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Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards E-I & II) (Sem.-7,8)

BRIDGE ENGINEERING

Subject Code : BTCE-820

M.Code : 71879

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

Q1. Write briefly :

- Draw a neat sketch for a well foundation.
- What are 'elastomeric bearings'?
- Describe the usual type of bridge piers.
- Under what circumstances rigid frame bridge is provided?
- What is the minimum time span after which a bridge requires any kind of maintenance?
- Why wind loads are considered for the design of bridges?
- Differentiate between box culvert and pipe culverts.
- Why expansion joints are provided in bridges?
- Define the term 'fixed bearings'.
- What is the significance of studying bridge engineering?

SECTION-B

- Q2. Would you prefer steel bridge or a RCC bridge for a canal on a state highway? Elaborate your answer.
- Q3. What essential data is required for the design of bridge?
- Q4. Why bearings and joints are provided in bridges? Discuss their significance.
- Q5. What are the various causes of bridge failures and how they can be avoided?
- Q6. Discuss the various types of stresses that arises in bridges.

SECTION-C

- Q7. With the help of neat sketches differentiate between the shallow, pile and well foundations.
- Q8. Under what circumstances box girder bridge is provided? Also discuss the advantages and disadvantages of providing truss bridges.
- Q9. Briefly discuss the following terms :
- a) Carriageway width
 - b) Wheel load
 - c) Buoyancy effect
 - d) Approach slab

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.