

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET B**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JAN 2024**

**Semester :** Semester V - 2021

**Course Code :** CIV2023

**Course Name :** Airport Engineering and Harbour

**Program :** B.Tech.

**Date :** 01 -JAN-2024

**Time :** 9:30AM - 12:30 PM

**Max Marks :** 100

**Weightage :** 50%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**4 X 5M = 20M**

1. What are the factors affecting the size of an airport?  
(CO1) [Knowledge]
2. Sketch and explain the different runway patterns.  
(CO1) [Knowledge]
3. What are the three commonly used concepts of terminal building planning?  
(CO2) [Knowledge]
4. What are the types of marine surveys conducted?  
(CO3) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**5 X 10M = 50M**

5. Calculate the actual length of the runway from the following data:  
Airport elevation: RL 150  
Airport reference temperature: 30oC  
Basic runway length: 800m  
Highest point along the length: RL 98  
Lowest point along the length: RL 95  
(CO1) [Comprehension]
6. What are the two types pavements? Explain with neat sketch.  
(CO2) [Comprehension]

7. Explain the commonly seen airport markings. (CO2) [Comprehension]
8. What are the different ways to classify harbours? (CO3) [Comprehension]
9. What are the advantages and disadvantages of water transport? (CO3) [Comprehension]

### PART C

#### ANSWER ALL THE QUESTIONS

2 X 15M = 30M

10. a) What are the factors affecting the design of airport pavements?  
b) Design a flexible pavement with the following data:  
Area of plunger = 19.6cm<sup>2</sup>  
Load at 2.5mm penetration = 45kg  
Load at 5mm penetration = 65kg  
Moorum sub-base CBR = 25%  
WBM base CBR = 85%  
Expected traffic = 650 vehicles per day (CO2) [Application]
11. What are the different facilities provided in all major ports? (CO3) [Application]