UPES
End Semester Examination, May 2022

Programme Name: B. Tech APE UP   Semester   : VI
Course Name   : Oil Field Development   Time   : 03 hrs
Course Code   : PEAU 3024P   Max. Marks: 100
 Instructions   :
> All questions are compulsory. However, internal choice has been provided. You have to attempt only one of the alternatives.
> Please use the graph papers.

	SECTION A (20 marks)	Marks	CO
S. No.		**Marks**	**CO**
1	"Data is the new oil." Explain the statement.	**4**	**CO1**
2	Define recovery factor.	**4**	**CO1**

3	Discuss the following stages of field development.
	  i) Spudding
	  ii) Appraisal
		4	**CO1**

4	Discuss the decommissioning of the well.	**4**	**CO3**
5	Differentiate between conventional and unconventional reservoirs.	**4**	**CO1**
	SECTION B (40 marks)		

6	Discuss the source of the following petro physical property essential for field development
	    i) Porosity
	    ii) Permeability
	    iii) Saturation of oil
	    iv) Capillary pressure
		10	**CO3**

7	Explain 1P, 2P and 3P reserves.	**10**	**CO3**
8	Discuss the various exploration techniques used in oil and gas industry. OR An oil reservoir exists at its bubble-point pressure of 2000 psia and temperature of 120°F. The oil has an API gravity of 42° and gas-oil ratio of 700 scf/STB. The specific gravity of the solution gas is 0.65. The following additional data are also available: Reservoir area = 640 acres Average thickness=10ft Connate water saturation =0.25 Effective porosity =15% specific gravity of oil = 0.8156 Initial oil formation volume factor= 1.30 bbl/STB. Calculate the initial oil in place in STB.	**10**	**CO2**

9	Explain the various components of Field Development Plan with the help of an example.	10	CO3
SECTION-C (40 marks)			

10.	Discuss the following economic parameters which play a role in oil field development.
	    i) Payout time
	    ii) Profit to investment ratio
	    iii) Present net worth
	    iv) Internal rate of return
		20	CO4

11.	Discuss the data obtained for the economic evaluation of a reservoir and the various source from which it is obtained. OR Explain the importance of reserve estimation in the oil field development. Discuss the different methods used for reserve estimation.	20	CO4