



DSSSB + SSC MTS

DSSSB PRT, TGT & PGT



दफ्तरी बैच

Part(A+B)

SCHOLAR BATCH

MATHS

S.I. & C.I

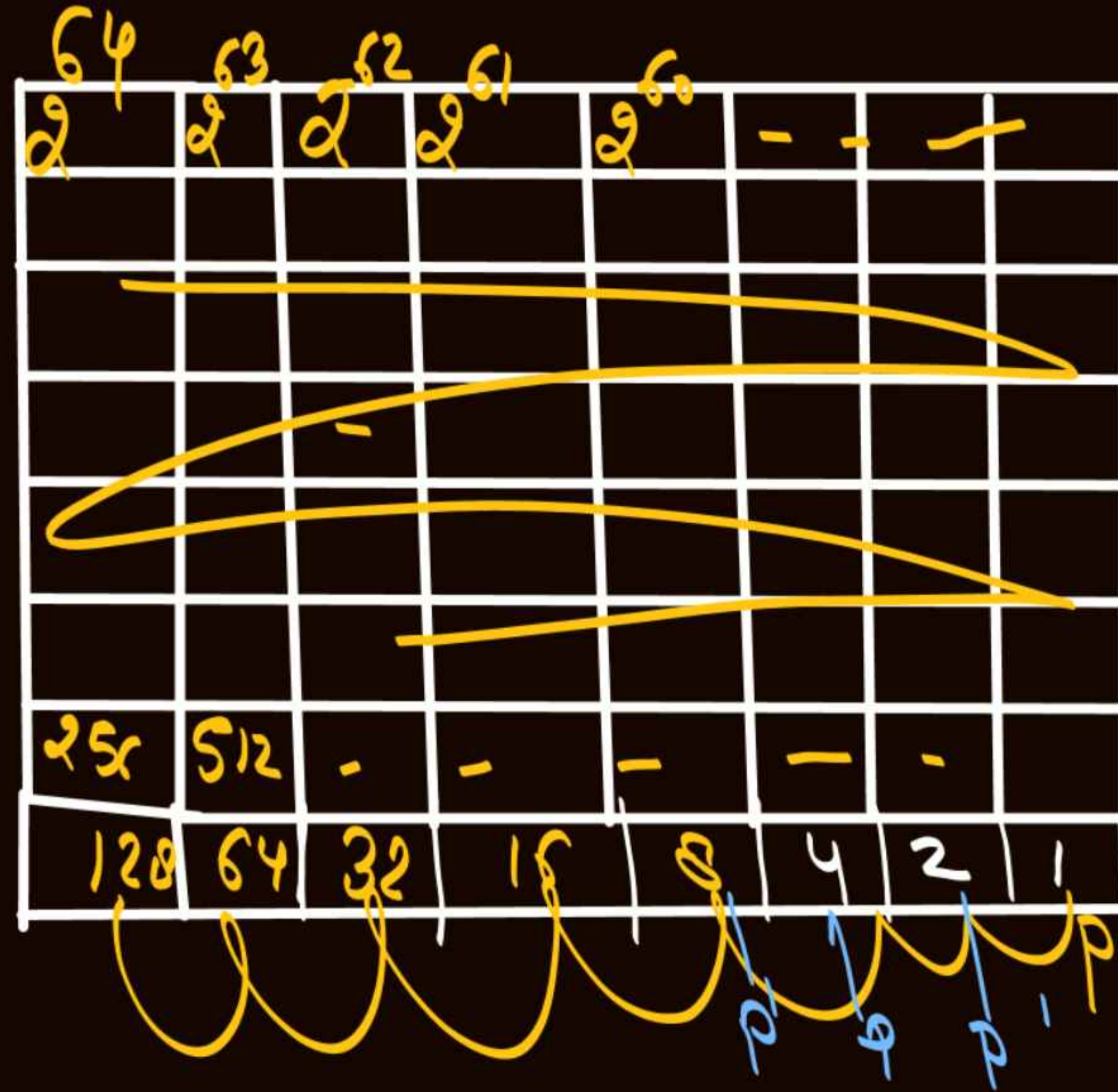


LIVE

27-05-2024 08:00 AM

Compound Interest

ચક્રવૃદ્ધિ બ્યાજ



પાવણ ફો રાઈ

Methods of Calculating C.I.

