Chapter-02
Profits

Creative Questions and Answers

Question no : 01

Some principal becomes Tk. 16,280 as profit-principal in 6 years and Tk. 18,080 as profit-principal in 8 years.

a. Find the profit in 5 years.
b. Find the principal and rate of profit.
c. Find the difference of simple profit and compound profit of Tk. 9,000 in 3 years at the same rate of profit.

Solution:

(a)

The profit-principal in 8 years is 18,080 taka
The profit-principal in 6 years is 16,280 taka
(8 - 6) years or 2 years interest is (18080 - 16280)
or, 1800 taka

interest in 1 year = $\frac{1800}{2}$ taka or 900

So, interest in 5 years = 900 x 5 taka = 4500 taka.

(b)

Profit-principal in 6 years = 16,280 taka
Interest in 6 years (6 x 900) = 5400 taka
principal = (16,280- 5400) = 10,880 taka
Now 10880 taka in 1year makes interest of 900 taka

1 ” ” 1 ” ” ” ” $\frac{900}{10880}$ ”

100 ” ” 1 ” ” ” ” $\frac{900x100}{10880}$ ”

= 8.27% (approx.)

So, principal is 10880 taka and rate of interest is 8.27%

(c)

We know,
Simple interest, I_s = npr and
compound interest $I_c = P(1 + r)^n - P$

Here we have from (b), above,

P = 9000 taka, r = 8.27% and n= 3(given)

$\therefore I_s$ = 3 x 9000 x $\frac{8.27}{100}$ taka

= 2232.9 taka

And I_c = { 9000 (1 + $\frac{8.27}{100}$)^3 – 9000 } taka

= {9000(1.27) - 9000} taka

=11430 - 9000 taka

= 2430 taka

So, the difference between compound interest and simple interest of 9000 taka for 3 years

= (2430 - 2232.9) taka

= 197.1 taka

So, the required difference is 197.1 taka.

Question no : 02

Mrs. Asma deposited Tk. 5000 in a bankat the rate of 5% per annum for three years.

a. Find her simple profit in two years.
b. What amount of compound profit will she get at the end of three years?
c. In how many years will the deposited amount be twice of it as profit principal at the same percentage of profit?

Solution:

(a)

We know,

simple profit, I_s = npr

Here n = 3 years, P = 5000 taka and r = 5% = $\frac{5}{100}$

I_s = 3 x 5000 x $\frac{5}{100}$ taka = 750 taka

So, the required profit is 750 taka,

(b)

We know, compound profit, I_c = P(1 + r)^n -P

Here P = 5000 taka, n = 3 years, r = 5% = $\frac{5}{100}$

∴ I_c = { 5000 (1 + $\frac{5}{100}$)^3 – 5000 } taka

= {5000 (1.05)^3 – 5000} taka (approx)

= (5788.13 - 5000) taka (approx)

= 788.13 taka

So, compound profit at the end of 3 years will be 788.13 taka.

(c)

According to the stem, bank deposit = 5000 taka

double of bank deposit = 2 x 5000 taka

= 10,000 taka

We know, simple profit principal, A = P+ npr.

Here, A = 10000. taka, P = 5000 taka, r = 5% = $\frac{5}{100}$, n = what?

∴ 10000 = 5000 + n x 5000 x $\frac{5}{100}$

or, 10000 = 5000 + 250 n

or, 250 n = 5000

or, n = $\frac{5000}{250}$

or, n = 20

That is, Tk. 5000 will be Tk. 10000 at the rate of 5% profit in 20 years.

Question no : 03

A commodity is sold at the loss of 9%. If it were sold at Tk. 900 more, there would be a profit of 9%. The same value the cost ,price of commodity in a bank at the profit of 10.50% per annum in 2 years.

a. What is the simple profit of Tk. 900 in 3 years at the rate of 9%?
b. Determine the cost price of the commodity.
c. Find the compound profit?

Solution:

(a)

We know, simple profit, I = npr

Here n = 3, p = 900 and r = 9% = $\frac{9}{100}$

∴ I = 3 x 900 x $\frac{9}{100}$ = 243

That is, the required simple profit is 243 taka.

(b)

Let the cost price of the commodity be 'x' taka

∴ selling price of the commodity making loss @ 9% = $\frac{91x}{100}$ taka

Now if the commodity is sold 900 taka more than $\frac{91x}{100}$ taka, then it would cost $\left(\frac{91x}{100} + 900\right)$ and

in that case profit would be made 9%.

∴ if selling price is 109 taka, cost price is 100 taka

" " " " 1 " " " " $\frac{100}{109}$ "

,, ,, ,, ,, $\left(\frac{91x}{100} + 900\right)$,, ,, ,, ,, $\frac{100\,(91x+90000)}{109\times100}$,,

∴ according to problem, x = $\frac{91x+90000}{109}$

or, 109 x = 91x + 90000

or, 18x = 90000

or, x = 5000

That is, the cost price of the commodity is 5000 taka.

