SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | |

Total number of pages:02

Total number of questions:06

B.Tech. || CE || 7th Sem

Bridge Engineering

Subject Code: BTCE-820

Paper ID:

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

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**

PART A **(10 × 2 = 20)**

Q. 1. Short-Answer Questions:

a) Name the components of a Bridge..

b) What factors you will consider during the appropriate site selection for a bridge.

c) What are different types of loads to be considered while designing road bridges.

d) What do you mean by Rigid Frame bridges.

e) What are Arch Bridges.

f) Give two functions of Piers.

g) Explain essential requirements of a good foundation.

h) What is the importance of providing bearings in bridges.

i) How would you assure the quality for bridge projects.

j) Name the major causes of Bridge failures.

PART B **(5 × 8 = 40)**

Q. 2. What is the importance of Bridges. How the bridges are classified based on different parameters. CO1

OR

Explain the different methods for determination of design discharge for River Bridge.

Q. 3. Explain the IRC Class AA Loading and IRC Class 70R Loading in detail. CO2

OR

Explain the different types of stresses to be considered while designing road

bridges and culverts.

Q. 4. Name the different types of reinforced concrete bridges. Explain any three types of reinforced concrete bridges. CO3

OR

Design a steel beam culvert with a clear span of 5m to carry a broad gauge single track on main line.

Q. 5. What is a pier. What are different types of loads and forces to be considered in the design of piers. CO4

OR

Explain the different types of bearings provided in bridges in detail.

Q. 6. Explain the different causes of Bridge failures in detail. CO5

OR

How would you assure the quality for bridge projects. Explain the different four classes of quality assurance.