GENERAL APTITUDE

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Todays topics

1. Interest
2. Partnership
3. Average
4. Probability

Interest

If P = Principal, R = Rate of interest, N = Time in years, I = Interest, A = Amount

Then **A = P + I**

Simple Interest

S.I. = (P x R x N) / 100

Basic principal remains constant.

S.I. is good example of AP(Arithmetic Progression)

Compound Interest

$A = P (1+ R/100)^T$

C.I. = A – P

T = periods of compounding,

R = rate for compounding period

Basic principal keeps on increasing as we get interest on interest.

C.I. is good example of GP(Geometric Progression)

Interest

Q1. A sum of Rs.12500 amounts to Rs.15500 in 4 years at the rate of simple interest. What is the rate of interest?

A. 7%

B. 6%

C. 9%

D. 10%

Ans: B

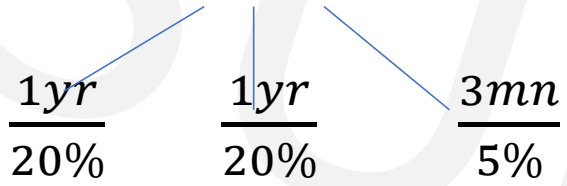
Interest

Q2. When annual compounding is done, a sum amounts to Rs. 5000 in 6 years and Rs. 7200 in 8 years. What is the interest rate?

A. 10% B. 15% C. 20% D. 25%

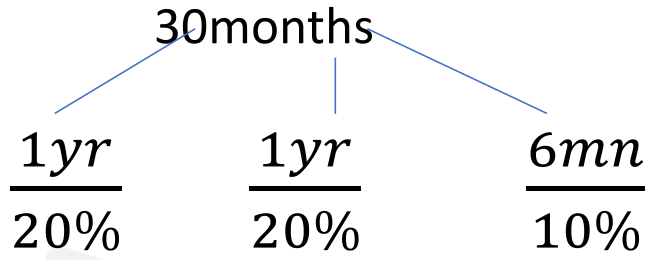
Ans: C

Interest

- T = 27months
- R = 20% p.a.
  - 27months
- 

- **Formula:**
- 27months = $2\frac{1}{4}$ yrs
- A = **P (1+ R/100)^n x (1+ $\frac{R/4}{100}$)^{4n}**
- **where, n is in years**

T = 30 months
R = 20% p.a.



Formula:

30months = $2\frac{1}{2}$ yrs

A = **P (1+ R/100)^n x (1+ $\frac{R/2}{100}$)^{2n}**

where, n is in years

Interest

Q3. A sum of Rs.10000 was deposited in a bank for a period of 27 months at the rate of 20%p.a. on compound interest. What will be the total amount received?

A. Rs.15120

B. Rs.13430

C. Rs.14400

D. Rs.13600

Ans: A

- 27months = $2\frac{1}{4}$ yrs
- A = **P (1+ R/100)^n x (1+ $\frac{R/4}{100}$)^{4n}**
- **where, n is in years**

Interest

Q4. A invests Rs.16000 at the rate of 10%p.a. for 1 year, if the interest is compounded half yearly, then find the amount received by A at the end of the year?

A. Rs. 17640

B. Rs. 16450

C. Rs. 17650

D. Rs. 12600

Ans: A

Interest

Q5. If a certain sum of money amounts to Rs. 3500 in 5years and Rs.5000 in 10years at compound interest. Find sum?

A. Rs. 1090 B. Rs. 1300 C. Rs. 2450 D. Rs. 1780

Ans: C

$$P = \frac{\text{square of smaller amount}}{\text{Bigger amount}}$$

$$= \frac{(3500)^2}{5000}$$

Note : - only applicable if number of years is double

Interest

Q6. The simple interest on a certain sum at the rate of 12.5% per annum for 6 years is Rs. 13,500 less than the principal. Find the simple interest.

A. Rs. 13,500

B. Rs. 54,000

C. Rs. 40,000

D. Rs. 40,500

Ans: D

Interest

Q7. A certain sum of money becomes Rs.2100 at some rate of simple interest in 2 years and Rs. 2250 in 5 years. Find the principal and rate%

A. Rs.2000 ,2.5%

B. Rs.2300 ,3%

C. Rs.1800 ,4%

D. Rs.2200 ,3.5%

Ans: A

Interest

Q8. The compound interest on Rs. 8000 for 9 months at 20% p.a. being compounded quarterly.

A. Rs. 1361

B. Rs. 1261

C. Rs. 1431

D. Rs. 1298

Ans: B

Interest

Q9. Simple interest on a sum of money for 5 years is 2/5 times the principal, Find the rate for simple interest.

A. 13% B. 12% C. 9% D. 8%

Ans: D

Interest

Q10. What is the simple interest on Rs. 32,000 at 8.5% per annum for period from 10^{th} Feb., 2019 to 24^{th} April, 2019?

