

PREVIOUS YEAR QUESTIONS (Chapter wise)

CHAPTER NAME: BANKING

SUMMARY POINTS

Key Points	Description	Formula	Notes
Monthly Deposit (P)	Fixed amount deposited every month.	Given in the question.	Always consistent throughout the RD tenure.
Time (n)	Duration for which the RD is held, in months or years.	$n = \text{Years} \times 12$	Ensure time is in months if interest formula uses it.
Rate of Interest (r)	Annual rate of interest in percentage.	Given or to be calculated.	Simple interest rate usually specified as per annum.
Total Deposit (D)	Total money deposited by the account holder.	$D = P \times n$	Does not include the interest earned.
Interest (I)	Simple interest earned on the deposits.	$I = \frac{P \times n \times (n+1) \times r}{24 \times 100}$	Derived from sum of months formula.
Maturity Value (M)	Total amount received at maturity, including interest.	$M = D + I$	Sum of total deposit and interest earned.

Important Notes and Examples

- Interest Calculation Formula:

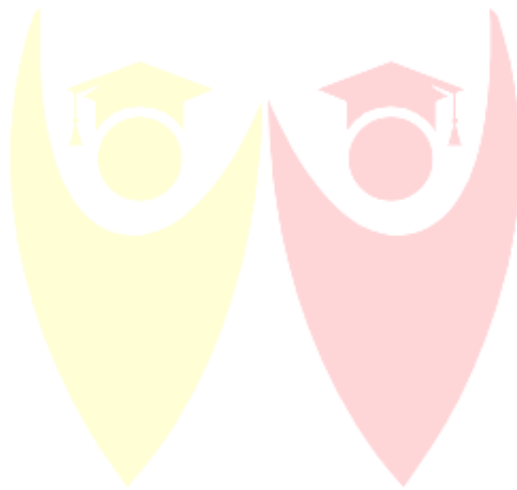
$$I = \frac{P \times n \times (n+1) \times r}{24 \times 100}$$

- P = Monthly deposit
- n = Number of months
- r = Annual rate of interest
- Maturity Value Calculation:

$$M = D + I \quad \text{or} \quad M = P \times n + I$$

Common Applications:

1. **Finding Time (n):** Rearrange the interest formula if interest is known.
2. **Calculating Interest (I):** Use the RD formula when P, n, and r are given.
3. **Determining Maturity Value (M):** Add total deposit to interest earned.
4. **Rate of Interest (r):** Solve the formula for r when interest and deposits are known.
5. **Monthly Installment (P):** Derive P if interest, rate, and time are provided.



Q.NO.: 1	Mrs. Rao deposited Rs 250 per month in a recurring deposit account for a period of 3 years. She received Rs 10,110 at the time of maturity. Find: (a) the rate of interest. (b) how much more interest Mrs. Rao will receive if she had deposited Rs 50 more per month at the same rate of interest and for the same time.	YEAR [2025]
ANS.:		
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Q.NO.: 1	Mr. Anuj deposits Rs 500 per month for 18 months in a recurring deposit account at a certain rate. If he earns Rs 570 as interest at the time of maturity, then his matured amount is (a) Rs($500 \times 18 + 570$) (b) Rs($500 \times 19 + 570$) (c) Rs($500 \times 18 \times 19 + 570$) (d) Rs($500 \times 9 \times 19 + 570$)	YEAR [2025]
ANS.:	a	
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Q.NO.: 1	Suresh has a recurring deposit account in a bank. He deposits ₹ 2000 per month and the bank pays interest at the rate of 8% per annum. If he gets ₹ 1040 as interest at the time of maturity, find in years total time for which the account was held.	YEAR [2024]
ANS.:	1. Identify the knowns: - Monthly deposit (P) = ₹ 2000 - Interest rate (R) = 8% per annum - Total interest earned (I) = ₹ 1040 2. Determine what to find: We need to find the total time in years for which the account was held (N in months). 3. Use the relevant formula: The formula for calculating interest in a recurring deposit account is: $I = (P * N * (N + 1) * R) / (2 * 12 * 100)$ 4. Substitute the known values into the formula: $1040 = (2000 * N * (N + 1) * 8) / (2 * 12 * 100)$ 5. Simplify and solve the equation: $1040 = (N * (N + 1) * 8) / 15$ $15600 = 8N^2 + 8N$ $8N^2 + 8N - 15600 = 0$ $N^2 + N - 1950 = 0$ 6. Solve the quadratic equation: $(N + 45)(N - 43) = 0$ - Therefore, N = -45 or N = 43 7. Choose the valid solution: Since the time period cannot be negative, we discard N = -45. Therefore, N = 43 months.	

