

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (R,S)(FT/PT/WP) Examinations April 2026 (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

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| 1 | What are the factors that influence the airport layout? | (3) |
| 2 | Mention any three components of an aircraft? | (3) |
| 3 | What are the data required for the orientation of runways? | (3) |
| 4 | Define wind coverage and calm period? | (3) |
| 5 | What are the main aims of an efficient air traffic control system? | (3) |
| 6 | Explain the purpose of installing visual aids at the airport? | (3) |
| 7 | Draw the sketch of natural harbour and artificial harbour. | (3) |
| 8 | Give the requirements of Harbour of refuge and commercial harbour. | (3) |
| 9 | Distinguish between tidal basin and wet dock. | (3) |
| 10 | What are the principal forces acting on a graving dock? | (3) |

PART B

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

Module I

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|----|---|-----|
| 11 | a) What are the characteristics of a conventional type airport? | (7) |
| | b) Explain the principles of planning an airport as per ICAO and FAA recommendations. | (7) |

OR

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| 12 | a) Explain about the classification of Airports. | (7) |
| | b) What are the various factors to be considered while selecting site for an airport? | (7) |

Module II

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|----|---|-----|
| 13 | a) Explain in detail the concepts of planning the terminal building, with the help of diagram | (7) |
| | b) Explain the corrections to be applied to get the actual length of runway. | (7) |

OR

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| 14 | a) Describe various geometric standards for the taxiway with special reference to the recommendations of the ICAO. | (7) |
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- b) The length of runway under standard conditions is 1620m. The airport site has an elevation of 270m. Its reference temperature is 32.94°C. If the runway is to be constructed with an effective gradient of 0.20 percent, determine the corrected runway length. (7)

Module III

- 15 a) Write short notes on Runway lighting and Taxiway lighting? (7)
b) List the six groups of the airport markings. Explain any two. (7)

OR

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

Module IV

- 17 a) Mention the factors which govern the choice of site for a harbour. (7)
b) Enumerate the features of a harbour. (7)

OR

- 18 a) Explain with neat sketches how mound breakwaters are protected from wave action. (7)
b) Give the sketches of (i) Light house (ii) Mooring buoys (iii) Beacon signals in a harbour. (7)

Module V

- 19 a) What are the various types of docks? Explain the primary functions of docks. (7)
b) Explain with the help of diagram dock entrances. (7)

OR

- 20 a) Explain the primary functions of wet dock and dry dock. Elaborate on the various types of wet docks. (7)
b) What are the advantages and disadvantages of floating dry dock? (7)
