CBCGS-SEM VI

Practice Questions

Environmental Engineering-II

1. The rate of accumulation of sludge in septic tanks is recommended as

A. 30 litres/person/year

B. 25 litres/person/year

C. 30 litres/person/month

D. 25 litres/person/month.

2. If 2% solution of a sewage sample is incubated for 5 days at 20°C and depletion of oxygen was found to be 5 ppm, B.O.D. of the sewage is

A. 200 ppm

B. 225 ppm

C. 250 ppm

D. None of these.

3. If *D* is the diameter of upper circular portion, the overall depth of a standard egg shaped section, is

A. *D*

B. 1.25 *D*

C. 1.5 *D*

D. 1.75 *D*

4. Aerobic bacterias

A. flourish in the presence of free oxygen

B. consume organic matter as their food

C. oxidise organic matter in sewage

D. All the above.

5. Pick up the correct statement from the following :

A. In treated sewage, 4 PPm of D.O. is essential

B. Only very fresh sewage contains some dissolved oxygen

C. The solubility of oxygen in sewage is 95% that is in distilled water

D. All the above.

6. In olden days the type of section adopted in trunk and out fall sewers was

A. parabolic shaped

B. horse shoe shaped

C. egg shaped

D. circular shaped.

7. For the survival of fish in a river stream, the minimum dissolved oxygen is prescribed

A. 3 ppm

B. 4 ppm

C. 8 ppm

D. 10 ppm.

8. Self-cleansing velocity is

A. velocity at dry weather flow

B. velocity of water at flushing

C. velocity at which no accumulation remains in the drains

D. velocity of water in a pressure filter.

9. An inverted siphon is designed generally for

A. one pipe

B. two pipes

C. three pipes

D. four pipes.

10. A rainfall may be classified as acidic if its pH value is less or equal to

A. 6

B. 7

C. 5

D. 6.5

11. For treating the sewage of a large city, you will recommend

A. a sedimentation tank and an activated sludge treatment plant

B. a plant consisting of Imhoff tanks with low rate trickling filters

C. sedimentation tanks with high rate trickling filters

D. none of these.

12. The detention time of a circular tank of diameter *d* and water depth *H*, for receiving the sewage *Q* per hour, is

A. $\frac{d^2\,(0.011d + 0.785H)}{Q}$

B. $\frac{d\,(0.022d + 0.085H)}{Q}$

C. $\frac{d\,(0.785d + 0.011H)}{Q}$

D. $\frac{d\,(0.285d + 0.011H)}{Q}$

13. The dimensions of a rectangular settling tank are : length 24 m, width 6 m and depth 3 m. If 2 hour detention period for tanks is recommended, the rate of flow of sewage per hour, is

A. 204 cu m

B. 208 cu m

C. 212 cu m

D. 216 cu m

14. The screens are fixed

A. perpendicular to the direction of flow

B. parallel to the direction of flow

C. at an angle 30° to 60° to the direction of flow

D. none of these.

15. A sewer pipe contains 1 mm sand particles of specific gravity 2.65 and 5 mm organic particles of specific gravity 1.2, the minimum velocity required for removing the sewerage, is

A. 0.35 m/sec

B. 0.40 m/sec

C. 0.45 m/sec

D. 0.50 m/sec

16. The coagulant widely used for sewage treatment, is

A. alum

B. ferric chloride

C. ferric sulphate

D. chlorinated copperas.

17. Dilution method of disposing off sewage, is not preferred to

A. when sewage is fresh

B. when diluting water has high dissolved oxygen content

C. when diluting water is used for water supply near the point of sewage disposed

D. none of these.

18. Bio-chemical oxygen demand (BOD) for the first 20 days in generally referred to

A. initial demand

B. first stage demand

C. carbonaceous demand

D. all of these.

19. For non-scouring velocity 5 m/sec, the type of sewers generally preferred to, is

A. cast iron sewers

B. cement concrete sewers

C. glazed bricks sewers

D. stone ware sewers.

20. Disposal to sewage in large cities, is done in

A. irrigation

B. dilution

C. oxidation

D. putrifaction.

21. For the COD test of sewage, organic matter is oxidised by $K_2Cr_20_7$ in the presence of

A. H_2SO_4

B. HNO_3

C. HCl

D. none of these.

22. Removal of oil and grease from sewage, is known

A. screening

B. skimming

C. filtration

D. none of these.

23. The gas which may cause explosion in sewers, is

A. carbondioxide

B. methane

C. ammonia

D. carbon monoxide.

24. In sewers the effect of scouring is more on

A. top side

B. bottom side

C. horizontal side

D. all sides.

25. If the depletion of oxygen is found to be 2.5 mg/litre after incubating 2.5 ml of sewage diluted to 250 ml for 5 days at 20°C, B.O.D. of the sewage is

A. 150 mg/l

B. 200 mg/l

C. 250 mg/l

D. 300 mg/l

26. Rate of flow of sewage is generally assumed

A. more than the rate of water supply

B. equal to the rate of water supply

C. less than the rate of water supply

D. at 150 litres per capita.

27. The digested sludge from septic tanks, is removed after a maximum period of

A. 3 years

B. 3.5 years

C. 4 years

D. 5 years.

28. For providing an Indian type W.C., the R.C.C. slabs in the toilet portion

A. should be sunk by 20 cm

B. should be kept 20 cm above the adjacent portion

C. should be sunk by 50 cm

D. need not be sunk.

29. If the depth of partial flow in a sewer of diameter 2 m, is 50 cm, its wetted perimeter is

A. π

B. $\frac{\pi}{2}$

C. $\frac{\pi}{3}$

D. $\frac{2\pi}{3}$

30. A drop manhole is provided if

A. a sewer drops from a height

B. a branch sewer joins the main sewer at higher level

C. a lamp is inserted to check obstruction

D. none of these.