A. Rs. 550

B. Rs. 555

C. Rs. 544

D. Rs. 540

Ans: C

Interest

- If the difference between compound and simple interest is of **two years** than,
  Difference = $P(R)^2/(100)^2$
  Where P = principal amount, R = rate of interest

- If the difference between compound and simple interest is of **three years** than,
  Difference = $3 \times P(R)^2/(100)^2 + P(R/100)^3$.
  Here also, P = principal amount, R = rate of interest

Interest

Q11. The difference between compound interest and simple interest on a sum of Rs.15000 for 2 years is Rs.96. What is the rate of interest per annum?

A. 8%

B. 10%

C. 12%

D. Cannot be determined

E. None of these

Ans: A

Ratio & Proportion

Dividing a given number in the given Ratio :

Let T be the Total Amount . Let the given ratio be a:b:c

This means A is divided into three parts such that

First Part = T x a/(a+b+c)

Second Part = T x b/(a+b+c)

Third Part = T x c/(a+b+c)

And First Part + Second Part + Third Part = T

Any Part = Total Amount x (Its related ratio term / Sum of Ratio Terms)

Interest

Q12. K started a business investing Rs. 90000. After five months, S joined with a capital of Rs 80000. If at the end of the year, they earn a profit of Rs. 69700, then what will be the share of S in the profit ?

A. Rs. 23800

B. Rs. 23000

C. Rs. 22800

D. Rs. 22600

Ans: A

Partnership

Q13. Three partners x, y, z start a business . y's Capital is four times z's capital and twice x's capital is equal to thrice y's capital . If the total profit is Rs.17171 at the end of a year ,Find out y's share in it.

A. Rs. 6242

B. Rs. 6424

C. Rs. 6244

D. Rs. 6247

Ans: C

Partnership

Q14. Three partners shared the profit in a business in the ratio 8 : 7 : 5. They had partnered for 7 months, 8 months and 14 months respectively. What was the ratio of their investments?

A. 20 : 64 : 49

B. 64 : 49 : 20

C. 20 : 49 : 64

D. 49 : 64 : 20

Capital	1st partner	2nd partner	3rd partner
	X	Y	Z
Time	7	8	14
Profit	8	7	5

Ans: B

Profit = Investment(invested capital) x time period of investment

$$\textbf{Investment(invested capital)} = \frac{\textbf{Profit}}{\textbf{time period}}$$

Partnership

Q15.A start a business with Rs. 850000. He was joined afterwards by B with Rs. 425000. For how much period does B join, if the profits at the end of the year are divided in the ratio of 30 : 10 ?

A. 4 months

B. 5 months

C. 6 months

D. 8 months

Ans: D

- Capital of A = Rs. 850000 Capital of B = Rs. 425000
- Ratio of P1:P2=30:10
- **using formula,**
- $\frac{C1T1}{C2T2} = \frac{P1}{P2}$
- In this type , the time period is 12 months i.e. one year

Probability

Q17. What is the probability of getting at least one tail when two coins are tossed?

A. 1/2

B. 3/4

C. 1/4

D. 2/4

Ans: B

On tossing a coin, the probability of each outcome is 1/2

P(Head) + P(Tail) = 1

Step 1: First, find the number of favorable outcomes from the given question.

Step 2: Then, find the total number of outcomes.

Step 3: Apply the probability formula to find the card probability.

$$\text{Probability} = \frac{\text{Favourable outcome}}{\text{Total number of outcomes}}$$

(H,H),(H,T),(T,T),(T,H)

Probability

Q16. What is the probability of drawing two cards from a deck of cards with/without replacement when the first card is heart and second card is diamond?

A. 12 / 204

B. 14 / 204

C. 16 / 204

D. 13 / 204

Ans: D

w/o replacement

with replacement

Probability

Q18. In a hotel, 60% had vegetarian lunch while 30% had non-vegetarian lunch and 15% had both types of lunch. If 96 people were present, how many did not eat either type of lunch ?

A. 20

B. 24

C. 26

D. 28

Ans: B

Note:

P(A or B) = P(A) + P(B) – P(A and B) where A and B are the two events.

- $P(A \cup B) = P(A) + P(B) - P(A \cap B)$
- This is also known as the addition theorem of probability.

Averages

- **Simple Average** :
- An average of a set of values is the sum of values divided by the total number of values.
- Average of ‘n’ values = (Sum of the ‘n’ values)/n
- This is also called as Arithmetic Mean.
- Average (A) = Sum (S)/ Number(n)
- S = A x n

Probability

Q19. The average age of husband, wife and their child 3 years ago was 27 years and that of wife and the child 5 years ago was 20 years. The present age of the husband is:

A. 35 years

B. 40 years

C. 50 years

D. 60 years

Ans: B

Probability

Q20. Three boxes have some average weight. When one box which weighs 89 kg is replaced by another box, the average weight increases by 5kg. How much the new box weighs?

A. 109kg

B. 94kg

C. 104kg

D. 84kg

Ans: C


THANK
YOU!