

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3170623****Date:17/12/2021****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.

		<b>Marks</b>
<b>Q.1</b>	(a) Discuss advantages of water transportation.	<b>03</b>
	(b) Write classification of harbour based on protection needed.	<b>04</b>
	(c) Draw the schematic diagram of harbour layout showing all components and briefly write each component.	<b>07</b>
<b>Q.2</b>	(a) Explain Dry port.	<b>03</b>
	(b) What are the principles of a seaport planning?	<b>04</b>
	(c) Enlist different types of breakwater and describe composite breakwater with figure.	<b>07</b>
	<b>OR</b>	
	(c) Why fenders are provided on docking platform? Draw the sketch of wooden and rubber fenders.	<b>07</b>
<b>Q.3</b>	(a) Explain Spring tide and Neap tide.	<b>03</b>
	(b) Write short note on wave breaking.	<b>04</b>
	(c) Discuss about study of natural phenomena for harbour planning.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Distinguish between Jetty and Wharves.	<b>03</b>
	(b) What is mooring? Explain any two mooring accessories with neat sketch.	<b>04</b>
	(c) Write short note on Gravity dock.	<b>07</b>
<b>Q.4</b>	(a) Define ferry and ferry slip.	<b>03</b>
	(b) Write short note on warehouse.	<b>04</b>
	(c) List cargo handling equipments and explain any two.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Distinguish between dry dock and wet dock.	<b>03</b>
	(b) What is dredging? Which are the objectives of dredging?	<b>04</b>
	(c) What are the purposes of navigation aids? Enlist navigation aids and explain beacon lights.	<b>07</b>
<b>Q.5</b>	(a) Give requirements of signals in navigation.	<b>03</b>
	(b) Discuss harbour maintenance	<b>04</b>
	(c) What are the causes of beach erosion?	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Define: (a) load line (b)Draft (c) Ballast	<b>03</b>
	(b) What are the types of locks?	<b>04</b>
	(c) Discuss environmental impacts of port activities.	<b>07</b>

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**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2022****Subject Code:3170623****Date:14/06/2022****Subject Name:Port and Harbour Engineering****Time:02:30 PM TO 05:00 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.

		<b>MARKS</b>
<b>Q.1</b>	(a) Write a critical note on water transportation.	<b>03</b>
	(b) Distinguish between natural and artificial harbours.	<b>04</b>
	(c) Discuss the classification of harbour based on utility.	<b>07</b>
<b>Q.2</b>	(a) Explain the term: Cargo handling capacity of a port.	<b>03</b>
	(b) Explain the principles of seaport planning.	<b>04</b>
	(c) Describe the Surveys to be carried out for seaport planning.	<b>07</b>
	<b>OR</b>	
	(c) Explain dynamic effect of wave action in deep water and shallow water.	<b>07</b>
<b>Q.3</b>	(a) Explain the terms: Littoral drift, Neap tide, Spring tide.	<b>03</b>
	(b) Explain the phenomena of the breaking of waves.	<b>04</b>
	(c) What considerations govern the size and position of harbour entrances?	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Differentiate between Dry docks and Wet docks.	<b>03</b>
	(b) Explain the common terms used in connection with ship characteristics.	<b>04</b>
	(c) Explain with neat sketches how mound breakwaters are protected from wave action.	<b>07</b>
<b>Q.4</b>	(a) Explain the terms: Jetty, Fender.	<b>03</b>
	(b) State the construction requirements for a transit shed.	<b>04</b>
	(c) What are the moorings? Mention the accessories of fixed and floating types of the moorings.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Draw a neat sketch of RCC warehouse having many floors.	<b>03</b>
	(b) Discuss the necessity of providing facilities like aprons, transit sheds and warehouses at the ports.	<b>04</b>
	(c) Describe various floating signals.	<b>07</b>
<b>Q.5</b>	(a) What is lighthouse? How is it constructed?	<b>03</b>
	(b) What is dredging? Classify different types of dredging works.	<b>04</b>
	(c) List various shore protection works and explain sea walls.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Distinguish between Dipper dredge and grapple dredge.	<b>03</b>
	(b) Describe various indicators for economic evaluation of port project.	<b>04</b>
	(c) Discuss the environmental impacts of port activities.	<b>07</b>

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