	8. Convert the time period to years: Total time (in years) = $N / 12 = 43 \text{ months} / 12 \text{ months/year} = 3.58 \text{ years}$ (approximately) Therefore, Suresh held the recurring deposit account for approximately 3.58 years.	
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Q.NO.: 2	Naveen deposits ₹800 every month in a recurring deposit account for 6 months. If he receives ₹4884 at the time of maturity, then the interest he earns is: (a) ₹84 (b) ₹42 (c) ₹24 (d) ₹284	YEAR [2023]
ANS.:	(a) ₹84 Principal (P) = 800 rupees Time (N) = 6 months Amount Deposited = $P * N = 800 * 6 = 4800 \text{ rupees}$ Interest Earned = Maturity Amount - Amount Deposited = $4884 - 4800 = 84 \text{ rupees}$	
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Q.NO.: 3	Salman deposits ₹1000 every month in a recurring deposit account for 2 years. If he receives ₹26000 on maturity, find: (a) the total interest Salman earns. (b) the rate of interest.	YEAR [2023]
ANS.:	1. Interest Earned = Maturity Amount - Amount Deposited = $26000 - (1000 * 24) = 2000 \text{ rupees}$. 2. To find the rate of interest, we can use the formula: $\text{Interest} = (P * N * (N+1) * R) / (2 * 12 * 100)$ - Substituting the values: $2000 = (1000 * 24 * 25 * R) / (2 * 12 * 100)$ - Simplifying the equation, we get: $R = 8\% \text{ per annum}$	
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Q.NO.: 4	Mohit opened a Recurring deposit account in a bank for 2 years. He deposits ₹1000 every month and receives ₹25500 on maturity. The interest he earned in 2 years is (a) ₹13500 (b) ₹3000 (c) ₹24000 (d) ₹1500	YEAR [2022]
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ANS.:	Interest Earned = Maturity Amount - Amount Deposited = $25000 - (1000 * 24) = 1500$ rupees.	
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Q.NO.: 5	Joseph has a recurring deposit account in a bank for two years at the rate of 8% per annum simple interest. (i) If at the time of maturity Joseph receives ₹ 2000 as interest then the monthly installment is (a) ₹ 1200 (b) ₹ 600 (c) ₹ 1000 (d) ₹ 1600 (ii) The total amount deposited in the bank (a) ₹ 25000 (b) ₹ 24000 (c) ₹ 26000 (d) ₹ 23000 (iii) The amount Joseph receives on maturity is (a) ₹ 27000 (b) ₹ 25000 (c) ₹ 26000 (d) ₹ 28000 (iv) If the monthly installment is ₹ 100 and the rate of interest is 8%, in how many months Joseph will receive ₹ 52 as interest? (a) 18 (b) 30 (c) 12 (d) 6	YEAR [2022]
ANS.:	1. To calculate the monthly installment (P), we can use the formula: $\text{Interest} = (P * N * (N+1) * R) / (2 * 12 * 100)$ - We know Interest = 2000 rupees, N = 24 months, and R = 8%. Substituting these values and solving the equation, we get: P = 1000 rupees 2. Total Amount Deposited = Monthly Installment * Number of Months = $1000 * 24 = 24,000$ rupees. 3. Maturity Amount = Interest + Total Amount Deposited = $2000 + 24,000 = 26,000$ rupees. 4. For the fourth part of the problem, we need to calculate the time period (N) and the rate of interest (R) given that P = 100 rupees and Interest = 52 rupees. - Using the same interest formula and substituting these values, we get: $52 = (100 * N * (N+1) * R) / (2 * 12 * 100)$. - Solving this equation, we get N = 12 months and R = 6%	
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Q.NO.: 6	Mr. Sonu has a recurring deposit account and deposits ₹ 750 per month for 2 years. If he gets ₹ 19125 at the time of maturity, find the rate of interest.	YEAR [2020]
ANS.:	First, calculate the interest earned: Interest = Maturity Amount - Amount Deposited = $19125 - (750 * 24) = 1125$ rupees	

