UPES
UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2025

Course: MBA OG **Semester:** II
Program: Advance IT Applications in Oil & Gas
Time: 03 hrs.
Course Code: DSIT7010P **Max. Marks:**100
Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Expand the followings terms a. OSDU......... b. EPSG.......	2	CO1
Q 2	Explain *Data Universe*	2	CO1
Q 3	*True or False?* ArcGIS is a product of ESRI?	2	CO1
Q 4	What is usefulness of National data Repository (NDR) ?	2	CO1
Q 5	Define Openrspirit framework?	2	CO1
Q 6	Define Multi client data uses in oil and gas	2	CO1
Q 7	Define DART technology in Seismic data acquisition.	2	CO1
Q 8	Define *data warehouses* and *analytic sandbox*	2	CO1
Q 9	Define the purpose of "*API Specification code 6A*"	2	CO1
Q 10	Define wireline drill pipe telemetry system.	2	CO1

SECTION B
4Qx5M= 20 Marks

Q 1	Describe some of the business processes (BP) in downstream oil & Gas sector.	5	CO2
Q 2	Describe how "*IIoT concepts are transforming the Oil & Gas industry business model in fast and dramatic ways as a result of three key factors*"?	5	CO2
Q 3	Describe *High Performance Computing (HPC)* and its applications in Petroleum industry.	5	CO2
Q 4	Describe the "smart field value loop" and its elements.	5	CO2

SECTION-C
3Qx10M=30 Marks

Q 1	Explain the six characteristics of *Big data.* Define the following data structures with examples across oil and gas industry,	10	CO3

	a. Structured data a) Semi structured data b. Unstructured data		
Q 2	Describe the use of ERP system in Oil & Gas Industry. Explain the SAP Modules -MM, SD and IS- Oil used by oil companies.	**10**	**CO3**
Q 3	Describe use of drones in pipelines and flare stack monitoring.	**10**	**CO3**
SECTION-D **2Qx15M= 30 Marks**			
Q 1	Refer to the case **:*Applications of Digital Twins to Offshore Oil/Gas Exploitation From Visualization to Evaluation*"** 1. Explain the purpose and definitions of "*Digital Twin"* and the common features they share 2. From the above case related to development of south china offshore gas/oil field: a) Write a short summary on construction of digital twins for oil/gas exploitation and its advantages to improve efficiency for FEED and evaluation. b). Explain case based reasoning on DT and the cycle of case based operations. Its applications across different areas as part of DT model.	**15**	**CO4**
Q 2	Refer to Case **"A Review of Distributed Fiber–optic Sensing in Oil and Gas Industry"** by Islam Ashry, Senior Member, IEEE and others and answer both the questions. 1. Explain the operation principal of DTSS and summarize the applications of fiber optics in Hydraulic fracturing monitoring. 2. Challenges and future trends in this technology?	**15**	**CO4**