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**Fifth Semester B.E. Degree Examination, June / July 2013**  
**Engineering Economics**

Time: 3 hrs.

Max. Marks:100

- Note:** 1. *Answer any FIVE full questions, selecting atleast TWO question from each part.*  
 2. *Use of Discrete interest tables is permitted.*  
 3. *Assume any missing data.*

**PART - A**

- 1 a. Differentiate between Intution and Analysis. (06 Marks)  
 b. Briefly explain the law of demand and law of supply. (06 Marks)  
 c. With the help of sketch, explain the problem solving process in decision making. (08 Marks)
- 2 a. Briefly explain the conditions for present worth comparisons. (06 Marks)  
 b. An entrepreneur intending to start a new business knows that the first few years are the most difficult. To lessen the chance of failure, a loom plan for start – up capital is proposed in which interest paid during the first two years will be 3%, 6% for the next 2 years and 12% for the last 2 years for the total 6 years loan. How large a loan can be justified for proposed repayments at the end of years 2, 4 and 6 respectively Rs 20,000, Rs 30,000 and Rs 50,000? (06 Marks)  
 c. An aircraft assembly fixture has a purchase price of Rs 900,000 and classed as a 5 year property. Use of the fixture is expected to result in an annual before tax savings of Rs 300,000 for a period of 6 years, at the end of which time it will be obsolete and virtually worthless. Applying the appropriate accelerated schedule, determine  
 i) The before tax present worth of the investment at an interest rate of 40 percent.  
 ii) The after tax present worth of the investment with an effective tax rate of 40 percent and an interest rate of 20 percent. (08 Marks)
- 3 a. Explain the following with examples :  
 i) Ownership life ii) Economic life. (04 Marks)  
 b. A stand by electric power generator was purchased 6 years ago for Rs 80000. At that time it was expected that the equipment would be used for 15 years and would have a salvage value of 10% of the first cost. The generator is no longer needed and is to be sold for Rs 25,000. Using an interest rate of 15 percent., determine the difference between the anticipated and actual equivalent annual capital costs. (08 Marks)  
 c. Standby lighting generator is required for a shop. Two types are available.

	Type 1	Type 2
First cost	Rs 5000	Rs 3200
Salvage value	Rs 1000	Nil
Annual operating cost	Rs 780	Rs 950

If both generator have a life of 4 years and the interest rate is 15 percent per year, which offers the lowest equivalent annual cost. (08 Marks)

- 4 a. Explain MARR, IRR and ERR. (06 Marks)  
 b. Explain the causes of depreciation. (06 Marks)  
 c. A farm house can be purchased for Rs 90,000 and the expected resale value after 20 years is Rs 60,000. If the annual rental income is Rs 11,800 and expenses Rs 4,700. What will be the rate of return earned on this farm house? (08 Marks)

**PART - B**

- 5 a. Briefly explain the contents of elements of cost. (06 Marks)
- b. A firm is producing 100 units per day. The direct material cost is found to be Rs 160, the direct labour cost is Rs 200 and factory overheads chargeable to it is Rs 250. If the selling expenses are 40% of the factory cost, what must be the selling price of each unit to realize a profit of 15% of selling price? (06 Marks)
- c. A manufacturing company specialized in central air – conditioning system plans to launch a new model which would have a material cost of Rs 400,000 and direct wages of Rs 200,000. The following figures relate to the previous year.  
 Stock of material as on 1<sup>st</sup> April 2005 = Rs 2,00,000 ; Stock of material as on 31<sup>st</sup> March 2006 = Rs 2,20,000 ; Purchase of raw material during this period = Rs 5,20,000 ; Manufacturing wages = Rs 1,60,000 ; Works on cost = Rs 80,000 ; Administrative and sales on cost = Rs 80,000 ; Sales during the year = Rs 9,00,000.  
 Based on the above data suggest a selling price for the new model which will cover the on cost and ensure the same percentage of profit as before. (08 Marks)

- 6 a. What are the sources of finance and financial information? (10 Marks)
- b. Following are the items of the profit and loss account of ABC Company for the year ended 31<sup>st</sup> March 2004. Arrange them systematically and indicate i) Profit before taxation and ii) Profit after taxation. (Rs Lakhs) (10 Marks)

Operating and administrative expenses	10,440.6
Depreciation	1,382.8
Provision for Income tax	0.0
Interest	2595.3
Cost of sales & services	54,773.9
Sales and services	69,552.9
Provision for wealth tax	3.5
Other income	517.6
Excess provision for tax in previous years	143.0
Proposed Dividend	643.8

- 7 a. Explain the following : i) Current ratio ii) Debt equity ratio iii) Net profit margin ratio iv) Inventory turnover ratio v) Price – Earnings ratio. (10 Marks)
- b. ABC Co., Ltd has the following capital data
- |                                     |              |
|-------------------------------------|--------------|
| 10% preference shares of Rs 10 each | Rs 3,00,000  |
| Equity shares of Rs 10 each         | Rs 8,00,000  |
|                                     | -----        |
|                                     | Rs 11,00,000 |
- Some other information available are as follows
- |                               |             |
|-------------------------------|-------------|
| Profit after tax at 60%       | Rs 2,70,000 |
| Depreciation                  | Rs 60,000   |
| Equity dividend paid          | 20%         |
| Market price of equity shares | Rs 50.      |
- Find : i) Dividend yield on the equity shares ii) Cover for the preference and equity dividends iii) Earnings for equity shares iv) Price earnings ratio. (10 Marks)
- 8 a. What are the objectives of profit planning? (08 Marks)
- b. How do you classify budgets? Explain the production budget and sales budget. (12 Marks)

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