Quiz Date: 4th June 2020

Q1. The simple interest (p.a.) accrued on an amount of Rs 17,000 at the end of four years is Rs 6,800. What would be the compound interest (compounded annually) accrued on the same amount at the same rate in two years?
(a) Cannot be determined
(b) Other than those given as option
(c) Rs 3570
(d) Rs 3260
(e) Rs 3980

Q2. A invested X Rs. in a scheme P for two year which offered simple at the rate of 15% per annum and Q invested (X + 2500) Rs. in another scheme for same period of time, which offered compound interest at the rate of 20% per annum. If from both scheme P and Q got total interest of Rs. 14050, then find the value of X?
(a) 12500 Rs.
(b) 15500 Rs.
(c) 14500 Rs.
(d) 10500 Rs.
(e) 17500 Rs.

Q3. What is the probability of making a five digits number which is divisible by 5 by using out of 0, 1, 2, 4, 5, 6, 8, 9, without repeating any digit?
(a) 31/49
(b) 41/49
(c) 21/48
(d) 17/49
(e) 13/49

Q4. How many permutations can be made using the letters of the word 'BHATNAGAR' such that 'N' always comes in the middle and B and R always comes at extreme end places (Repetition of letters is not allowed)?
(a) 640
(b) 720
(c) 360
(d) 240
(e) 520

Q5. A woman goes to visit the house of some friend whom she has not seen for many years. She knew that besides the two married adults in the household, there are two children of different ages, But she does not know their genders. When she knocks on the door of the house, a boy answer. What is the probability that the younger child is a boy?
(a) 2/3
(b) 1/2
(c) 1/3
(d) 1/4

(e) 2/4

Q6. There are four hotels in a town. If three men check into the hotels in a day, then what is the probability that all of them do not check into the same hotel?
(a) 15/16
(b) 63/64
(c) 3/64
(d) 1/16
(e) 17/64

Q7. The simple interest accrued on an amount of Rs. 22,500 at the end of four years is Rs. 10,800. What would be the compound interest accrued on the same amount at the same rate of interest at the end of two years?
(a) Rs. 16,908
(b) Rs. 5,724
(c) Rs. 28,224
(d) Rs. 8,586
(e) Rs. 5424
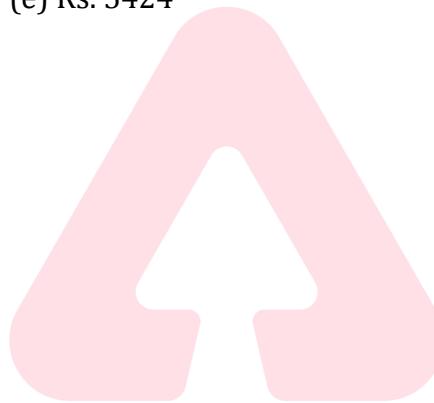
Q8. Mr. Gupta invested his total wealth in two schemes P and Q which give $16\frac{2}{3}\%$ compound interest per annum and 20% simple interest per annum respectively. If interest obtained from these two schemes after 2 years were same and Mr. Gupta's total wealth was Rs 61.65 lakhs. Find the interest obtained from amount invested in simple interest.
(a) 14.96 lakhs
(b) 10.7 lakhs
(c) 1.296 lakhs
(d) 11.7 lakhs
(e) 9.96 lakhs

Q9. A number is chosen from first 100 natural numbers. Find the probability that the number is divisible by both 2 and 3.
(a) 4/25
(b) 6/25
(c) 8/25
(d) 16/25
(e) 9/25

Q10. Rahul took a loan of Rs.80000/- at rate of of 5% p.a. at SI & lent it at 5% pa at CI. After 3 years, he cleared all his debts and invested the profit earned in a scheme which offers C.I. After two years he got Rs.128.1/- as interest from the scheme. Find the rate of interest offered by scheme.
(a) 8%
(b) 7%
(c) 6%
(d) 10%
(e) 12%

Directions (11-15): What should come in place of question mark (?) in the following questions?

Q11. 23% of 2300 − 255 ÷ 17 = 36 ÷ 18 + $?^3$
(a) 5
(b) 4
(c) 7
(d) 8
(e) 16

Q12. $45 \times 46 + 23 \times 24 - 34 \times 35 = \frac{8}{7} \times ?$
(a) 1183
(b) 1351
(c) 1337
(d) 1253
(e) 1281

Q13. 80% of 900 + $16^2 \times 4 \times$? = $(11)^3$ - 99
(a) 2.5
(b) 2
(c) 1.5
(d) 1
(e) 0.5

Q14. $44\frac{1}{11} + 23\frac{3}{22} + 54\frac{7}{66} = ?$
(a) $121\frac{1}{11}$
(b) $121\frac{1}{3}$
(c) $121\frac{2}{3}$
(d) 121
(e) $121\frac{3}{4}$

Q15. $\sqrt{4096} + \sqrt[3]{1728} + 55\%\ of\ 200 =?^2 + 510 \div 30$
(a) 12
(b) 13
(c) 14
(d) 9
(e) 7

Solutions

S1. Ans.(c)
Sol.
Let the rate of interest be r percent per annum

$\therefore 6800 = \dfrac{17000 \times r \times 4}{100}$

$\Rightarrow r = 10\%$

$\therefore C.I. = 17000\left[\left(1+\dfrac{10}{100}\right)^2 - 1\right] = 17000\left(\dfrac{121-100}{100}\right) = Rs.\ 3,570$

S2. Ans.(e)
Sol.

