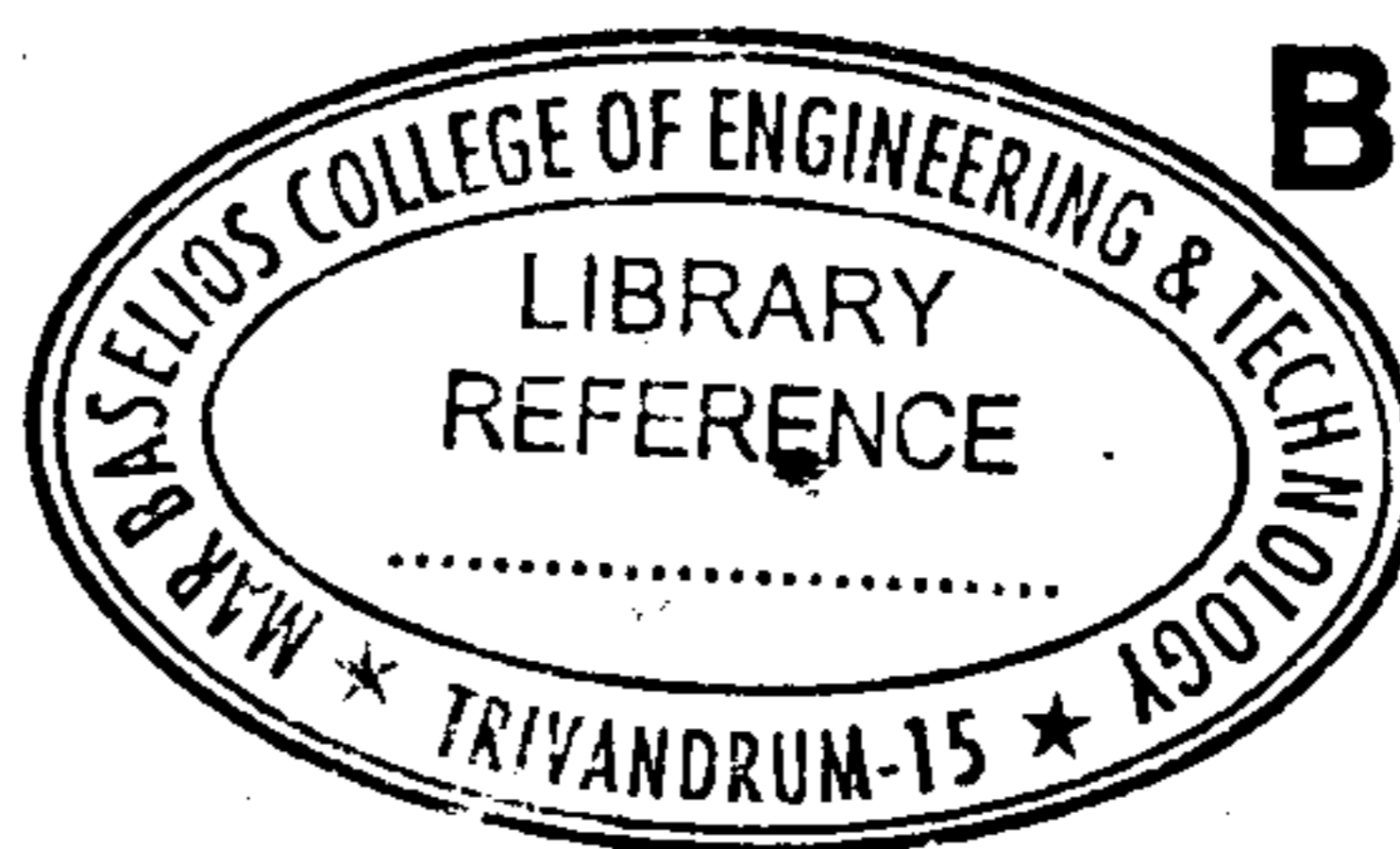




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B – 2856



Reg. No. :

Name :

**Second Semester M.Tech. Degree Examination, December 2016
(2013 Scheme)**

CSD 2001 : DESIGN OF BRIDGES

Time: 3 Hours

Max. Marks : 60

Instructions : Answer *any two* questions from *each* Module.
Assume any missing data suitably.
Use of relevant IS Codes permitted.

MODULE – I

1. Discuss the different types of foundations for bridges. 10
2. Explain the forces to be considered for the design of a bridge pier. 10
3. Design an elastomeric pad bearing for a R.C. T-beam bridge for the following data : 10
Max. D. L reaction per bearing = 250 kN
Max. L. L reaction per bearing = 500 kN
Longitudinal force due to friction per bearing = 33 kN
Effective span of girder = 16 m
Rotation at bearing of girder = 0.002 rad
Use M20 grade.

MODULE – II

4. Design an RC slab culvert for the following data : 10
Clear span = 7 m
Clear width of roadway = 7.5 m
Live load : Class AA tracked
Footpath on either side 1 m wide
Width of bearing = 0.4 m
Assume M25 and Fe 415.

P.T.O.



5. The slab panel of an R.C.C. T – beam and slab bridge is 2.5 m wide between main beams and 4 m long between cross girders. Design the R.C. slab for IRC class AA tracked vehicle. Use M25 and Fe 415. **10**
6. Design the intermediate support section of a double cantilever bridge to suit the following data : **10**
- Total length of bridge = 77 m
Road width 7.5 m between kerbs
Footpaths = 1.8 m on either sides
Spacing of T-beams = 1.8 m
Loading IRC class AA tracked vehicle
Use M25 and Fe 415.

MODULE – III

7. Explain the design procedure for a post tensioned prestressed concrete slab bridge deck. **10**
8. Design a welded plate girder bridge to suit the following data : **10**
- Effective span of the girder = 25 m
Superimposed load = 35 kN/m.
9. Explain the design principle of a steel trussed bridge. **10**

