POKHARA UNIVERSITY

Level: Bachelor Semester: Fall Year : 2016
Programme: BE Full Marks: 100
Course: Engineering Economics Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Define demand, supply and utility. Explain about elasticity of demand. 7

   b) What are the principles of Engineering Economics? Explain why Studying Engineering Economics is fruitful to engineering student. 8

2. a) Sabina deposits a sum of Rs. 10, 00, 000 in a bank at an interest rate of 12 % per year. What will be the future amount after 5 years? 6
   If compounded
   i. weekly
   ii. quarterly and annually.

   b) Evaluate the following project by the simple payback period, present worth and future worth method. The cash flows of the project are as follows: if the MARR is 12 % per year. 9

End of year	Net cash flows (Rs.)
0	-700
1	-400
2	125
3	200
4	800
5	220
6	320

3. a) Evaluate the following two feasible investments A and B having different useful lives, if MARR is 10 % per year. Use PW method with repeatability assumptions. 8

	Investment of A(Rs.)	Investment of B(Rs.)
Investment	50,000	150,000
Net annual revenue	25,000	70,000
Net annual cost	3000	2000
Salvage value	15,000	40,000
Useful life	3 years	5 years

b) Evaluate IRR of the following project and identify whether the project is feasible or not. 7

Initial investment = Rs. 6,00,000
Annual revenue = Rs. 2,50,000
Annual cost = Rs 50,000
Useful life = 10 years
Repair and maintenance cost at 4^{th} and 8^{th} year = Rs 30,000
MARR = 10 % per year.

4. a) A machine costing of Rs 100,000 is estimated to have life of 10 years. The salvage value of the machine at the end of life is Rs 20000. Find depreciation charge and book value of each year and tabulate it. Use straight line and sum of years digit (SOYD) method. 7

b) Find out the B/C ration using present worth and annual worth method. 8

Initial investment = Rs. 6,00,000
Annual benefit = Rs. 2,50,000
Annual cost = Rs. 30,000
Salvage value = Rs. 40,000
MARR = 12 % per year
Useful life = 8 years

5. a) What are the advantages of company? What are the features of partnership firms? 7

b) What is life cycle cost? What are the differences between financial accounting and cost accounting? 8

6. a) Select which project is feasible to invest among other alternative projects whose cash flows are as follows: if MARR is 10 % per year. Use IRR method and incremental analysis if necessary. 10

	Investment of A (Rs.)	Investment of B (Rs.)
Investment	50,000	150,000
Net annual revenue	25,000	70,000
Net annual cost	3000	2000
Salvage value	15,000	40,000
Useful life	7 years	7 years
Repair and maintenance cost at 3^{rd} and 5^{th} year.	10,000	15,000

b) What do you mean by independent, dependent and mutually exclusive project? Explain with suitable examples. 5

7. Write short notes on: **(Any two)** 2×5

a) Methods of financing
b) VAT
c) Stock and Bond
d) Types of cost.