DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2024

PUBLIC HEALTH ENGINEERING

[Maximum Marks: **75**]   [Time: **3** Hours]

PART-A

I. Answer '*all*' the following questions in one word or one sentence. Each question carries '*one*' mark.

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1.	Define springs.	M 1.01	R
2.	Define design period of a water supply scheme.	M 1.02	R
3.	List any two physical characteristics of water.	M 1.03	R
4.	The process of removal of hardness from water is called………...	M2.04	R
5.	Valve is used to regulate the flow of water through pipes.	M2.05	R
6.	The waste water from bathrooms, kitchens etc. is called................	M3.01	R
7.	Define COD of waste water.	M3.04	R
8.	Tanks for removing oils and grease from waste water is called............	M4.02	R
9.	A sanitary fitting that contains water seal used to prevent escape of foul gases is called.................	M4.04	R

PART-B

II. Answer any '*eight*' questions from the following. Each question carries '*three*' marks.

(8 x 3 = 24 Marks)

		Module Outcome	Cognitive level
1.	Explain infiltration galleries.	M1.01	U
2.	List the factors affecting rate of water demand.	M1.02	R
3.	Estimate the population of a town in 1991 using arithmetic method for the following census data: 	Year	1951	1961	1971
Population	258000	495000	735000		M1.02	A
4.	Explain rain water harvesting.	M1.04	U
5.	Define the terms prechlorination, breakpoint chlorination and super chlorination.	M2.02	R
6.	List the objects of providing sewerage works.	M3.01	R
7.	Describe water carriage system of sewage disposal.	M3.02	U
8.	List the merits of a circular sewer over other sections.	M3.03	R
9.	Explain Significance of testing BOD of waste water.	M3.04	U
10.	List the objectives of primary and secondary treatment of sewage.	M4.01	R

PART-C

Answer 'all' questions from the following. Each question carries 'seven' marks.

(6 x 7 = 42 Marks)

Module Outcome | Cognitive level

		Module Outcome	Cognitive level
III.	The population of a locality as obtained from census report is as follows:	M1.02	A

Year	1950	1960	1970	1980	1990
Population	120000	150000	200000	250000	290000

Estimate the population expected after one, two and three decades after the last known decade, by using geometric increase method.

OR

		Module Outcome	Cognitive level
IV.	With the given census report, calculate the population of a city for the year 2000 using incremental increase method.	M1.02	A

Year	1880	1890	1900	1910	1920	1930
Population	30000	32500	39100	46500	52050	59500

		Module Outcome	Cognitive level
V.	Explain the methods of aeration of water.	M2.02	U
	OR		
VI.	Outline the construction and operation of a slow sand filter.	M2.03	U
VII.	Identify any one treatment method to control hardness of water.	M2.04	U
	OR		
VIII.	Describe grid iron system of distribution with the help of a neat layout.	M2.05	U
IX.	Explain Separate sewerage system with its suitability.	M3.02	U
	OR		
X.	Describe function and construction of a manhole.	M3.03	U
XI.	Outline the functions and working of grit chambers.	M4.02	U
	OR		
XII.	Describe activated sludge process.	M4.03	U
XIII.	Explain disposal of sewage by dilution and disposal on land.	M4.03	U
	OR		
XIV.	Explain following sanitary fittings: a) Flushing cisterns b) Inspection chambers c) Anti-syphonage pipe.	M4.04	U

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