(c)

We know, compound profit, $I_c = P(1 + r)^n - P$
Here we have,
P = 5000 taka, n = 2 years, r = 10.50% = $\frac{10.50}{100}$

∴ $I_c = 5000(1 + 0.105)^2 - 5000$
= 6105.13 - 5000
=1105.13.
That is, the compound profit is 1105.13 taka.

Question no : 04

Some principal becomes Tk 3,200 as profit-principal in 4 years and Tk 3,725 as profit-principal in 7 years.

a. Find the interest of 3 years.
b. Find the rate of interest.
c. At the same rate of interest, what will be the difference of compound profit and simple profit of Tk 3,000 in 3 years.

Solution:

(a)

Here we have,
Profit principal in 7 years = 3725 taka
,, ,, ,, 4 ,, = 3200 taka
profit in (7 - 4) years or 3 years = (3725 - 3200) taka
= 525 taka
So, the interest of 5 years is 525 taka.

(b)

From (a) above,

Interest of 3 years = 525 taka

,, ,, 1 ,, = $\frac{525}{3}$ or 175 taka

,, ,, 7 ,, = 175 x 7 or 1225 taka

∴principal profit principal of 7 years – interest of 7 years
= 3725 taka - 1225 taka
=2500 taka

∴ The profit of 2500 taka in 7 years is 1225 taka

∴ ” ” ” 1 ” ” 1 ” ” $\frac{1225}{2500 \times 7}$ ”

∴ ” ” ” 100 ” ” 1 ” ” $\frac{1225 \times 100}{2500 \times 7}$ ”

∴the rate of interest is 7%.

(c)

We know,
Simple interest, $I_s = npr$
and compound interest, $I_c = P(1 + r)^n - P$
where n = time, P = Principal, r = rate of interest in percent,

Here, P = 3,000 taka and n = 3 years (given).
r = 7%, from (a) above
$= \frac{7}{100}$
∴I_s = 3 x 3000 x $\frac{7}{100}$ taka = 630 taka
Again, I_c = { 3000 (1 + $\frac{7}{100}$)^3 – 3000 }taka
= {3675 - 3000} taka (approx.)
= 675 taka
∴ difference between, compound profit and simple profit = (675 - 630) taka = 45 taka.
So, the required difference is 45 taka.

Question no : 05

Mr Sarwar deposited 1500 taka in a bank at the rate of interest 10% per 2 years,

a. What is the next two numbers of' the series 1, 4, 10, 22, 46 ...,,,,,,,,?
b. Find the profit principal.
c. Find the difference between compound profit and simple profit.

Solution:

(a)

The given series can be written as under including the next two numbers :

∴the next two numbers of the series are 94 and 190.

(b)

We know, profit principal, A = P + npr
Here, P = 1500 taka
r = 10% = $\frac{10}{100}$
n = 2 years
A = (1500 + 2 × 1500 × $\frac{10}{100}$) taka
= (1500 + 300) = 1800 taka
So, the desirous profit-principal = 1800 taka.,

(c)

From (b) above, we have, simple profit of 1500 taka at the rate of 10%
profit for 2 years = profit principal - principal
= (1800 - 1500) taka - 300 taka

We know, compound profit, $C = P(1 + r)^n - P$

Here P = 1500, r = 10% $= \frac{10}{100}$, n = 2 years

$C = \{ 1500 (1 + \frac{10}{100})^2 - 1500 \}$taka

= (1815 - 1500) taka = 315 taka

∴the difference between compound profit and simple profit = (315 - 300) taka = 15 taka.

Question no : 06

Mr Shafique deposited Tk. 30,000 in a bank at the rate of 7% per annum.

a. Find his simple profit in 5 years.
b. Determine the compound principal of the amount in 2 years.
c. Find the difference of simple profit and compound profit of the amount in 3 years.

Solution:

(a)

We know, simple profit, $I_s = npr$

Here, n = 5, P = 30,000 taka and r =7% = $\frac{7}{100}$

$\therefore I_s = 5 \times 30{,}000 \times \frac{7}{100}$ taka = 10,500 taka.

So, the required simple profit is 10,500 taka.

(b)

We know, compound principal, $C_p = P(1 + r)^n$
Here, P = 30,000 taka, r =7% = $\frac{7}{100}$ and n = 2 years.

$C_p = 30{,}000 (1 + \frac{7}{100})^2$
$= 30{,}000 (1.07)^2$ taka
= 34,347 taka
So, compound principal is 34,347 taka.

(c)

We know, simple profit, $I_s = npr$.

Here, n = 3 years, P = 30,000 taka and r =7% = $\frac{7}{100}$

$\therefore I_s = 3 \times 30{,}000 \times \frac{7}{100}$ taka = 6,300 taka.

