English

1.

A raw sludge is containing 75% volatile matter that is reduced to 45% after digestion. Reduction in the volatile matter is _____.

(A) 35%
(B) 40%
(C) 50%
(D) 75%

Correct Option(s): B

English

2. According to IS 10500, acceptable limit of total arsenic in drinking water is

(A) 0.001 mg/L
(B) 0.01 mg/L
(C) 0.1 mg/L
(D) 1.0 mg/L

Correct Option(s): B

English

3.

According to National Ambient Air Quality Standards, the permissible concentration of Nitrogen dioxide (NO_2) in ambient air in "Ecologically sensitive areas" on annual basis is ---------- $\mu g/m^3$

(A) 30
(B) 40
(C) 85
(D) 100

Correct Option(s): A

English

4. COP-29 will be held at

(A) Madrid
(B) Paris
(C) Glasgow
(D) Baku

Correct Option(s): D

English

5.

Which of the following is not correctly matched ?

(A) SDG 4 : Clean water and education
(B) SDG 7 : Affordable and clean energy
(C) SDG 10 : Reduced inequalities
(D) SDG 11: Sustainable cities and communities

Correct Option(s): A

English

6. Which of the following is not correctly matched?

(A) Chilka lake - Odisha
(B) Harike wetland - Punjab
(C) Kolleru Lake - Manipur
(D) Sambhar Lake - Rajasthan

Correct Option(s): C

English

7. In which layer of the atmosphere, air is dry?

(A) Troposphere
(B) Stratosphere
(C) Thermosphere
(D) Ionosphere

Correct Option(s): B

English

8.

Cloud associated with mountain wave is

(A) Cumulus
(B) Stratocumulus
(C) Cirrocumulus
(D) Lenticularis

Correct Option(s): D

English

9. The boundary line between the Earth's atmosphere and outer space is called as_____.

(A) Durand line
(B) Snow line
(C) Karman Line
(D) Tropopause

Correct Option(s): C

English

10. Global Positioning Service (GPS) is based on the principle of _____.

(A) Transmission
(B) Orbiteration
(C) Trilateration
(D) Globalization

Correct Option(s): C

English

11.

Which of the following formula is used to calculate the uniformity coefficient of a filter media?

(A) D_{60}/D_{10}
(B) D_{60}/D_{100}
(C) D_{10}/D_{60}
(D) $D_{60} - D_{10}$

Correct Option(s): A

English

12. According to Biomedical Waste Management Rules 2016, bags of _____ colour are used to dispose human anatomical waste

(A) Red
(B) Blue
(C) Black
(D) Yellow

Correct Option(s): D

English

13. Bangalore method is used to compost_____

(A) town refuse and night soil
(B) agricultural waste
(C) hazardous waste
(D) radioactive waste

Correct Option(s): A

English

14.

A sedimentation tank receives a sewage of 0.3 m^3/s, having suspended solids of 200 mg/L. The suspended solid removal is 70%. The suspended solid in kg/d in effluent is _____.

(A) 77 kg/day
(B) 1555 kg/day
(C) 3110 kg /day
(D) 3628 kg/day

Correct Option(s): B

English

15. Which of the following property of solid waste is not analyzed during its proximate analysis?

(A) Moisture content
(B) Ash content
(C) Sulphur content
(D) Fixed carbon content

Correct Option(s): C

English

16. Which step of EIA identifies the key issues and impacts that should be further investigated?

(A) Baseline study
(B) Scoping
(C) Impact analysis
(D) Mitigation

Correct Option(s): B

English

17.

The Catalytic converter used in motor vehicles converts:I) NOx to N_2 II) Hydrocarbons to CO_2 III) CO to CO_2 IV) SOx to Sulphur

(A) only I is correct
(B) only I and II are correct
(C) I, II and III are correct
(D) I, II, III and IV are correct

Correct Option(s): C

English

18.

If the depletion of oxygen is found to be 5 mg/L after incubation of a 10% solution of sewage supply for 5 days at 20 ^{o}C, then what is the BOD of the sewage ?

(A) 5 mg/L
(B) 25 mg/L
(C) 50 mg/L
(D) 100 mg/L

Correct Option(s): C

English

19. Which of the following air pollutants causes asphyxia?

(A) Sulphur oxides
(B) Carbon monoxide
(C) Nitrogen oxides
(D) Radionuclides

Correct Option(s): B

English

20. For the treatment of 5,000 cubic meters of water per day, 2 kg/day chlorine is used. The residual chlorine after 10 minutes of contact is 0.1 mg/L. The chlorine demand of the water is _____.

