

**M. TECH.-III (CIVIL-HYDRAULIC ENGINEERING) (CBCS – 2015  
COURSE) : WINTER - 2017**

**SUBJECT : ELECTIVE – I: COASTAL ENGINEERING**

Day : **Tuesday**  
Date : **16/01/2018**

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

**W-2017-2829**

**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) Assume suitable data if necessary.

**SECTION – I**

- Q.1** Write short notes on **ANY THREE** of the following: **[10]**
- a) Global tides and its types
  - b) Concept of normalized spectrum
  - c) Types of wave breakers
  - d) Types of dredgers

**OR**

- Q.1** a) Enumerate the assumptions and advantages of Airy's (linear) wave theory. **[05]**
- b) Explain phenomena of refraction and diffraction with sketches. **[05]**
- Q.2** a) What are the wave data collection and recording methods? **[05]**
- b) Explain the concept of wave spectrum, its interpretation and applicability for computation of wave parameters. **[05]**

**OR**

- Q.2** Compare the West and East coastal features of India and explain in brief its impact on the design of ports and coastal structure with suitable example. **[10]**
- Q.3** Explain the concept of onshore / off-shore sediment transport process due to oblique waves with suitable sketches. **[10]**

**OR**

- Q.3** a) What are Winter and Summer beach profiles? Explain how formation of bar is useful for recovery of beach. **[05]**
- b) What is the necessity of artificial beach nourishment at coastal structures? What are other coastal protection methods to control erosion? **[05]**

P.T.O.

**SECTION – II**

- Q.4 a)** Explain the significance of various terms in the Hudson's formula for the design of armour unit of RM breakwater? **[05]**
- b)** List the various types of offshore oil platforms and explain criteria for the design with suitable sketches. **[05]**

**OR**

- Q.4** Sketch the typical layout of port indicating various facilities and structures in the port project. Brief the functional aspect of any two. **[10]**

- Q.5 a)** Describe general classification of inner harbor along the river. **[05]**
- b)** Explain the function and design aspect of Tuning circle, dry dock, dock arm and approach channel. **[05]**

**OR**

- Q.5** What are the advantages of Modern development in port facilities? What is its significance of port efficacy on the port cost analysis? **[10]**

- Q.6** Explain in brief the procedure for development of boundary conditions of random wave model. **[10]**

**OR**

- Q.6** What are the adverse effect of oil pollution on the coastal activities and aquatic life? What do you understand by coastal zone management in the coastal development? **[10]**

\* \* \* \*