G 1471

(Pages : 2)

B.TECH. DEGREE EXAMINATION, MAY 2016

Sixth Semester

Branch : Civil Engineering

CE 010 606 L03—AIRPORT ENGINEERING—(Elective I) [CE]

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Give the classification of airports as per ICAO.

2. Explain Windrose diagram.

3. What are the factors affecting Airport capacity ?

4. Explain load classification number system.

5. Mention various factors affecting taxiway design.

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

1. Explain the importance of airport planning.

2. What is basic runaway length ? Discuss the three cases to be considered.

3. What are the main aims of an efficient air traffic control system ?

4. Explain CBR method of designing the flexible pavement.

5. What are the purposes for installing the visual aids at the airport ?

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each question carries 12 marks.

1. What are the characteristics of a conventional type aircraft.

Or

2. (a) How are aerodromes classified in India ?

   (b) What is the economic significance of air transport ?

Turn over

3. The length of runway under standard condition is 2300 m. The airport is to be provided at an elevation of 475 m above MSL. Airport reference temperature is 20°C. The runaway provides gradients of +1.00%, – 0.5%, + 0.75%, + 0.5% and – 1.05% and chainage 300, 700, 1200, 1650, 2100 to 2400 m from one end. Determine the actual length of Runaway as per ICAO.

Or

4. (a) What are the factors to be considered in the Geometric design of a runaway ?

   (b) Explain :

      (i) Head wind ;

      (ii) Cross wind component.

5. (a) What are the different systems of aircraft parking ? Mention the importance of each system.

   (b) Find the capacity of 10 gates for exclusive use of three classes of aircrafts using the following data.

Aircraft Type		Gate Group	Number of Gates	Mix %	Service time
A	...	I	5	30	60
B	...	II	3	50	45
C	...	III	2	20	30

Or

6. Describe in details with sketch, the Instrument landing system.

7. (a) Mention several types of the overlay aircraft pavements.

   (b) How are the pavements for light aircraft provided ?

Or

8. Describe in detail the LCN method of pavement design.

9. (a) What are the factors which govern the layout of taxiways ?

   (b) Determine the radius of taxi way for a supersonic aircraft to negotiate the curve at a turning speed of 60 kmph the wheel base is 30 m. Wheel treat is 7.2 m assuming coeff. friction 0.15.

Or

10. Discuss the various elements of the airport lighting, with need sketches.

(5 × 12 = 60 marks)