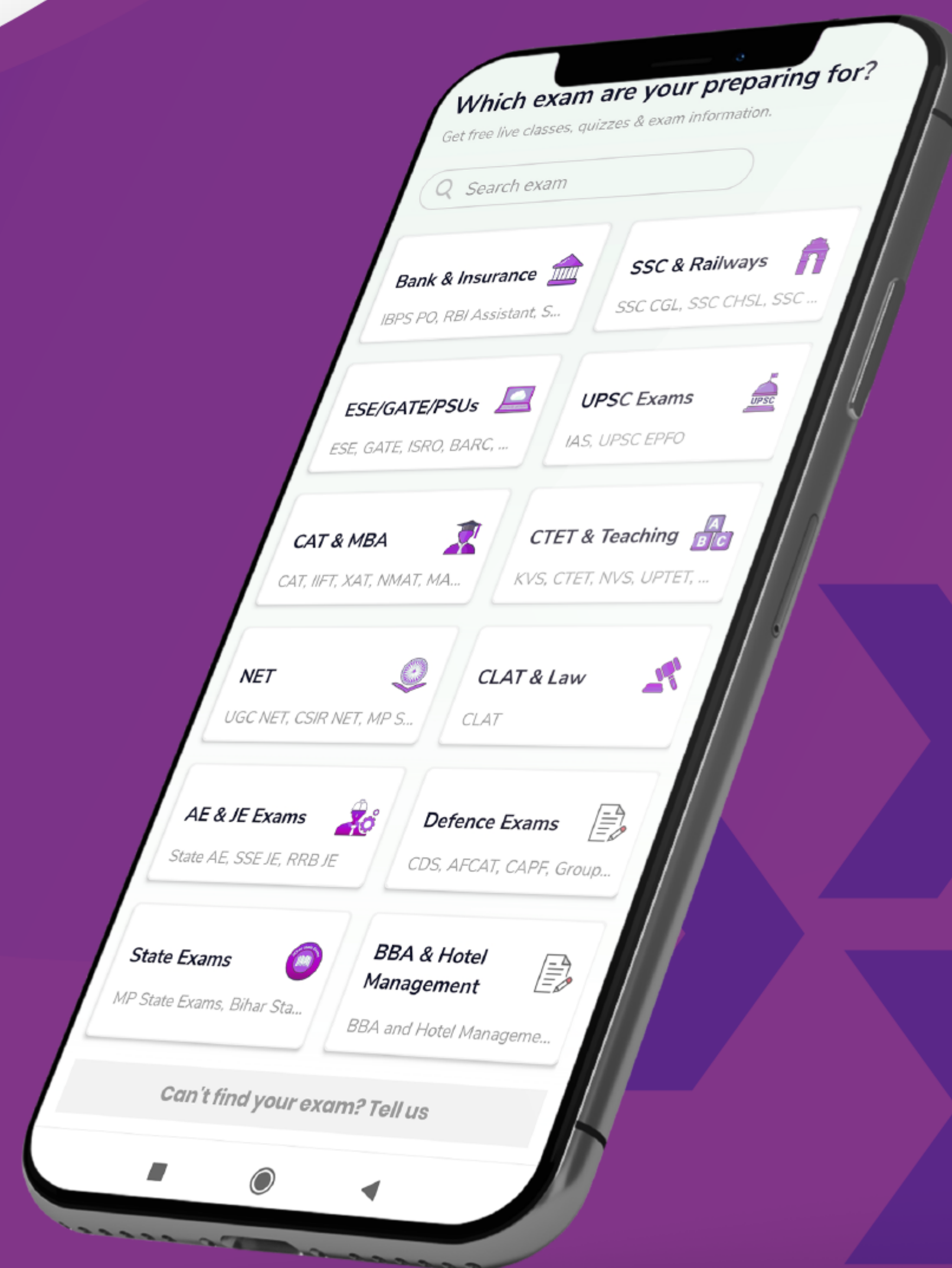


Formula Sheet On Simple Interest

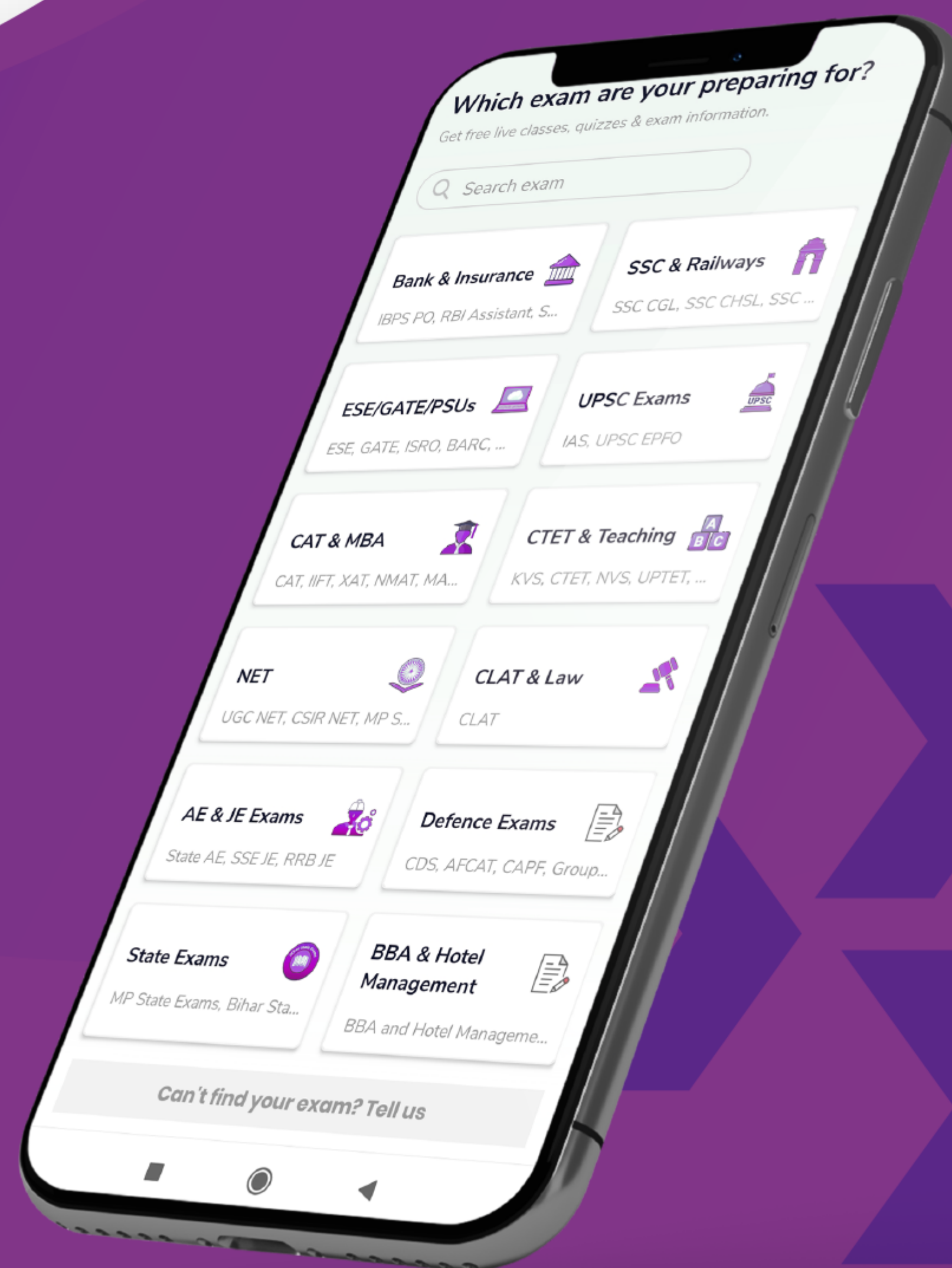


Simple Interest

- Simple interest = $\frac{(Principal \times Rate \times Time)}{100}$ i.e $S.I = \frac{P \times R \times T}{100}$
- Amount = Principal + Interest i.e $A = P + I$ (where "i" is interest)
- Principal(P) = $\frac{100 \times S.I}{R \times T}$
- Rate(R) = $\frac{(100 \times S.I.)}{T \times P}$
- Time(T) = $\frac{(100 \times S.I.)}{P \times R}$

➤ **NOTE-** When there is a situation given that, the rate simple interest differs from year to year,

$$\text{then } S.I = \frac{P \times ((R_1 + R_2 + R_3 + \dots))}{100}$$



Note:

1. When a Principal sum becomes “n” times of itself in t years at simple interest then

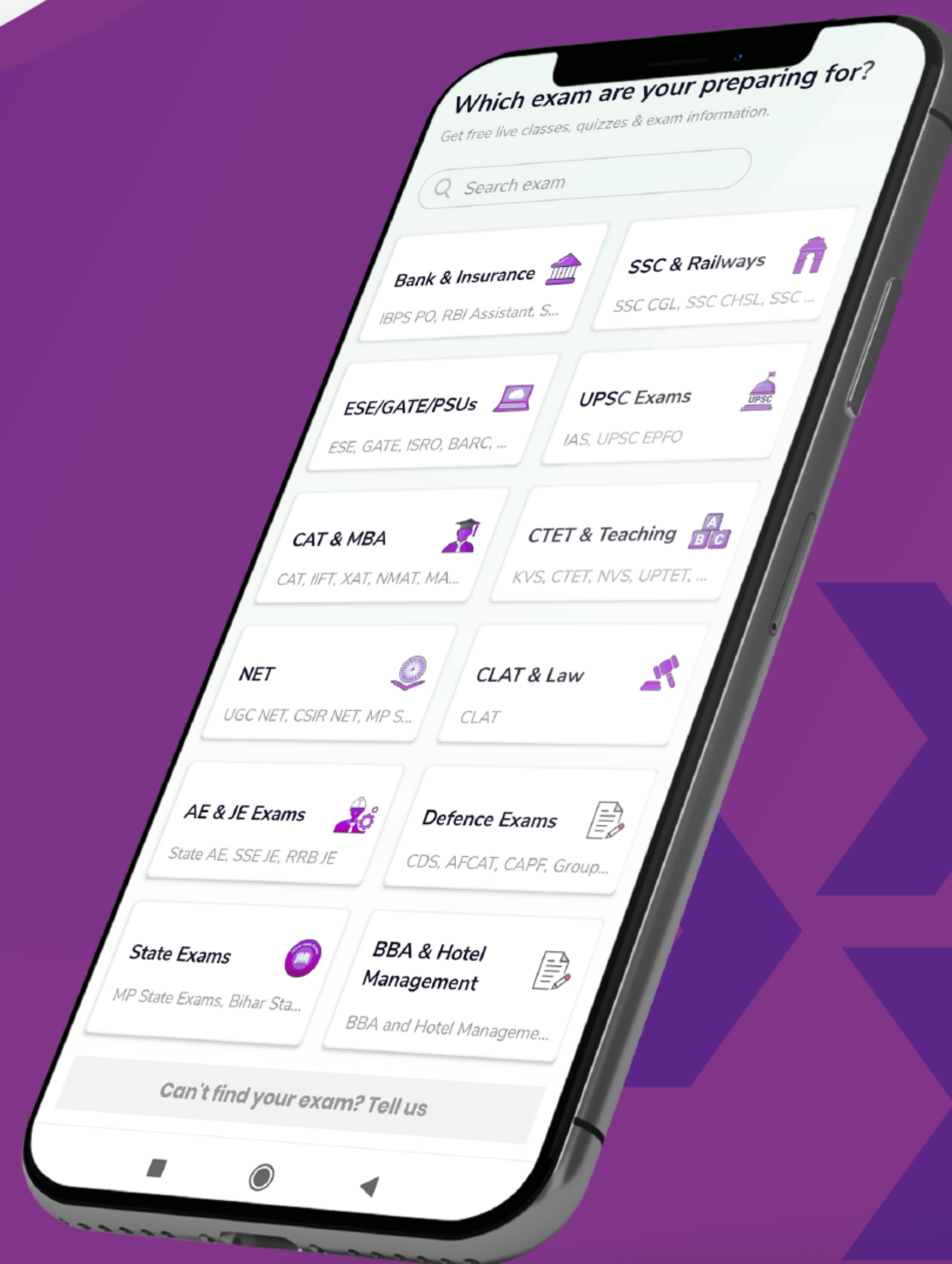
$$R\% = \frac{100(n - 1)}{t}$$

2. If a certain sum is invested in n types of investments in such a manner that equal amount is obtained on each investment where interest rates are $R_1, R_2, R_3, \dots, R_n$, respectively and time periods are $T_1, T_2, T_3, \dots, T_n$, respectively, then the ratio in which the amounts are invested in:

$$\frac{1}{100 + R_1 T_1} : \frac{1}{100 + R_2 T_2} : \frac{1}{100 + R_3 T_3} : \dots : \frac{1}{100 + R_n T_n}$$

3. If a certain sum of money becomes n times itself in T years at simple interest, then the time T in which it will become m times itself is given by

$$T' = \frac{(m - 1)}{(n - 1)} \times T \text{ years}$$



4. If a certain sum of money P lent out at SI amounts to A_1 in T_1 years and to A_2 in T_2 years, then

$$P = \frac{A_1 T_2 - A_2 T_1}{T_2 - T_1} \text{ and } R = \frac{A_1 - A_2}{A_1 T_2 - A_2 T_1} \times 100\%$$

5. If a certain sum of money P lent out for a certain time T amounts to A_1 at R_1 % per annum and to A_2 at R_2 % per annum, then

$$P = \frac{A_2 R_1 - A_1 R_2}{R_1 - R_2} \text{ and } T = \frac{A_1 - A_2}{A_2 R_1 - A_1 R_2} \times 100 \text{ years}$$

6. If an amount P_1 lent at the simple interest rate of R_1 % per annum and another amount P_2 at the simple interest rate of R_2 % per annum, then the rate of interest for the whole sum is

$$P = \frac{P_1 R_1 + P_2 R_2}{P_1 + P_2}$$

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