1. Tree Method

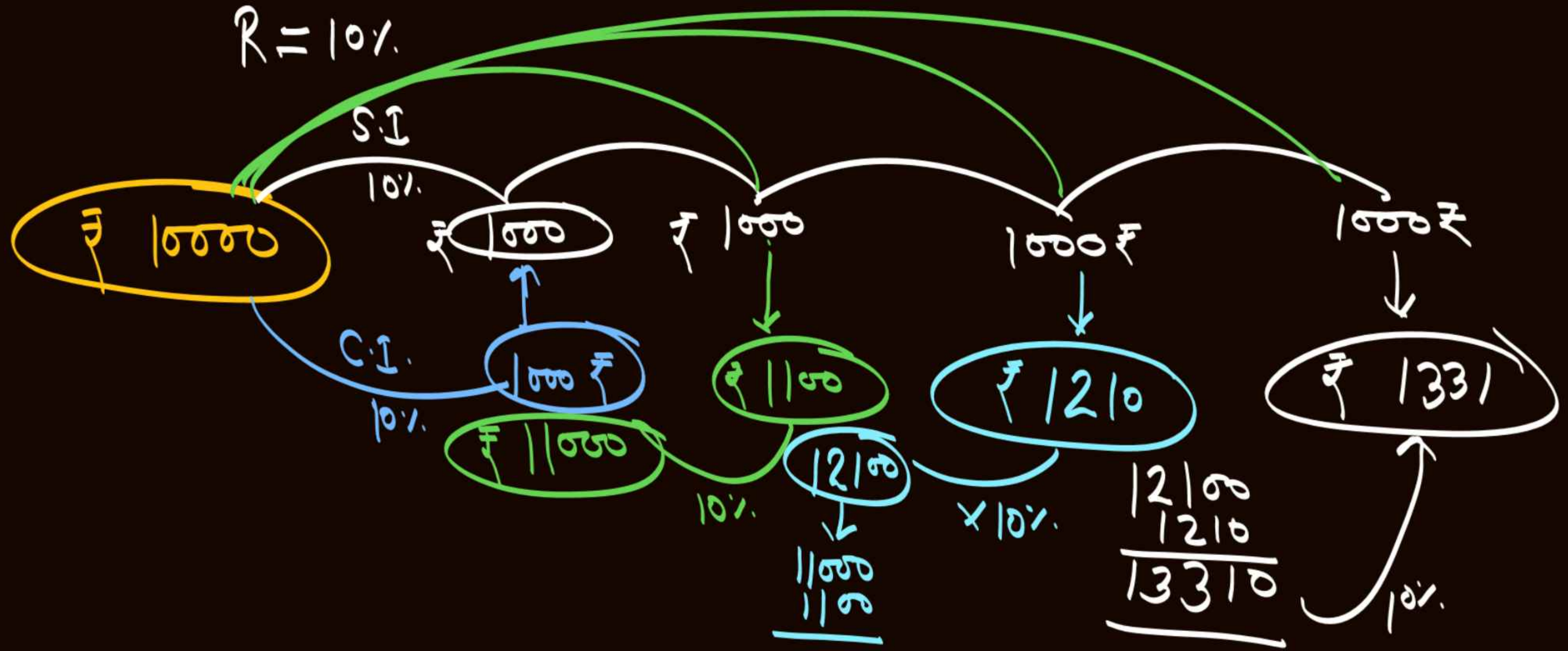
2. Ratio method

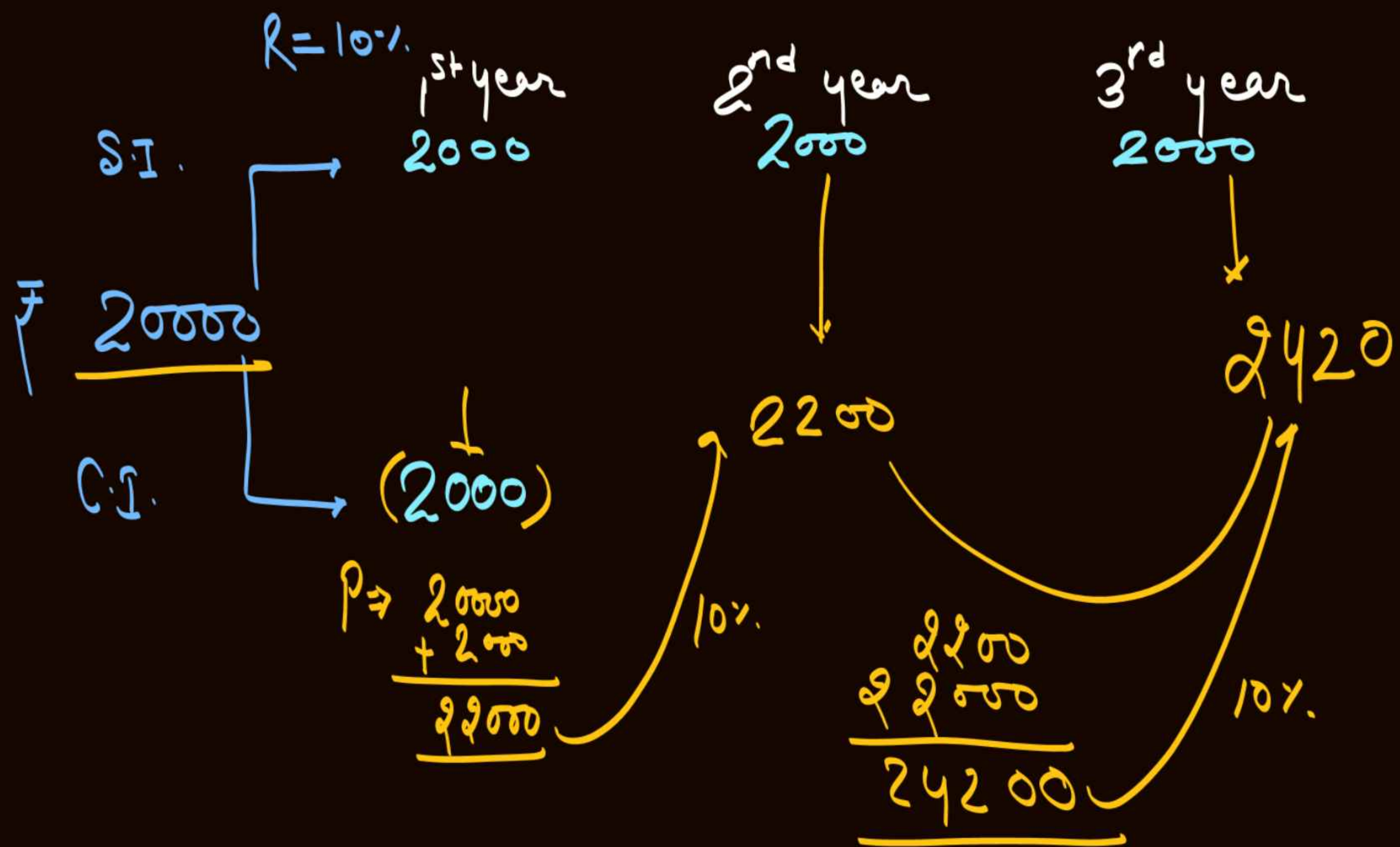
3. $x+y+\frac{xy}{100}$ method

⇒ 4. Percentage Method

5. $A = P\left(1 + \frac{R}{100}\right)^T$

$R = 10\%$





DSSSB + SSC MTS

दफ्तरी बैच

MATHS





1. What will be compound interest on ₹14000 for 2 years at rate of 10% per annum compounded annually?

₹ 14000 पर 10% वार्षिक चक्रवृद्धि ब्याज की दर से 2 साल का चक्रवृद्धि ब्याज क्या होगा?

