Master level/ M. Sc. (Construction Management)/ 2nd Semester	Full Marks: 60
Time: 3 hours	Pass Marks: 30

Subject: Economics for Construction Managers (CMT523/CM723)

- *Attempt all the questions.*
- *Figures in the margin indicate full marks.*
- *Assume suitable values, with a stipulation, if necessary.*
- *Candidates are required to answer the questions in their own words as far as possible.*

1. How do the principles of engineering economics contribute in decision-making process in the field of engineering and what role do they play in selecting the most favorable alternatives? [3]

2. As a construction engineer, how would you utilize the principles of demand and supply, including concepts such as elasticity and equilibrium to optimize resource allocation, project planning, and decision-making within the construction industry? [3]

3. Graphically illustrate the relationships between Marginal Cost, Average Variable Cost, Average Fixed Cost, Average Total Cost. Also, analyze the Break-even point with the help of cost curve. [4]

4. Calculate both IRR and ERR from the following cash flow: [5]

EOY	Cash flow
0	-45,000
1	-4,000
2	9,000
3	45,000
4	58,000
5	15,000

Also draw the UIB diagram.

5. Nepal government is planning to invest three irrigation projects. The detail cash flow estimation is given below (in billion) with MARR = 10% and life of each project is 20 years. [6]

Parameter	Koshi	Gandaki	Mahakali
Initial Cost	24,000	22,000	20,000
Annual benefit	5,000	4,500	4,000
Annual Cost	1,400	1,200	1,000

Compare mutually exclusive project to invest.

6. Compute the following projects by using repeatability assumption when MARR is 12%. [6]

Parameter	Project A	Project B
Initial investment	2,00,000	3,00,000
Annual revenue	25,000	30,000
Annual cost	7,000	9,000
Salvage value	10,000	20,000
Useful life in year	8	16