

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)  
B.Tech.Sem - VIII CIVIL : WINTER- 2022  
SUBJECT : INFRASTRUCTURE ENGINEERING

Day : Monday

Time : 02:30 PM-05:30 PM

Date : 28-11-2022

W-13640-2022

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 the concept of BOT. [05]  
b) Give the classification of roads according to function and location. [05]

**OR**

- a) Discuss the salient features of Nagpur Plan. [05]  
b) Describe in detail some of the typical failures of flexible pavement. [05]

- Q.2** a) With the help of neat sketch, describe how the super elevation is calculated. [05]  
b) Differentiate between stopping sight distance and overtaking sight distance. [05]

**OR**

- a) Derive an expression for widening of pavement on horizontal curves. [05]  
b) Mention the recommended land widths for different classes of roads. [05]

- Q.3** a) Draw the C.B.R. design chart adopted by IRC. [05]  
b) Describe briefly the Marshal method of bituminous mix design. [05]

**OR**

- a) Discuss the functions of bituminous materials. [05]  
b) Explain rigid pavement. [05]

- Q.4** Discuss sketches of fish plate, dog spikes, fang bolt and bearing plate. [10]

**OR**

Draw the cross section of rail track and explain functions of each unit. [10]

- Q.5** a) Explain the concept of metro. [05]  
b) Explain the technique of inter locking in a railway system. [05]

**OR**

Explain the functions and locations of any five signals. [10]

- Q.6** a) Differentiate between runway and taxiway. [05]  
b) Enlist different runway patterns and explain any two of them. [05]

**OR**

What is apron? Discuss factors affecting the size of apron. [10]

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