UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Programme Name: B-Tech ADE,PIE   **Semester**   **: VIII**
Course Name   **: Economics and life cycle concepts**   **Time**   **: 03 hrs.**
Course Code   **: PMEO 401**   **Max. Marks : 100**
Nos. of page(s)   **: 2**
Instructions: Draw cash flow diagrams wherever necessary

SECTION A (20 marks)

S. No.		Marks	CO
Q 1	Distinguish between technical efficiency and economic efficiency.	**5**	**CO1**
Q2	Briefly explain the term capital allowance.	**5**	**CO4**
Q3	Distinguish between breakdown maintenance and preventive maintenance.	**5**	**CO4**
Q4.	Compare decline balance method of comparison and double decline balance method of depreciation	**5**	**CO3**

SECTION B (40 Marks)

Q5.	Consider the following data of a company for the year 2017:
	Sales=80000rs
	Fixed cost=15000
	Variable cost=35000
	Calculate the following
	   a) Contribution
	   b) Profit
	   c) BEP
	   d) Margin of safety
		10	**CO1**

Q6.	A finance company advertises two investment plans. In the plan 1, company pays rs. 12000 after 15 years for every 1000 rs. Invested now. In plan 2 for every 1000rs invested, the company pays rs 4000 at the end of the 10th year and 4000rs at the end of 15th year. Select the best investment plan (based on present worth method of comparison) from the investors point of view at i=12%, compounded annually.	**10**	**CO2**

Q7.	Two possible ways for laying a pipe line are under study		

	Around the lake(option-1)	**Under the lake (option-2)**
length	15 km	5km
First cost	155000/km	760000/km
Useful life	15 years	15 years
Maintenance cost	6000/km/yr.	12000/km/yr.
Salvage Value	90000/km	150000/km
Yearly power loss	15000/km	15000/km

If i=12%, which option will be best?   **10**   **CO2**

Q8.	Trace out the flow of goods, services, and resources and money payments in a simple economy.	10	CO1
	SECTION-C (40 Marks)		

Q 9	A machine was purchased two years ago for rs 10000.its annual maintenance cost is rs.750.its life is six years and its salvage value at the end of its life is rs.1000.Now a company is offering a new machine at a cost of rs.10000.its life is 4 years and its salvage value at the end of its life is rs.4000.The annual maintenance cost of new machine is rs.500.The company which is supplying the new machine is willing to take the old machine for rs.8000 if it is replaced by the new machine. Assume an interest rate of 12%, compounded annually.
	   a) Comparative use value of the old machine
	   b) Is it advisable to replace the old machine?
	 OR A company has already identified machine A and determined the economic life as four years by assuming 15% interest rate. The annual equivalent total cost corresponding to the economic life is rs 2780.
	Now the manufacturer of machine B has approached the company. Machine B, which has same capacity as that of machine A, is estimated at rs 1500 for the first year and an equal increment of rs 250 thereafter.
	If the money is worth 10% per year, which machine should be purchased?
		20	CO4

Q10.	The alpha company has just purchased a capsulating machine for the rs 2000000. The plant engineer estimates that the machine has a useful life of five years and a slavage value of rs 25000 at the end of its useful life . Compute the depreciation schedule for the machine by each of the following depreciation method:
	   a) Straight line method
	   b) Sum of the years digits method of depreciation
	   c) Double declining balance method of depreciation
		20	CO3