Paper Code - 5501

M.Sc. Semester-III (Environmental Science) (Old Course)

July-September-2021

CES-301 Environmental Monitoring Techniques

કુલ સમય :– : ૬૦ મીનીટ **કુલ પ્રશ્નો : ૫૦** **વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫**

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

1. Which one of the following is the apex organization in the country in the field of pollution control?
   (a) Water Pollution Control Board (b) Central Pollution Control Board
   (c) Air Pollution Control Board (d) State Pollution Control Board
2. The locations of air quality monitoring stations depends on _____
   (a) Stack height (b) Wind speed (c) Wind direction (d) Rainfall
3. Location of air quality monitoring stations is decided by PCB.
   (a) True (b) False
4. Total Volatile Organic Compounds has to be monitored apart from stipulated NAAQS.
   (a) True (b) False
5. VOC should be monitored at least _____ a year.
   (a) Once (b) Twice (c) Thrice (d) Multiple
6. Stack gaseous emission for the parameters should be carried out _____ basis.
   (a) Annual (b) Quarterly (c) Monthly (d) Hourly
7. Toxic gases such as H_2S, nitrogen oxides causes _____
   (a) Immediate harm to body (b) Slow harm to body (c) Not sure about speed of action (d) None of the mentioned
8. VOC stands for _____
   (a) Viable organic components (b) Volatile organic components
   (c) Varying organic components (d) Virtual organic carriage
9. Which of the following represents the allowed rate of CO_2?
   (a) Less than 5000ppm (b) Less than 700ppm (c) Less than 300ppm (d) Less than 100ppm
10. According to National Ambient Air Quality Standards (NAAQS),concentration of SO_2 ($\mu g/m^3$) in industrial area (24 h) should be less than
    (a) 80 (b) 50 (c) 20 (d) 40
11. According to National Ambient Air Quality Standards (NAAQS), concentration of Lead ($\mu g/m^3$) in industrial area (annual) should be less than
    (a) 1.0 (b) 0.5 (c) 01 (d) 05
12. Good air quality index ranging from
    (a) 0-50 (b) 51-100 (c) 201-300 (d) 301-400
13. For the measurement of Particulate Matter (size less than 2.5 microns) or PM2.5 $\mu g/m^3$ in air which method is used?
    (a) ICP (b) UV-Photometric (c) AAS (d) Gravimetric
14. Which of the following techniques is used for reducing the total dissolved solids (TDS) in the water?
    (a) Osmosis (b) Ion exchange (c) Distillation (d) Both b and c
15. What is the health effects of excess fluoride in drinking water?
    (a) Fluorosis (b) Toothaches (c) Lung disease (d) Intestinal infection
16. Which of the following techniques is used to determine the concentration of odour compounds in the given water sample?
    (a) Settling (b) Flushing (c) Stripping (d) Chlorination
17. Methods for safe disposal of non-biodegradable waste are:
    (a) Recycling (b) Incineration (c) Landfill (d) All of above
18. The water temperature should preferably be less than __ degree Celsius.
    (a) 10 (b) 15 (c) 25 (d) 30
19. The following cause alkalinity as well hardness in natural water.
    (a) Calcium carbonate (b) Calcium bicarbonate (c) Magnesium carbonate (d) All of the above
20. The process of nutrient enrichment is termed as
    (a) Eutrophication (b) Limiting nutrients (c) Enrichment (d) Schistosomiasis
21. In most freshwater lakes, the algal productivity is limited by the availability of which of the following inorganic ions?
    (a) Carbon (b) Nitrogen (c) Phosphorus (d) All of the above
22. Which of the following is said to be a biodegradable waste?
    (a) Plastics (b) Glasses (c) Eggshell (d) Polythene
23. Areas that are under the influence of DDT may observe a decline in the population of birds. This is due to the fact that
    (a) Birds stopped laying eggs altogether (b) The eggs did not hatch
    (c) Predation of the eggs increased (d) None of the above.

