

Seat
No.

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CAI1329

Transportation Engineering - II (New) (1090)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **any two** subquestions from each unit.
5. Non - programmable calculator is allowed.

UNIT - I

1. a) Briefly explain the engineering surveys needed for locating a new highway. **10**
b) A car travelling at 22.22 m/s is overtaking another car moving at 16.67m/s on a two lane undivided highway. Assuming an acceleration of the overtaking car is 0.7 m/s^2 . **10**
Calculate-
i) Minimum overtaking sight distance.
ii) Minimum & desirable length of overtaking zones.
c) i) Explain necessity & object of highway planning. **5**
ii) Explain camber. Discuss the factors on which amount of camber to be provided depends. **5**

UNIT - II

2. a) What are the common causes of road accidents ? Explain the three 'E' S for prevention of accidents. **10**
b) Enumerate the various methods of flexible pavement design. Explain group index method with its limitations. **10**
c) i) What is PCU ? On what factors it depends. **5**
ii) Write a short note on Highway drainage. **5**

UNIT - III

3. a) What are the factors to be considered while selecting a site for airport. **10**
- b) Calculate the actual length of runway from the following data. **10**
Airport elevation = 115 m.
Airport reference temperature = 30°C
Basic runway length = 700m
Highest point along the length = 114.10 m
Lowest point along the length = 100.20 m.
- c) Write note on : **10**
i) Heliport.
ii) Apron & Hanger.

UNIT - IV

4. a) Enlist different forces to be considered for bridge design. **10**
Explain any two in detail.
- b) What do you mean by economic span of a bridge ? Derive an expression for the same. What assumptions are made in this derivation. **10**
- c) i) What is a free board ? Why is it provided ? Give its values for different types of bridges. **5**
- ii) What do you mean by effective linear waterway ? How is it determined. **5**

UNIT - V

5. a) What is mean by bridge bearing ? State the functions of bearing. **10**
Explain any one type of bearing with neat sketch.
- b) What are the different types of culverts ? Discuss with neat sketch. **10**
- c) Write note :- **10**
i) Continuous Bridge.
ii) Cable - stayed Bridge.
