

MANIPAL ACADEMY OF HIGHER EDUCATION**SEVENTH/EIGHTH SEMESTER B. ARCH. DEGREE EXAMINATION – NOVEMBER 2018****ARC-14-409.4 – ADVANCED STRUCTURES (2014 SCHEME)****SUBJECT: ARC 409 – STRUCTURES VII (2010 SCHEME)****ARC 406 – STRUCTURES (2007 SCHEME)**

Monday, November 05, 2018

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

- ✗ Answer any FIVE FULL questions.
- ✗ Answer all parts of a question.
- ✗ Give sketches wherever necessary.

1A. Discuss the types of cable structures used in construction with the advantages and materials used for the same.

1B. Explain salient features of any cable structure example in architecture.

(6+4 = 10 marks)

2A. Explain advantages and applications of membrane structures in construction. Discuss any two forms of membrane structures.

2B. Give an inspiring architectural example for tensegrity and explain salient points.

(6+4 = 10 marks)

3. Discuss Pneumatic Structures in detail with reference to following points:

- i) Types ii) Advantages iii) Disadvantages
- iv) Materials v) Practical Application

(10 marks)

4A. What is breakwater? With neat sketches discuss different types of breakwaters. List the various forces considered in design of breakwater.

4B. Discuss salient features of complimentary structures used in marine construction.

(6+4 = 10 marks)

5A. What are composite structures? Explain characteristics of composite structures with an example.

5B. Explain properties, advantages and disadvantages of foam concrete and fibre reinforced concrete.

(5+5 = 10 marks)

6. Write short notes on following:

- 6A. Types of pile foundation
- 6B. Types of underground structures
- 6C. Tensegrity
- 6D. Graphene
- 6E. Sea Walls

(10 marks)