Again, compound profit, $I_c = P(1 + r)^n - P$

Here, P = 30,000 taka, r =7% = $\frac{7}{100}$, n = 3 years

$\therefore I_c$ = { 30000 (1 + $\frac{7}{100}$)^3 – 30000 }taka

= {36751.29 - 30000} taka

= 6751.29 taka

Question no : 07

Some principal becomes Tk. 3025 as profit-principal in 3 years and 3375 as profit-principal in 5 years.

a. Write down the formula of simple profit and compound profit.
b. Find the principal and rate of profit.
c. What will be the difference between the compound principal and simple profit-principal at the end of 3rd year at the same rate?

Solution:

(a)

Formula of simple profit, I_s = P(l + nr),
Where P = Principal, n = Time, r = Rate of profit.
Formula of compound profit, I_c = $P(1 + r)^n$ -P
Where P = Principal, n = Time, r = Rate of profit.

(b)

In 5 years profit-principal 3375 taka
In 3 years profit-principal 3025 taka
$\therefore$In 2 years, profit = (3375 - 3025) taka
= 350 taka
$\therefore$ In 1 years, profit = (350 ÷ 2) taka = 175 taka
$\therefore$ In 3 years, profit = 175 × 3 = 525 taka
$\therefore$Principal = (3025 - 525) taka = 2500 taka
Now profit of 2500 taka in 3 years = 525 taka

" " 1 " " 1 " = $\frac{525}{2500 \times 3}$ taka

" " 100 " " 1 " = $\frac{525 \times 100}{2500 \times 3}$ taka

$\therefore$Principal = 2500 taka and rate of profit = 7%.

(c)

We know,
Simple profit-principal, A = P(l + nr) and compound profit-principal, C = $P(1 + r)^n$ - P
Where P = Principal, n = Time, r = Rate of profit.
Here P = 2500 taka, n = 3 years, r =7% = $\frac{7}{100}$
A = 2500 (1+3 × $\frac{7}{100}$) taka = 3025 taka and
C = 2500(1 + $\frac{7}{100}$)^{3}taka = 3062.61 taka (approx.)
The difference between the compound profit- principal and simple profit-principal
= (3062.61 - 3025) taka
= 37.61 taka.

Question no : 08

At the fixed rate of profit Tk 6500 becomes Tk. 9425 as profit-principal in 5 years.

a. What is the rate of profit?
b. How much money. , will, become Tk. 10295 as profit-principal in 5 years at the same rate of profit?
c. If the rate of profit is 10% per annum,what will be the compound profit of the principal in obtained 'b' in 5 years?

Solution:

(a)

Here, profit - principal = 9425 taka

Principal = 6500 taka

Time = 5 years

Profit = (9425 - 6500) = 2925 taka

So, profit in percent $= \frac{2925 \times 100}{6500 \times 5} = 9$

rate of profit = 9%.

(b)

We know,
$A = P + nPr$ ……. (i)
where A = profit - principal
n = period
P = principal
r = rate of interest in %

Here A =10295 taka, n =5 years, $r = \frac{9}{100}$,
P = what?
$\therefore$ $10295 = P + 5 \times P \times \frac{9}{100}$, putting the value of A, n, P and r in (i).
or, $10295 = P + \frac{45}{100} P$
or, $10295 = P + 0.45 P$
or, $10295 = P(1.45)$
or, $P = \frac{10295}{1.45}$
or, $P = 7100$
So, the principal is 7100 taka.

(c)

We know,
$C = P(1 + r)^n$ ……. (ii),
Where C = compound profit
P = principal
r = rate of interest percent per year
Here P = 7100 taka from (b)
$r = \frac{10}{100}$
n = 5 years
C = what?

$\therefore C = 7100\left(1 + \frac{10}{100}\right)^5$,putting the value of P, n and r in (ii)

$= 7100(1 + 0.1)^5 = 7100(1.1)^5$

$= 7100 \times 1.61051$

$= 11434.62$ (approx.)

So, the desired compound profit is 11434.62 taka. (approx.)

Question no : 09

Mr Anwar deposited Tk. 10000 in a bank at the rate of profit 8%.

a. How much profit he will get after one year as a simple profit?

b. What will be the compound principal for him after two years?

c. Determine the difference between compound profit and simple profit after 3 years.

Solution:

(a)

We know,

Simple profit, I = nPr,

Where n = time

P = Principal

r = rate of interest in percent

Here we have,

n =1 year

P = 10000 taka

$r = 8\% = \frac{8}{100}$

$\therefore$ Profit, $I = 1 \times 10000 \times \frac{8}{100}$ taka

So, after 1 year, he will get simple interest of Tk 800

(b)

We know.

compound Principal, $C = P(1 + r)^n$,

Where, P = principal

r = rate of interest in %

n = time

Here we have, P = 10000 taka, n = 2 years, $r = 8\% = \frac{8}{100}$

$\therefore C = 10000\left(1 + \frac{8}{100}\right)^2$

$= 10000(1 + 0.08)^2$

$= 10000\ (1.08)^2$

$= 11664$

So, the compound principal for him after 2 years is 11664 taka.