(A) 0.1 mg/L
(B) 0.2 mg/L
(C) 0.3 mg/L
(D) 0.4 mg/L

Correct Option(s): C

English

21. Which of the following statement is INCORRECT regarding Service reservoirs?

(A) Service reservoirs are the storage reservoirs.
(B) Service reservoirs store untreated water.
(C) Service reservoirs store treated water.
(D) Service reservoirs absorb the hourly variations in water demand.

Correct Option(s): B

English

22.

Consider below given products: i. Mosquito coils ii. Drain cleaners iii. Mercury thermostats a) i only b) i and i Which of them is/are domestic hazardous waste?

(A) i only
(B) i and ii only
(C) i, ii and iii
(D) iii only

Correct Option(s): C

English

23. According to Solid Waste Management Rules 2016, The post-closure care of a landfill site shall be conducted for at least _____ years.

(A) 5
(B) 10
(C) 15
(D) 25

Correct Option(s): C

English

24. Which of the following statements is INCORRECT regarding a Construction and Demolition waste recycling facility?

(A) The processing or recycling site should be near to habitation clusters.

(B) The processing or recycling site should be away from national parks.

(C) Processing or recycling site should be fenced or hedged.

(D) Work Zone air quality at the Processing or Recycling site and ambient air quality at the vicinity should be monitored.

Correct Option(s): A

English

25.

_____ is not a mechanical method of sewer cleaning

(A) Gully Emptier (Suction Units)

(B) Hydraulically Propelled Devices

(C) Sewer Cleaning Bucket Machine

(D) Manila Rope and Cloth Ball

Correct Option(s): D

English

26.

Syngas is a mixture of _____ gases

(A) CO_2 and CH_4

(B) CO and O_2

(C) CO_2 and O_2

(D) CO and H_2

Correct Option(s): D

English

27.

_____ deals with the conservation of Wetlands

(A) Vienna Convention

(B) Ramsar Convention

(C) Kyoto Protocol

(D) Montreal Protocol

Correct Option(s): B

English

28. According to the Plastic Waste Management (Amendment) Rules, 2022, Carry bags made of virgin or recycled plastic, shall not be less than _____ after 31 December 2022.

(A) 30 micron

(B) 75 micron

(C) 90 micron

(D) 120 micron

Correct Option(s): D

English

29. A packed bed absorber is treating a gas stream with a pollutant concentration of 500 mg/m³. If the gas flow rate is 200 m³/h and the absorption efficiency is 70%, how many milligrams of pollutant are removed per hour?

(A) 35,000 mg

(B) 70,000 mg

(C) 100,000 mg

(D) 140,000 mg

Correct Option(s): B

English

30.

If a roof has an area of 100 square meters and the average annual rainfall is 800 mm, how much rainwater can be harvested in a year?

(A) 80,000 litres

(B) 80,000 cubic meters

(C) 8,000 litres

(D) 100,000 litres

Correct Option(s): A

English

31. Potassium bromide (KBr) is used in _____.

(A) UV- Visible spectroscopy

(B) Circular dichroism

(C) Atomic Absorption spectrophotometry

(D) Infra-red spectroscopy

Correct Option(s): D

English

32. Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R). (A): Invasive species enrich biodiversity. (R) : Invasive species outcompete native species for resources, disrupt ecosystems, and can drive native species to extinction.

(A) Both A and R are true, but R is not the correct explanation of A.

(B) Both A and R are true and R is the correct explanation of A.

(C) A is correct and R is false.

(D) A is false, and R is correct.

Correct Option(s): D

English

33. A colony of ants increases from 500 to 2000 individuals in 2 years. Its average annual growth rate is _____.

(A) 0.5

(B) 1

(C) 1.5

(D) 2

Correct Option(s): C

English

34.

Which of the following industries waste water that contains high levels of organic pollutants?

