

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination – Dec- 2021

Program: MBA Oil & GAS
Subject/Course: Fundamentals of Petroleum Exploration
Max. Marks: 100
Course Code: OGOG 7009

Semester: I

Duration : 3 Hours

SECTION- A
Each Question will carry 2 Marks

S.No.	Question	
Q.1	Write the full form of, 1. EMV 2. MEFS 3. AAPG 4. IPAA	CO1
Q.2	Write the API gravity range of, 1. Condensate 2. Extra Heavy Oil	CO1
Q.3	US Geological survey defines 1 boe as equivalent to.....cubic feet of natural gas.	CO1
Q.4	Draw the symbol for each of the following rock type, 1. Shale 2. Salt 3. Basement 4. Limestone	CO1
Q.5	Draw the well symbol for each of the following, 1. Dry well 2. Oil well with gas show 3. Development well 4. Exploratory well	CO1

Q.6	Write the unit of the following properties, <ol style="list-style-type: none"> 1. Porosity 2. Permeability 3. Bo 4. GOR 	CO1
Q.7	To which country the following NOCs belong ? <ol style="list-style-type: none"> 1. PDVSA 2. OVL 3. PETROBRAS 4. PEMEX 	CO1
Q.8	Which Sedimentary basin the following oil & gas fields are located? <ol style="list-style-type: none"> 1. Kalol 2. Bassein 3. RAVVA 4. Gandhar 	CO1
Q.9	Deep water is categorized by water depth greater than..... Mts.	CO1
Q.10	Describe Shapefile in GIS	CO1

SECTION- B

Each Question will carry 5 Marks

Q.1	Describe Indian sedimentary basins classification and their EUR potential.	CO2
Q.2	Describe the significance of Geological Time Scale and assign the ages to following geological Eras, <ol style="list-style-type: none"> 1. Paleozoic 2. Mesozoic 3. Cenozoic 	CO2
Q.3	Describe the Concessionary and Contractual agreements for petroleum awards. What is the significance of Farm in / Farm out agreements?	CO2
Q.4	What are unconventional petroleum resources and describe their exploitation Methods.	CO2

SECTION- C

Each Question will carry 10 Marks

Q.1	Describe the geophysical, geochemical and geological methods for petroleum exploration. What is the significance of 4D Seismic?	CO3
Q.2	Describe the five petroleum system elements. Summarize the primary and secondary hydrocarbon migration processes.	CO3
Q.3	<p>Attempt one of the following :</p> <p>Describe the economic indicators for evaluating Oil & Gas opportunities. How MEFS is calculated and its relevance in opportunity evaluation.</p> <p style="text-align: center;">OR</p> <p>Describe the classification of Resource and Reserves of petroleum as per the WPC/SPE/AAPG. Define the deterministic and probabilistic distribution used in their classification.</p>	CO3

SECTION- D

Each Question will carry 15 Marks

Q.1	<p>Explain the concept of Discounting to calculate the present value of future money. Complete the following discounted cash flow table. Calculate the cumulative cash flow and profitability indicator such as NPV & P/I Ratio.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Year</th> <th style="text-align: right;">Net Cash (\$MM)</th> <th style="text-align: right;">Cumulative Cash Flow (\$MM)</th> <th colspan="3" style="text-align: center;">Discounted Cash Flow at....</th> </tr> <tr> <th></th> <th></th> <th></th> <th style="text-align: center;">5%</th> <th style="text-align: center;">10%</th> <th style="text-align: center;">25%</th> </tr> </thead> <tbody> <tr> <td>1995</td> <td style="text-align: right;">-200</td> <td style="text-align: right;">-200</td> <td style="text-align: right;">-200</td> <td style="text-align: right;">-200</td> <td style="text-align: right;">-200</td> </tr> <tr> <td>1996</td> <td style="text-align: right;">-80</td> <td style="text-align: right;">-280</td> <td style="text-align: right;">-267</td> <td style="text-align: right;">-254</td> <td style="text-align: right;">-224</td> </tr> <tr> <td>1997</td> <td style="text-align: right;">35</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1998</td> <td style="text-align: right;">100</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1999</td> <td style="text-align: right;">130</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2000</td> <td style="text-align: right;">150</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2001</td> <td style="text-align: right;">160</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2002</td> <td style="text-align: right;">140</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2003</td> <td style="text-align: right;">110</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2004</td> <td style="text-align: right;">80</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2005</td> <td style="text-align: right;">50</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Totals</td> <td style="text-align: right;">675</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>NPV</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>P/I Ratio</td> <td style="text-align: center;">-----</td> <td style="text-align: center;">-----</td> <td style="text-align: center;">-----</td> <td style="text-align: center;">-----</td> </tr> </tbody> </table>	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	100					1999	130					2000	150					2001	160					2002	140					2003	110					2004	80					2005	50					Totals	675						NPV						P/I Ratio	-----	-----	-----	-----	CO4
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Q.2	<p>Attempt one of the followings:</p> <p>Describe the <i>Production Sharing Contracts (PSC)</i> and explain the terms <i>Cost Oil</i> and <i>Profit Oil</i>. <i>Draw a model PSC contract</i></p> <p style="text-align: center;">OR</p> <p>Describe <i>EMV</i> and <i>Decision Tree analysis</i> employed for E&P decision making as a strategy in highly competitive environment.</p>	CO4