

GOVT. COLLEGE OF ENGINEERING, AURANGABAD

(An Autonomous Institute of Government of Maharashtra)

End Semester Examination

ME FT (REV) - AM546 Bridge Engineering

Course: M. Tech.

Academic Year: 2016-2017

Duration: Three hours

Instructions:

Programme: Structural Engineering

Max. Marks: 60

17 DEC 2016

1. Figures to the right indicate full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/ sharing of stationary, calculator etc. not allowed.
5. Use of, IS: 456, IS: 1343 and IRC codes, is permitted.
6. Assume suitable data, if required.

- Q.1** Find the maximum design bending moment and shear force for 10 m two lane slab bridge of 7.5 m width having 1.0 m footpath on either side for Class 70 R tracked load. [15]
- Q.2** Design the main girder of the slab and girder bridge having span 20 m with following details – [20]
Loading - Class AA wheelcd, Width of road 7.5 m, Wearing coat – 100 mm, Footpath - 1.0 m on either side, Cross girder spacing – 5 m, M 30, Fe 415
- Q.3** Suggest material and structural arrangement to be used for a through type railway bridge. Elaborate the design procedure for this bridge. [10]
- Q.4a** Draw the cross section of the open web girder for two lane roadway bridge of 7.5 m width and explain the role of the components. [05]
- Q.4b** What are the forces involved in parapet wall design? How to assess these forces on the parapet wall? [05]
- Q.4c** What is the necessity of the bearing? What are the different types of bearings used for bridges? [05]