(A) Pharmaceutical manufacturing

(B) Glass manufacturing

(C) Cement manufacturing

(D) Metal fabrication

Correct Option(s): A

English

35. Which parameter measures the force exerted by the weight of the air above a given point?

(A) Temperature

(B) Wind velocity

(C) Humidity

(D) Pressure

Correct Option(s): D

English

36. The rate at which the temperature of a rising parcel of air decreases with height is known as_____.

(A) Environmental Lapse Rate

(B) Saturation Mixing Ratio

(C) Adiabatic Lapse Rate

(D) Mixing Ratio

Correct Option(s): C

English

37. The wind rose for a month shows wind direction percentages as follows: N = 5%, E = 10%, S = 25%, W = 60%. If the total number of days in the month is 30, how many days did the wind blow from the W?

(A) 6 days

(B) 12 days

(C) 18 days

(D) 24 days

Correct Option(s): C

English

38. The Gibbs free energy change (ΔG) for a reaction is given by ΔGo = ΔHo - TΔSo. What does a negative ΔG indicate about the reaction?

(A) The reaction is at equilibrium

(B) The reaction is spontaneous

(C) The reaction is non-spontaneous

(D) The reaction has no change in entropy

Correct Option(s): B

English

39. According to Henry's Law, the solubility of a gas in a liquid is directly proportional to_____.

(A) The pressure of the gas above the liquid

(B) The temperature of the liquid

(C) The volume of the gas

(D) The surface area of the liquid

Correct Option(s): A

English

40.

_____ is the primary source of atmospheric ions

(A) Cosmic rays

(B) Volcanic eruptions

(C) Industrial emissions

(D) Soil dust

Correct Option(s): A

English

41. Which of the following is a thermochemical reaction in the atmosphere?

(A) Formation of ozone from oxygen and UV light

(B) Oxidation of methane by hydroxyl radicals

(C) Formation of nitrogen oxides from lightning

(D) Reaction between sulphur dioxide and oxygen to form sulphur trioxide

Correct Option(s): D

English

42.

Water is a universal solvent, because _____ and can dissolve many substances.

(A) It has a neutral pH

(B) It has a high dielectric constant

(C) It boils at 100 °C.

(D) It can dissolve all types of solutes

Correct Option(s): B

English

43. A high positive redox potential (Eh) typically indicates _____.

(A) Neutral pH

(B) Reducing conditions

(C) Oxidizing conditions

(D) Anoxic conditions

Correct Option(s): C

English

44. Photochemical smog is primarily formed from

(A) Nitrogen oxides and volatile organic compounds under sunlight

(B) Sulphur dioxide and particulate matter

(C) Carbon monoxide and ozone

(D) Water vapor and sulphur dioxide

Correct Option(s): A

English

45. A sample of water is analyzed for chloride ions using gravimetry. After precipitation and filtration, the mass of the precipitate (AgCl) is found to be 0.502 grams. Calculate the mass of chloride ions (Cl^-) in the sample. (Molar mass of AgCl = 143.32 g/mol; Molar mass of Cl = 35.45 g/mol)

(A) 0.123 g

(B) 0.502 g

(C) 0.345 g

(D) 0. 143 g

Correct Option(s): A

English

46.

In a paper chromatography experiment, the distance traveled by the spot of a substance is 3.5 cm, and the distance traveled by the solvent front is 8.0 cm. what is the Rf (retention factor) value of the substance ?

(A) 3.589

(B) 8.025

(C) 0.4375

(D) 28.784

Correct Option(s): C

English

47.

The Standard curve for a substance yields a line with the equation $y = 0.150x + 0.020$, where y is absorbance and x is concentration. If the absorbance of a sample is 0.400, then what is its concentration.

(A) 2.533 mol/L

(B) 3.85 mol/L

(C) 0.3 mol/L

(D) 0.08 mol/L

Correct Option(s): A

English

48.

What is the primary characteristic of 'r' selected species?

(A) High parental care and low reproduction rate

(B) Adapted to stable environments with high competition

(C) High reproductive rate and short life span

(D) Low reproductive rate and high longevity

Correct Option(s): C

English

49. In which type of population growth model does the population size stabilize at the carrying capacity?

(A) Exponential growth model

(B) Cyclic growth model

(C) Geometric growth model

(D) Logistic growth model

Correct Option(s): D

English

50. Keystone species is a species _____.

(A) that is the top predator in an ecosystem

(B) that is the most abundant in a community

(C) that plays a critical role in maintaining the structure and diversity of an ecosystem

(D) that competes with all other species in a community

Correct Option(s): C