

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

December, 2018

00153

**BAR-049 : ARCHITECTURAL SCIENCES AND
SERVICES – III**

(WATER SUPPLY AND SANITATION)

Time : 3 hours

Maximum Marks : 70

Note : Part A is compulsory. Attempt any three questions from Part B. Supplement your answers with neat sketches. Marks of questions are mentioned against each.

PART A

1. Write short notes on any **five** of the following : $5 \times 3 = 15$
 - (a) Flocculation
 - (b) Sewage Disposal Methods
 - (c) Aerobic Composting
 - (d) Hot Water Supply
 - (e) Softening of Hard Water
 - (f) Reverse Osmosis

2. Explain "Water Distribution System" in a Residential Housing Complex. 10

PART B

3. Discuss the sewage and drainage layout systems in a multi-storeyed residential building and its premises. Support your answer with neat sketches. 15
4. Discuss the basic principles of drainage systems under the following parameters : 15
- (a) Piping layout
 - (b) Slopes/Gradients
 - (c) Siphonage and Clear-outs
 - (d) Back pressure
5. Name various methods for population forecasting in determining water demand. Choose a suitable method to forecast the population of a town of 50,000 for 20 years from now and calculate the water demand for purpose of design. (Assume per capita demand as 150 lpcd.) 15
6. What are the different methods of rainwater harvesting ? Design a rainwater harvesting system for a residential complex. (Assume suitable data for calculation) 15