# ST. LAWRENCE HIGH SCHOOL

**A JESUIT CHRISTIAN MINORITY INSTITUTION**

CLASS 8
SUBJECT :Arithmetic**Work sheet26 answer key**
Marks:15Compound Interest
Date:24.5.21

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**Answer all thefollowing questions(1×15=15)**

1.The compound interest on Rs.1000 at 10% p.a. for 2 years is
(a) ₹190

(b) ₹210

(c) ₹1210

(d) ₹200
Solution:

Principal (P) = ₹1000

Rate (R) = 10% p.a.

Period (n) = 2 years

$$A = P\left(1+\frac{R}{100}\right)^2 = ₹1000\left(1+\frac{10}{100}\right)^2$$

$$= ₹1000 \times \frac{11}{10} \times \frac{11}{10} = ₹1210$$

and C.I. = A − P
= ₹1210 − ₹1000 = ₹210 (b)

2.The compound interest on ₹5000 at 20% per annum for $1+\frac{1}{?}$ years compounded half yearly is
(a) ₹6655

(b) ₹1655

(c) ₹50

(d) ₹1000

Solution:

Principal (P) = ₹5000

Rate (R) = 20% p.a. or 10% half-yearly

Period (n) = $1\frac{1}{2}$ years or 3 half-years

$$\therefore A = P\left(1+\frac{R}{100}\right)^{n} = ₹5000\left(1+\frac{10}{100}\right)^{3}$$

$$= 5000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{11}{10} = ₹6655$$

$\therefore$ C.I. = A − P = ₹6655 − ₹5000 = ₹1655 (b)

3. The compound interest on ₹10000 at 8% per annum for 6 months compounded quarterly is

a) ₹408

(b) ₹10404

(c) ₹404

(d) ₹400

Solution:

Principal (P) = ₹ 10000

Rate (R) = 8% p.a. or 2% quarterly

Period (n) = 6 months = 2 quarters

$$\therefore A = R\left(1+\frac{R}{100}\right)^{n} = 10000 \times \left(1+\frac{2}{100}\right)^{2}$$

$$= ₹10000 \times \frac{51}{50} \times \frac{51}{50} = ₹10404$$

$\therefore$ C.I. = A − P = ₹10404 − ₹10000 = ₹404 (b)

4. The time periods and rate for a sum taken at 8% p.a. for $1+\frac{1}{2}$ years compounded half yearly are

(a) n = 3, R = 4%

(b) n = 6, R = 2%

(c) n = 3, R = 2%

(d) n = 6, R = 4%
Solution:

Rate (R) = 8% p.a. = 4% half-yearly
Time (n) = $1\frac{1}{2}$ years = 3 half-year (a)

5.If ₹12000 taken for 2 years at 4% per annum compounded quarterly, then time period and rate is
(a) n = 2, R = 16%

(b) n = 4, R = 1 %

(c) n = 8, R = 1%

(d) n = 8, R = 16%
Solution:

Principal (P) = ₹ 12000
Rate (R) = 4% p.a. or 1% quarterly
Time (n) = 2 years or 8 quarter (c)

6.If the number of conversion periods ≥ 2, then compound interest is
(a) less than or equal to the simple interest

(b) greater than or equal to the simple interest

(c) less than simple interest

(d) greater than simple interest
Solution:

Number of conversion period ≥ 2
The C.I. is greater than simple interest (S.I.) (d)

7.The time in which ₹6000 amounts to ₹7986 at 10% p.a. compounded annually is
(a) 2 years

(b) 3 years

(c) 4 years

(d) 5 years

Solution:

Amount (A) = ₹7986
Principal (P) = ₹6000
Rate (R) = 10% p.a.

$$\therefore \frac{A}{P} = \left(1 + \frac{R}{100}\right)^n \Rightarrow \frac{7986}{6000} = \left(1 + \frac{10}{100}\right)^n$$

$$\Rightarrow \frac{7986}{6000} = \left(\frac{11}{10}\right)^n \Rightarrow \left(\frac{11}{10}\right)^3 = \left(\frac{11}{10}\right)^n$$

$\therefore n = 3$

$\therefore$ Time = 3 years

8.In compound interest the ………… goes on changing every conversion period
(a) Principal

(b) Simple interest

(c) Rate

(d) Time

Solution: a)

9.The time after which the interest is added each time to form a new principal is called …………
(a) conversion period

(b) conversion month

(c) conversion year

(d) None of these

Solution: a)

10.If the interest is compounded semi-annually then semi-annually rate is ………… of the annual rate.
(a) Half

(b) Double

(c) Triple

(d) One-fourth

Solution: a)

11. The interest paid by the banks, post offices, insurance companies is…………interest.

(a) compound

(b) simple

(c) a & b

(d) none of these

Solution: a)

12. Compound interest is calculated on the amount of the ……….year.

(a) previous

(b) current

(c) next

(d) none of these

Solution: a)

13. In compound interest, the…………does notremain constant for the whole period.

(a) principal

(b) time

(c) rate

(d) none of these

Solution: a)

14. If the interest is compounded quarterly then there are …..conversion periods in a year

(a) 4

(b) 2

(c) 1

(d) 3

Solution: a)

15. The time from one specified interest period to the next period is called the . . . . . . . .

(a) conversion period

(b) conversion time

(c) conversion year

(d) none of these

Solution: a)

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