

BACHELOR OF ARCHITECTURE
3RD YR. 1ST SEM. EXAM 2018

SERVICES & EQUIPMENT-I

Time: Three Hours

Full Marks: 100

Instruction: Answer for 100 marks

01. What is an aquifer? Describe in brief the process of sinking a well for collection of water. Using an appropriate sketch show when a 'Shallow Well' becomes deeper than the 'Deep Well'.
- With the help of suitable sketches, describe the combination of a 'Jack Well' and a set of 'Infiltration Galleries' as a set up for River Water Intake. 25
02. Using suitable sketches describe the various water distribution planning schemes adopted in a town.
- Describe the process of treatment of raw water from a river source in a Water Treatment Plant. 25
03. Given Data:
 A 15 storeyed Office building with 12 ft. floor-to floor height with one toilet in each floor. Each of such toilets consists of 3 nos. wcs, 4 nos. wall urinals and 3 nos. service sinks. All floors would be facilitated with flush valve typed fixtures except for the top three floors where flush tank type fixtures would be used. Pressure at the service main is 50 psi.
- Find:
 Up-feed zone, Down-feed zone and riser pipe sizes. 25
04. With the help of suitable sketches, describe how water supply and disposal of storm water, waste water and soil wastes are undertaken for a residential household in a municipal area. Draw the plans and sections for an Inspection Pit and a Man hole and describe the purposes they serve in a drainage scheme.
- With the help of appropriate sketches, describe the advantages and disadvantages of a 'Single Stack' and a 'Double Stack' system in connection with drainage. 25
05. Draw plan and section of a Septic Tank and a Soak pit. Describe the process of purification of sewage in a Septic Tank
- Draw a dimensioned plan and a section of necessary civil construction for an Elevator 25
06. Write short notes on (any five) 25
- (i) Travelator
 - (ii) Lift machine room floor level distance from the top level served
 - (iii) Clariflocculator
 - (iv) Soak Pit
 - (v) Macerator
 - (vi) Master Trap
 - (vii) Slope for laying drainage pipes
 - (viii) Purpose of a Water Seal in a Drainage Trap
 - (ix) Impeller
 - (x) Centrifugal and Reciprocating pumps