

PLUMBING SERVICES (AR-304)

Time: 3 Hours

Full Marks: 70

All questions are compulsory. Neat appropriate sketches will be given due credit.

1. Fill in the gaps with appropriate word / words: – 1 x 10
 - (i) _____ shall mean coupling, flange, branch, bend, tees, elbows, unions, waste with plug, P or S trap with vent, stop ferrule, stop tap, bib tap, pillar tap etc.
 - (ii) _____ is the liquid made up of the soil wastes and the waste water from houses, factories, industries etc. and storm water.
 - (iii) _____ system refers to supply of water to various floors in a building directly from the mains which have sufficient pressure.
 - (iv) A _____ system of drainage refers to combination of runoff mixed with sanitary sewage and rest amount flowing through surface drain.
 - (v) Other than 'pumping with intermediate storage' and 'pumping only' systems, _____ is another system of conveyance of water.
 - (vi) As per NBC 2005, a thumb rule for calculation of capacity of the storage tanks for cases where both OHT and UGT are provided, excluding fire fighting requirements, is that _____% of one day's requirement is to be borne by OHT.
 - (vii) For discharge computation of downtake taps, almost all studies based on the _____ of flow, pipe roughness and flow pattern yields accurate and mutually consistent results over a wide range of flow compared to empirical formulae.
 - (viii) The water supply requirement for restaurants as per NBC 2005 is _____ lit per head per day.
 - (ix) There should be at least a _____ of $0.0018 \text{ N}^{\text{mm}^{-2}}$ at the consumer's tap.
 - (x) When pH value of a water sample is six, it is said to be _____.
2. Write short notes on the following: 6 x 3
 - (a) Classification of ground water;
 - (b) Sitting type water closet;
 - (c) Balancing reservoir.
3.
 - (a) What are the aims of designing a drainage system and how these aims can be realized? 2 + 5
 - (b) With a neat sketch explain the working of a drop manhole. 5 + 2
4. Design a septic tank for an isolated building where seven families reside and draw neat sketch of its longitudinal section. Assume any data that is necessary for your design. 7 + 7
5. Write short notes on the following : 7 x 2
 - (a) Air relief valve;
 - (b) Spigot and socket joint.