

Seat No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code: 2184002****Date:13/05/2019****Subject Name: Airport and Seaport Infrastructure****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. Support your answer with neat sketches wherever possible.

- Q.1** (a) Discuss briefly merits and demerits of water transportation. **03**
(b) What are the components of an airport? Draw the typical layout of airport and describe functions of its components. **07**
(c) Briefly explain terms: Harbour, Hinterland, Port, Dock. **04**
- Q.2** (a) Draw the typical layout of a Seaport with artificial harbour. Show all components and write their functions. **07**
(b) Show the different elements and size of typical aircraft in the sketches. **07**
What are the advantages of jet engine?
- OR**
- (b) Draw the sketch and show elements of ship. Briefly explain ship characteristics and load carrying capacities. **07**
- Q.3** (a) Discuss following with respect to harbour planning: (a) size & shape of harbour, (b) width of entrance channel, (c) turning basin. **04**
(b) What are the factors affecting in selection of site for an Airport? **04**
(c) Explain with sketches following phenomena & its importance in design of berthing structures: (a) tides, (b) waves, (c) littoral drift. **06**
- OR**
- Q.3** (a) What is 'Wind rose' diagram? Describe with sketches the orientation of runway by using wind rose diagram-type II. **04**
(b) What is the function of breakwater? Discuss with sketches methods of construction of mound break waters. **04**
(c) Compute the corrected runway length for: Runway length at sea-level, std. atmospheric pressure, temperature and zero gradient = 1500m, Site elevation = 900 m, ART = 20° c, effective gradient = 0.2 %. **06**
- Q.4** (a) Discuss about structural aspects of dock walls. **04**
(b) Describe with sketches different types of runway configurations and their operating capacities. **04**
(c) Explain with sketches: (i) Lock gates, (ii) Dry dock. **06**
- OR**
- Q.4** (a) Explain with sketches: Fillets, Holding aprons. **04**
(b) Explain with sketch: (i) Bucket-ladder dredger, (ii) Grab dredger. **05**

- (c) Describe with sketches the working of different types of en-route and landing air traffic control aids. **05**
- Q.5** (a) What is Light House? Explain with sketch its functioning. **04**
- (b) Show the components in a detailed C/S sketches of typical (i) Runway and (ii) Taxiway. **04**
- (c) Explain with sketches: Buoys, Fenders, Dolphins. **06**
- OR**
- Q.5** (a) What are the general points to be observed in grading of an airport? **04**
- (b) Enlist and state significance of supporting facilities and ancillaries required on seaport area. **04**
- (c) Describe with sketches surface drainage system and its design procedure for air field. **06**

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