

Total number of printed pages – 7

B. Tech
HSSM 4201

Fourth Semester Examination – 2008

**ENGINEERING ECONOMICS
AND COSTING**

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory
and any **five** from the rest.*

*Figures in the right hand margin
indicate marks.*



1. Answer the following questions : 2×10
- (a) How will you find out the present value of
an infinite life annuity ?

- (b) State the bases for comparing the worthiness of the various projects.
- (c) State the benefit-cost ratio to evaluate a single public activity.
- (d) What are the needs for capital rationing ?
- (e) State two characteristics of discounted cash flow techniques.
- (f) What is cost-effectiveness analysis ?
- (g) What is depletion ?
- (h) Define 'margin of safety'.
- (i) What is abnormal loss ?
- (j) Define 'variable overhead cost variance'.

P.T.O.

HSSM 4201

2

Contd.

2. From the undermentioned facts, develop the repayment schedule for the three consumer financing schemes (A), (B), (C) using the flat rate of interest. Also, compute the effective rate of interest using both long and short-cut approaches.

* Loan amount : Rs. 2,40,000

* Repayment period : 3 years

* Rate of interest (flat) : 6 per cent

* Repayment pattern : Scheme (A), loan to be repaid in three equal instalments ;
Scheme (B), loan with interest to be

repaid in three equated annual instalments ; and Scheme (C), loan with interest to be repaid in three equal instalments. 10

3. Explain, with the help of examples, the importance of equivalent annual worth. Discuss the difference between annual payment and capital recovery. 10

4. Contrast the IRR and the NPV methods. Under what circumstance may they lead to (a) comparable recommendations, and (b) give conflicting recommendations ? 5+5

5. AB Ltd., a multi-product company, furnishes you the following data relating to the current year :

	First-half of the year	Second-half of the year
	Rs.	Rs.
Sales	45,000	50,000
Total cost	40,000	43,000

Assuming that there is no change in prices and variable costs, and that the fixed expenses are incurred equally in the two half-year period, calculate for the year : 2.5×4

- Profit-volume ratio
- Fixed expenses
- Break-even sales
- Percentage margin of safety.

HSSM 4201

5

P.T.O.

6. State the objectives of charging depreciation. Make a comparative study between straight-line method and written-down value method.

4+6

7. (a) Explain with one example, the concept of relevant cost for decision making. 5

- (b) Discuss two cost reduction techniques. 5

8. (a) From the following particulars, compute the variable overhead variances : 5

	Standard	Actual
Output in units	2,500 units	2,000 units
Labour hours	5,000	6,000
Variable overheads	Rs. 1,000	Rs. 1,500

HSSM 4201

6

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(b) How will you prepare a Process Account to find out the cost of a particular process ? Explain with imaginary figures.

5