(c)

Here principal = 10000 taka

time = 3 years

$\text{rate} = 8\% = \frac{8}{100}$

$\therefore$simple interest for 3 years, I = npr in taka

$= 3 \times 10000 \times \frac{8}{100}$ taka, putting the value of n, p, r

$= 2400$ taka

Again,
compound principal of 3 years, ∴ $C = P(1 + r)^n$ in taka

$$C = 10000\left(1 + \frac{8}{100}\right)^3 \text{taka}$$
$$= 10000\ (1.08)^3 \text{ taka}$$
$$= 10000\ (1.26) \text{ taka (approx)}$$
$$= 12597.12 \text{ taka}$$

∴Compound interest for 3 years = (12597.12 - 10000) taka
= 2597.12 taka
∴The difference between the compound profit and the simple profit = (2597.12 - 2400) taka
= 197.12 taka
So, the desired difference between the compound profit and simple profit is 197.12 taka.

Question no : 10

Nasima Begum deposited Tk. 5000 in a bank and got Tk, 6200 together with profit after 3 years.

a. Find the percentage of simple profit.
b. What will be the profit-principal after another 2 years?
c. If she deposited the money at the same percentage of compound profit, what would be the compound principal after 3 years?

Solution:

(a)

We know,
I = npr ……..(i)
I = simple profit
n = Time
P = Principal
r = Rate of profit in percent
Here n = 3 years
P = 5000 taka
I = (6200 - 5000) taka or 1200 taka
r = what?
From (i), I = npr
or, $1200 = 3 \times 5000 \times r$,

$$\text{or, } r = \frac{1200}{3 \times 5000}$$
$$= \frac{1200}{3 \times 50 \times 100}$$
$$= \frac{8}{100} = 8\%$$

The desired simple profit is 8%

(b)

We know,
Profit-principal = Principal + profit
= p + pnr
Here P = 5000 taka
n = (2 + 3) years or 5 years
r = 8% from (a)

$$\therefore \text{ Profit principal} = \left(5000 + 5000 \times 5 \times \frac{8}{100}\right) \text{ taka}$$
$$= (5000 + 2000) \text{ taka}$$
$$= 7000 \text{ taka}$$

So, the desired profit – principal is 7000 taka.

(c)

We know,
compound-profit, $C = P(1 + r)^n$,
where,
P = principal,
r = rate of interest in percent
n = time
Here,
P = 5000 taka
n = 3 years
r = 8% = $\frac{8}{100}$
∴Compound-profit, $C = 5000 \left(1 + \frac{8}{100} \right)^3$ taka
$= 5000 (1 + 0.08)^3$ taka
$= 5000 (1.08)^3$ taka
= 6298.66 taka.
Therefore, the desired compound-profit is 6298.56 taka.

Question no : 11

Some principal becomes Tk, 1625 as profit-principal in 3 years and Tk 1875 as profit-principal is 5 years.

a. What is the profit of 2 years?
b. Find the principal änd the rate of profit.
c. At the same rate of profit in how many years the profit-principal will 2250?

Solution:

(a)

Here we have,
Profit principal of 5 years = 1875 taka and
profit principal of 3 years = 1625 taka
∴Profit principal of (5 - 3) years or 2 years = (1875 - 1625) taka = 250 taka
So, profit principal of 2 years is 250 taka.

(b)

From (a) we get,
Profit of 2 years = 250 taka
∴ profit of 1 years = (250 ÷ 2) taka
or, 125 taka
∴ profit of 3 years = 125 x 3 taka
or, 375 taka.
Again,
profit principal of 3 years 1625 taka
profit of 3 years = 375 taka
∴ Principal = (1625 - 375) taka = 1250 taka.
We further know that,
I = Pnr, where
I = interest
p = profit
n = time
r = rate of interest percent
Here P = 1250 taka, I = 375 taka, n = 3 years , r = what?

∴ I = Pnr
or, 375 = 1250 × 3 × r
or, r = $\frac{375}{1250 \times 3} = \frac{125}{1250} = \frac{1}{10} = \frac{10}{100}$ = 10%

So, the required principal is 1250 taka and rate of interest is 10%.

(c)

Here, profit principal 2250 taka
principal = 1250 taka
rate of interest = 10% = $\frac{10}{100}$
∴ interest (I) of particular period = (2250 -1250) taka = 1000 taka
We know,
I = Pnr
∴1000 = 1250 × n × $\frac{10}{100}$
or, 12500 n = 100000
or, n = $\frac{100000}{12500}$ or, 8
∴ in 8 years profit principal will be 2250 taka.

Question no : 12

Profit-Principal of some principal is Tk. 11000 in 6 years. The profit is $\frac{3}{8}$ parts of the principal.

a. Write down the formula for simple profit and compound profit.
b. find the principal and rate of profit.
c. At the same rate of profit, what will be the difference of simple profit and compound profit of Tk. 12000 in 3 years?

