

**M. TECH.-IV (CIVIL-HYDRAULIC ENGINEERING) (CBCS –
2015 COURSE) : SUMMER - 2018**
SUBJECT: SELF- STUDY PAPER- II OFFSHORE STRUCTURES

Day: **Tuesday**
Date: **19/06/2018**

S-2018-3036

Time: **11.00 AM TO 02.00 PM**
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Answers to both the section should be written in **SEPARATE** answer books.
- 4) Draw diagrams **WHEREVER** necessary.
- 5) Assume suitable data if necessary.

SECTION-I

Q.1 Brief the history of development of offshore platforms with salient landmarks. (10)

OR

Q.1 Explain the various applications of offshore structures. (10)

Q.2 Sketch the cross sections of various structures from the oil platform to oil refinery at shore indicating modes of transport and storage of crude oil. (10)

OR

Q.2 Write short notes on: (10)

- a) Safety measures in offshore structures
- b) Role of Reynolds Number in the design of cylinders

Q.3 Explain the design aspects of submarine pipeline under wave action and sediment load. (10)

OR

Q.3 Why the oil platforms are required to be braced? How the spacing of piles is determined. (10)

SECTION-II

Q.4 Write short notes on: (10)

- a) Single Buoy Mooring
- b) Role of wave spectra for design of oil platforms

OR

Q.4 What are adverse effects of oil pollution on sea life and shore based activities. (10)

Q.5 Brief the design of ocean towing and floating structures. (10)

OR

Q.5 Write short notes on: (10)

- a) Stability of offshore structures
- b) Vertex shedding frequency

Q.6 Explain the significance of C_D and C_m in the design of cables of the offshore structures. (10)

OR

Q.6 Describe the methods to avoid wave induced vibrations in the fixed structures. (10)

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