

UNIT IV- ADVANCED WATER TREATMENT**1. What is the purpose of using velocity control device in a grid chamber?**

- The velocity control device in a grid chamber is providing for settling the grid particles in the sewer pipes and then it is removed by an endless chain to which perforated buckets are fixed

2. Mention the classification of treatment process of sewage

- Preliminary treatment
- Primary treatment
- Secondary treatment
- Complete final treatment

3. State the purpose of using the skimming tanks

- The skimming tanks are employed for removing oils & grease from the sewage and placed before the sedimentation tanks

4. Why baffles are provided in the sedimentation tank in sewage treatment?

- Baffles are required to prevent the movement of organic matters and it escapes along with the effluent and to distribute the sewage uniformly through the cross section of the tank and thus to avoid short circuiting

5. What are the types of trickling filters?

- Conventional trickling filter
- High rate trickling filter

6. What are the operational troubles in trickling filter?

- Fly nuisance
- Odour nuisance
- Ponding troubles

7. Define sludge

- The sludge age is defined as the average time for which particles of suspended soil remain under aeration

8. Define sludge volume index

- sludge volume index is defined as the volume occupied in ml by 1 gm of solids in the mixed liquor after settling for 30 minutes and is determined experimentally

9. What is meant by biodegradable organic matter?

- The organic matters is decomposed by bacteria under biological action is called biodegradable organic matter

10. What are the various tests for finding the quality of sewage?

- Turbidity test
- Colour test

- Odour test
- Temperature test

11. What is meant by relative stability of a sewage effluent?

- The relative stability of a sewage effluent is nothing but the ratio of oxygen available in the effluent to the total oxygen required to satisfy its first stage BOD demand

12. What are the methods of disposing the sewage effluent

- Disposal in water(dilution)
- By disposal on land

13. What are the different types of sewage treatment?

- Contact beds
- Intermittent sand filters
- Trickling filters
- Miscellaneous type of filters

14. Define sludge digestion

- The process of stabilization of the sewage particles are called sludge digestion

15. What are the stages in the sludge digestion process?

- Acid fermentation
- Acid regression
- Alkaline fermentation

16. What is meant by ripened sludge?

- The ripened sludge is nothing but the digested sludge is collected at the bottom of the digestion tank and it is alkaline in nature

17. What are the factors affecting sludge digestion and their control?

- Temperature
- pH value
- mixing and stirring of raw sludge with digested sludge

18. What are the types of incinerators has primary designed?

- multiple hearth furnace
- fluid bed furnace and infra red furnace

19. What are the methods of aeration ?

- diffused air aeration
 - mechanical aeration
- combined aeration

20. What is meant by sludge concentrator unit ?

- the sludge obtained in a sludge digestion plant contains too much of moisture and is therefore very bulky may be reduced in its moisture content by sending into sludge thicker unit (or) sludge concentrator unit

21. Give different types of thicker unit

- Gravity thickener
- Floating thickener
- Centrifugal thickener

22. What are the methods of disposal of septic tank effluent?

- Soil absorption system
- Biological filters
- up flow anaerobic filters

23. Define percolation rate

- percolation rate is defined as the time in minutes required for sewage of water through that ground by one cm

24. what are the soil absorption system

- dispersion trench
- seepage pit (or) soak pit

25. What are the methods of applying sewage effluents to farms ?

- surface irrigation
- free flooding
- border flooding
- check flooding

26. What is meant by oxygen sag curve?

- The amount of resultant oxygen defect can be obtained by algebraically adding the de -oxygenation and re - oxygenation curves. The resultant curve so obtained is called oxygen sag curve

27. What is meant by sewage sickness?

- The phenomena of soil getting clogged when the sewage is applied continuously on a piece of land is called sewage sickness

28. What are the preventive methods for sewage sickness?

- Primary treatment of sewage
- Choice of land
- Under drainage of soil
- Giving rest to land and Rotation of crops

29. Define dilution factor

- The dilution factor is defined as the ratio of the amount of river water to the amount of the sewage