

MANIPAL UNIVERSITY**FIRST SEMESTER EXECUTIVE M. ARCH. (ADVANCED DESIGN)
DEGREE EXAMINATION – NOVEMBER 2017****SUBJECT: ARM 603 E - ADVANCED STRUCTURAL SYSTEMS AND CONSTRUCTION
TECHNIQUES**

Saturday, November 11, 2017

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer any FIVE full questions.

✍ Missing data be suitably assumed. Provide neat sketches wherever applicable.

1. Write a short note on any TWO:

- 1A. Seismic zones
- 1B. Detailing of openings in masonry structure
- 1C. Box action in masonry structure

(10 marks)

- 2A. Briefly comment on classification and application of Shell forms in building.
- 2B. Write a short note on “strong column and weak beam” concept as relevant to seismic resistant design of building.

(5+5 = 10 marks)

- 3A. Seismic resistant detailing of stone masonry structures.
- 3B. Comment upon significance of ductility in structural design. How is it ensured in detailing of RCC column structures?

(5+5 = 10 marks)

4. Write short note on any TWO:

- 4A. Membrane structures
- 4B. Truss systems
- 4C. Shear wall

(10 marks)

- 5A. List out the various structural systems for high rise building and selection criteria for the same.
- 5B. Briefly describe any one of the above listed system, highlighting the salient aspects.

(5+5 = 10 marks)

- 6A. Explain the concept of Prestress and its application to concrete structures.
- 6B. Briefly explain the salient difference between pre tensioning and post tensioning with significant applications of the same.

(10 marks)

