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06ME56

Fifth Semester B.E. Degree Examination, December 2012
Engineering Economics

Time: 3 hrs. Max. Marks:100

Note: 1. ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***
2. Interest factor tables permitted.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

PART – A

1 a. Explain i) Law of demand ii) Law of supply iii) Equilibrium price iv) Equilibrium amount. **(06 Marks)**

b. Determine the effective interest rate in the following cases :
i) Nominal interest of 12% compounded semiannually with time interval of two years.
ii) Nominal interest of 18% compounded monthly with time interval of two years.
iii) Nominal interest of 9% compounded quarterly with time interval of one year.
iv) Nominal interest of 10% compounded weekly with the time interval of one year. **(08 Marks)**

c. Deduce an expression for equal payment series sinking fund factor. **(06 Marks)**

2 a. Explain i) Common – multiple and ii) Study period method of comparing the assets that have unequal lives. **(06 Marks)**

b. Amjay company is currently renting a parking lot for employee and visitors use at an annual cost of Rs 9000, payable on the first of each year. The company has an opportunity to buy the lot for Rs 50,000. Maintenance and takes on the property are expected to cost Rs 2500 annually. Given that the property will be needed for 10 more years, determine what sales price must be obtained at the end of the period in order for Amjay to break even, when the interest rate is 12 percent. **(08 Marks)**

c. A Rs 5,00,000 gift was equated to a city fot the construction and continued upkeep at a music shell. Annual maintenance for a shell is estimated at Rs 15,000. In addition Rs 25,000 will be needed every 10 years for painting and major repairs. How much will be left for the initial construction costs, after funds are allocated for perpetual upkeep? Deposited funds can earn 6 percent annual interest and these returns are not subject to taxes. **(06 Marks)**

3 a. Explain use of a sinking fund. **(04 Marks)**

b. A company owns several gasoline stations in a major city. It is decided that a major television advertising campaign will greatly improve income. Initial development costs for the advertisements will be Rs 1,20,000. Monthly television airing costs are quoted at Rs 35,000 for the first month, decreasing by Rs 500 per month thereafter during the period in which the ads will run, which is 18 months. Revenues are expected to increase by Rs 40,000 in the first month and increase by Rs 700 per month thereafter for 11 months more. The last 6 months of the study are expected to see a linear decline at Rs 300 per month from the peak increase. Determine whether the campaign will be economically viable, using an equivalent monthly worth analysis. Assume a nominal annual interest rate of 12 percent with monthly compounding. **(08 Marks)**