

Total No. of printed pages = 8

END SEMESTER EXAMINATION – 2020

Subject Code : CT - 402

**WATER SUPPLY AND SANITARY
INSTALLATION**

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

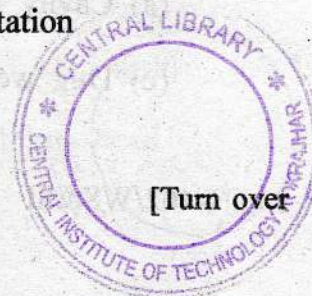
PART – A

Marks – 25

All the questions are compulsory. 1×25=25

Choose the correct option :

- 1 (i) The precipitation occur due to topographical barriers
- (a) Convective precipitation
 - (b) Cyclonic precipitation
 - (c) Orographic precipitation
 - (d) All of the above



(ii) The purest form of water is considered to be

- (a) Ground water (b) Spring water
(c) River water (d) Rain water

(iii) The type of rain gauge, which is installed at hilly and inaccessible areas is

- (a) Tipping bucket type
(b) Float type
(c) Weighing type
(d) None of the above

(iv) A geological formation which not only stored water, but can yield it in sufficient quantity, is known as an

- (a) Aquiclude (b) Aquitard
(c) Aquifuse (d) Aquifer

(v) The most widely used type of a tube well in India is

- (a) Cavity well (b) Strainer well
(c) Dug well (d) Ranney well



(vi) Shrouding is essentially provided in

- (a) Cavity type tube wells
- (b) Allotted type tube wells
- (c) Strainer type tube wells
- (d) All of the above

(vii) The devices installed for drawing water from different water sources are called

- (a) inlets (b) filters
- (c) intakes (d) outlets

(viii) Asbestos pipes are made of

- (a) asbestos
- (b) silica and asbestos
- (c) asbestos cement
- (d) None of these

(ix) Reciprocating pumps are used for

- (a) high discharge and high speed
- (b) low discharge and high head
- (c) high discharge and high head
- (d) low discharge and low head



(x) As compare to the cast iron pipes, steel water pipes are

- (a) heavier
- (b) stronger
- (c) durable
- (d) All of these

(xi) The corrosion in pipe is due to

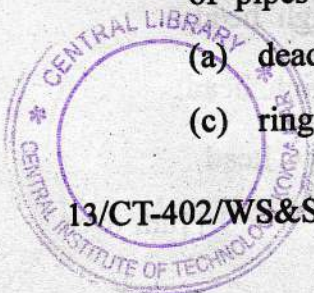
- (a) dissolved oxygen in water
- (b) pH value of water
- (c) impurities in the material particularly those having a lower potential
- (d) All of the above

(xii) A valve which allows the water to flow in one direction but prevent its flow in reverse direction, is known as

- (a) sluice valve
- (b) reflux valve
- (c) air relief valve
- (d) pressure relief valve

(xiii) For an area developed in haphazard way, the type of layout used for the distribution of pipes is known as

- (a) dead end system
- (b) radial system
- (c) ring system
- (d) grid iron system



(xiv) Manholes are generally located

- (a) at all changes of direction
- (b) at all changes of gradient
- (c) at all the junction
- (d) All of these

(xv) The pipe through which liquid waste carrying human excreta flows, is called

- (a) waste pipe
- (b) soil pipe
- (c) vent pipe
- (d) anti-siphonage pipe

Write true or false :

(xvi) A septic tank is a sedimentation cum digestion tank.

(xvii) Ring system layout of distribution system is suitable for well-planned town.

(xviii) Air vent pipe is not essential required in a septic tank.

(xix) The discharge from washing places is called sullage.

(xx) Wrought iron pipes are more costly but are less durable.

Fill in the blanks :

(xxi) The earth's water circulatory system is known as _____.

(xxii) The zone of soil through which lateral movement of water takes place is called _____.

(xxiii) The plain ends of cast iron pipes are joined by _____.

(xxiv) The method in which different types of refuse are collected, carried and disposed of separately is called _____.

(xxv) The effluent from septic tank are discharged into _____.

PART-B

Marks - 45

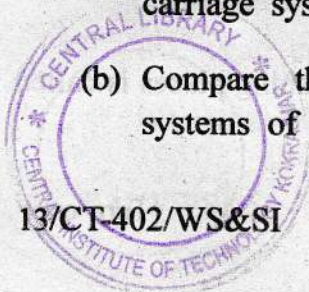
All the questions are compulsory.

2. (a) Describe in brief the various types of water carriage system. 6

(b) Compare the continuous and intermittent systems of water. 4

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(6)



3. (a) Design a septic tank for the following data : 5

No. of persons = 100, sewage/capita/day=120 litres, Desludging period = 1 year.

(b) Write a note on soak pit. Discuss advantage and disadvantage of an imhoff tank. 5

4. (a) Explain the various principles that should be kept in mind while designing a house drainage system. 5

(b) Define traps. Explain the various types of traps commonly used. 5

Or

Describe the procedures for laying and testing of sewer. 10

5. A combined sewer is to be designed to serve population of 30,000 residing over an area of 30 hectares, assume rate of water supply = 180 litres per capita per day, runoff coefficient = 0.4, time of concentration = 30 minutes. Assume that 80% of water supply reaches the sewer as wastewater. 5

Or

Define sewer appurtenances. Explain the working of catch basin with the help of neat sketch. 5

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(7)

[Turn over



6. (a) Describe with the help of diagrams, the various systems of plumbing used for house drainage. 6

(b) What should be the characteristics of materials to be used for sewers? 4

Or

(a) Discuss in brief the various factors affecting the dry weather flow. 5

(b) Differentiate between lamp hole and clean out. 5

