SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | | **Total number of pages:[2]**

B.Tech. || CIVIL || 5th Sem
TRANSPORTATION ENGINEERING -I
Subject Code: BTCE-504A

Paper ID:

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**
- **Additional instructions, if any**

PART A (10x 2marks)

Q. 1. Short-Answer Questions:

a) Explain the importance of preventative maintenance of road works.
b) Draw a typical cross section of a highway on embankment and show the various flexible pavement layers. List the functions of each component.
c) What are the road classification as per Nagpur road plan.
d) What are the various special care to be taken while aligning hill roads.
e) What are the objects of reconnaissance in engineering surveys?
f) What are the various factors on which overtaking sight distance depends?
g) How would you describe origin and destination study.
h) What are the advantages and disadvantages of traffic signals?
i) What are benefits of soil compacting in highway engineering?
j) What are the quality control tests during the construction of bituminous concrete layer?

PART B (5×8marks)

Q-2 What are the objects of highway geometric design? List the various geometric elements to be considered in highway design.

Or

What are the various surveys to be carried out before planning before planning a highway system for a given area? Explain briefly. CO1

Q-3 What are the effects of speed on horizontal alignment design? What are design speeds for different classes of roads specified by the IRC?

Or

Derive an expression for finding the extra widening required on horizontal curve. CO2

Q-4 Mention the specifications of materials and construction steps for wet mix Macadem base course.

Or

List the requirements and specifications of the granular sub-base course of a flexible pavement . CO3

Q-5 Explain with sketches the methods of controlling seepage flow.

Or

Explain with sketches the methods of providing capillary cut off to control capillary rise of water. CO3

Q-6 Indicate the maximum dimensions and weight of vehicles allowed in India,as specified by IRC .Discuss the effect of wider vehicles on the roads.

Or

Indicate how the traffic volume data are presented and the results interpreted for use in traffic engineering design. CO4