

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER- VII EXAMINATION-SUMMER 2023****Subject Code: 3170623****Date: 21/06/2023****Subject Name: Port and Harbour Engineering****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) List name of any four major ports and any six minor ports of India. **03**  
 (b) What are the requirements of a good harbour ? **04**  
 (c) What are the causes of wave generation? Explain types of waves. Also explain characteristics of waves. **07**
- Q.2** (a) List the names bodies associated with port construction, management, maintenance and administration in Gujarat and at National level. Write the function of state level body. **03**  
 (b) How is the: **04**  
     (1) Wave height within a harbour is determined?  
     (2) Depth of a harbour is decided ?  
 (c) What is the importance, advantages and disadvantages of water transportation ? **07**
- OR**
- (c) Write a short note on (1) Deendayal port and (2) JNPT Port **07**
- Q.3** (a) Define (1) Port (2) Harbour (3) Jetty **03**  
 (b) Explain following ship characteristics: Bow, Keel, Port side, starboard side **04**  
 (c) Give a detailed classification of harbours along with neat sketches based on protection needed. **07**
- OR**
- Q.3** (a) List the factors affecting selection of site of a harbour. **03**  
 (b) Explain following ship characteristics: **04**  
     Displacement Tonnage, Dead Weight Tonnage, Displacement light, Load line  
 (c) Give a detailed classification of ports. Also give detailed classification of harbour based on location. **07**
- Q.4** (a) Explain 'Littoral Drift'. **03**  
 (b) Explain about 'Wave breaking'. **04**  
 (c) What are the purposes of providing navigational aids ? **07**  
     Explain fixed type navigational aids.
- OR**
- Q.4** (a) Explain about Wind Rose diagram. **03**  
 (b) Explain about 'Wave reflection'. **04**  
 (c) Explain floating Navigational aids. **07**
- Q.5** (a) Explain any one method of Economic evaluation of port projects ? **03**  
 (b) Explain the causes of beach erosion. **04**  
 (c) Write a short note on different methods of dredging. **07**
- OR**
- Q.5** (a) What are the environmental impacts of port activities ? **03**  
 (b) List different coastal protection works. **04**  
 (c) Explain about different types of dredgers with neat sketch. **07**

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