



SE-7345

B. E. IV (Sem - VII) (Civil) Examination

April / May - 2011

Transportation Engg. II

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दशांशवैध निशानीवाणी विगतो उत्तरवही पर अवश्य लिखनी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. 4 (Sem - 7) (Civil)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Transportation Engg. - 2"/>	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="3"/> <input type="text" value="4"/> <input type="text" value="5"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="Nil"/>	<input type="text"/>
	Student's Signature

- (2) Attempt all the questions.
- (3) Figures to the right indicate full marks.
- (4) Draw neat and labelled sketch wherever necessary.
- (5) Assume missing data suitably and mention them clearly if required.

- 1 Answer the following questions : (any two) 12
- (a) Discuss road planning in India.
  - (b) Discuss comparison of Roman roads and Macadam roads.
  - (c) Explain road user characteristics.

- 2 (a) Explain 'PIEV' theory. 3

OR

- (a) Explain 'PCU'.
- (b) Attempt any **three** of following : 15
  - (1) Explain cross sectional elements of highway
  - (2) An ascending gradient of 1 in 50 meets a descending gradient of 1 in 80. Determine the length of summit curve for SSD 200 m and OSD 380 m. Design speed is 80 kmph.
  - (3) Calculate the stopping sight distance for a design speed 40 kmph. The coefficient of friction between the road and the tyre is 0.42 and reaction time is 3 seconds.
  - (4) Discuss maintenance of bituminous road.
  - (5) Explain 3-Es for reduction in accident rates.

- 3** Write short notes : (any **four**) **20**
- (1) Spot speed study
  - (2) Surface and subsurface drainage
  - (3) Traffic control devices
  - (4) Concept of overlays
  - (5) Vehicular characteristics
  - (6) Gradient.

- 4** (a) Design a tie bar system for a **5**
- Cement concrete pavement
  - Slab thickness = 20 mm
  - Slab width = 3.35 m.
  - No. of lanes to be tied = 2
  - Coefficient of friction between slab and subgrade = 1.5
  - Weight of slab = 480 kg/m<sup>2</sup>
  - Allowable working stress in steel = 1400 kg/cm<sup>2</sup>
  - Max. permissible bond stress :  
Plain bars : 17.5 kg/cm<sup>2</sup>  
Deformed bars : 24 kg/cm<sup>2</sup>
- (b) Enlist various methods of flexible pavement design. **6**  
Explain any one in detail.

**OR**

- (b) Enlist various tests carried out on aggregate. Explain any one in detail.
- (c) What are the desirable properties of soil ? Enlist **6**  
various tests of soil.

**OR**

- (c) Differentiate between flexible and rigid pavement.
- 5** (a) Explain construction of bituminous bound macadam. **18**
- (b) What is seal coat ? What are the functions of seal coat ?

**OR**

- (b) Discuss about construction of low cost roads.
- (c) Discuss about WBM roads.

**OR**

- (c) Explain sheet and Mastic asphalt.

**6** Write short notes : (any **three**)

**15**

- (1) Project report
  - (2) Highway in desert area
  - (3) Investigations for highway project
  - (4) Level of service
  - (5) One way system.
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