Reg. No.										

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

VI SEMESTER B.TECH (CIVIL ENGINEERING)

END SEMESTER EXAMINATIONS, MAY/JUNE 2016

SUBJECT: COASTAL ENGINEERING [CIE 326] - Program Elective II

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ANY FIVE FULL** the questions.
- Missing data may be suitable assumed.

1A.	Explain in detail on the constituents of dynamic ocean environment.	**4**
1B.	For a 5 m high wave with T = 10 sec, determine maximum water particle velocities and accelerations for a water depth of 75 m. Also find the wave celerity.	**6**
2A.	Write a short note on various equipment used for the measurement of waves.	**4**
2B.	Obtain dispersion relation using equation of velocity potential.	**4**
2C.	List the assumptions made while deriving the expression for wave force on a vertical member.	**2**
3A.	What is wave deformation? With neat sketches describe any three forms of wave deformation.	**4**
3B.	Define a beach and explain beach profile with a help of a neat diagram.	**4**
3C.	Explain the phenomenon of longshore ocean currents and rip currents formation.	**2**
4A.	What is coastal erosion? Briefly explain man made causes responsible for erosion.	**4**
4B.	List out the merits and demerits of seawalls as a coastal protection work. Write the steps adopted for the design of permeable seawall.	**6**
5A.	Define a harbour and briefly explain its classification.	**6**
5B.	Write a short note on i) Coastal pollution ii) Dredging	**4**

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6A. What are the factors considered for finding the dimensions of berthing structures? **2**

6B. With a neat sketch differentiate between graving and floating dry dock. **3**

6C. Design a breakwater at a location with following details **5**

Mean water depth – 5 m
Tidal correction – 1.5 m
Armour unit – Quarry stone (Stability coefficient- 1.2,
Layer coefficient-1.02, unit weight – 2650 kg/m^3)
Slope – 1:1.5
Unit weight of sea water – 1030 kg/m^3.