Quiz Date: 23rd March 2020

Direction (1-5): What approximate value will come in place of the question mark (?) in the following question? (Note: You are not expected to calculate the exact value.)

Q1. $? = \left(21.02 \times \frac{130.25}{64.87}\right) + 31.97\%$ of 701.02

(a) 489
(b) 222
(c) 456
(d) 312
(e) 266

Q2. ? = (351.82 × 252.08) ÷ (616.12 × 36.12) × 42.19% of (39.83 × 30.09)

(a) 3012
(b) 2016
(c) 1582
(d) 4026
(e) 4580

Q3. ? = (74.98% of 27.95% of (200.2 × 35.12)) ÷ 48.96

(a) 30
(b) 70
(c) 100
(d) 120
(e) 150

Q4. 32.99% of 1428.07 + 93.001% of 1240 – 78.10% of 3456 = ?

(a) – 4460
(b) – 1073
(c) – 9460
(d) – 2564
(e) – 6562

Q5. 40.929% of 2197.85 + 100.01% of 8912.95 – 18.113% of 9782.15 = ?

(a) 8013
(b) 8053
(c) 8163
(d) 8253
(e) 8063

Q6. Manoj lend Rs. P for three years on S.I. at the rate of 15% per annum and Rajesh lend Rs. (P + 8000) for two years on C.I. at the rate of 8% per annum. Suresh borrowed sum equal to of what Manoj and Rajesh lend, for two years on C.I. at the rate of 20% per annum. If Suresh paid interest Rs. 5352 more than, what Manoj and Rajesh got total interest on their sums together. Find total sum borrowed by Suresh?

(a) Rs. 34000

(b) Rs. 44000
(c) Rs. 32000
(d) Rs. 46000
(e) Rs. 30000

Q7. Anushka has certain amount with herself. She invested half of amount in scheme 'A' which offers compound interest at the rate of 10% p.a. and remaining half in scheme 'B' which offers compound interest at the rate of 20% p.a. If after 2 years she earns total interest of Rs5200, then find the amount Anushka has initially?
(a) 8,000
(b) 12,000
(c) 16,000
(d) 20,000
(e) 24,000

Q8. Satnam 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%

Q9. The compound interest accrued on an amount of Rs. 25,500 at the end of three years is Rs. 8,440.50. What would be the simple interest accrued on the same amount at the same rate in the same period?
(a) Rs. 4,650
(b) Rs. 5,650
(c) Rs. 6,650
(d) Rs. 7,650
(e) Rs. 7560

Q10. The simple interest accrued on an amount Rs. 27,500 at the end of three years is Rs. 10,230. What would be the compound interest accrued on the same amount at the same rate in two years?
(a) Rs. 7422.84

(b) Rs. 7242.84
(c) Rs. 6242.84
(d) Rs. 9452.84
(e) Rs. 8452.84

Q11. On Rs. 3500 invested at a simple interest rate of 7 per cent per annum, Rs. 500 is obtained as interest in certain years. In order to earn Rs. 800 as interest on Rs. 4900 in the same number of years, what should be the rate of simple interest ?
(a) 9%
(b) 10%
(c) 12%
(d) 8%
(e) None of these

Q12. Prabhat borrowed a sum of money from Anurag at S.I. at the rate of 8% per annum for the first 4 years, 10% per annum for the next 6 years and 12% per annum for the period beyond 10 years. If he pays a total of Rs. 12,160 only as interest at the end of 15 years, how much money did he borrow?
(a) Rs. 12000
(b) Rs. 10000
(c) Rs. 8000
(d) Rs. 9000
(e) Rs. 8500

Q13. A sum is divided between A and B in the ratio of 1 : 2. A purchased a car from his part, which depreciates $14\frac{2}{7}\%$ per annum and B deposited his amount in a bank, which pays him 20% interest per annum compounded annually. By what percentage will the total sum of money increase after two years due to this investment pattern (approximately)?
(a) 20%
(b) 26.66%
(c) 30%
(d) 25%
(e) 33.33%

