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Seat No.	

Total No. of Pages : 2

T.E. (Civil Engineering) (Semester - V) (New) Examination, December - 2015

TRANSPORTATION ENGINEERING - I

Sub. Code : 66239

Day and Date : Thursday, 17 - 12 - 2015 **Total Marks : 100**

Time : 2.30 p.m. to 5.30 p.m.

Instructions : 1) **All questions are compulsory.**

2) **Figures to the right indicate full marks.**

SECTION - I

Q1) a) What are the various methods of classifying the roads? Briefly outline the classification based on location and function as suggested in the Nagpur road plan. [9]

b) Calculate the super elevation to be provided for a horizontal curve with radius, 400 m for a design speed of 90 kmph in plain terrain. Comment on the results. What is the coefficient of lateral friction mobilized if superelevation is restricted to 0.07? [8]

OR

What are the factors that contribute to select the alignment of roads in plains as well as hill terrain? How do geological conditions affect the location?

Q2) a) Draw a sketch of flexible pavement cross section and show the component parts.Enumerate the functions and importance of each component of pavement. [9]

b) Explain the CBR method of pavement design. How is this method used in determining the thickness of component layers? [8]

OR

What are various tests carried out on bitumen? Briefly mention the principle and uses of each.

P.T.O.

Q3) a) What are the different causes of traffic accidents? Discuss briefly. **[8]**

b) Write down the construction steps of water bound macadam road with its cross-section in filing. **[8]**

OR

Briefly discuss different types of drains used in hill roads with sketch.

SECTION - II

Q4) a) What are the requirements of an ideal airport location? Explain. **[9]**

b) Explain the use of wind rose diagram in deciding runway orientation. **[8]**

OR

What are the various parameters to be considered while planning for airport drainage? Discuss.

Q5) a) What are the requirements of a good port? Describe. **[8]**

b) Why dredging is required in ports and harbors? What are different types of devices used for dredging purposes? Describe with the help of neat sketches. **[8]**

OR

Differentiate between a dry dock and a wet dock. What are the requirements and facilities needed for a dock? Support your answer with neat sketches.

Q6) a) During setting out of tunnel briefly bring out how do you set out tunnels center line on the ground surface and translate center line from surface to underground. **[9]**

b) Explain shield method of tunneling in soft grounds. **[8]**

OR

Briefly write a note on ventilation in tunnels.

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