

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

Week 8

● Lecture 36 : Water carriage system and sewerage layout

● Lecture 37 : Quantity of sanitary sewage

● Lecture 38 : Storm water drainage planning Part I

● Lecture 39 : Storm water drainage planning Part II

● Lecture 40 : Storm water drainage planning Part III

● Week 8 Lecture Material

 Quiz: Week 8 : Assignment 8

 Week 8 Feedback Form

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Week 8 : Assignment 8

The due date for submitting this assignment has passed.

Due on 2021-09-22, 23:59 IST.

As per our records you have not submitted this assignment.

- 1) Match the following water carriage system with its function

Water carriage system	Function
A. Combined system	i. Portion of storm water is allowed to enter the sewer carrying sewage and the remaining amount flows in a separate set of sewers.
B. Separate system	ii. Carries both sanitary sewage and storm water.
C. Partially Separate system	iii. Domestic and industrial sewage is carried in one set of sewers and storm water and sullage surface water in another network.

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

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

- 2) Sewage lines are installed in a vertical zigzag configuration in _____

- a. Pressurised sewer system
 b. Vacuum sewer system
 c. Partially separate system
 d. Combined system

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

- 3) Match the following sewage collection system pattern with its characteristics

Pattern	Characteristics
A. Perpendicular Pattern	i. This pattern is adopted when the sewage is to be disposed off on land around town.
B. Interceptor Pattern	ii. Sewers carrying stormwater are laid in such a way to seek the shortest possible path to a water course.
C. Radial Pattern	iii. Sewers are connected to a large size sewer that carries sewage to a common point where it is disposed with or without treatment.
D. Zone Pattern	iv. Suitable for sloped areas.

- a. A-ii; B-iii; C-i; D-iv
 b. A-i; B-ii; C-iii; 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) Which of the following statements is true concerning sewer design

- a. Lateral and sub-main sewers are usually designed for average flows of the population
 b. Lateral sewers are designed for peak flow and sub-main sewers are designed for average flows of the population
 c. Lateral sewers are designed for average flow and sub-main sewers are designed for peak flow of the population
 d. Lateral and sub-main sewers are usually designed for peak flows of the population

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 5) Design infiltration value shall be limited to a maximum of _____ % of the design value of sewage flow.

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

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

- 6) Which of the following does the peak factor of sewage flow depend on?

- A. Population
 B. Population density
 C. Site topography
 D. Water supply hours

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

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 7) Sewage flow rate at night is _____ % of the average flow

- a. 40-50
 b. 50-60
 c. 60-70
 d. 70-80

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

- 8) Which of the following method is involved in Intensity Duration Frequency (IDF) curve generation

- a. Bernard equation
 b. Time Area Method
 c. Unit Hydrograph Method
 d. Rainfall-Runoff process simulation

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

- 9) What is the rainfall intensity for a storm of 15 minutes duration using empirical formula in absence of rainfall records?

- a. 30.48 mm/hr
 b. 32.48 mm/hr
 c. 33.48 mm/hr
 d. 34.48 mm/hr

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

- 10) Which of the following factors affect stormwater volume?

- A. Topography
 B. Evaporation
 C. Percolation
 D. Absorption

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

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 11) What is the Partial area effect?

- a. Runoff coefficient x lesser catchment area x higher rainfall intensity (lower t_c) > Runoff coefficient x full catchment area x lower rainfall intensity (higher t_c).
 b. Runoff coefficient x lesser catchment area x higher rainfall intensity (lower t_c) ≤ Runoff coefficient x full catchment area x lower rainfall intensity (higher t_c).
 c. Runoff coefficient x lesser catchment area x higher rainfall intensity (lower t_c) < Runoff coefficient x full catchment area x lower rainfall intensity (higher t_c).
 d. Runoff coefficient x lesser catchment area x higher rainfall intensity (lower t_c) = Runoff coefficient x full catchment area x lower rainfall intensity (higher t_c).

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

- 12) Design of pumping station depends on

- A. Spacing availability
 B. Distance/route of the rising main alignment
 C. Estimation of design runoff at the pumping station
 D. Capacity of the wet well (detention time in minutes for peak load) and additional storage capacity

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

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 13) Match the following stormwater drainage indices with their definition.

Index	Definition
A. Drainage Coverage (Constructed) Index	i. Ratio of rate of incoming storm flow to rate of pumping.
B. Permeability Index	ii. Ratio of operational natural drainage systems to the total natural drainage systems.
C. Natural Drainage System Index	iii. % of the catchment which is impervious
D. System Robustness Index	iv. Ratio of the length of existing drains to the length of total constructed drains required for an area.

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

- 14) Which of the following is not a component of Capital cost concerning Storm water drainage projects?

- a. Cost of civil construction
 b. Cost of pumping machineries and their installation
 c. Cost of drains appurtenances and erection
 d. Cost of chemicals

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 15) Waterlogging index is

- a. Ratio of encroached water bodies (area) to the total area under water bodies.
 b. Area inundated for four hours or more and having water depth more than 6"
 c. Ratio of total flood-prone area to total area
 d. Percentage of the catchment which is impervious

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.