

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)

B.Tech.Sem - VIII CIVIL :SUMMER- 2022

SUBJECT : INFRASTRUCTURE ENGINEERING

Day : Monday
Date : 20-06-2022

S-13640-2022

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data if necessary.

- Q.1** a) Discuss salient features of Bombay road plan. [05]
b) What is meant by highway alignment? Explain the four guideline principles to be adopted for an ideal highway alignment. [05]

OR

- a) Discuss salient features of Lucknow Plan. [05]
b) Discuss important factors which affect the highway alignment. [05]

- Q.2** a) Explain different types of cambers. [05]
b) Discuss the term design speed. [05]

OR

- a) Define road gradient and explain its various types. [05]
b) Briefly describe types of horizontal curves. [05]

- Q.3** a) Compare the characteristics of flexible pavement and rigid pavement. [05]
b) Explain design parameters for rigid pavement. [05]

OR

- a) Explain different types of bitumen. [05]
b) Design a flexible pavement with the following data: [05]
i) Area of plunger = 19.6 cm²
ii) Load at 2.5 mm penetration = 55 kg
iii) Load at 5 mm penetration = 78 kg
iv) Murum sub base C.B.R. = 20%
v) W.B.M. base C.B.R. = 90%
vi) Expected traffic = 700 vehicles per day

- Q.4** a) Discuss different types of rails used in railway track. [05]
b) What are the problems caused by multigauge system? [05]

OR

- a) Discuss basic requirements of an ideal alignment. [05]
b) Explain requirements of good railway track. [05]

- Q.5** a) What is meant by grade compensation for curves? [05]
b) Explain the term negative superelevation. [05]

OR

- a) What essential purposes are served by signaling and interlocking? [05]
b) Explain concept of monorail. [05]

- Q.6** a) What are the functions of Airport Authority of India? [05]
b) What are the design objectives for terminal building? [05]

OR

What are the geometric standards for taxiway? Explain in detail. [10]

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