Q14. Out of Rs. 50000, that a man has, he lends Rs. 8000 at $\frac{11}{2}\%$ per annum simple interest and Rs. 24000 at 6% per annum simple interest. He lends the remaining money at a certain rate of interest so that he gets total annual interest of Rs. 3680. The rate of interest per annum, at which the remaining money is lent, is
(a) 5%
(b) 7%
(c) 10%
(d) 12%
(e) 15%

Q15. A man gave 50% of his savings of Rs. 84,100 to his wife and divided the remaining sum among his two sons A and B of 15 and 13 years of age respectively. He divided it in such a way that each of his sons, when they attain the age of 18 years, would receive the same amount at 5% compound interest per annum. The share of B was
(a) Rs. 20,000
(b) Rs. 20,050
(c) Rs. 22,000
(d) Rs. 22,050
(e) None of these

Solutions

S1. Ans.(e)
Sol.
$? = \left(21.02 \times \frac{130.25}{64.87}\right) + 31.97\% \text{ of } 701.02$
$? \approx \left(21 \times \frac{130}{65}\right) + 32\% \text{ of } 700$
$? \approx 21 \times 2 + 224$
$? \approx 42 + 224$
$? \approx 266$

S2. Ans.(b)
Sol.
$? = (351.82 \times 252.08) \div (616.12 \times 36.12) \times 42.19\% \text{ of } (39.83 \times 30.23)$
$? \approx (352 \times 252) \div (616 \times 36) \times 42\% \text{ of } (40 \times 30)$
$? \approx (16 \times 11 \times 2 \times 7 \times 6 \times 6) \div (2 \times 2 \times 22 \times 7 \times 6 \times 6) \times 42\% \text{ of } 1200$
$? \approx 4 \times 504$
$? \approx 2016$

S3. Ans.(a)
Sol.
$? = (74.98\% \text{ of } 27.95\% \text{ of } (200.4 \times 34.94)) \div 48.96$
$? \approx (75\% \text{ of } 28\% \text{ of } (200 \times 35)) \div 49$
$? \approx (75\% \text{ of } 28\% \text{ of } 7000) \div 49$
$? \approx (0.75 \times 0.28 \times 7000) \div 49$
$? \approx 30$

S4. Ans.(b)
Sol.
32.99% of 1428 + 93.001% of 1240 – 78.10% of 3456
≈ 33% of 1428 + 93% of 1240 – 78% of 3456
≈ 471 + 1153 – 2697
≈ – 1073

S5. Ans.(b)
Sol.
≈ 41% of 2198 + 100% of 8913 – 18% of 9782
≈ 901 + 8913 – 1761
≈ 8053

S6. Ans(c)
Sol.
Three years SI on 15% = 15×3=45%
Equivalent two years CI on 8 %= 8 +8+ $\frac{8\times8}{100} = 16.64\%$
Equivalent two years CI on 20% = 20+20+$\frac{20\times20}{100} = 44\%$
ATQ –

$$\frac{44(2P+8000)}{100} - \left(\frac{45P}{100} + \frac{16.64(P+8000)}{100}\right) = 5352$$

.88P + 3520 - .45P – .1664P – 1331.2 = 5352
.2636P = 3163.2
P = $\frac{3163,2}{.2636} = 12000\ Rs.$
Suresh borrowed = 12000×2+8000 = 32000 Rs

S7. Ans.(c)
Sol.
Let the amount Anushka initially has = x
ATQ,

$$\frac{x}{2}\left[\left(1+\frac{10}{100}\right)^2 - 1\right] + \frac{x}{2}\left[\left(1+\frac{20}{100}\right)^2 - 1\right] = 5200$$

$$\frac{x}{2}\left[\frac{21}{100}\right] + \frac{x}{2}\left[\frac{44}{100}\right] = 5200$$

$$\frac{65x}{200} = 5200$$

$$\Rightarrow x = \frac{5200\times200}{65} = 16000$$

S8. Ans.(e)
Sol.
Let, ratio = r%
ATQ,

$4000\left[\left(1+\frac{r}{100}\right)^2-1\right]-\frac{4000\times r\times 2}{100}=360$

