Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2741303 **Date:04/05/2016**

Subject Name: Docks 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.**

Q.1	**(a)**	Discuss merits and demerits of water transportation. Give a brief note on present scenario of water transportation in India.	**07**
	(b)	Explain clearly the terms: Harbour, Port, Dock, Hinterland.	**07**
Q.2	**(a)**	Draw the typical layout of a harbour. Show all components and write their functions.	**07**
	(b)	What are the points to be considered while selecting site of harbour?	**07**
		OR	
	(b)	Discuss about the design considerations of following with respect to harbour planning: (a) size & shape of harbour, (b) width of entrance channel, (c) turning basin.	**07**
Q.3	**(a)**	Explain the formation of Tides and Waves. How are they affecting the design of berthing structures of harbour?	**07**
	(b)	Briefly explain the meanings of following terms: Stern, Keel, Draft, Beam, G.R.T., D.W.T., Displacement tonnage.	**07**
		OR	
Q.3	**(a)**	Describe the followings with sketches and their significance on harbour design: Littoral drift, Wind rose diagram, Wave rose diagram.	**07**
	(b)	Briefly describe the following terms: Wharf, Jetty, Fenders, Dolphins, Slipways.	**07**
Q.4	**(a)**	What is the function of breakwater? What are the forces acting on break waters? What are the design factors shall be considered in construction of break waters?	**07**
	(b)	Explain with sketches: (i) Lock gates, (ii) Dry dock.	**07**
		OR	
Q.4	**(a)**	Explain with sketches wall type break waters and their construction procedure.	**07**
	(b)	Discuss about structural aspects of dock walls.	**07**
Q.5	**(a)**	Explain with sketch: (i) Bucket-ladder dredger, (ii) Light House.	**07**
	(b)	Discuss with sketch the dimension requirement of general cargo handling berth on wharf considering the berthing of three design vessels in series.	**07**
		OR	
Q.5	**(a)**	How will you forecast the cargo and passenger demand for the port? Which points do you suggest to increase the cargo handling capacity of the port?	**07**
	(b)	Discuss general requirements of Transit sheds with respect to dimensions, spacing, floors, appurtenances and provisions.	**07**

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