

COURSE CODE: 11M1WCE133

MAX. MARKS: 15

COURSE NAME: Bridge Engineering

COURSE CREDITS: 3

MAX. TIME: 1 Hr

*Note: (i) Carrying of mobile phone during examinations will be treated as case of unfair means. Sharing of any material is not allowed. Assume necessary data but must be clearly mentioned. One A4 cheat sheet is allowed*

Q1. What is the need of a Bridge? Briefly explain various characteristics of selecting a sites for bridge construction. [1+2 = 3 Marks]

Q2. Explain different classification of Bridges with neat sketch. [3 Marks]

Q3. (a) Explain about scour depth in Pier and Abutment.

(b) The design discharge under a bridge is 300 cu.m/sec. If the river bed has a deep layer of course sand. Determine the maximum depth of scour under pier. [1.5+1.5 = 3 Marks]

Q4. Design a slab culvert over an effective span of 7.0 m for the following data:

- Clear carriage way width = 7.0 m
- Width of kerb = 650 mm on either side
- Loading class – IRC Class A
- Thickness of wearing coat = 80 mm
- Concrete grade – M25
- Steel grade – Fe415.

[6 Marks]

-----End-----