

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024

**Subject Code:3170623**

**Date:19-11-2024**

**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.

**MARKS**

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|------------|--|-----------|
| <b>Q.1</b> | (a) Compare Water Transportation and Land Transportation.  | <b>03</b> |
|            | (b) Explain the modern trends in water transportation in India.  | <b>04</b> |
|            | (c) Discuss the site selection and planning criteria for seaports.   | <b>07</b> |
| <b>Q.2</b> | (a) Enlist and write the functions of bodies dealing with port administration in India.                    | <b>03</b> |
|            | (b) What are the surveys to be carried out for harbour planning.   | <b>04</b> |
|            | (c) Draw the diagram of harbour layout showing all components of it.                                       | <b>07</b> |
|            | <b>OR</b>  |           |
|            | (c) Explain with sketch the different types of breakwaters.  | <b>07</b> |
| <b>Q.3</b> | (a) Define: Spring Tide, Neap Tide and Lunar Day.  | <b>03</b> |
|            | (b) Explain ship characteristics: Bow, Keel, Port side, starboard side                                     | <b>04</b> |
|            | (c) What are the different wind characteristics? Also explain wind rose diagram with its uses.             | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.3</b> | (a) Define: Tidal Range, Tidal Bore and Clapotis.  | <b>03</b> |
|            | (b) Explain ship characteristics: Displacement Tonnage, Dead Weight Tonnage, Displacement light, Load line | <b>04</b> |
|            | (c) How are waves generated? Explain shallow and deep waves with sketches.                                 | <b>07</b> |
| <b>Q.4</b> | (a) What are the advantages and disadvantages of floating dry docks.                                       | <b>03</b> |
|            | (b) Enlist the different types of locks and explain anyone.  | <b>04</b> |
|            | (c) Discuss buoys, beacons, and light house.   | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.4</b> | (a) Compare dry docks and wet docks.   | <b>03</b> |
|            | (b) Briefly explain the types of moorings.   | <b>04</b> |
|            | (c) Enumerate the different types of lock and explain any one.   | <b>07</b> |
| <b>Q.5</b> | (a) Write a short note on transfer bridge.   | <b>03</b> |
|            | (b) What are the function of LORAN and RADAR.  | <b>04</b> |
|            | (c) What is dredging? Enlist the different types of dredgers and explain any one.                          | <b>07</b> |
|            | <b>OR</b>  |           |
| <b>Q.5</b> | (a) What is a transit shed? What are purposes of it?   | <b>03</b> |
|            | (b) What are the different types of buoys?   | <b>04</b> |
|            | (c) Explain the different coastal protection works.  | <b>07</b> |

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