

Reg. No. : **E N G G T R E E . C O M**

Question Paper Code : 20474

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth Semester

Civil Engineering

CE 3025 — AIRPORTS AND HARBOURS

(Regulations 2021)

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Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Show the outline of ICAO master planning process.
2. List the general classification of airport.
3. State the role of taxiway.
4. Classify the cases that are to be considered in deciding the basic runway length.
5. Define wind rose diagram.
6. Classify the elements of airport lightings.
7. What is meant by port?
8. State the role of Jetties.
9. How is Inland water transport different from sea transport?
10. List the shore protection methods followed.

PART B — (5 × 13 = 65 marks)

11. (a) (i) Describe the points to be considered for the site selection of airports. (6)
- (ii) Summarize briefly the various geometric of the runway as recommended by the ICAO. (7)

Or

- (b) Discuss the advantages disadvantages of air transportation and list the aircraft characteristics for airport planning.

12. (a) Discuss in detail about
- (i) Various design factors to be considered in determining the thickness of pavement. (6)
 - (ii) Special consideration for pavement design. (7)

Or

- (b) (i) The length of runway under standard condition is 1620 m. The airport site has an elevation of 270 m. Its reference temperature 32.90°C. If the runway is to be constructed with an effective gradient of 0.20%. Determine the corrected runway length. (6)
 - (ii) Analyze the cases usually considered in determining the basic runway length. (7)
13. (a) What are the different types of terminals? Explain its concepts with neat sketch. (13)

Or

- (b) Distinguish between Type I and Type II wind rose diagrams. Explain how the optimum runway orientation is determined? (13)
14. (a) Draw a net sketch of a harbour layout and show the various components. Mention the objectives of each. (13)

Or

- (b) (i) What are the function of wet docks? Explain with sketches, their working and main features. (6)
 - (ii) Bring out the difference between a port and a harbor. What are the requirements of good port? (7)
15. (a) Explain clearly about the coastal regulation zone 2011. (13)

Or

- (b) Explain about the wave action on coastal structures and coastal protection works. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Explain the various aircraft parking systems involved in airport. Give all in detail.

Or

- (b) Explain the need of air traffic control. Enumerate the various features involved in air traffic control network system.