Quiz Date: 2ⁿᵈ August 2020

Q1. Mohit invested Rs. 3200 at 5% per annum compounded half yearly. Find amount earned as interest at the end of year?
(a) Rs. 122
(b) Rs. 162
(c) Rs. 81
(d) Rs. 102
(e) None of these.

Q2. A sum become 5 times in 5 years at rate of simple interest, if rate of interest is reduced to $\frac{1}{5}$th of initial rate of interest, then find simple interest earned on Rs.1200 in 2 years?
(a) Rs. 1536
(b) Rs. 384
(c) Rs. 2880
(d) Rs. 512
(e) Rs. 438

Q3. Interest earned on a sum in $1\frac{2}{3}$ years is Rs. 129, and rate of interest is 18% per annum at CI. Find the sum if interest is calculated after every 10 months?
(a) Rs. 1000
(b) Rs. 500
(c) Rs. 529
(d) Rs. 400
(e) None of these

Q4. A sum becomes 3 times in 2 years at rate of S.I, find in how many years the sum becomes 9 times of itself at same rate of interest?
(a) 4 years
(b) 5 years
(c) 8 years
(d) 12 years
(e) 10 years

Q5. A sum becomes 160% of amount at simple interest in 3 years. Find the compound interest on sum of Rs 12000 at same rate of interest after 2 years.
(a) Rs 4820
(b) Rs 5460
(c) Rs 6280
(d) Rs 5280
(e) Rs 5840

Q6. A sum of money is invested at simple interest for 3 years and same sum is invested at compound interest for 2 years. if the rate of interest is 10% for both and the difference between S.I and C.I is Rs. 900. What is the principle amount?
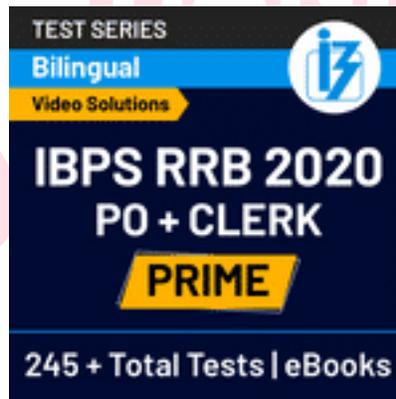
(a)   Rs.9000
(b)   Rs.11000
(c)   Rs.10000
(d)   Rs.8000
(e)   Rs.15000

Q7. At simple interest, a sum becomes 4 times in 20 years. Find the time in which the sum will be 7 times at the same rate of interest.
(a)30 years
(b) 50 years
(c) 28 years
(d) 40 years
(e) 35 years

Q8. find the difference between simple interest and compound interest on Rs 3000 for $1\frac{1}{2}$ years at 20% per year but interest is calculated on half yearly basis.
(a)Rs 90
 (b)Rs 92
 (c)Rs 93
 (d)Rs 95
 (e)Rs 97

Q9. A mixture contains alcohol and water in the ratio 7:1. On adding 6 litters of water, the ratio of alcohol and water becomes 4:1. Then quantity of alcohol in original mixture.
(a) 48 liters
(b) 40 liters
(c) 56 liters
(d) 60 liters
(e) 58 liters

Q10. A vessel contains 88 liters of mixture in which there is 4-part milk and 7-part water. How much quantity of mixture should be replaced with milk so that the ratio of milk and water becomes 23:21?
(a)13 liters
(b)11 liters

(c)22 liters
(d)33 liters
(e)29 liters

Q11. In the mixture of 120 liters the ratio of milk and water is 3:5. How many liters milk should be added to the mixture so that the ratio of milk and water may reverse?
(a) 72 liters
(b) 64 liters
(c) 56 liters
(d) 76 liters
(e) 80 liters

Q12. An alloy contains silver and copper in the ratio 3:7 and another alloy contains silver and copper in the ratio 7:8. If equal amount of both the alloys are melted together, then find the ratio of silver and copper in the resulting alloy?
(a)23:37
(b)23:33
(c)21:37
(d)23:29
(e)27:37

Q13. How many kg of rice worth Rs.20 per kg must be added with 50 kg of rice worth Rs. 30 per kg. so that by selling the mixture variety at Rs 28 per kg there is a gain of 12%.
(a) 45 kg
(b) 50 kg
(c) 55 kg
(d) 47 kg
(e) 52 kg

Q14. A chemist has 10 litre of a solution that is 10% nitric acid by volume. He wants to dilute the solution to 4% strength by adding water how many litre of water must be added?
(a) 15
(b) 20
(c) 18
(d) 25
(e) 17

Q15. A mixture of milk and water contains 60% milk and remaining water. How much water should be added (in percentage) in mixture to reverse the proportion of milk and water?
(a) 25%
(b) 37.5%
(c) 62.5%
(d) 75%
(e) 50%

Solutions

S1. Ans(b)

Sol. Required interest = $3200 \left[\left(1 + \frac{5}{200} \right)^2 - 1 \right]$

$\qquad\qquad = 3200 \times \frac{81}{1600} = Rs.\,162$

S2. Ans(b)

Sol. Rate of interest = $\frac{4 \times 100}{5 \times 1} = 80\%$

New rate of interest = $80 \times \frac{1}{5} = 16\%$

Required simple interest = $\frac{1200 \times 2 \times 16}{100} = Rs.\,384$

S3. Ans.(d)

Sol. Let the sum was 'Rs. x'.