(SSC CHSL 9 March, 2023)

(a) ₹3490

(b) ₹1490

(c) ₹6940

(d) ₹2940

①

$$P = 14000 \text{ ₹} -$$
$$R = 10\% -$$
$$T = 2 \text{ वर्ष} -$$

$$A = P \left(1 + \frac{R}{100}\right)^T$$

$$\underline{A = P + I}$$

परवर्ति मित्राधन = $P \left(1 + \frac{R}{100}\right)^T$

$$\Rightarrow 14000 \left(1 + \frac{10}{100}\right)^2$$
$$\Rightarrow 14000 \times \left(\frac{11}{10}\right)^2$$
$$\Rightarrow 14000 \times \frac{121}{100}$$

$$A \Rightarrow \text{₹} 16940$$

$$A = P + I$$

$$I = A - P$$

$$\Rightarrow 16940 - 14000$$

$$2940 \text{ ₹}$$



$$P = 14000$$

$$R = 10\% \text{ वार्षिक}$$

$$\Rightarrow T = 2 \text{ वर्ष}$$

Most Imp

② Ratio method →

$$R = 10\% \Rightarrow \frac{1}{10}$$

$$P \Rightarrow 100 \quad R \Rightarrow 14000$$

$$\boxed{1R = 140}$$

(P)	(A)
10	11
10	11
<u>100</u>	<u>121</u>

C.I. $\Rightarrow 21R$

$$C.I. \Rightarrow 21R$$

$$\Rightarrow 21 \times 140$$

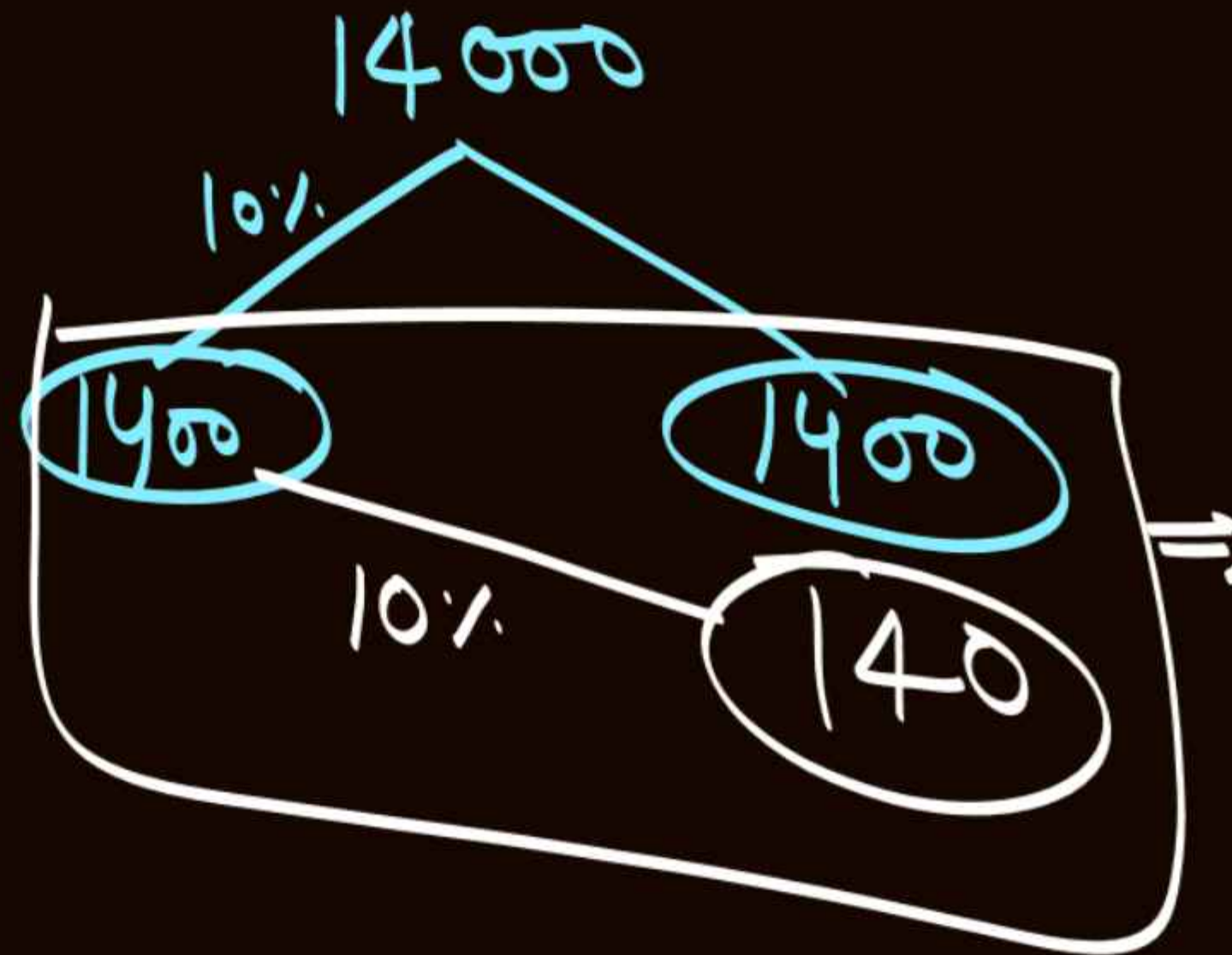
$$\Rightarrow 2940$$

↑

$$P = \underline{14000}, R = 10\%, T = 2 \text{ वर्ष}$$

③

TREE METHOD:-



$$C.I. \Rightarrow 1400 + 1400 + 140$$

$$\Rightarrow 2940 \text{ ₹}$$

$$P = 14000, R = 10\%, T = 2 \text{ वर्ष}$$

प्रभावी दर विधि:- Latest

$$R = 10^2$$

④ Effective Rate Method $\rightarrow$ 2 वर्ष के लिए $\Rightarrow$

$$2R \cdot \underline{R^2}$$

$$R^2 = 100$$

$$2R \Rightarrow 2 \times 10$$

$$\underline{21} \cdot 10\%$$

$$C.I. \Rightarrow \frac{14000 \times 21}{100} \Rightarrow 2940 \text{ ₹}$$

3 वर्ष के लिए :-

$$\underline{3R} \cdot \underline{3R^2} \cdot \underline{R^3}$$

→ $P = 10000 \text{ ₹}$

