

Roll No. to be filled in your Answer Book

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FOR ECE and EEE

Semester: III

B. Tech End Semester Examination Dec 2014

ENGINEERING ECONOMICS

Time : Three Hours]

[Max. Marks : 75

Note: Attempt all questions, the marks assigned to each question is indicated at question itself.

Q1. Attempt any four (all questions carry equal marks) (15)

- Explain the concept of cash flow by elaborating various components of cash flow with the help of an example.
- Explain the concept of effective annual interest rate.
- What is capitalized cost, how is it used for comparing two projects.
- Explain Cost-Benefit analysis and its importance.
- What do you mean by straight line depreciation? How does it impact the profitability of the firm?
- What do you mean by book value? What is the procedure of calculating the book value?

Q2. Attempt any four (all questions carry equal marks) (15)

- How much should be put in an investment with a 10% effective annual rate today to have \$10,000 in five years?
- An asset is purchased that costs \$9000. It has a 10-year life and a salvage value of \$200. Find the straight-line depreciation and ACRS depreciation for 3 years.

(1)

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- c) An asset is purchased that costs \$6000. It has a 10-year life and a salvage value of \$150. What is the book value of the asset in the previous example after 3 years using straight-line depreciation? Using ACRS depreciation?
- d) Explain the various misconceptions regarding internal rate of return (IRR) method.
- e) What do you mean by Cost- effectiveness analysis? Explain the procedure of conducting cost- effectiveness analysis.
- f) Write down the various cost reduction and cost control techniques a firm can use to reduce cost various projects.

Q3. Attempt any two

(2x7.5)

- a) Investment A cost \$10,000 today and payback \$ 11,500 two years from now. Investment B costs \$ 8000 today and pays back \$ 4500 each year for two years. If interest rate of 5% is used identify which alternative is superior.
- b) What do you mean by Break-even analysis? Explain the linear and non linear models of break even analysis.
- c) Critically analyze the various methods of comparing the projects undertaken by a company.

Q4. Attempt any two

(2x7.5)

- a) Which of the following alternatives is superior over a 30-year period if the interest rate is 7%?

	Type	Life	Initial Cost	Maintenance
Alternative A	Brick	30 Yr	\$1800	\$5/Year
Alternative B	Wood	10 Yr	\$450	\$20/year

(2)

c) A company is considering the purchase of either machine A or machine B.

	Machine A	Machine B
Initial cost	\$80,000	\$100,000
Estimated life	20 years	25 years
Salvage value	\$20,000	\$25,000
Other costs	\$18,000 per year	\$15,000/year [for the first 15 yrs] & \$20,000 per year for the next 10 yrs

How much money would have to be placed in a sinking fund each year to replace machine B at the end of 20 years if the fund yields 10% annual compound interest and if the first cost of the machine is assumed to increase at a 6% annual compound rate? (Assume the salvage value does not change.)