

MANIPAL UNIVERSITY**SEVENTH SEMESTER B. ARCH. DEGREE EXAMINATION – NOVEMBER 2017****SUBJECT: ARC-14-409.4 – ADVANCED STRUCTURES (2014 SCHEME)****ARC 409 – STRUCTURES VII (2010 SCHEME)**

Wednesday, November 15, 2017

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

✍ Answer any FIVE FULL questions

✍ Any missing data may suitably be assumed.

1A. What are pneumatic structures? Under what circumstances are they preferred? List their advantages.

1B. Explain the salient feature of membrane structures. Sketch any three of the shape forms that are possible with membrane structures.

(5+5 = 10 marks)

2A. What is a Breakwater? With sketches explain the different arrangements of Breakwater. List the different forces to be considered in the design of Breakwater.

2B. What are Wharves? Explain different types of Wharves in brief.

(6+4 = 10 marks)

3A. What are cable structures? What are their benefits? Give a brief about types of cable structures.

3B. Explain the salient features of any cable structure example in Architecture.

(6+4 = 10 marks)

4A. Under what circumstances pile foundations are provided? Give a detailed classification of piles.

4B. Write a note on pile groups and spacing of piles.

(6+4 = 10 marks)

5A. Explain the properties of any two advanced materials of construction. Explain their usefulness in buildings.

5B. Give an inspiring architectural example made of composite materials and explain its salient features.

(6+4 = 10 marks)

6A. What are Tensegrity structures? Write a note on history of development of tensegrity structures. Sketch any two basic forms.

6B. Explain underground structures with respect to:

i) Areas of use

ii) Advantages

iii) Construction and operation

(5+5 = 10 marks)

