


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2022			
Course: Advanced Construction Techniques Program: B.Tech (Civil Engineering) Course Code: CIVL 4061		Semester: VIII Time 3 hrs. Max. Marks: 100	
Instructions: <u>All questions are compulsory to attempt.</u>			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1.	What do you understand by site investigation process? Also, state its relevance.	4	CO2
Q 2.	State the various methods of tunnel construction along with their critical points.	4	CO2
Q 3.	What do you understand by long line and short line bed of precast segment casting	4	CO3
Q 4.	Enumerate the various primary factors affecting offshore structures in marine environment	4	CO2
Q 5.	State the different ways of matching precast segments during bridge span construction.	4	CO3
SECTION B (4Qx10M= 40 Marks)			
Q 1.	Suppose a head race tunnel has to be excavated in soft soil type geological condition. Explain in detail the different TBM tunneling methodologies that can be adopted for the same tunneling purpose.	10	CO2
Q 2.	Describe the different installation procedures adopted for the Jacket platform system.	10	CO2
Q 3.	Analyze the “vacuum dewatering process” and laying procedure for the vacuum dewatered floors.	10	CO1
Q 4.	Analyze the auto launching process of launching girder in bridge construction. OR Explain the methodology adopted for construction of pile cap in foundation work of bridge construction.	10	CO3
SECTION-C (2Qx20M=40 Marks)			

Q1.	<p>Explain the Underslung mechanism for bridge construction along with its essential components and detailed erection methodology.</p> <p style="text-align: center;">OR</p> <p>Explain the Launching girder mechanism for bridge construction along with its essential components, detailed erection methodology and auto launching process.</p>	20	CO3
Q2.	<p>Discuss the relevance/importance of precast and prefabricated construction in modern construction works. Also, analyze the planning, analysis and design considerations generally important for these construction mechanisms in detail.</p>	20	CO4