$4000\left[\frac{r^2}{100^2}+\frac{r}{50}\right]-80r=360$

$0.4r^2+80r-80r=360$

$\Rightarrow r^2=900$

$r=\pm 30$

$\Rightarrow r=30\%$

S9. Ans.(d)

Sol. $(25500+8440.5)=25500\left(1+\frac{r}{100}\right)^3$

or, $\frac{339405}{255000}=\left(1+\frac{r}{100}\right)^3$

or, $\frac{1331}{1000}=\left(1+\frac{r}{100}\right)^3$

or, $\left(\frac{11}{10}\right)^3=\left(1+\frac{r}{100}\right)^3$

$\therefore r=10\%$

And simple interest at 10% for 3 years = 30% of 25500 = Rs. 7650.

S10. Ans.(b)

Sol. Rate = $\frac{10230\times 100}{27500\times 3}$

= 12.4 % per annum

$\therefore$ C.I. = $27{,}500\left(1+\frac{12.4}{100}\right)^2-27{,}500$

$=27{,}500\times\frac{164.61}{625}$

= Rs. 7,242.84

S11. Ans.(d)

Sol.

Let time t

$\frac{3500\times 7\times t}{100}=500, t=\frac{100}{49}$ years

Now let interest be r%

ATQ

$\frac{4900\times 100\times r}{49\times 100}=800$

$r=8\%$

S12. Ans.(c)

Sol.

Let, he borrowed Rs P from Anurag

$\frac{P\times 8\times 4}{100}+\frac{P\times 10\times 6}{100}+\frac{P\times 5\times 12}{100}=12{,}160$

$\Rightarrow$ P = Rs 8000

S13. Ans.(a)
Sol.
Let the amounts be Rs. 100 and Rs. 200 respectively.
The value of the 100 would become 100 × 6/7 × 6/7 = 3600/49 = 73.46
The other person's investment of 200 would become 200 × 1.2 × 1.2 = 288
The total value would become 288 + 73.46 = 361.46
This represents approximately a 20% increase in the value of the amount after 2 year.

S14. Ans.(c)
Sol. Remaining amount
$= (50000 - (8000 + 24000) = Rs.18000$
Let Rs. 18000 be lent at the rate of r% p.a.
According to the question,
$\frac{8000\times11\times1}{2\times100} + \frac{24000\times6\times1}{100} + \frac{18000+r\times1}{100}$
$= 3680$
$\Rightarrow 440 + 1440 + 180r = 3680$
$\Rightarrow 1880 + 180r = 3680$
$\Rightarrow 180r = 3680 - 1880 = 1800$
$\Rightarrow r = \frac{1800}{180} = 10\%$

S15. Ans.(a)
Sol.
Wife's share = $\frac{50}{100} \times 84100 =$ Rs. 42050
Remaining sum (A+B)= 84100–42050 = Rs. 42050
Rate of interest = 5%
ATQ-
A's share$\left(1 + \frac{5}{100}\right)^3$ = B's share$\left(1 + \frac{5}{100}\right)^2$

$\frac{A's\ share}{B's\ share} = \left(1 + \frac{5}{100}\right)^{5-3}$

$\frac{A's\ share}{B's\ share} = \left(\frac{105}{100}\right)^2$

$\frac{A's\ share}{B's\ share} = \left(\frac{21}{20}\right)^2$

Ratio of shares of A and B ⇒
$\frac{A's\ share}{B's\ share} = \frac{441}{400}$
B's share = $\frac{42050}{841} \times 400 =$ Rs. 20,000