

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER- VIII EXAMINATION-SUMMER 2023****Subject Code: 2180602****Date: 28/06/2023****Subject Name: Harbour & Airport 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.

		MARKS
Q.1	(a) Define: 1) Break water 2) Surges 3) Terminal area	03
	(b) Explain classification of airports as per I.C.A.O.	04
	(c) Discuss characteristics of ship that affect the harbour design.	07
Q.2	(a) Define Beaufort scale and its use.	03
	(b) Write short notes with neat sketch on: i) Littoral drift.	04
	(c) State the reason to provide fenders on docking platform? Discuss the wooden and rubber fenders with neat sketch.	07
OR		
	(c) Explain factors determining selection of breakwater and draw the different arrangement of the breakwaters.	07
Q.3	(a) Differentiate between: i) Wharf and jetty	03
	(b) List the factors affecting selection of a dredger.	04
	(c) Explain the dry dock with neat sketch.	07
OR		
Q.3	(a) Differentiate between: i) Mound type and vertical wall type breakwater.	03
	(b) List different types of dredgers. Explain dipper dredger with neat sketch.	04
	(c) Enlist design requirements of wet dock wall along with neat sketch.	07
Q.4	(a) Classify comparison of air transport with other modes of transportation.	03
	(b) Explain the procedure of orienting the runway.	04
	(c) Classify different characteristics of an aircraft and their affect in planning and design of airports.	07
OR		
Q.4	(a) Draw a neat sketch of an aeroplane and mention each component parts.	03
	(b) Compare the recommendation of FAA and ICAO with reference to airport master planning.	04
	(c) The length of runway under standard condition is 1500 m. the airport site has an elevation of 270 m. its reference temperature is 32.94°C. if the runway is to be constructed with an effective gradient of 0.20 percent. Determine the corrected runway length.	07

- Q.5** (a) Draw a neat cross-section of a main taxiway for an international airport. Show the various taxiway geometric geometrics in the diagram. **03**
- (b) Enlist the different systems of aircraft parking and explain the satellite system. **04**
- (c) Explain the various taxiway geometrics as recommended by ICAO. **07**

OR

- Q.5** (a) Draw a typical layout of airport terminal building. **03**
- (b) Enumerate the various criteria's for designing the filter material for sub surface drainage. **04**
- (c) Explain with neat sketch, requirements of suitable sites for locating localizer antenna and glide slope antenna at the airport having ILS facility. **07**
