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S.Y. B.Tech. (Civil Engineering) (Semester - VII) (CBCS) Examination, December - 2023

ESE PCC-CV704 : TRANSPORTATION ENGINEERING - I

Sub. Code : 83735

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Day and Date : Thursday, 7 - 12 - 2023 **Total Marks : 70**

Time : 10.30 a.m. to 1.00 p.m.

Instructions :
1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Assume suitable data if necessary and state them clearly.**
4) **Answer shall be supported by adequate sketches.**

SECTION - I

Q1) Attempt all questions.

a) Explain the considerations while aligning roads in hilly areas. **[6]**

b) Explain 'Scope of Highway Engineering'. **[6]**

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Q2) Attempt all questions.

a) Calculate the O.S.D. for a two-way road for which design speed is 80 kmph. Assume the rate of acceleration as 3.15 kmph/sec and difference between the speeds of fast and slow moving vehicles is 20 kmph,Assume the required data. **[6]**

b) Draw cross-section of a road and explain the elements. **[5]**

OR

b) Explain 'Overtaking Sight Distance'. How O.S.D. is calculated for One-way traffic road and Two-way traffic road? **[5]**

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Q3) Attempt any two questions.

a) Differentiate between Flexible Pavements and Rigid Pavements with sketches. **[6]**

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b) Explain design steps of IRC 37-2001 for flexible pavement. **[6]**

c) Write a note on VDF and EWLF. **[6]**

SECTION - II

Q4) Attempt all questions.

a) Differentiate between Flexible Pavements and Rigid Pavements with sketches. **[6]**

b) Explain the construction steps for SDBC. **[6]**

Q5) Attempt all questions.

a) Explain the use of 3E's of road safety. **[6]**

b) Explain with neat sketches Surface and subsurface highway drainage. **[5]**

OR

b) Enlist all Traffic studies and explain any one. **[5]**

Q6) Attempt any two questions.

a) Explain sequence of tunneling operations in hard rock. **[6]**

b) Explain Shield method of Tunneling in soft grounds. **[6]**

c) Enlist different methods of tunneling in soft rock and explain needle beam method in detail. **[6]**

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