	■ Now, using the interest formula and substituting the values, we get: $1125 = (750 * 24 * 25 * R) / (2 * 12 * 100)$ ■ Solving this equation, we get: $R = 6\%$ per annum	
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Q.NO.: 7	Rekha opened a recurring deposit account for 20 months. The rate of interest is 9% per annum and Rekha receives 441 as interest at the time of maturity. Find the amount	YEAR [2019]
ANS.:	Using the interest formula and substituting the given values, we get: $441 = (P * 20 * 21 * 9) / (2 * 12 * 100)$ ■ Solving this equation, we find: $P = 80$ rupees	
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Q.NO.: 8	Priyanka has a recurring deposit account of ₹ 1,000 per month at 10% per annum. If she gets ₹ 5,550 as interest at the time of maturity, find the total time for which the account was held.	YEAR [2018]
ANS.:	1. Identify the given information: - Monthly Deposit (P) = ₹ 1000 - Rate of Interest (R) = 10% per annum - Total Interest (I) = ₹ 5550 2. What needs to be determined? The total time (N) in months for which Priyanka held the account needs to be calculated. 3. Use the formula for calculating interest on recurring deposits: $I = (P * N * (N + 1) * R) / (2 * 12 * 100)$ 4. Substitute the given values into the formula: $5550 = (1000 * N * (N + 1) * 10) / (2 * 12 * 100)$ 5. Simplify and solve the equation: $5550 = (N * (N + 1) * 5) / 6$ $33300 = 5N^2 + 5N$ $5N^2 + 5N - 33300 = 0$ $N^2 + N - 6660 = 0$ 6. Solving the quadratic equation: This equation can be factored. The sources show a similar problem being solved where the values plugged into the formula result in a quadratic equation that needs to be factored¹². The factors for this equation are: $(N + 82)(N - 81) = 0$ - This gives two possible solutions: $N = -82$ or $N = 81$	

