

MANIPAL UNIVERSITY**SECOND SEMESTER B. ARCH. DEGREE EXAMINATION – JULY 2017****SUBJECT: BUILDING SERVICES I (ARC-14-108)
(2014 SCHEME)**

Monday, July 10, 2017

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

- ✍ Answer any **FIVE** questions.
✍ Support the answers with sketches wherever necessary.

1. Explain the following water supply systems with neat sketches:

- 1A. Gravity system
1B. Gravity and pumping system
1C. Pumping system

(3+4+3 = 10 marks)

2A. Explain in detail any two types of solar water heaters.

2B. Write short notes on centralized water heating systems and where are they used.

(4+6 = 10 marks)

3A. What are the different classifications of traps based on shapes and uses?

3B. Explain the different types of traps with sketches and name their components.

(5+5 = 10 marks)

4A. What is subsoil drainage? What are the advantages and disadvantages of it?

4B. Mention the different systems of subsoil drainage along with sketches.

4C. Explain Herringbone subsoil drainage with a neat sketch.

(3+3+4 = 10 marks)

5A. Explain the method of landfill of solid waste along with a neat sketch.

5B. Explain the process of separation, processing and transformation of solid wastes.

(5+5 = 10 marks)

6. **Draw sketches of the following:**

- 6A. Rectangular surface drain
6B. Semi-circular surface drain
6C. U-shaped surface drain
6D. V-shaped surface drain

(2½ marks × 4 = 10 marks)

