

No. of Printed Pages : 4

BICE-020**B. Tech. Civil Engineering (BTCLEVI)****Term-End Examination****June, 2019****BICE-020 : TRANSPORTATION ENGINEERING-II***Time : 3 Hours**Maximum Marks : 70*

Note : Attempt any seven questions. All questions carry equal marks. Assume data suitably, if missing. Use of scientific calculator is allowed.

1. (a) What are the basic requirements of Highway Alignment ? 5
- (b) Compare the development of Indian Roads between pre-independence and post-independence era. 5

2. (a) What do you understand by highway alignment ? Explain various factors controlling highway alignment. 5
- (b) Describe the PIEV theory and specify the total reaction time as per the IRC recommendations. 5
3. What are the requirements of a good intersection ? Compare the functionalities of rotaries and signals for controlling the traffic at road junctions. 3, 7
4. (a) Define the Overtaking Sight Distance (OSD). 2
- (b) What is the purpose of traffic signs ? Discuss various traffic signs with the help of neat sketches. 8

5. Describe the various factors to be considered for the design of pavements. 10
6. (a) Explain, in brief, the characteristics of surface and sub-surface of road drainage with neat sketches. 5
- (b) Discuss the factors to be considered for designing the road drainage. 5
7. (a) Define traffic volume. 2
- (b) Explain the objectives and various methods for carrying out traffic volume studies. 8
8. (a) Discuss the factors that affect PCU values. 5
- (b) Explain the relative advantages and disadvantages of over-pass and under-pass. 5

9. Define expressway. Explain the surveys to be conducted for constructing an expressway. 10
10. Write short notes on any *two* of the following : 5 each
- (a) Value of travel time saving
 - (b) Properties of road aggregates
 - (c) GIS in traffic engineering
 - (d) Traffic management measures