Name: **Enrolment No:** **SAP ID:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

Online End Semester Examination, December, 2020

Course: Economics and Risk management in Exploration — **Semester: III**
Program: M.Tech. PE — **Time: 3 hrs.**
Course Code: PEGS 8001 — **Max. Marks: 100**

	SECTION A **Each Question carries 5 Marks**	
Q.1	Distinguish between retrospective risk and prospective risk in petroleum industry.	CO2
Q.2	Name **five** factors that impact the economics of oil and gas projects.	CO1
Q.3	Define cash flow, profit, depreciation, salvage value and inflation	CO2
Q.4	Write the full form of : TVM, EMV, NCF, DCF, ROI	CO3
Q.5	Define the term Lead time with an example	CO4
Q.6	If your company has $35 million available for investing in a project, and its NPV has been calculated as $12 million. Compute the profitability Index and take a decision whether your company should proceed for investment or not on the basis of Profitability index.	CO3
	SECTION B **1. Each question carries 10 marks** **2. Instruction: Write short / brief notes**	
Q.7	Describe geological and price volatility risks encountered in oil and gas industry. Also outline how to mitigate these risks. **OR,** (a) Define Sensitivity analysis. How do you perform sensitivity analysis?	CO4

	(b) Define stage – gate process.	
Q.8	Suppose an oil and gas company is considering investing in a project which involves an initial outlay (CAPEX) of $200 million in the first year and regular annual running (Operating) costs of $20 million over a period of 4 years after the first year. The Co. anticipates that annual income generated by the project will be $75 million in each of those four years. How will you evaluate the net cash flow and profit for this investment?	CO2
Q.9	Describe the Service Contract legal system that has been developed to address the rights and obligations of host Govt. and of private investors in oil and gas industry.	CO5
Q.10	An oil and gas company purchased a compressor for ₹ 50,000 on 2nd of March. It has an estimated useful life of 5 years and residual value of ₹2000. If the rate of depreciation is considered as 20% , how will you compute decline balance depreciation for the machinery?	CO2
Q.11	Write short notes on: (i) CAPEX (ii) OPEX (iii) Net Cash Flow (iv) Gross Revenue (v) Royalty	CO1
	Section C **1. Each Question carries 20 Marks.** **2. Instruction: Write long answer.**	
Q.12	If the probability of a successful well is 0.9 and you have two alternatives which are: (i) Farm out : Producer's return is worth $75,000 , a dry hole causes no profit or loss. (ii) Drilling the well: A dry hole costs $300,000 and a hit brings $ 800,000 (after all costs). You need to take a decision for your company whether it should go for farming out or go for drilling option by evaluating your options on the basis of decision tree analysis. **OR,** Explain the following economic indicators used for project viability critiquing their decision rules (a) NPV (b) IRR (c) Pay back period (d) PI	CO3