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**School of Engineering****M.Tech Structural Engineering  
Mid Term Examination - May 2024****Duration : 90 Minutes  
Max Marks : 50****Sem II - G1PC204T - Design of Concrete Bridges**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Explain the typical steps involved in the design of an RC bridge as per IRC? K2 (2)
- 2) How is the load-carrying capacity of a bridge determined? K1 (3)
- 3) Design a T-beam bridge girder to support a given set of loads from various vehicle types. K2 (4)
- 4) Explain the "effective width method " of bridge design . K2 (6)
- 5) Identify the concept of pre stressing and its application for long span bridges. K3 (6)
- 6) Identify the different types of deck slab construction methods used in T-beam bridges? K3 (9)
- 7) Elaborate the influence of lane distribution on the bending moments in T-beam bridge design, considering mixed traffic scenarios. K4 (8)
- 8) Elaborate the procedures for calculating bending moments in RC bridges under concentrated loads using the effective width method. K4 (12)

**OR**

- Analyze the lateral forces acting on a tall pier during a strong wind event. K4 (12)