

**M. Tech.-III (Civil-Hydraulic Engineering) (CBCS – 2015 Course) :**

**WINTER - 2018**

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

Day: Tuesday  
Date: 04/12/2018

**W-2018-3161**

Time: 11.00 AM TO 02.00 PM  
Max Marks. 60

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**N.B.**

- 1) All questions are **COMPULSORY**
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Answers to both sections should be written in **SEPARATE** answer books.
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**SECTION - I**

**Q.1** Write short notes on any **THREE** of the following **(10)**

- a) Wave breaking criteria
- b) Methods for estimation of longshore transport
- c) Normalized spectrum
- d) Types of breakers

**OR**

Explain the assumptions made in Airy's (linear) wave theory and the advantages over other wave theories for applicability.

**Q.2** a) Explain how sediment budget is useful for planning of port on Indian coast. **(10)**

- b) Explain the phenomena of refraction and diffraction of waves and use of coefficient of refraction and shoaling for computation of waves

**OR**

What are the terms in Hudson's formula and use in design of unit for breakwater?

**Q.3** Explain the various types offshore structures used in practice, sketch any typical one and brief the hydraulic design parameters. **(10)**

**OR**

Compare the east and west coast of India keeping in view various parameters and processes for design of port.

**SECTION - II**

**Q.4** Write short notes on any **THREE** of the following **(10)**

- a) Disposal of industrial waste in coastal water
- b) Radio active tracer studies
- c) Types of natural and artificial harbours
- d) Ro – Ro and Lo – Lo port facilities

**OR**

Explain the modes of vibration and measures by changing the spacing of vertical piles in the offshore platform.

**Q.5** Elaborate the factors affecting growth and development of port. **(10)**

**OR**

- a) What are the various aspects related to coastal zone management?
- b) What are the adverse effects due to large scale oil spills from the oil tanker in the coastal area?

**Q.6** a) Discuss the roll of modern port facilities in the port economics. **(10)**

- b) What is the need of developing special type of port near the major port?

**OR**

Explain the random wave modeling simulation technique for wave generation, model spectra and wave data acquisition system.