Rate of interest per 10 months = $\frac{18}{12} \times 10$

= 15%

Total time = $\frac{5}{3} \times 12$

= 20 months

ATQ

$129 = x \left[\left(1 + \frac{15}{100} \right)^2 - 1 \right]$

$129 = x \left[\frac{529}{400} - 1 \right]$

$129 = x \times \frac{129}{400}$

x = Rs. 400

S4. Ans.(c)

Sol. Let sum is Rs. 'x' and Rate is R% per annum.

ATQ,

$2x = \frac{x \times R \times 2}{100}$

R = 100%

Let required time is T years.

ATQ,

$T = \frac{8x \times 100}{x \times 100}$

T = 8 years

S5. Ans (d)

Sol. Let sum be Rs P and rate of interest be R% per annum.

ATQ

$0.6P = \frac{P \times R \times 3}{100}$

$R = 20\%$

Now,

Required interest $= 12000 \left[\left(1 + \frac{20}{100}\right)^2 - 1\right]$

$= 12000 \left(\frac{36-25}{25}\right)$

$= Rs\ 5280$

S6. Ans(c)

Sol. Let the sum of money that is invested is $x\ Rs$

$\therefore A.T.Q$

$S.I = \frac{x \times 10 \times 3}{100} = \frac{30x}{100}$

and

$C.I = [x\left(1 + \frac{10}{100}\right)^2 - x] = \frac{21x}{100}$

A.T.Q $\frac{30x}{100} - \frac{21x}{100} = 900$

X =Rs. 10000

S7. Ans(d)

Sol.

4 times in 20 years

So, interest will be 3 times of principal

Let principal=Rs. P

And rate = r%

$3p = \frac{p \times r \times 20}{100}$

R=15%

So, time (t)

$6p = \frac{p \times 15 \times t}{100}$

t = 40 years

S8. Ans.(c)

Sol. Since rate calculated half yearly

$$R = \frac{20}{2} = 10\ \% \left.\begin{array}{l} \\ \\ \end{array}\right\}$$ for C. I

and time $= \frac{3}{2} \times 2 = 3\ half\ years$

C.I-S.I $= 3000\left[\left(1 + \frac{10}{100}\right)^3 - 1\right] - \frac{3000 \times 20 \times 3}{100 \times 2}$

= 993 – 900

=Rs 93

S9. Ans (c)

Sol.

Let initial quantity of alcohol and water in mixture $7x\ liters\ and\ x\ liters\ respectively$.

ATQ,

$\frac{7x}{x+6} = \frac{4}{1}$

$x = 8$

So, initial quantity of alcohol in mixture $= 7x = 7 \times 8 = 56\ liters$

S10. Ans (c)

Sol.

Let initial quantity of milk and water are $4a\ and\ 7a\ unit\ respectively$.

ATQ, $4a + 7a = 88$

$a = 8$

Milk=32 liters and water=56 liters

Let x liters mixture replaced by milk

$\frac{32 - \frac{4}{11} \times x + x}{56 - \frac{7}{11} \times x} = \frac{23}{21}$

$\frac{32 + \frac{7}{11} \times x}{56 - \frac{7}{11} \times x} = \frac{23}{21}$

$x = 22\ liters$

ATQ,

S11. Ans (e)

Sol.

Let milk and water are $3x\ and\ 5x\ liters\ respectively$

$3x + 5x = 120$

$x = 15$

So, milk=45 liters

And water=75 liters

ATQ,

Let $x\ liters$ milk be added

$\frac{45+x}{75} = \frac{5}{3}$

$x = 80\ liters$

S12. Ans (a)

Sol.

Let quantity of silver and copper in alloy first are $3x$ and $7x$ unit respectively.
And quantity of silver and copper in alloy second are $7y$ and $8y$ unit respectively.
ATQ,
$3x + 7x = 7y + 8y$
$\frac{x}{y} = \frac{3}{2}$
So, ratio of silver and copper in resulting alloy $= \frac{3x+7y}{7x+8y}$

$$= \frac{\frac{3x}{y}+7}{\frac{7x}{y}+8}$$

$$= \frac{3 \times \frac{3}{2}+7}{7 \times \frac{3}{2}+8}$$

$$= \frac{23}{37}$$

Ratio = 23 : 37

S13. Ans (b)
Sol.
Let *the quantity of first type of rice is x kg*
And cost price of mixture $= 28 \times \frac{100}{112} = $ Rs.25 per kg
ATQ,
$\frac{20 \times x + 30 \times 50}{x+50} = 25$
$x = 50\ kg$

S14. Ans.(a)
Sol.
Initial quantity of acid $= 10 \times \frac{10}{100}$
$= 1\ \ell$
And that of water $= 9\ \ell$
Let x litre water is added.
$\therefore \frac{4}{100} \times (10 + x) = 1$
$\Rightarrow x = 15\ \ell$

S15. Ans.(e)
Sol.
Let, total quantity $= 100\ell$
Quantity of milk $= 60\ \ell$
And quantity of milk $= 40\ \ell$
ATQ,
$\frac{40}{100} = \frac{60}{100+x}$
$2\ (100 + x) = 5 \times 60$
$200 + 2x = 300$
$2x = 100$

x = 50 ℓ

Water added in % $= \frac{50}{100} \times 100$

$= 50\%$

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