

P. P. SAVANI UNIVERSITY

First Semester of B.Sc. Examination

Jan.-Feb.-2022

SSES1080-Water and Water Resources

08.02.2022, Tuesday Time: 12:00 p.m. to 02:30 p.m. Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Make suitable assumptions and draw neat figures wherever required.
3. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions [10]

1.1 Objectives [05]

1.1a A maximum acceptable level of TDS for drinking water is ___ mg/L.

- A 1000
- B 500
- C 200
- D 300

1.1b Which of the following produce odor in water?

- A Anaerobic bacteria
- B Inorganic salts
- C H₂S
- D All of the above

1.1c What is maximum limit of TSS in drinking water?

- A 400 mg/l
- B 300 mg/l
- C 350 mg/l
- D Negligible

1.1d The COD test is commonly used to measure which of the following?

- A Amount of organic compounds in water
- B Amount of oxygen in water
- C Amount of oxygen in a chemical
- D Amount of oxygen used in an oxygenation process

1.1e Efficiency of disinfection is _____ at lower temperature.

- A Higher
- B Lower
- C Equal
- D Does not affect

1.1f Which of the following is the source of Acidity in Water?

- A Dissolved CO₂
- B Hydroxide Alkalinity OH⁻
- C Carbonate Alkalinity CO₃²⁻
- D Bicarbonate Alkalinity HCO₃⁻

- 1.1g The SI unit for electrical conductivity is _____
A s/m
B S/m
C m/s
D m/S
- 1.1h The velocity at which water flows underground is depend on _____ of the rocks.
A Permeability
B Porosity
C Conductivity
D Size
- 1.1i Which of the following is an organic constituent that is found in water?
A NH₃
B H₂S
C Fe
D VOC
- 1.1j Zooplankton are a type of _____ plankton.
A Autotrophic
B Heterotrophic
C Mixotrophic
D Saprotrophic

1.2 **Answer the Following** [05]

- 1.2a Define water resources.
1.2b Oceans are also known as _____.
1.2c In total global water, fresh water is about ____%.
1.2d What are the two main sources of dissolved oxygen?
1.2e If colour is due to suspended material, it is called as _____.

Q.2 **Short Notes (Attempt any two)** [06]

- A What is sodium adsorption ratio (SAR)?
B What is BOD? Explain.
C Explain.
1. Temperature
2. Total suspended solids

Q.3 **Explain in detail (Attempt any two)** [14]

- A Explain hydrological cycle in detail with figure.
B Enlist the classification of water resources and explain anyone in detail.
C Write a short note on dissolved gases.

Section-II (Total Marks - 30)

Q.1 Short Questions

[10]

1.1 Objectives

[05]

- 1.1a ___ has no direct inflow or outflow of water
- A Marshes
 - B Lakes
 - C Bogs
 - D Peats
- 1.1b ___ are considered to be transition zones because both land and water play a role in creating this environment.
- A Marshes
 - B Lakes
 - C Bogs
 - D Peats
- 1.1c Ramsar Convention came into force in year ___
- A 1975
 - B 1971
 - C 1972
 - D 1973
- 1.1d The ___ wetland system is the largest wetland system in India
- A Chilika
 - B Kolleru
 - C Vembanad
 - D Loktak
- 1.1e Examples of wetlands are ___
- A Swamps
 - B Coral reefs
 - C Deltas
 - D All
- 1.1f If pollution comes from a single location, such as a discharge pipe attached to a factory is known as ___ source of pollution
- A Point
 - B Non-point
 - C Area
 - D Line
- 1.1g The zone of Aeration is subdivided in to ___ types
- A 1
 - B 2
 - C 3
 - D 4
- 1.1h Which of the following method is an example of Indirect Method of Artificial Recharge?
- A Flooding
 - B Recharge Pits
 - C Recharge Shafts
 - D Jacket Well Technique

1.1i The intermediate zone is also known as ___ Zone

- A Soil water zone
- B Vadose Zone
- C Capillary Zone
- D Water Capillary Zone

1.1j Based on the nature and distribution of water bearing zones, aquifers could be classified into ___ types.

- A 1
- B 2
- C 3
- D 4

1.2 Answer the Following

[05]

1.2a Name any 2 sources of ground water pollution.

1.2b Define aquifer.

1.2c Artificial recharge of groundwater can be done by ___ methods.

1.2d ___ is an area of land which is saturated with water.

1.2e ___ is the second largest coastal lagoon in the world and largest wintering ground for migratory birds coming to India.

Q.2 Short Notes (Attempt any two)

[06]

- A Write a note on sources of surface water pollution.
- B Write a note on Watershed management.
- C What are the threats to wetlands?

Q.3 Explain in detail (Attempt any two)

[14]

- A Write a note on vertical distribution of ground water.
- B Write a note on Rain water Harvesting.
- C Write a note on ecological significance of wetlands.