$R \Rightarrow 12\%$

$T = 2 \text{ वर्ष}$

$C.I. = ?$

$$\Rightarrow \frac{29. \overset{1}{\cancel{92}}}{25. \underline{\underline{44}}\%}$$

$$92^2 = 144$$

$$C.I. \Rightarrow \frac{10000 \times 25.44}{100} = 2544 \text{ ₹}$$

2544

$$P = 14000, R = 10\%, T = 2 \text{ वर्ष}$$

Successive method

⑤

$$\boxed{x + y + \frac{xy}{100}}$$

$\downarrow \quad \downarrow$
 10 10

$$R \Rightarrow 10 + 10 + \frac{10 \times 10}{100}$$

21%

$$\begin{array}{r}
 25 \overline{) 3.4 \times 10} \\
 \underline{25 \overline{) 34} \times 100} \\
 25 \overline{) 34} \times 1000 \\
 \boxed{25340}
 \end{array}$$

$$C.I. = \frac{14000 \times 21}{100} \Rightarrow 2940 \text{ ₹}$$

⑥ Percentage method →

$$P = 14000$$

$$R = 10\%$$

$$T = \underline{2940}$$

$$A \Rightarrow 14000 \times \frac{110}{100} \times \frac{110}{100}$$

$$14 \times 1210$$

$$A = 16940$$

$$I = A - P$$

$$\Rightarrow 2940$$

20 percent per annum by annual compounding?

2400 रु. पर वार्षिक संयोजन द्वारा 20 प्रतिशत प्रतिवर्ष की दर से 2 वर्षों में मिलने वाला चक्रवृद्धि ब्याज (रु. में) क्या होगा?

$$9 \times (20)^2 = 400$$

(a) 960

(b) 1024

(c) 1056

(d) 1120

Effective Rate ✓
 $\Rightarrow 29.9\%$
 44.00

$$C.I. = \frac{2400 \times 44}{100}$$
$$\Rightarrow 1056$$

$$29.9\%$$
$$44.00\%$$

$$P \Rightarrow 25R = 2400$$
$$1R \Rightarrow 96$$

$$C.I. = 11R$$
$$\Rightarrow 11 \times 96$$
$$\Rightarrow 1056$$

Ratio $\rightarrow$
 $20\% \rightarrow \frac{1}{5}$

$$\begin{array}{r} P \\ 55 \\ \hline 25 \\ \hline \end{array} \quad \begin{array}{r} R \\ 36 \\ \hline \end{array}$$

C.I. $\Rightarrow 11R$