24. Measuring BOD (biological oxygen deman(d) is primarily used for
(a) Estimating the types of microbes (b) Determine the level of dissolved oxygen
(c) Estimating the quantity of organic matter in sewage water (d) None of the above
25. The presence of _____ in a water body is an indicator of water pollution.
(a) Zygosporangium (b) E.Coli (c) Deinococcusradiodurans (d) None of the above
26. Lichens are good bioindicators for
(a) Environmental radiation (b) Soil pollution (c) Water and air pollution (d) None of the above
27. _____ is an organism used to gauge the quality of an ecosystem.
(a) Decomposers (b) Predator (c) Bio-remediator (d) Bioindicator
28. _____ is a waste disposal method where solid organic wastes are converted to the residue and gaseous products through combustion.
(a) Incarnation (b) Incineration (c) Incarceration (d) Incubation
29. Algae (seaweeds) are good indicators of heavy metal levels in marine environments
(a) True (b) False
30. Birds as Indicator Species because
(a) They live in every climate and biome; (b) They respond quickly to environmental change
(c) They are relatively easy to track and count. (d) all of above
31. A toxic substance produced by biological system is specially referred to as a ------
(a) toxicant (b) toxin (c) xenobiotic (d) poison
32. Which of the following toxicity can occur due to single exposure?
(a) Acute toxicity (b) Sub-acute toxicity (c) Sub-chronic toxicity (d) Chronic toxicity
33. Which of the following is NOT an initiating event in carcinogenesis?
(a) DNA adduct formation (b) DNA strand breakage (c) oxidative damage of DNA (d) mitogenesis
34. The most common target organ of toxicity is the ----
(a) heart (b) lung (c) CNS (brain and spinal cor(d) (d) skin
35. Which of the following is used in bio degradation of xenobiotics?
(a) Enzymes (b) Chemicals (c) Physical sorting (d) PAHs
36. If two organophosphate insecticides are absorbed into an organism, the result will be----
(a) additive effect (b) synergestic effect (c) potentiation (d) substraction effect
37. The most rapid exposure to a chemical would occur through which of the following routes-------
(a) oral (b) subcutaneous (c) inhalation (d) intramuscular
38. A chemical that is toxic to the brain but which is detoxified in the liver would be expected to be ---
(a) more toxic orally than intramuscularly (b) more toxic rectally than intravenously
(c) more toxic via inhalation than orally (d) more toxic on the skin than intravenously
39. The LD50 is calculated from ------
(a) a quantal dose-response curve (b) a hormesis dose –response curve
(c) a graded dose-response curve (d) a log-log dose-response curve
40. Which of the following are tools used in risk analysis?
(a) toxicology (b) epidemiology (c) clinical trials (d) all of the above
41. Blue, green, and red are the _____ of the visible spectrum.
(a) primary colours (b) primary frequent (c) secondary colours (d) secondary frequent
42. It is easy to integrate GIS, Remote Sensing and GPS technologies because these are:
(a) Digital, special and generic (b) Digital, analogue and manual
(c) Digital, spatial and generic (d) Negative, positive and neutral
43. The purpose of georeferencing is to:
(a) Converting data to a feature class (b) Projecting your data so that it has no distortion
(c) Assigning geographic location information (d) Combining two data set
44. Apart from location, GPS data can also be used for:
(a) Precise timing (b) Frequency calibration (c) Both ((a) and ((b) (d) None of the above
45. The shape of a pixel of an image can only be:
(a) Rectangular (b) Circular (c) Square (d) Triangle
46. Repetitive observations of the same area at equal interval of time, are useful to monitor the dynamic phenomena:
(a) Lithology (b) Vegetative cover (c) Buildings (d) Groundwater
47. In false colour composite (FC(C) image healthy vegetation appears:
(a) Blue (b) Red (c) Green (d) Orange
48. The spectral region of the electromagnetic radiation which passes through the atmosphere without much attenuation is known as:
(a) Ozone hole (b) Atmospheric window (c) Ozone window (d) Black hole
49. Remote sensing techniques make use of the properties of _____ emitted, reflected or diffracted by the sensed objects:
(a) Electric waves (b) Sound waves (c) Electromagnetic waves (d) Wind waves
50. The compounds which does not get degraded under any circumstances is called _____
(a) Recalcitrant (b) Persistent (c) Mineralization (d) Bioaccumulation