

Roll No: -----


<b>Name:</b> <b>Enrolment No:</b>		 <b>UPES</b> UNIVERSITY WITH A PURPOSE	
<b>UNIVERSITY OF PETROLEUM &amp; ENERGY STUDIES</b> <b>End Semester Examination – May, 2019</b>			
<b>Program/course: MBA (Oil &amp; Gas)</b> <b>Subject: Advance IT Applications for Oil &amp; Gas Industry</b> <b>Code: DSIT 7010</b> <b>No. of page/s:3</b>		<b>Semester : II</b> <b>Max. Marks : 100</b> <b>Duration : 3 Hrs.</b>	
<i>All questions shall be strictly answered in chronological order.</i>			
<b><u>SECTION A</u></b>			<b><u>[20 Marks]</u></b>
<b>Qs. 1</b>	Define any 2 of the following terms, a. W3C b. OASIS c. HTML d. SQL	<b>2.5 x 2</b>	<b>CO1</b>
<b>Qs. 2</b>	Define the Apache Hadoop architecture and how its implementation helps Oil & Gas companies in efficient, cost effective operations?	<b>5</b>	<b>CO1</b>
<b>Qs. 3</b>	.Describe the SCADA system and draw a generalized SCADA configuration for offshore Oil & gas industry	<b>5</b>	<b>CO1</b>
<b>Qs. 4</b>	Define the Geographical Information System (GIS) and how it is being applied across petroleum industry? Define Map Projection.	<b>5</b>	<b>CO1</b>
<b><u>SECTION B</u></b>			
<b>Attempt any two of the three questions</b>			<b>[20 marks]</b>
<b>Qs. 5</b>	Define Big Data and its five main characteristics. What are the technologies related to storage and processing of the Big Data?	<b>10</b>	<b>CO2 CO3</b>
<b>Qs. 6</b>	Enlist a brief summary on the concept of e- Business, e-Tendering, and how these processes are integrated under SAP	<b>10</b>	<b>CO2 CO3</b>

<b>Qs. 7</b>	Elaborate on the computing, processing and robotic tape library set up at GEOPIC, ONGC and how 3D visualization technology is used in discovering more petroleum resource	<b>10</b>	<b>CO2 CO3</b>
<b><u>SECTION C</u></b>		<b>[30 marks]</b>	
<b>Qs. 8</b>	Elaborate on National Data Repository (NDR) and its benefits to oil & gas companies?. Define the following data types with examples, a) Structured data b) Semi structured data c) Unstructured data	<b>15</b>	<b>CO2, CO3</b>
<b>Qs. 9</b>	From “BP Energy Outlook Review 2017”, analyses 3 of the 4 followings base case key issues.  a) Will global energy demand continue to increase? Has the link between economic growth and increases in energy demand been broken?  b) How quickly will the global energy mix evolve?  c) How will electric cars and new mobility technologies impact oil demand?  d) How will the behavior of low-cost oil producers change in a world of abundant oil resources and slowing oil demand?	<b>15</b>	<b>CO4, CO5</b>
<b><u>SECTION D</u></b>		<b>[30 marks]</b>	
<b>Attempt any two of the three questions</b>			
<b>Qs. 10</b>	Comprehend reasons on the common data and information standards and their importance in enhancing E & P business efficiencies? Under this, describe the primary goals of the oil & gas industry. What are the main data and information issues faced by the oil companies	<b>15</b>	<b>CO4, CO5</b>
<b>Qs. 11</b>	Refer to case study “ <b>M2M Applications in the Oil and Gas Industry</b> ” from Berg Insight on the latest developments on the use of wireless M2M technologies in this industry vertical worldwide. Summarize any 3 of the 4 the following points, a) Which are the leading wireless M2M solution providers for oil and gas applications? b) What offerings are available from device vendors and service providers? c) What impact will new regulations have on the market?	<b>15</b>	<b>CO4, CO5</b>

	<p>d) What are the key drivers behind the adoption M2M applications?</p> <p>e) What is the split between cellular and satellite connectivity?</p>		
<b>Qs.13</b>	<p>Analyze and summarize the “Digital Transformation in Oil &amp; Gas industry”.</p> <p>Explain the smart field “value loop”.</p> <p>Describe the <b>Na Kika deep-water development –Gulf of Mexico</b> as an example of the Smart Field.</p>	<b>15</b>	<b>CO4, CO5</b>