	7. Selecting the valid solution: Time cannot be negative, so the valid solution is $N = 81$ months. Therefore, Priyanka held the recurring deposit account for 81 months.	
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Q.NO.: 9	Sonia had a recurring deposit account in a bank and deposited Rs.600 per month for 212 years. If the rate of interest was 10% p.a., find the maturity value of this account.	YEAR [2018]
ANS.:	First, convert 2.5 years into months: $2.5 \text{ years} \times 12 \text{ months/year} = 30 \text{ months}$. ■ Calculate the interest using the formula: $\text{Interest} = (P \times N \times (N+1) \times R) / (2 \times 12 \times 100) = (600 \times 30 \times 31 \times 10) / (2 \times 12 \times 100) = 2325 \text{ rupees}$ ■ Maturity Value = Interest + Amount Deposited = $2325 + (600 \times 30) = 20325$ rupees	
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Q.NO.: 10	Mr. Richard has a recurring deposit account in a bank for 3 years at 7.5% p.a. simple interest. If he gets ₹ 8325 as interest at the time of maturity, find: [3] (i) The monthly deposit (ii) The maturity value.	YEAR [2017]
ANS.:	1. Convert 3 years to months: $3 \text{ years} \times 12 \text{ months/year} = 36 \text{ months}$ 2. Using the interest formula and substituting the values, we get: $8325 = (P \times 36 \times 37 \times 7.5) / (2 \times 12 \times 100)$ 3. Solving for P, we find the monthly deposit is 2000 rupees 4. Maturity Value = Interest + Amount Deposited = $8325 + (2000 \times 36) = 80325$ rupees	
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Q.NO.: 11	Mohan has a recurring deposit account in a bank for 2 years at 6% p.a. simple interest. If he gets Rs.1200 as interest at the time of maturity, find : (i) the monthly installment. (ii) the amount of maturity.	YEAR [2016]
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ANS.:	(i) The interest paid by the bank • Calculate the total amount deposited: Ahmed deposits Rs. 2,500 per month for 2 years, which is 24 months. The total amount deposited is $2500 \times 24 = \text{Rs. } 60,000$. • Calculate the interest: The interest paid by the bank is the difference between the maturity amount and the total amount deposited. Therefore, the interest is $66,250 - 60,000 = \text{Rs. } 6,250$. (ii) The rate of interest 1. Identify the knowns: We know the following: ○ Monthly deposit (P) = Rs. 2,500 ○ Time period (N) = 2 years = 24 months ○ Total interest (I) = Rs. 6,250 2. Use the formula for recurring deposit interest: The formula is: $I = (P \times N \times (N + 1) \times R) / (2 \times 12 \times 100)$ 3. Substitute the known values and solve for R (rate of interest): ○ $6250 = (2500 \times 24 \times 25 \times R) / (2 \times 12 \times 100)$ ○ Simplifying the equation: $R = (6250 \times 2 \times 12 \times 100) / (2500 \times 24 \times 25) = 5\%$ Therefore, the rate of interest is 5% per annum.	
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Q.NO.: 12	Katrina opened a recurring deposit account with a Nationalised Bank for a period of 2 years. If the bank pays interest at the rate of 6% per annum and the monthly instalment is 1,000, find the: (i) interest earned in 2 years. (ii) matured value.	YEAR [2015]
ANS.:	1. Convert 2 years to months: $2 \text{ years} \times 12 \text{ months/year} = 24 \text{ months}$ 2. Calculate the interest using the formula: $\text{Interest} = (P \times N \times (N+1) \times R) / (2 \times 12 \times 100) = (1000 \times 24 \times 25 \times 6) / (2 \times 12 \times 100) = \text{1500 rupees}$ 3. Maturity Value = Interest + Amount Deposited = $1500 + (1000 \times 24) = \text{25500 rupees}$	
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Q.NO.: 13	Shahrukh opened a Recurring Deposit Account in a bank and deposited Rs.800 per month for 1 1	YEAR [2014]
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	2 years. If he received Rs.15,084 at the time of maturity, find the rate of interest per annum.	
ANS.:	1. Convert 1.5 years to months: $1.5 \text{ years} * 12 \text{ months/year} = 18 \text{ months}$ 2. Calculate the interest earned: $\text{Interest} = \text{Maturity Amount} - \text{Amount Deposited} = 15840 - (800 * 18) = 1440 \text{ rupees}$ 3. Using the interest formula, we get: $1440 = (800 * 18 * 19 * R) / (2 * 12 * 100)$ 4. Solving for R, we find the rate of interest to be 6% per annum	
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Q.NO.: 14	Mr. Britto deposits a certain sum of money each month in a Recurring Deposit Account of a bank. If the rate of interest is of 8% per annum and Mr. Britto gets Rs. 8088 from the bank after 3 years, find the value of his monthly installment.	YEAR [2013]
ANS.:	Convert 3 years to months: $3 \text{ years} * 12 \text{ months/year} = 36 \text{ months}$ ■ Using the interest formula: $8088 = (P * 36 * 37 * 8) / (2 * 12 * 100)$ ■ Solving for P, we find the monthly installment to be 200 rupees	
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Q.NO.: 15	Kiran deposited Rs. 200 per month for 36 months in a bank's recurring deposit account. If the bank pays interest at the rate of 11% per annum, find the amount she gets on maturity.	YEAR [2012]
ANS.:	First, calculate the interest earned: $\text{Interest} = (P * N * (N+1) * R) / (2 * 12 * 100) = (200 * 36 * 37 * 11) / (2 * 12 * 100) = 1224 \text{ rupees}$ ■ Maturity Value = Interest + Amount Deposited = $1224 + (200 * 36) = 8424 \text{ rupees}$	
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Q.NO.: 16	Ahmed has a recurring deposit account in a bank. He deposits Rs. 2,500 per month for 2 years. If he gets Rs. 66,250 at the time of maturity, find	YEAR [2011]
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	(i) The interest paid by the bank. (ii) The rate of interest.	
ANS.:		
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Q.NO.: 17	Mr. Gupta opened a recurring deposit account in a bank. He deposited ₹ 2,500 per month for two years. At the time of maturity he got ₹ 67,500. Find: (i) the total interest earned by Mr. Gupta. (ii) the rate of interest per annum.	YEAR [2010]
ANS.:	1. Calculate the total interest earned: Interest = Maturity Amount - Amount Deposited = 67,500 - (2500 * 24) = 7500 rupees 2. Using the interest formula and substituting the values, we get: $7500 = (2500 * 24 * 25 * R) / (2 * 12 * 100)$ 3. Solving for R, we find the rate of interest to be 5% per annum	
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Students Point
Let's Result Speak