Solution:

(a)

Formula for simple profit = Pnr
where P = Principal
n = time
r = rate of interest in percent
Formula for compound profit = $P(1 + r)^n - P$
where P = principal
r = rate of interest in percent
n = time.

(b)

Let us suppose,
principal = 8x taka
∴ profit = 3x taka in 6 years
So, profit principal in 6 years = (8x + 3x) taka
= 11x taka
But according to problem, profit - principal, A = 11000 taka in 6 years.
∴ 11x = 11000
=> x = 1000
=> 3x = 3000
That is, profit = 3000 taka in 6 years

Principal = Profit- principal – profit
= (11000 - 3000) taka
= 8000 taka

We know,
A = P + Pnr, Where
A = profit principal
P = principal
n = time
r = rate of interest in percent

Now putting the value of A, P, n in the above formula, we get,
$11000 = 8000 + 8000 \times 6 \times r$

or, $48000\ r = 11000 - 8000$

or, $48000\ r = 3000$

or, $r = \frac{3000}{48000} = \frac{3000}{480 \times 100} = \frac{62.5}{100}$

$= 6.25\%$

So, the required principal is 8000 taka and rate of interest is 6.25%.

(c)

Here we have,
principal, P = 12000 taka
n = 3 years
r = 6.25%

∴Simple interest, $I_s = Pnr$
$= 12000 \times 3 \times \frac{6.25}{100}$ taka, putting the value of P, n and r.

$= 36000 \times \frac{625}{100 \times 100}$ taka

= 3.6 x 625 taka
= 2250 taka

Again, compound profit principal, $C = P(1 + r)^n$
$=12000 \times (1 + \frac{6.25}{100})^3$ taka, putting the value of P, n, r.
$= 12000(1 + 0.0625)^3$ taka
= 14393.55 taka (approx)

∴Compound profit, I_c = (14393.56 - 12000) taka
= 2393.55 taka

∴difference between compound profit and simple profit = $l_c - l_s$
= (2393.55 - 2250) taka
= 143.55 taka

So, the required difference is 143.55 taka.

Question no : 13

Some principal becomes Tk. 5000 as profit-principal in 5 years and Tk. 4500 as profit-principal in. 3 years.

a. What will be the profit in 2 years?
b. Find the principal and rate of profit.
c. In how many 'years 'the mentioned principal will be double as profit-principal?

Solution:

(a)

Profit principal in 5 years = 5000 taka
profit principal in 3 years = 4500 taka
profit in 2 years = (5000 - 4500) taka
= 500 taka.
So, the desirous profit in 2 years is 500 taka.

(b)

From (a) we have,

profit of 2 years = 500 taka

profit of 1 year = $\frac{500}{2}$ or, 250 taka

profit of 3 years = 250 x 3 taka

= 750 taka.

According to the problem,

profit principal of 3 years is 4500 taka profit of 3 years is 500 taka
∴ principal = (4500 - 500) taka or, 4000 taka
So, we have principal, P = 4000 taka and profit of 3 years, I = 750 taka.
We know, I = Pnr ……(i)
Here I = 750 taka, P = 4000 taka, n = 3 years, r = what?
Now from (i) we get,
750 = 4000 × 3 × r, putting the value of I, P, n.

or, $r = \frac{750}{4000 \times 3}$

$= \frac{750}{40 \times 3 \times 100}$

$= \frac{62.5}{100} = 6.25\%$

The required principal is 4000 taka and the rate of interest is 6.25%.

(c)

Let the principal of 4000 taka will be double i.e. 8000 taka at the rate of 6.25% in n years.

So, in this case, we have,

P = 4000 taka,

profit- principal, A = 8000 taka

r = 6.25% = $\frac{62.5}{100}$

n = what?

We know, A = P + Pnr ……..(i)

Now putting the value of A, P, r in (i), we get,

$$8000 = 4000 + 4000 \times \frac{62.5}{100} n$$

or, 40 x 6.25 n = 8000 - 4000

or, 40 x 6.25 n = 4000

$$\text{or, } n = \frac{4000}{40 \times 6.25} = \frac{4000}{250} = 16$$

That is, in 16 years the principal will be double. So, the desirous time is 16 years.

Question no : 14

Mr Kamal deposited Tk. 4000 in a bank at a certain rate of profit and he got Tk. 5500 as profit-principal after 3 years.

a. On Tk. p at a rate of r% profit, in n year what, will be the simple profit and compound profit?
b. At what rate of profit Mr Kamal deposited his money in bank?
c. What amount of money did Mr Kamal deposit in another bank at the same rate of profit so that he got Tk.16250 s profit—principal after 5 years?

