76x \times 10}{19} = \text{Rs. } 40x$$

ATQ,

$$40x - 39x = 1500$$

$$\Rightarrow 76x = 1500 \times 76 = \text{Rs } 1,14,000$$

S10. Ans (a)

Sol. Let the age of Rashmi 16 years hence be 10x years Then, 16 years hence Neha's age = 13x years

Present age of Rashmi = (10x-16) years

Present age of Neha = (13x-16) years

ATQ,

$$\frac{10x-16-8}{13x-16-8} = \frac{4}{7}$$

$$\Rightarrow 70x-168 = 52x-96$$

$$\Rightarrow 18x = 72$$

$$\Rightarrow x = 4$$

Present age of Rashmi = 24 years.

Present age of Neha = 36 years.

$$\text{Required \%} = \frac{12}{24} \times 100 = 50\%$$

S11. Ans (c)

$$\text{Sol. Interest in first two years} = 10,000 \left[1 + \frac{20}{100} \right]^2 - 10,000 = \text{Rs. } 4400$$

$$\text{Interest on third year} = \text{Rs } 14,400 \times \left(1 + \frac{10}{100} \right)^2 - 14,400 = \text{Rs } 3024$$

$$\text{Total interest} = \text{Rs. } 7424$$

S12. Ans.(c)

Sol.

$$\text{Percentage increase} = 12 + 17 + \frac{12 \times 17}{100}$$

$$= 29 + 2.04$$

$$= 31.04\%$$

S13. Ans.(d)

Let sum of money be Rs 10,000x

ATQ,

$$[10000x(1 + \frac{1}{20})^2 - 10000x] - [10000x(1 + \frac{1}{20}) - 10000x] = 3150$$

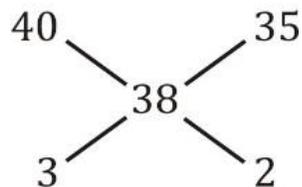
$$525x = 3150$$

$$x = 6$$

Sum of money invested = Rs 60,000

S14. Ans.(c)

Sol.



ATQ, 5 → 50.

1 → 10.

2 → 20

Number of Girls = 20.

S15. Ans.(c)

Sol.

Let initial average → x

Total score → 9x

ATQ,

$$9x + 100 = 10(x + 8)$$

$$x = 20$$

So, New average = 20 + 8 = 28

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