Two years CI on $20\% = 20 + 20 + \dfrac{20 \times 20}{100} = 44$

ATQ

$\dfrac{15 \times 2 \times x}{100} + \dfrac{44}{100} \times (x + 2500) = 14050$

$30x + .44x = 14050 - 1100$

$x = \dfrac{12950}{.74}$

x = 17500 Rs

S3. Ans.(e)
Sol.

Total no. of 5 digits = $^8P_5 - {}^7P_4$ = 5,880
A no. will be divisible by 5 if it's unit place has either '0' or '5'
Favourable cases
When '0' comes at end place
= 7 × 6 × 5 × 4 × 1
= 840
When '5' comes at end place
= 6 × 6 × 5 × 4 × 1
= 720
∴ Required probability $= \dfrac{(840 + 720)}{5880}$
$= \dfrac{13}{49}$

S4. Ans.(d)
Sol.
Total letters = 9 (3A, B, H, T, N, G, R)
Required probability $= \dfrac{6! \times 2!}{3!}$
$= 240$

S5. Ans (a)
Sol.

Possible cases may be

	Younger child	Elder child
	B	G
	G	B
	B	B
	G	G

∴ Possible cases = 3 (according to question there is at least one boy)
Favorable cases = 2 (marked above)
∴ Probability $= \dfrac{2}{3}$

S6. Ans.(a)
Sol. The total number of ways in which they can check in = 4 × 4 × 4 = 64 ways.
Out of this there will be 4 ways in which all of them will check into the same hotel.
Number of ways all of them do not check into the same hotel = 64 – 4 = 60 ways
Required probability $= \dfrac{60}{64} = \dfrac{15}{16}$

S7. Ans.(b)
Sol.

$$r = \frac{10800 \times 100}{22500 \times 4} = 12\%$$

$$CI = 22500 \left(1 + \frac{12}{100}\right)^2 - 22500$$

$$= 22500 \times \frac{112}{100} \times \frac{112}{100} - 22500$$

$$= 28224 - 22500 = 5724$$

S8. Ans.(d)
Sol.

$$\because 16\frac{2}{3}\% = \frac{50}{3}\% = \frac{1}{6}$$

Let amount invested by Mr. Gupta at
compound interest = x

And, at simple interest = y

$\therefore$ x + y = 6165000   ...(i)

And,

CI = SI (for two years)

$$x\left[\left(1 + \frac{1}{6}\right)^2 - 1\right] = \frac{y \times 20 \times 2}{100}$$

$$\Rightarrow \frac{13x}{36} = \frac{2y}{5}$$

$\Rightarrow 65x = 72y$ ...(ii)

Solving equation (i) and (ii)

y = 29,25,000 & x = 32,40,000

$$\therefore SI = \frac{29,25,000 \times 20 \times 2}{100}$$

$$= 11,70,000 = 11.7 \text{ lakhs}$$

S9. Ans.(a)
Sol.

A number will be divisible by 3 and 2
both if it is divisible by 6.

$\therefore$ Favorable cases 6, 12, 18, 24, 30.....................96

= 6 × 1, 6 × 2, 6 × 3..........6× 16

= 16

Possible cases = 100

$\therefore$ probability $= \frac{16}{100} = \frac{4}{25}$

S10. Ans (d)
Sol.

Profit earned in 3 years = Difference in interest obtained

$$D = \frac{P\,r^2\,(300+r)}{(100)^3}$$
$$= \frac{80000 \times 25 \times 305}{1000000}$$
= Rs610

Let scheme offers R% rate of interest

$$610\left(1 + \frac{R}{100}\right)^2 - 610 = 128.1$$

R = 10%

S11. Ans(d)
Sol.

$$\frac{23}{100} \times 2300 - \frac{255}{17} = \frac{36}{18} + ?^3$$
$$529 - 15 = 2 + ?^3$$
$$?^3 = 512$$
$$? = 8$$

S12. Ans.(d)
Sol.

$$45(45 + 1) + 23(23 + 1) - 34(34 + 1) = \frac{8}{7} \times ?$$
$$2025 + 45 + 529 + 23 - 1156 - 34 = \frac{8}{7} \times ?$$
$$1432 \times \frac{7}{8} = ?$$
$$? = 1253$$

S13. Ans.(e)
Sol.

$$\frac{80}{100} \times 900 + 256 \times 4 \times ? = 1331 - 99$$
$$720 + 1024 \times ? = 1232$$
$$? = \frac{512}{1024}$$
$$? = 0.5$$

S14. Ans.(b)
Sol.

$$(44 + 23 + 54)\left(\frac{1}{11} + \frac{3}{22} + \frac{7}{66}\right) = ?$$

$$? = 121\left(\frac{6 + 9 + 7}{66}\right)$$

$$? = 121\frac{1}{3}$$

S15. Ans.(b)
Sol.

$$64 + 12 + 55 \times 2 = ?^2 + 17$$
$$\Rightarrow ?^2 = 169$$
$$\Rightarrow ? = 13$$

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