Name: Enrolment No:		UPES UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination Dec 2024

Program: MBA Oil & GAS   **Semester: I**
Course: Fundamentals of Petroleum Exploration   **Max Marks: 100**
Course Code: OGOG 7009   **Duration : 3 Hours**

SECTION- A
Each Question will carry 2 Marks

S.No.	Question	
Q.1	Write the sea water depth (mts) of the followings offshore areas. 1. Continental shelf....... 2. Shallow water.......... 3. Deep water.......... 4. Ultra deep water.........	**CO1**
Q.2	What was the need to have API classification of crude and who invented it?	**CO1**

Q.3	To which country the follwing NOCs belong ?
	  1. PDVSA
	  2. YPF
	  3. ECOPETROL
	     PEMEX
		CO1

Q.4	In which Sedimentary basin the following oil & gas fields are located?
	  1. Raniganj
	  2. Bassein
	  3. RAVVA
	  4. Gandhar
		CO1

Q.5	1. Coalbed methane is called **'Sweet gas'** because of its lack of .... 2. Some reservoirs contain gas and **no oil**. This gas is termed as............ **gas** or **............gas.**	**CO1**

Q.6	How are the following tools used in well logging?
	  1. LWD
	  2. MWD
		CO1

Q.7	Name the three JV partners in Stabroek Oil block.....................in Guyana.	**CO1**
Q.8	The main reasons for *Deep Water Horizon Rig* blowout in Gulf of Mexico were.............	**CO1**

Q.9	Draw the symbol for each of the following rock type,
	  1. Salt
	  2. Siltstone
	  3. Lignite
	  4. Marl
		CO1

Q.10	What is a Shapefile in GIS?	**CO1**

SECTION- B

Each Question will carry 5 Marks

Q.1	What is the significance of *salt* in petroleum exploration?. Give examples of salt related play.	**CO2**
Q.2	Describe the Geological Time Scale and assign the ages to following geological Eras, 　1. Paleozoic 　2. Cenozoic	**CO2**
Q.3	What are unconventional petroleum resources? What is the current status of E&P of unconventional petroleum in India?	**CO2**
Q.4	What are the different categories of drilling rigs?	**CO2**

SECTION- C

Each Question will carry 10 Marks

Q.1	Describe the .geochemical and geophysical methods for hydrocarbon exploration. What is the potential application of Gravity prospecting in petroleum exploration?	**CO3**
Q.2	Describe *Contracts and Concessions* fin hydrocarbon licensing. What were the issues with Cost oil recovery in NELP and how it was changed in the new HELP/ OALP?	**CO3**
Q.3	**Attempt one of the following** : 1. Describe the volumetric method of estimation of petroleum resource for a sub-surface prospect. What is the need to classify petroleum reserves for governments and petroleum companies? OR 2. Describe the deterministic and probabilistic distribution of petroleum reserves as defined by AAPG/ SPE/SEG. Define P90, Pmean and P10 distribution and their significance.	**CO3**

SECTION- D

Each Question will carry 15 Marks

Q.1	Explain the concept of time value of money. Complete the following discounted cash flow table. Calculate the cumulative cash flow and profitability indicator such as NPV.	**CO4**

Year	Net Cash ($MM)	Cumulative Cash Flow ($MM)	Discounted Cash Flow at....		
			5%	10%	25%
1995	-200	-200	-200	-200	-200
1996	- 80	-280	-267	-254	-224
1997	35				
1998	75				
1999	130				
2000	150				
2001	160				
2002	140				
2003	110				
2004	80				
2005	50				
Totals	**650**				
NPV		-------	--------	--------	--------

Attempt one of the followings:

1. Describe the *Production Sharing Contract* (PSC) and explain the terms *Cost Oil* and *Profit Oil. Draw a model PSC contract for Indonesia.*

OR

Q.2

2. Select one Global or Indian Hydrocarbon producing field and describe the followings of this field.
   a. Petroleum system elements and play type
   b. Production profiles and remaining reserves
   c. Operator and JV partners
   d. Geographical location and method of acquisition of the field.

CO4