

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

Online End Semester Examination, May 2021

Course: Information Technology for Exploration and Production

Semester: IV

Program: B. Tech CSE OGI

Time : 03 hrs.

Course Code: CSOG 3002

Max. Marks: 100

SECTION A

- 1. Each Question will carry 5 Marks**
- 2. Instruction: Write short / brief notes**

S. No.	Question	CO
Q 1	Illustrate the classification of SCADA system and explain various element of SCADA system used in Oil and Gas Industry?	CO1
Q2	State the concept of Geo referencing.	CO2
Q3	List the role and jurisdiction of PPDM	CO1
Q4	Identify the working principles of DOF and EOR	CO2
Q5	Restate Turning Test.	CO3
Q6	Elucidate the different categories of AI system with proper examples	CO3

SECTION B

- 1. Each question will carry 10 marks**
- 2. Instruction: Write short / brief notes**

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Q 1	What are the characteristic of any AI System? Explain the industry standard for declaring the given system process artificial intelligence? What are the different foundation of AI system?	CO3
Q 2	Illustrate the role and working of FERC	CO1
Q 3	Define the various family of Projection with relevant examples and List various properties that can be preserved while projecting a Map.	CO2
Q 4	List various component of any real time system. Distinguish between hard and soft real time systems and with respect to any real time system define the following terms: <ul style="list-style-type: none"> • Timing constrains, • functional parameter, • sporadic task, • lateness, • miss ratio and hit ratio 	CO4
Q 5	Design a GIS system to identify the presence of Hydrocarbon at any E &P site	CO2

Section C

- 1. Each Question carries 20 Marks.**
- 2. Instruction: Write long answer.**

Q1	<p>There are 10 jobs to be executed under the given hard real-time system i.e. J1, J2, J3, J4, J5, J6, J7, J8, J9, J10. Each job has the release time and absolute deadline respectively (2,0,3,3,2,4,4,9,7,9) and deadline (7,3,10,6,10,6,10,13,10,16) respectively. The precedence and successor relation of the job as follows:</p> <ul style="list-style-type: none">• J6 is a successor of J3 and J4,• J7 is a successor of J4,• J10 is a successor of J8,• J3 is a successor of J2,• J5 and J2 are the predecessor of J4,• J4 and J9 are the predecessor of J8, and• J1 is the predecessor of J2. <p>On the basis of the given input:</p> <ol style="list-style-type: none">1. Draw the precedence graph2. Calculate the effective deadline and release time of each job3. Generate the EDF schedule if the execution time for each job is 1 clock cycle, 2 clock cycle and 3 clock cycle.4. Identify the job at Level 0, Level 1, Level 2, and Level 3. <p>Or</p> <p>There are 6 jobs to be executed under the given hard real-time system i.e. J1, J2, J3, J4, J5, J6, J7, J8, J9, J10. Each job has the release time and absolute deadline respectively (0,1,4,2,1,5,4,6,3,2) and deadline (8,6,8,10,8,6,10,12,12,12). The precedence and successor relation of the job as follow</p> <ul style="list-style-type: none">• J2 is successor of J1,• J3 is predecessor of J2 and J4,• J5 is successor of J2 and J4,• J5, J7 is predecessor of J6.• J2, J6, J7 are predecessor of J8.• J7 is predecessor of J9• J8, J9 are predecessor of J10 <p>On the basis of the given input:</p> <ol style="list-style-type: none">1. Draw the precedence graph2. Calculate the effective deadline and release time of each job3. Generate the EDF schedule if the execution time for each job is 1 clock cycle, 2 clock cycle and 3 clock cycle.4. Identify the job at Level 0, Level 1, Level 2, and Level 3.	CO4
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