Total No. of Questions: 22

Enrollment No : _____

MEDICAPS UNIVERSITY

Faculty of Engineering

End Semester Examination May 2025

CE3CO20 Environmental Engineering -I

Programme	:	B.Tech.	**Branch/Specialisation**	:	CE
Duration	:	3 hours	**Maximum Marks**	:	60

Note: *All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.*

Section 1 (Answer all question(s))

		Marks	CO	BL
Q1.	What characterizes a confined aquifer system?	1	1	2
	○ It is open to the surface ● It has a layer of impermeable rock above it ○ It has no connection to surface water ○ It is heavily contaminated			
Q2.	In which of the following distribution system, the clean water flows entirely under gravity?	1	1	1
	● Gravity system ○ Pressure system ○ Combined gravity and pumping system ○ Pumping system			
Q3.	Which of the following is known as Shut off valve?	1	2	1
	○ Air relief valve ● Sluice valve ○ Pressure relief valve ○ Altitude valve			
Q4.	Which valve allows water to flow in one direction only?	1	2	1
	○ Air relief valve ○ Sluice valve ● Reflux valve ○ Altitude valve			
Q5.	In which type of settling, sedimentation of discrete particles takes place?	1	3	2
	○ Zone settling ○ Compression settling ○ Hindered settling ● Discrete settling			
Q6.	In which action of filtration, particles coarser than the void size is arrested?	1	3	2
	● Mechanical Straining ○ Sedimentation ○ Biological mechanism ○ Electrolytic action			
Q7.	What is noise?	1	4	1
	○ Desirable sound ○ Desirable and unwanted sound ● Undesirable and unwanted sound ○ Undesirable and wanted sound			
Q8.	What is the dB of a threshold of pain?	1	4	2
	○ 100 ○ 110 ● 120 ○ 146			
Q9.	Which of the below is not an idea behind solid waste management?	1	5	1
	○ Control of waste generation ○ Storage and collection ○ Disposal ● Stop waste generation			
Q10.	Under which rule of Government, guidelines for solid waste management are followed today?	1	5	1
	○ Municipal Solid Waste Rules, 2000 ○ Municipal Solid Waste Rules, 2016 ○ Solid Waste Rules, 2000 ● Solid Waste Rules, 2016			

Section 2 (Answer all question(s))

Marks CO BL

Q11. What is Fire Demand and Per Capita Demand? On what basis it is calculated? **2 2 2**

Rubric	Marks
Explain Fire demand and Per Capita Demand,Basis of Calculation	2

Q12. Explain the factors affecting water demand in cities. **3 1 2**

Rubric	Marks
minimum 5 factors	3

Q13. (a) Explain different types of water sources in detail and methods of population forecasting. **5 1 2**

Rubric	Marks
Types of Water Sources,Methods of Population Forecasting	5

(OR)

(b) From the following data, forecast the population in the year 2080 and 2090 in village from Arithmetic Increase and Geometric Increase method-

Year (B.S.)	2030	2040	2050	2060	2070
Population (nos.)	25,000	28,000	34,000	42,000	47,000

Rubric	Marks
By Arithmetic Increase Method,By Geometric Increase Method	5

Section 3 (Answer all question(s))

Marks CO BL

Q14. What is leak detection? Describe intake structures. **4 2 1**

Rubric	Marks
Leak Detection,Intake Structures	4

Q15. (a) Define hardy cross method used for distribution system. How this is used to define the pipe size in complex network system? **6 2 2**

Rubric	Marks
Hardy cross method,Defining the pipe Size	6

(OR)

(b) Explain different types of water distribution systems and appurtenances in detail with diagram.

Rubric	Marks
Types of distribution system,Types of Appurtenances	6

Section 4 (Answer all question(s))

Marks CO BL

Q16. Describe in brief physical, chemical and biological characteristics of water. **3 3 1**

Rubric	Marks
Physical Characteristics,Chemical characteristics,Biological Characteristics	3

Q17. (a) What is sedimentation? Explain the process and operation of sedimentation tank with diagram in detail. **7 3 2**

Rubric	Marks
Definition of Sedimentation,Process of sedimentation,Operation of Sedimentation tank,Diagrams	7

(OR)

(b) Describe various disinfection, hardness removal and aeration techniques in detail.

Rubric	Marks
Disinfection techniques,Hardness removal techniques,Aeration Techniques	7

Section 5 (Answer all question(s))

Marks CO BL

Q18. What is noise pollution? Give its sources. **2 4 1**

Rubric	Marks
Define Noise Pollution,Types of Sources	2

Q19. Explain effects of noise pollution on human being and its control measures in brief. **3 4 2**

Rubric	Marks
Effects of Noise Pollution,Control Measures	3

Q20. (a) Explain noise pollution rules and standards in detail. **5 4 2**

Rubric	Marks
Noise Pollution rules,Noise Pollution Standards	5

(OR)

(b) Justify the following statements:-

- It is desirable to make massive base for a vibrating machine
- The welding may be preferred to riveting
- The efficiency of the person exposed to the noise decreases considerably.

Rubric	Marks
Justification of Point A,justification of Point B,Justification of Point C	5

Section 6 (Answer all question(s))

Marks CO BL

Q21. What is solid waste management? Explain types of solid waste. **4 5 2**

Rubric	Marks
What is Solid Waste management,Types of Solid Waste	4

Q22. (a) Explain characteristics of solid waste in detail. **6 5 2**

Rubric	Marks
Characteristics of solid waste	6

(OR)

(b) Explain process of solid waste management in detail.

Rubric	Marks
Process of Solid Waste Management	6

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