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MANIPAL INSTITUTE OF TECHNOLOGY
(A Constituent College of Manipal University, Manipal)



**VII SEM. B.E. (INFORMATION & COMMUNICATION TECH.) DEGREE
END SEMESTER (MAKE-UP) EXAMINATION JAN. 2007**

**SUBJECT : ENGINEERING ECONOMICS (HUM-301)
REVISED CREDIT SYSTEM
(09 /01/2007)**

Time: 3 Hours.

MAX.MARKS: 50

Instructions to Candidates:

- ❖ Answer **ANY FIVE FULL** questions.
- ❖ Use of Interest factor table is permitted.

- 1A) Briefly explain the economic aspects of exchange of utilities. (04)
- 1B) A company must make licence payments for a process that it has adopted for a new plant. The payments will begin at \$10,000 & the first payment is expected to be made 3 years from now. Payments will be made every three months thereafter and the licence payments are expected to increase by \$500 each quarter. What single present amount is equivalent to the series of licence payments made over an 8 year period if the interest rate is 8% per year compounded quarterly. (06)
- 2A) Explain the different types of price elasticity of demand giving suitable examples. (04)
- 2B) Find the IRR for the following cash flow pattern.

End of year	Cash flow \$
0	- 1000
1	- 800
2	500
3	500
4	500
5	1200

(06)

- 3A) Define the term angle of Incidence & explain its significance in the following business situation:
i) High Margin of safety, Low BEP.
ii) Low Margin of safety, High BEP. (05)

3B) Annual sales of a given product are 8000 units, the selling price is \$8 per unit. Annual fixed production costs are \$6000 & the current annual profit is \$18000. The company is planning to invest to influence the sale of its product. The marketing department estimates that this new advertising campaign will increase total fixed costs by 15% & the unit variable cost by 25%. Sales are expected to be 9600 units per year. Determine the new selling price in order to keep the same annual profit. (05)

4A) Give the format of Balance Sheet and Income Statement for a Joint stock company. (05)

4B) An asset had a first cost of \$60000 with a salvage value of \$5000 after 11 years. Using i) WDV method ii) Sum of digits method, find
a) Depreciation charge in the 10th year
b) Book value at the end of 8th year. (05)

5A) Briefly explain the various elements of cost which must be considered in determining the selling price of a product. (04)

5B) Four alternative investment proposals are considered for selection. For an MARR of 10% which alternative is selected. Use present worth on incremental investment approach.

End of year	Alternatives			
	B1	B2	B3	B4
0	-10000	-12000	-12000	- 15000
1	- 2725	- 1635	- 1308	- 436
2	- 2970	- 1782	- 1426	- 475
3	1295	1943	1943	3885

(06)

6A) Briefly explain the different types of public activities undertaken by the Government for the welfare of public what is the significance of Benefit cost analysis in evaluating public activities. (04)

6B) The communications system for Conglomerate Engineering cost \$50000 four years ago. Its current salvage value is \$26000 which will decline as follows over the next 4 years: \$20000, \$16250, \$14000 & \$12500. The operation and maintenance costs will be \$6000 this year & these costs will increase by \$2000 per year. Find when it is worth replacing this system at an interest rate of 10%. (06)