

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2180602****Date: 06/05/2017****Subject Name: Harbour & Airport Engineering(Departmental Elective - III)****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) Calculate the actual length of runway from the following data: **07**  
 Airport elevation : R.L. 100 m  
 Airport reference temperature : 28 °C  
 Basic length of runway : 600 m  
 Highest point along the length : R.L. 98.2 m  
 Lowest point along the length : R.L. 95.2 m
- (b) Enlist the constituents of harbour. Draw the sketch of a typical artificial harbour. **07**
- Q.2** (a) Explain in detail wind rose diagram showing direction, duration and intensity of wind by drawing sketch. **07**
- (b) What is the function of a hanger? Explain the Nose hangers and T hangers with neat sketch. **07**
- OR**
- (b) What is break water? Give classification of break water and explain any one. **07**
- Q.3** (a) Describe airport master planning process as per ICAO recommendations. **07**
- (b) What are the purposes of airport terminal building? Draw layout of airport terminal building. **07**
- OR**
- Q.3** (a) Write a short note on runway lighting and visual aids. **07**
- (b) What is the function of taxiway in airport? Explain exit taxiway and holding apron. **07**
- Q.4** (a) How the water waves are generated? Explain by drawing sketch shallow waves and deep waves. **07**
- (b) Discuss the necessity of dry docks. Write advantages and disadvantages of floating dry docks. **07**
- OR**
- Q.4** (a) Distinguish between Jetty and wharves. State the conditions under which you will prefer their construction. **07**
- (b) Explain (i) Littoral drift (ii) Fenders **07**
- Q.5** (a) Write short note on (i) Harbour maintenance (ii) Ship characteristics **07**
- (b) Enlist different types of locks and explain any one. **07**
- OR**
- Q.5** (a) Discuss importance of grading and drainage in Airport. Explain general requirements of grading. **07**
- (b) Enlist the major sea ports in India and in Gujarat. Also discuss any two in detail. **07**

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