Question Paper

Exam Date & Time: 03-May-2023 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES
END SEMESTER THEORY EXAMINATION-MAY 2023
IV SEMESTER B.Sc.(APPLIED SCIENCES) IN ENGG.

ENGINEERING ECONOMICS AND MANAGEMENT [IHS 241 - S2]

Marks: 50 **Duration: 180 mins.**

Answer all the questions.

Instructions:
(i) Assume values for missing data, if applicable and mention the same in your answer
(ii) Cash flow diagram carries marks
(iii) Interest factor table for 10% is given alongside question.

1)		Find the Present worth of each of the following cash flows	(4)
	A)	(i) Deposit of ₹10,000 per quarter at an interest rate of 12% per year, compounded quarterly, for 3 years (ii) Deposit of ₹5000 per month at an interest rate 12% per year, compounded monthly, for 2 years (iii) Deposit of ₹7000 per year at an interest rate 12% per year, compounded annually, for 5 years (iv) Deposit of ₹2000 per week at an interest rate 12% per year, compounded weekly, for 1 year	
	B)	An industrial firm is considering automating the company's manufacturing operations. It is estimated that the initial setup will cost $140,000. A maintenance contract the equipment will cost $5,500 per year. Trained service personnel will have to be hired at an annual salary of $30,000. Also estimated is an approximate $12,000 annual income-tax savings (cash inflow). How much will this investment in equipment and services have to increase the annual revenues after taxes in order to break even? The equipment is estimated to have an operating life of 10 years, with no salvage value because of obsolescence. The firm's MARR is 10%.	(3)
	C)	A person is planning to invest his yearly bonus into a savings account that pays 10% interest compounded annually. The size of the bonus increases by $1,000 each year, and the initial bonus amount was $6,000. Determine how much will be in the account immediately after the fifth deposit.	(3)
2)		What is the equal payment series for 10 years that is equivalent to a	(3)