UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
END SEMESTER EXAM, DECEMBER 2018

Course: Modern construction Techniques (CEEG 408) **Semester: VII**
Program: B. Tech (Civil Engg)
Time: 03 hrs. **Max. Marks: 100**
No of Pages:1
Instructions: Answer all the questions **PAPER - I**

SECTION A

S. No.		Marks	CO
Q.1	Briefly explain the requirement of construction joints in buildings	4	CO4
Q.2	What are offshore platforms? Where are sheet piles provided in construction.	4	CO3
Q.3	Briefly explain different types of blasting techniques in construction	4	CO2
Q.4	Briefly explain the incremental launching method of bridge construction.	4	CO3
Q.5	Briefly explain difference between shotcrete & guniting.	4	CO1
	SECTION B		
Q .6	What are pre-cast & pre-fabricated structures? What are various criteria associated with design of *pre-cast* & *pre-fabricated* structures as per IS 15916?	10	CO4
Q.7	Explain the different types of bridge construction with suitable erection techniques. Also, explain their advantages & disadvantages over one another.	10	CO3
Q.8	What is shoring? What are the needs & restrictions concerning diaphragm walls as permanent structures & propose functional requirements.	10	CO2
Q.9	Is it desirable to use concrete of very high strength i.e. exceeding 60Mpa? What are the potential problems associated with such high strength concrete at offshore construction.	10	CO3
	OR		
Q.9	What is slip formwork? What are its various components? Explain the advantage & disadvantage of slip formwork.	10	CO1
	SECTION-C		
Q.10	Being a Civil engineer, how do you account for modern methods of construction for sustainable housing construction in India? Give your answers with critical comments & constructive suggestions.	20	CO2
Q.11	During the concreting of diaphragm walls, three tremie pipes used in one time. However, only one concrete truck is available. How the concreting works should carried out. Give your answers with critical explanations & suggestions.	20	CO1
	OR		
Q.11	**a)** Under what conditions shall engineers use jacking at one end only & from both ends in Pre-stressing works		CO4
	b) What is the significance of quality of bentonite slurry in the construction of bored piles	10 +10	CO3

Name:

Enrolment No:

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SECTION A

S. No.		Marks	CO
Q.1	Briefly explain the advantage & disadvantage of Pneumatic Caisson's	4	CO1
Q.2	Write five major challenges while working on tunnel projects.	4	CO2
Q.3	What are function of shear key in the design of retaining walls	4	CO1
Q.4	Why diaphragm are necessary in construction of concrete bridges.	4	CO3
Q.5	What are functions of applying epoxy adhesives in joints of precast concrete segment	4	CO4
	SECTION B		
Q .6	In Incremental launching method of bridge construction, what are the measures adopted to enhance sufficient resistance of the superstructure during the launching process.	10	CO3
Q.7	What is tolerance? Explain in detail with sketches the pre-fabrication system & their relative merits & field of application.	10	CO4
Q.8	Compare the merits & demerits of conventional method & modern method of erection of structures. Also, explain how loads can reduced by pre-stressing.	10	CO1
Q.9	What are various primary & secondary factors affecting offshore structures in marine environment.	10	CO3
	OR		
Q.9	Explain the terms repair, rehabilitation of structures with suitable Examples. Briefly explain how steel structures be retrofitted.	10	CO2
	SECTION-C		
Q.10	In bridge widening projects, the method of stitching normally employed for connecting existing deck to new deck. Being a Civil Engineer, what are the potential problems associated with this method in terms of shrinkage of concrete.	20	CO3 & CO4
Q.11	What is the method used for underground metro construction in Delhi. Being civil engineer, write the process & construction technique to use it effectively.	20	CO2
	OR		
Q.11	a) How do you account for Quality control of concrete during slip form erection of pylon?		CO1
	b) Lightweight aggregate said to hold water, which is available for curing the cement paste. Is there any likelihood that this so-called curing water will be removed by vacuum dewatering, thus losing the advantage? Give your answer with critical comments.	10 +10	CO1 & CO4