Question 1:

I Ola owes Reem (a) $1000, which is four months overdue; (b) $2000, which is three months overdue; and (c) $1500, which is due today. Ola now wishes to sign a three-month non-interest-bearing note to cover all the debts. If a 6% interest rate is used to compute the obligations, what should be the face value of the note?

II What simple interest rate p.a. is equivalent to \( j_2 = 9\% \) if money is invested for 3 years?

Question 2:

I To pay off a loan of $5,000 at \( j_{12} = 12\% \), Reem agrees to make three payments in 2, 5 and 10 months respectively. The second payment is to be double the first, and the third payment is to be triple the first. What is the size of each payment?

II What sum of money should be set aside to provide an income of $500 a month for a period of 3 years if the money earns interest at \( j_{12} = 15\% \) and the first payment is to be received:

(a) one month from now?
(b) immediately?
(c) 2 years from now?

Question 3:

I A man invests $300 each 31 August. After 10 such payments, he increases his deposits to $400 p.a. Assuming that he has been earning 8% p.a. effective, what accumulation will there be after 15 payments?

II Ola wants to accumulate $7,000 in a fund at the end of 10 years. She deposits $300 at the end of each year for the first 5 years and then $300+x at the end of each year for the next 5 years. Find \( x \) if the fund earns 12% p.a. effective.

With my best wishes.
Dr. Emam Abdel-Aziz