**SET 2**

Roll No: -----

<b>Name:</b> <b>Enrolment No:</b>		 <b>UPES</b> UNIVERSITY WITH A PURPOSE	
<b>UNIVERSITY OF PETROLEUM &amp; ENERGY STUDIES</b> <b>End Semester Examination – May, 2019</b>			
<b>Program/course: MBA (Oil &amp; Gas)</b> <b>Subject: Advance IT Applications for Oil &amp; Gas Industry</b> <b>Code: DSIT 7010</b> <b>No. of page/s: 2</b>		<b>Semester : II</b> <b>Max. Marks : 100</b> <b>Duration : 3 Hrs.</b>	
<i>All questions shall be strictly answered in chronological order.</i>			
<b><u>SECTION A</u></b>			<b>[20 Marks]</b>
<b>Qs. 1</b>	Define any 2 of the following terms, a). ERP b) IETF c) HTTP d) RDBMS	<b>2.5 x 2</b>	<b>CO1</b>
<b>Qs. 2</b>	Describe Bid Data and the Apache Hadoop architecture for storage and processing of the bid data.	<b>5</b>	<b>CO1</b>
<b>Qs. 3</b>	Describe the SCADA system and draw a generalized structure of enterprise SCADA system used by ONGC for offshore Oil & gas assets	<b>5</b>	<b>CO1</b>
<b>Qs. 4</b>	Describe the components of the Geographical Information System (GIS) and how it benefits the petroleum industry? Define terms like Geographic coordinates system and Map Projection	<b>5</b>	<b>CO1</b>
<b><u>SECTION B</u></b>			<b>[20 marks]</b>
<b>Attempt any two of the three questions</b>			
<b>Qs. 5</b>	Describe Big Data and its five main characteristics. What are the technologies related to storage and processing of the Big Data? Describe different types of data used in petroleum industry	<b>10</b>	<b>CO2, CO3</b>
<b>Qs. 6</b>	Describe the main concept of e- Business, e -Tendering, and how these processes are integrated under SAP architecture? Describe Reverse auctioning process	<b>10</b>	<b>CO2, CO3</b>

Qs. 7	Describe Ariyabhat-2, the super - computer at GEOPIC, ONGC for seismic data processing. Explain the terms SMP and MPP. What is Robotic tape library?	10	CO2, CO3
<b><u>SECTION C</u></b>		<b>[30 marks]</b>	
Qs. 8	Describe the various IT initiatives taken by ONGC – a move towards Business Process Engineering. What is EPINET project?	15	CO3 CO4
Qs. 9	Refer to “BP Energy Outlook Review 2017”, analyses the followings base case key uncertainties,  a) A faster mobility revolution b) Alternative pathways to a lower carbon world c) Risks to gas demand	15	CO3 CO4
<b><u>SECTION D</u></b>		<b>[30 marks]</b>	
<b>Attempt any two of the three questions</b>			
Qs. 10	From the Article IDC Technology Spotlight published in June 2016 by AWS, comprehend on “Cloud in the Transformation of Upstream Oil and Gas”	15	CO4, CO5
Qs. 11	From the case study “ <b>M2M Applications in the Oil and Gas Industry</b> ” from Berg Insight on the latest developments on the use of wireless M2M technologies in this industry vertical worldwide. Interpret and comprehend any 3 of the following points,  a) Which are the leading wireless M2M solution providers for oil and gas applications? b) What offerings are available from device vendors and service providers? c) What impact will new regulations have on the market? d) What are the key drivers behind the adoption M2M applications? e) What is the split between cellular and satellite connectivity?	15	CO4, CO5
Qs. 12	Elaborate the smart wells and intelligent oil fields? Comprehend a summary of the study “ <b>Digitalization offers new horizons in flow measurements</b> ” and the use of clouds in simulating real time virtual measurement of multiphase flows ( developed by Arundo Analytics) as explained in the class	15	CO4, CO5