

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET A**

**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 :** 11-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. Determine the turning radius of a taxiway for an aircraft with a wheel base of 27m, and distance between the mid-point of main gear and pavement edge as 9m, for a design speed of 70kmph. Assume coefficient of friction as 0.14 and width of taxiway as 20m  
(CO1) [Knowledge]
2. What are the drawings to be prepared before starting an airport construction?  
(CO1) [Knowledge]
3. List the various types of airport lighting.  
(CO2) [Knowledge]
4. What are the different types of dry docks?  
(CO3) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**5 X 10M = 50M**

5. Explain the various surveys conducted before the construction of an airport.  
(CO1) [Comprehension]
6. What are the systems of aircraft parking followed at the airport premises? Explain with sketch.  
(CO2) [Comprehension]

7. What are the different types of failures in flexible pavement?  
(CO2) [Comprehension]
8. What are the advantages and disadvantages of water transport?  
(CO3) [Comprehension]
9. What are the requirements of a good harbour?  
(CO3) [Comprehension]

### PART C

#### ANSWER ALL THE QUESTIONS

2 X 15M = 30M

10. a) What are the types of aircraft parking adopted near the terminal building?  
b) An airport has 5 gates which are available for all the aircraft. It serves three classes of aircraft having mix and average occupancy time during peak hour as follows:

Aircraft Class	Mix (%)	Average Occupancy Time in Minutes
1	20	60
2	25	45
3	25	30
4	30	20

If the maximum gate utilization factor is 50%, find the capacity of the gates at this airport to process the aircraft.

(CO2) [Application]

11. a) Define breakwater.  
b) What the forces considered for the design of a breakwater?  
c) Explain the different types of breakwater.

(CO3) [Application]