Solution:

(a)

Based on the given information,
Simple profit = P + Pnr and
compound profit = $P(1 + r)^n - P$

(b)

Here principal, P =4000 taka
Profit- principal, A = 5500 taka
Time, n = 3 years
rate of profit, = what?
We know, Profit - principal = principal + profit.
That is, A = P + Pnr ……(i)
Now putting the value of A, P, n in (i) we get,

$$5500 = 4000 + 4000 \times 3 \times r$$
$$\text{or, } 12000r = 5500 - 4000$$
$$\text{or, } 12000r = 1500$$
$$\text{or, } r = \frac{1500}{12000} = \frac{1500}{120 \times 100} = \frac{12.5}{100} = 12.5\%$$

The required rate of profit is 12.5%.

(c)

Here, profit - principal, A = 16,250 taka

rate of profit, r = 12.5% = $\frac{12.5}{100}$

time, n = 5 years

principal, P what?

We know, A = P + Pnr ……(i)

Now putting the value of A, n and r in (i),

$$16250 = P + P \times 5 \times \frac{12.5}{100}$$

$$\text{or, } 16250 = P\left(1 + \frac{62.5}{100}\right)$$

$$\text{or, } 16250 = P\left(\frac{162.5}{100}\right)$$

$$\text{or, } P = \frac{16250 \times 100}{162.50}$$

$$= 10000$$

The required principal is 10,000 taka.

More Questions:

Q-18

Mr. Kamal deposited TK. 4,000 in a bank at a certain rate of profit and he got TK.5,500 as profit-principal after 3 years.

a. On TK. P, at rate of r% profit, in n year what will be the sample of profit and compound profit?
b. At what rate of profit Mr. Kamal deposited his money in bank?
c. What amount of money did Mr. Kamal deposit in another bank at the same rate of profit so that he got TK. 16,250 as profit-principal after 5 years?

Q-19

Some principal becomes TK. 1625 as profit-principal in 3 years and TK. 1875 as profit principal is 5 years.

a. What is the profit of 2 years?
b. Find the principal and the rate of profit.
c. At the same rate of profit in how many years the profit-principal will be TK. 2250?

QUES-3: Jalil sold his mobile by TK. 4,000. He calculates that he loss 10%.

a. How much money loss of jalil?
b. If jalil wants to profit 10% then how much money he sold his mobile?
c. At the rate of 8% of cost price deposit in a bank what he will get the profit-principal after 5 years?

Q-20

Some principal becomes TK. 5,000 as profit-principal in 5 years and TK. 4500 as a profit-principal in 3 years.

a. What will be the profit in 2 years?
b. Find the principal and rate of profit?
c. In how many years the mentioned principal will be double as profit-principal?

Q-21

Monu Mia has a fruit-shop at shantinagar.He buys the some numbers of bananas at taka 30 per 10 pcs and 15 pcs respectively. Then sells all the bananas at taka 30 per 12 pcs.

a. What are the cost price of type-1 and type-2 bananas per pcs?
b. What will be the profit or loss in percentage?
c. What will be the profit in percentage if second type of bananas is sold at taka 30 per 12 pcs?

Q-22

Mr. Jamil has invested 3000 taka for 6 years at 10% annual rate.

a. Determine the profit for 6 years.
b. At 7 ½% annual rate, in how many years the previous profit can be found on 1000 taka?
c. At 5% annual rate, how much money need to be invest to get double of the previous profit?

Q-23

Principal double with profit-principal in 6 years.

a. Determine the rate of profit.
b. In how many years, that principal will be three-fold as profit-principal in the same rate of profit?
c. At the same rate of profit, which amount of money will be TK. 2100 with profit-principal in 4 years?

Q-24

Any principal becomes 460 taka with simple profit in 3 years and 600 taka with profit in 5 years.

a. If the principal is P, make two equations with the given information.
b. Determine the rate of principal and profit from the two equations.
c. After 5 years, to get 2000 taka in the same rate, how much money one will have to deposit?

Q-25

Mr. Anwar deposited TK. 10000 in a bank at the rate of 8%.

a. How much profit he will get after one year as a simple profit?
b. What will be the compound principal for him after 2 years?
c. Determine the difference between compound profit and simple profit after 3 years.

Q-26

At the fixed rate of profit TK. 6500 becomes TK. 9425 as profit-principal in 5 years.

a. What is the rate of profit?
b. How much money will become TK. 10295 as profit principal in 5 years at the same rate of profit?
c. If the of profit is 10 % per annul, what will be the compound profit of the principal in obtained 'b' in 5 years?

Q-27

Profit principal of some principal is TK. 11000 in 6 years. The profit is 3/8 parts of the principal.

a. Write down the formula for simple profit and compound profit.
b. Find the principal and rate of profit.
c. At the same rate of profit, what will be the difference of simple profit and compound profit of TK.12000 in 3 years?

Q-28

Nasima Begum deposited TK. 5,000 in a bank and got TK. 6,200 together with profit after 3 years.

a. Find the percentage of simple profit.
b. What will be the profit-principal after another 2 years?
c. If she deposited the money at the same percentage of compound profit, what would be the compound principal after 3 years?

