POKHARA UNIVERSITY

Level: Bachelor Semester: Spring Year : 2017
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) 'Hydropower is known as demandable project in the Nepal' what are the factors affecting the demand? 5
   b) You wish to study your son in medical college after 20 years. Recently, government has fixed total 35lakh to complete MBBS studies. How much you need to deposit on each year to meet your desire if bank providing 10% interest rate per year for your fixed account. 5
   c) Define terms as cost and revenue with example of cash flow diagram. Ram invested at high yield account aimed to get the double of his investment at the end of 10 years. Compute the effective interest rate he received on the account. 5
2. a) Find IRR and unrecovered value. 8
   Investment Rs.250,000 Salvage value = Rs.50,000
   Net annual Revenue = Rs.70,000 Number of years = 5Yrs
   b) A project has the following cash flows 5+2

Years	Cash flows (Rs.)
0	-500
1	202
2	-X
3	196
4	350
5	451

   MARR =10% and ERR=14.14% Find the value of X. Also describe what the factors to be considered to determine the time value of money.
3. a) Find the B/C ratio by both conventional and modified method. Use AW method. 7
   Investment =Rs.250,000 Annual Benefits=Rs.75,000.

   Annual cost=Rs.15,000 Salvage Value=Rs.25,000
   MARR=12% Number of years=10
   b) What are the methods used to analyze the projects of same useful life and different useful life. 2+6
   Assuming infinite project life, recommend one of the following mutually exclusive projects if MARR =10%.

Projects	A	B
First investment cost (Rs)	750,000	1,800,000
Salvage value(Rs)	150,000	270,000
Annual costs(Rs)	135000	90,000
Useful life(yr)	30	75

4. a) Define the sensitivity analysis. Analyze the sensitivity of Present worth to ±40% deviation change of the project having Investment = Rs.11500 Revenue = Rs.5000 Expenses = Rs.2000 Salvage = Rs.1000 Useful life = 10 MARR = 10% on 2+6
      i. interest
      ii. life
   b) Define Ecological footprint. What environmental cost need to be considered for Sustainable Development? Sales = Rs.80000 Fixed cost = Rs.15000 variable cost = Rs.35000 find profit and break even volume. 4+3
5. a) A company has purchased an equipment whose first cost is Rs.100000 with an estimated life of eight years .The estimated salvage value of the equipment at the end of its lifetime is Rs.20000. Determine the depreciation using 8
      i. Double declining methods of depreciation
      ii. Sum of the Year –Digit Method of Depreciation
   b) What are the factors to be considered while determining the cost of debt? Calculate the after tax cost of debt while the interest rate = 10% and tax rate = 40%. 3+4
6. a) Define the ratios and their important for financing. Prepare one sample of Balance sheet including the components of Assets and Liability 4+4
   b) Define funding and financing with examples. What is the difference between the general accounting and cost accounting? 3+4
7. Write short notes on: **(Any two)** 2×5
   a) Life cycle cost
   b) Mutually exclusive projects and its combinations
   c) Capital structure