

Mid-West University
Examinations Management Office

End Semester Examinations 2081

Master level/ M. Sc. (Structural Engineering)/ 3rd Semester

Full Marks: 60

Time: 3 hours

Pass Marks: 30

Subject: Repair and Retrofitting Techniques of Structures (ELE537/MSTR503)

- Attempt all the questions.
 - Figures in the margin indicate full marks.
 - Assume suitable values, with a stipulation, if necessary.
 - Candidates are required to answer the questions in their own words as far as possible.
 - IS15988-2013 is Allowed to bring in exam hall.
1. Define Repair, Renovation, Restoration, Rehabilitation and Retrofitting. Explain in details the difference between them & where it is used? [6]
 2. In which type of components and under what conditions "Jacketing" is suitable for strengthening of structures. Explain the process as standard codes. [8]
 3. Explain the procedure of any nonlinear analysis to be applied for qualitative assessment in building retrofitting technique. [8]
 4. Explain basic principles of Seismic evaluation and Retrofit of structures. [6]
 5. Explain & Enlisted damaged Grade Assessment for Masonry and RC frame structures. [8]
 6. Difference between non-linear pushover static and Dynamic analysis. Describe the procedure of non-linear pushover analysis. Mention merits and Demerits of non-linear pushover analysis. [8]
 7. Explain in details different Visual Inspection method and NDT tests for strength estimation of concrete. [8]
 8. Can a building (an existing building) be protected from earthquake? Explain with suitable examples Retrofitting techniques for a building. [8]

The End