Q-29

Babul Hossain sold a goat at the loss of 8%.if it were sold at taka 8000 ore, there would be a profit 8%.Later he deposited the amount equal to the cost price of the goat in the bank for 3 years at the rate of 10% profit per year.

a. Find out the profit of 800-taka deposit for 3 years at the rate of 8% simple profit.
b. Find out the cast price of the goat.
c. If the money is deposited in the Bank, what will be difference of simple and compound profit?

Q-30

Mr. Riaz deposited TK. 1200 in profit 12.50% found in 3 years.

a. Explain the formula of simple profit.
b. Find out the simple profit principal
c. Find out the difference of compound profit and simple profit.

Q-31

Mr. Karim deposited TK. 15000 for 5 years in the bank. The rate of profit is at the Bank is 10% yearly.

a. Find out the next two digits after 1,3,7,15.
b. Find in how many years the deposited amount of Mr. Karim will be double including the profit with the principal amount.
c. Find out the difference of amount of simple profit and compound profit after end of term.

Q-32

Mr. Amal deposited TK. 8000 in the bank for 3 years at the rate of 12% profit.

a. Express 12% in simple fraction.
b. Find out the simple profit and the profit-principal.
c. Find out the compound profit.

Q-33

Principal account becomes TK. 5400 in 4 years as profit principal and the profit is 2/7 part of the principal amount.

a. Write down the formula of compound profit with the identity of symbol.
b. Find the rate of profit.
c. Considering the above profit-principal as the capital, find out the compound profit and simple profit for 3 years at the rate of 9%.

Q-34

A person deposited TK. 6000 in Sonali Bank at the rate of 10% profit yearly. Again, he deposited TK. 4000 in Janata Bank and received TK. 6000 as profit principal after 5 years.

a. What will be the simple profit after 4 years in Sonali Bank?
b. What was the yearly rate of profit in Janata Bank?
c. What will be the difference of amount of simple profit and compound profit of the money deposited in Janata Bank in 3 years?

Q-35

A certain amount of principal becomes TK. 650 and TK. 675 respectively after 1 and 2 years as compound principal at the same rate of profit.

a. Write down the formula of solution of simple profit and compound principal.
b. Find out the principal.
c. If the cost and selling price of a watch is the compound principal of an amount after 1^{st} and 2^{nd} year, what is the percentage of profit or loss?

Q-36

Mr. Nizam deposited 500 taka in a bank for 3 years at the rate of 10% profit.

a. In case of compound increase if the ISC, write down the formula of C.
b. What will be the profit of Mr. Nizam in 3 years?
c. After 5 years what will be his in the compound increase rate?

One Word Questions

1. **The purchasing price of a thing is called ___ price.**
   Ans. cost
2. **What is made when selling price is more than cost price of a thing?**
   Ans. Profit
3. **What does happen when selling price is less than cost price?**
   Ans. Loss
4. **If cost price of a castrated goat is Tk. 2220 and selling price is Tk, 2175, then what is made in the deal?**
   Ans. Tk. 45 is made loss
5. **A grower bought 50 kg of rice at the rate of Tk. 35 per kg and then sold the same at the rate of Tk. 37 per kg. What profit will the grocer make?**
   Ans. Tk. 100
6. **What is called tax payable at a fixed rate with the cost price of a thing?**
   Ans. VAT
7. **If cost price of twenty bananas are Tk. 100 and its selling price is Tk. 120. What is the profit?**
   Ans. Tk. 20
8. **If 15 prices of wood pencils is bought at the rate of Tk. 12 per piece and is sold all the pencils at Tk. 220, what is the profit?**
   Ans. Tk. 40
9. **12% 1088 has incurred when a thing has been gold at Tk, 792, What is the cost price of the thing?**
   Ans. Tk. 900
10. **If the selling price of a thing is $\frac{5}{4}$times of its cost price of Tk. 440, what will be the total profit in the deal?**
    Ans. Tk 110
11. **What is the full name of the term 'VAT'?**
    Ans. Value Added Tax
12. i. Selling price cost price + profit
    ii. Cost price = selling price + loss
    iii. If cost price of a thing is Tk. 93 and its selling price is Tk. 107, then loss increased in the deal is Tk. 14.
    Which one of the following is correct?
    Ans. i & ii
13. i. The cost of a car is Tk. 5 lac and its selling price is $\frac{24}{25}$ of cost price. So, its selling price is Tk. 4,80,000.
    ii. 50 kg of rice is bought at Tk. 40 per kg and then is sold the total rice at a profit of Tk 3 per kg. So, total profit is Tk. 150.
    iii. The term VAT refers to Very Attractive Tax.
    Which one of the following is correct?
    Ans. i & ii
14. i. Selling price = cost price - loss
    ii. The cost price is Tk. 100, selling price is TK. 92. So, loss is 8%.
    iii. Selling price is 120 against cost price of
    Tk. 100. So, profit is 200/0.
    Which one of the following is correct?
    Ans. i, ii & iii

- **Answer questions from 15 to 17**

An orange seller bought 100 oranges for Tk. 1250 and sold it at Tk. 1500.

