

## Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

● Lecture 31 : Sanitation basics Part I

● Lecture 32 : Sanitation basics Part II

● Lecture 33 : Sewage systems Part I

● Lecture 34 : Sewage systems Part II

● Lecture 35 : Sewage systems Part III

● Week 7 Lecture Material

○ Quiz: Week 7 : Assignment 7

● Week 7 Feedback Form

Week 8

Week 9

Week 10

Week 11

Week 12

Detail Solution

Live Interactive session

# Week 7 : Assignment 7

The due date for submitting this assignment has passed.

Due on 2021-09-15, 23:59 IST.

As per our records you have not submitted this assignment.

1) Match the following terms with their meaning

2 points

Term	Definition
A. Fresh Sewage	i. Residential discharge from latrines and urinals
B. Combined Sewage	ii. Sewage recently originated.
C. Sanitary Sewage	iii. Sewage undergoing treatment.
D. Septic Sewage	iv. Combination of sewage and stormwater.

- a. A-ii; B-iv; C-i; D-iii  
 b. A-ii; B-iii; C-i; D-iv  
 c. A-i; B-iv; C-ii D-iii  
 d. A-iv; B-iii; C-i; D-ii

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

2) Which of the following parameters constitute the concept of totally sanitized cities

1 point

- A. Open defecation free  
 B. Municipal sewage and storm water drainage  
 C. Recycling and reuse of treated sewage for non-potable applications  
 D. Improved public health outcomes and environmental standards

- a. A and D  
 b. A, B and D  
 c. A, C and D  
 d. A, B, C and D

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

3) Match the following Acts with its function

2 points

Act	Function
A. The Water (Prevention and Control of Pollution) Act and its Amendments(1974)	i. Water body is put to use that demands the highest quality of water and it is designated accordingly
B. The Water (Prevention and Control of Pollution) Cess Act (2003)	ii. Protection and improvement of the environment.
C. The Environment (Protection Act) (1986)	iii. Prevent and control water pollution and ensure the wholesomeness of water.
D. "Designated best use" by CPCB(1981)	iv. Levy and collection of cess on water consumed by consumers like industries.

- a. A-iii; B-iv; C-ii; D-i  
 b. A-ii; B-iii; C-i; D-iv  
 c. A-i; B-iv; C-ii D-iii  
 d. A-iv; B-iii; C-i; D-ii

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

4) Open defecation free cities involve access to safe sanitation and waste \_\_\_\_\_ facilities for households

1 point

- a. Disposal  
 b. Collection  
 c. Management  
 d. Treatment

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

5) Match the following organisations with its responsibility concerning sewerage and sewage treatment.

2 points

Organisation	Responsibility
A. Ministry of Housing and Urban affairs, Government of India (GOI)	i. Responsible for planning, funding and coordination drinking water and sanitation programs in rural areas.
B. Ministry of Drinking Water and Sanitation	ii. Independent monitoring of other agencies, NGOs and ULBs, to ensure compliance to existing laws and rules.
C. Non-Government Organizations (NGOs)	iii. Programs of capacity building, micro level management of people on behalf of the government
D. Regulators	iv. Formulates policies and provides technical assistance to the States and ULBs.

- a. A-iv; B-i; C-iii; D-ii  
 b. A-ii; B-iii; C-i; D-iv  
 c. A-i; B-iv; C-ii D-iii  
 d. A-iv; B-iii; C-i; D-ii

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

6) What is the design period for the sewage treatment plants in years given by CPHEEO?

1 point

- a. 5  
 b. 10  
 c. 15  
 d. 20

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

7) Which of the following statement(s) is/are true concerning the City Sanitation plan?

1 point

- A. It considers only long term sewage project plans  
 B. It involves the determination of existing needs/demand or deficit  
 C. It involves the evaluation and monitoring of 100% sanitation status  
 D. It involves Capacity building

- a. A, B and D  
 b. A, B and C  
 c. A, C and D  
 d. B, C and D

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

8) Match the following Wastewater management parameters with service level benchmarks

2 points

Parameter	Definition
A. Coverage of toilets	i. 20
B. Extent of reuse and recycling of sewage	ii. 80
C. Efficiency in redressal of customer complaints	iii. 90
D. Efficiency in collection of sewage charges	iv. 100

- a. A-ii; B-iv; C-i; D-iii  
 b. A-ii; B-iii; C-i; D-iv  
 c. A-i; B-iv; C-ii D-iii  
 d. A-iv; B-i; C-ii; D-iii

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

9) Which of the following statement(s) is not an example of an onsite sanitation system?

1 point

- a. Small-bore sewer system  
 b. Leach pit  
 c. Soak pit  
 d. Septic tank

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

10) The optimal pit emptying frequency of leach pit is \_\_\_\_\_.

1 point

- a. 1.5 – 3 years  
 b. 3 – 4.5 years  
 c. 4.5 – 5 years  
 d. 5 – 6.5 years

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

11) Infiltration area required for infiltration of the waste liquids in the leach pit is given by \_\_\_\_\_.

1 point

- a.  $\frac{\text{Total flow in pit every hour}}{\text{Infiltration rate}}$   
 b.  $\frac{\text{Total flow in pit every day}}{\text{Infiltration rate}}$   
 c.  $\frac{\text{Total flow in pit every hour}}{\text{Sludge accumulation rate}}$   
 d.  $\frac{\text{Total flow in pit every hour}}{\text{Sludge accumulation rate}}$

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

12) What is the minimum number of dispersion trenches to be provided if the area required for dispersion trench is 90m<sup>2</sup>? Consider the width of the dispersion trench as 1m

1 point

- a. 1  
 b. 2  
 c. 3  
 d. 4

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

13) \_\_\_\_\_ filter is a fixed bed biological reactor.

1 point

- a. Upflow aerobic  
 b. Upflow anaerobic  
 c. Trickling  
 d. Gravity filter

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

14) Match the following Sewage management systems with its functioning mechanism

2 points

Sewage management systems	Functioning
A. Package septic tank with contact aeration type system	i. Two aerobic digestion chamber and a filter chamber is involved in treatment
B. Aqua privy	ii. An anaerobic filter is employed and microbial growth on the media makes digestion possible
C. Chemical toilet	iii. Uses a fixed film plastic media with high specific area along with continuous diffusion of controlled air
D. Multi Chamber anaerobic filter with septic tank	iv. Concentrated solution of caustic soda is utilised to sterilise and liquify waste

- a. A-ii; B-iv; C-i; D-iii  
 b. A-iii; B-i; C-vi; D-ii  
 c. A-ii; B-iv; C-iii D-i  
 d. A-iv; B-ii; C-i; D-iii

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

15) Which of the following statement/s is/are false for a decentralized sewerage system?

1 point

- a. It is suitable for low density communities and where STP capacity is limited  
 b. It is suitable for low density communities and provides localized water reuse opportunities.  
 c. It does not allow targeted treatment for specific sewage constituents  
 d. It allows targeted treatment for specific sewage constituents

- a.  
 b.  
 c.  
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.