

Scheme – G

Sample Question Paper

Course Name : Diploma in Civil Engineering

Course Code : CE/CR/CS/CV

Semester : FIFTH for CE/CR/CS and SIXTH for CV

Subject Title : Public Health Engineering

Marks : 100

17503

Time : 3 hours

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

Q.No. 1(A) Attempt any THREE of the following (12)

- a) State various demands of water. Mention values for domestic activities.
- b) Define intake structure. List four types of intake structures.
- c) Define coagulation and state purpose of using alum as coagulant.
- d) Define aeration and describe any one method of aeration.

Q.No.1.(B) Attempt any ONE of the following (06)

- a) What is water conservation? State the necessity of ground water recharging.
- b) State the importance of residual chlorine and Describe Break point chlorination with the help of graph.

Q.No.2: Attempt any FOUR of the following (16)

- a) State the types of water supply schemes and mention their suitability.
- b) Draw a labelled sketch of clari-flocculator.
- c) Describe the theory of filtration.
- d) Differentiate between dead end system and grid iron system of distribution of water.
- e) Define Trap and draw labelled sketch of any two traps.
- f) Draw a line plan showing water supply arrangement in residential building.

Q.No.3 Attempt any FOUR of the following (16)

- a) Describe the process of recycling and reuse of domestic sewage.
- b) Draw a labeled sketch of river intake structure.
- c) Describe inspection Chamber with neat sketch.
- d) Compare with four points Plain sedimentation and sedimentation with coagulation.
- e) State four system of sewerage and describe any one.

Q.No.4 (A) Attempt any THREE of the following (12)

- a) State four purposes of sanitation.
- b) Draw a line plan of building drainage system and show different components.
- c) State the factors affecting choice of pipe for water supply (write four points).
- d) Design a circular sewer using following data:
Population : 25000 souls
Rate of water supply: 135 lpcd
 $n = 0.015$, Max flow = 2 x Average flow

Q.No.4 (B) Attempt any ONE of the following (06)

- a) Estimate the probable population in year 2020 & 2030 using incremental increase method for the town having following census data.:

Year	1980	1990	2000	2010
population	80,000	1,20,000	1,70,000	2,25,000

- b) State the reason for suitability of two pipe system over one pipe system
Draw a neat labeled sketch of two pipe system for two storeyed building.

Q.No.5 Attempt any FOUR of the following (16)

- a) List any four sewer appurtenances & mention purpose of each.
- b) Define B.O.D. State its significance in sewage treatment
- c) Describe the process of sludge digestion.
- d) Describe the working of septic tank with its L-Section.
- e) Describe rain water & sewage collection system for residential building.
- f) Suggest suitable sewage treatment process for rural area & draw its flow diagram

Q.No.6 Attempt any FOUR of the following (16)

- a) Write which type of impurities are removed in skimming tank & state how it helps in improving further biological treatment.
- b) Write any two reasons for necessity of pretreatment (primary settling) before trickling filter process in view of Activated Sludge Process.
- c) Draw a labelled sketch of following
 - i) Air relief Valve
 - ii) Pressure Relief Valve
- d) Compare Gravity system and Pumped System of distribution of water.(any four points)
- e) Write the step by step procedure of laying of sewer.

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Sample Test Paper - I

Course Name: Diploma in Civil Engineering

Course Code : CE/CR/CS/CV

Semester : FIFTH for CE/CR/CS and SIXTH for CV

Subject Title : Public Health Engineering

Time : 1 hour

17503

Marks : 25

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

Q.No.1 Attempt any THREE of the following

(09)

- a) State the purpose of Public Health Engineering with respect to water supply and sanitation.
- b) Draw the labeled flow diagram of water supply scheme.
- c) Define Design Period for water supply scheme and state its effect on the scheme.
- d) State four demands of water and state their specified required values.

Q.No.2 Attempt any TWO of the following

(08)

- a) State four factors affecting rate of demand of water and state the effect of any one factor on the rate of demand.
- b) State the necessity of population forecasting and list methods used for population forecasting.
- c) State four factors governing the location of an intake structure

Q.No.3 Attempt any TWO of the following

(08)

- a) State two objectives of aeration process and Describe any one method of aeration
- b) Define coagulation and Describe principle of coagulation.
- c) State objectives of disinfection and Describe any one method of disinfection.

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Sample Test Paper - II

Course Name: Diploma in Civil Engineering

Course Code : CE/CR/CS/CV

Semester : FIFTH for CE/CR/CS and SIXTH for CV

Subject Title : Public Health Engineering

Time : 1 hour

17503

Marks : 25

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

Q.No.1 Attempt any THREE of the following (09)

- a) List types of valves to be fitted on a rising main and mention their location.
- b) Define trap. State two requirements of good trap.
- c) State three principles of design for building drainage.
- d) Describe the procedure for testing of sewers.

Q.No.2 Attempt any TWO of the following (08)

- a) Draw the sketch of intercepting trap and gully trap.
- b) State any eight characteristics of sewage.
- c) Mention any four MPCB norms for discharge of treated sewage.

Q.No.3 Attempt any TWO of the following (08)

- a) Describe aeration process in Activated Sludge Process.
- b) Draw a general layout of sewage treatment plant.
- c) Draw schematic sketch for water supply arrangement of residential building.