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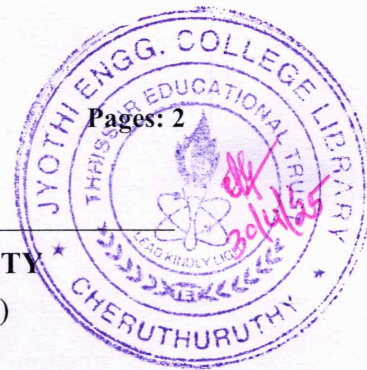
Pages: 2

Reg No.: _____

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (R,S) Exam April 2025 (2019 Scheme)



Course Code: CET438

Course Name: AIRPORT, SEAPORT AND HARBOUR ENGINEERING

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

- | | | |
|----|--|-----|
| 1 | Define turning radius of an aircraft. | (3) |
| 2 | What are the characteristics of a well-planned airport layout? | (3) |
| 3 | What is basic runway length? | (3) |
| 4 | What are the factors controlling taxiway layout? | (3) |
| 5 | What are the primary functions of air traffic control devices? | (3) |
| 6 | Draw a typical sketch showing the general pattern of an airport. | (3) |
| 7 | What are the requirements of a good harbour? | (3) |
| 8 | Distinguish between natural harbour and artificial harbour. | (3) |
| 9 | List down the desirable features of a dock. | (3) |
| 10 | Explain the functions of navigational aids of a harbour. | (3) |

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

- | | | |
|----|---|-----|
| 11 | a) Explain the characteristics of an aircraft. | (7) |
| | b) Explain the effect of noise on airport planning. | (7) |

OR

- | | | |
|----|---|-----|
| 12 | a) Explain in detail the components of airport. | (7) |
| | b) What are the four phases recommended by FAA to prepare the master plan of airport? | (7) |

Module II

- | | | |
|----|---|-----|
| 13 | a) Explain the geometric standards given by ICAO for runway design. | (7) |
| | b) Explain the procedure of fixing orientation of runway using wind rose diagram. | (7) |

OR

- 14 a) Describe various aspects to be considered while planning a terminal building for an airport. (7)
- b) The runway length required for landing at sea level in standard atmospheric conditions is 3000m. Runway length required for take-off at a level site at sea level in standard atmospheric conditions is 2500m. Aerodrome reference temperature is 25°C and that of the standard atmosphere at aerodrome elevation of 150m is 14.025°C. If the effective runway gradient is 0.54 percent, determine the runway length to be provided. (7)

Module III

- 15 a) Write short notes on Wind direction indicator and Landing direction indicator. (7)
- b) Explain in brief the need of air traffic control. (7)

OR

- 16 a) Differentiate marker beacon and airway beacon. (7)
- b) What are the various features of Instrument landing System (ILS)? (7)

Module IV

- 17 a) Explain characteristics of good harbour. (7)
- b) Mention the factors which govern the choice of site for a harbour. (7)

OR

- 18 a) Write short notes on (i) Light house (ii) Beacon signals in a harbour. (7)
- b) Classify harbours based on protection needed and utility. (7)

Module V

- 19 a) Explain with the help of diagram the working of the lock gate and passage. (7)
- b) Explain the functions and design considerations of wet docks. (7)

OR

- 20 a) What are the advantages and disadvantages of floating dry dock? (7)
- b) What are the forces acting on a graving dock? (7)