15. **What was the cost price per four orange?**
    Ans. Tk. 50
16. **What is the profit per orange?**
    Ans. Tk. 2.50
17. **To make 10% profit, what should be the selling price per piece of orange?**
    Ans. Tk. 13.75

18. **Observe the information** —
    i. 4% of Tk. 25 is Tk. 1
    ii. At 10% loss selling price is Tk. 90
    iii. At 20% profit selling price is Tk. 10
    Which one is correct?
    Ans. i & ii
19. **What is the formula for compound principal?**
    Ans. $\frac{C}{P} = (1 + r)^n$
20. **What is the profit of Tk. 750 in 4 years at 5% of profit?**
    Ans. 150
21. **Cost price of a thing is Tk. 500. At 8% rate of profit, what will be the selling price?**
    Ans. Tk. 450
22. **What is simple profit of Tk. 1500 in 3 years at the rate of simple profit of 10% per annum?**
    Ans.Tk. 450
23. **If one pen was bought in 30 taka and sold in 20% loss, then what is the selling price?**
    Ans. Tk. 24.00

Answer to the question numbers 24 & 25 by using the following information:

Present population of a city is 15 lac. The growth rate of population of the city is 20 per thousand.

24. **What is growth rate of population of the city?**
    Ans. 2%
25. **What will be the population of the city after 3 years?**
    Ans. 1590000
26. **Is bought at 3 pieces per taka and is sold at 2 pieces per taka. What will be the percentage of profit?**
    Ans. 50%

27. **The commodity is bought at 60 Tk. and is sold at 57 Tk. What will be the percentage of loss?**
    Ans. 5%

- Present population of a pity is 30 lac. The growth rate of population of that city is 30 per thousand.
  Answer the questions v No. 28 and 49 in respect of the above information :

28. **What is the growth rate of population?**
    Ans. 3%
29. **What will be the population of the after 3 years?**
    Ans. 32, 78, 181
30. **In case of interest —**
    i. I = Prn
    ii. I = A - P
    iii. I = C - P
    Which one is correct?
    Ans. i, ii & iii
31. **If a pencil is sold at Tk 11, there is a profit10%. What was the cost price of the pencil?**
    Ans. Tk.10

- **Answer the questions No. 32 & 33 according to the following information:**

Mr Mamuri deposited Tk 3,000 in a bank at the rate of profit 5% per annum.

32. **What will be the simple profit after 3 years?**
    Ans. 450
33. **In simple profit, what will be the profit principal after 2 years?**
    Ans. 3,300
34. **In the field of profit related problem —**
    i. A = P(1 + nr)

ii. $n = \frac{I}{Pr}$

iii. $C = P(1 + r)^n$

Which one is correct?

Ans. i, ii & iii

35. **The population of your village is 10,000. If growth rate of population is 20 per thousand, what will be the number of increase of population after 2 years?**
    Ans. 10404
36. **For what percentage of profit the principal will be three times in profit-principal in 10 years?**
    Ans. 20%
37. **If Tk. 5000 is deposited in a bank at the rate of simple profit 10%, what will be the profit-principal at the end of 2nd year?**
    Ans. 6000

38. **If the rate of profit/ is 12% which is the compound principal of Tk. 30000 in 2 years?**
    Ans. Tk. 37632
39. **Cost price Tk. 1000, at the loss of- 12%. What will be the selling price?**
    Ans.Tk. 880
40. **If the, percentage of profit is Tk. 4 per annum, what will be the profit for Tk. 1250 in 3 years.**
    Ans. Tk. 150

- **According to the following information answer to the questions No. 42 and 43 :**

The simple profit in n years of Tk. 1500 is Tk. 900 at the rate of 12% per annum.

41. **What is the value of n?**
    Ans. Tk. 150
42. **If n = 2, then what will be the compound profit?**
    Ans. Tk. 38160
43. **The length of a small box is 15 cm , breadth is 7 cm and height is. 5 cm. What is the volume of the box?**
    Ans. 525 cubic cm
44. **Which one of the following is 10% of Tk. 1050?**
    Ans. Tk.105
45. **P = 500, r = 5% and n = 1 then —**
    i. 1=25
    ii. A = 525
    iii. C = 525
    Which one is correct?
    Ans. i, ii & iii
46. **15% of Tk, 3000 = what?**
    Ans.Tk. 450

- **Answer to the questions No. 48 and 49 in the light of the following information :**

Rony deposited Tk. 10000 at 5% interest for 2 years in the bank.

47. **What will be the simple interest after 2 years?**
    Ans. Tk. 1000
48. **What will be the compound capital after 2nd year?**
    Ans. Tk. 11025
49. **The extra money which is got from the deposited money after a certain period is called —**
    Ans. profit
50. **If anybody deposited money in any bank, then what is called its amount?**
    Ans. Profit-principal