

MANIPAL UNIVERSITY**SECOND/THIRD SEMESTER B. ARCH. DEGREE EXAMINATION – MAY 2017****SUBJECT: BUILDING SERVICES I (ARC-14-108/ARC 211)**
(2014/2010 SCHEME)

Tuesday, May 02, 2017

Time: 10:00 – 13:00 Hrs.

Max. Marks: 50

- ✍ **Answer any FIVE full questions.**
✍ **Support your answers with neat sketches wherever necessary.**

- 1A. Explain any two types of pipes.
1B. What are pumps? What is the main purpose of a pump?
1C. What are up-feed system and down-feed system of water supply?
1D. Mention any five pipe appurtenances.

(2½ marks × 4 = 10 marks)

- 2A. What are the objectives and principles of storm water drain?
2B. Explain in brief the different types of hydrological losses.

(10 marks)

3. Draw a sectional elevation of a toilet and show different types of water connections along with labels.

(10 marks)

4. **Write short notes on the listed below with neat sketch:**

- 4A. Herring bone system of drains
4B. Natural system of drains

(5+5 = 10 marks)

5. **Explain the below listed layouts with neat sketch:**

- a) Gridiron pattern b) Dead end pattern
c) Radial pattern d) Circular method

(2½ marks × 4 = 10 marks)

6. **Write two sentences on each of below to explain:**

- 6A. Civic use of water
6B. Domestic use of water
6C. Trade or business use
6D. Commercial or industrial use

(2½ marks × 4 = 10 marks)

