

Seat No.

Total No. of Pages : 14

Ph.D. Entrance Examination 2024-25

ENVIRONMENTAL SCIENCE

Subject Code : 58801

Day and Date : Tuesday, 12/11/2024

Total Marks : 100

Time : 04.00 pm to 06.00 pm

Instruction :

1. There will be 50 questions. Each question will carry 2 Marks.
 2. There will be two sections: Section I Research Methodology.
Section II Environmental Science
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Section I

1. The first step of research is:
 - a) Selecting a problem
 - b) Searching a problem
 - c) Finding a problem
 - d) Identifying a problem
2. A research problem is feasible only when:
 - a) it has utility and relevance
 - b) it is researchable
 - c) it is new and adds something to knowledge
 - d) all the above.

3. When a research problem is related to heterogeneous population, the most suitable sampling method is:
 - a) Cluster Sampling
 - b) Stratified Sampling
 - c) Convenient Sampling
 - d) Lottery Method
4. The last stage of research process is.....
 - a) Review of literature
 - b) Report writing
 - c) Research design
 - d) Analysis of data
5. Bibliography means.....
 - a) foot note
 - b) Quotations
 - c) List of book referred
 - d) Biography
6. The first page of the research reports
 - a) Appendix
 - b) Bibliography
 - c) Index
 - d) Title page

7. The essential qualities of a researcher are
 - a) Spirit of free enquiry
 - b) Reliance on observation and evidence
 - c) Systematization or theorizing of knowledge
 - d) All the above
8. Field study is related to
 - a) real life situations
 - b) Laboratory situations
 - c) Experimental situations
 - d) None of these
9. Generally the data of the research is.....
 - a) quantitative only
 - b) Qualitative only
 - c) Both of the above
 - d) None of these
10. Which of the following is not a type of non probability sampling.....
 - a) Snowball sampling
 - b) Stratified random sampling
 - c) Quota sampling
 - d) Convenience sampling

11. What is a research design?
 - a) A way of conducting research that is not grounded in theory
 - b) The choice between using qualitative and quantitative methods
 - c) a framework for every stage of the collection and analysis of data
 - d) None of the above.
12. Questionnaire is filled by
 - a) Respondent
 - b) Everybody
 - c) Enumerator
 - d) None of the above
13. The chi-square test is:
 - a) A mean
 - b) A multi-question tests.
 - c) A statistical mistake.
 - d) A statistic
14. What type of chart is useful for comparing values over categories?
 - a) Pie Chart
 - b) Column Chart
 - c) Line Chart
 - d) Dot Graph

15. Functions in MS Excel must begin with
- a) An() sign
 - b) An Equal Sign
 - c) A Plus Sign
 - d) A > Sign
16. Which technique is generally followed when the population is finite?
- a) Area Sampling Technique
 - b) Purposive Sampling Technique
 - c) Systematic Sampling Technique
 - d) None of the above
17. Which correlation coefficient best explains the relationship between creativity and intelligence?
- a) 1.00
 - b) 0.6
 - c) 0.5
 - d) 0.3
18. The research which is exploring new facts through the study of the past is called.....
- a) Philosophical research
 - b) Historical research
 - c) Mythological research
 - d) Content analysis

19. Identify the correct sequence of research steps:
- a) Selection of topic, review of literature, data collection, interpretation of findings
 - b) Review of literature, selection of topic, data collection, and interpretation of findings
 - c) Selection of topic, data collection, review of literature, interpretation of findings
 - d) Selection of topic, review of literature. interpretation of findings, data collection
20. Which is the main objective of research?
- a) To review the literature
 - b) To summarize what is already known
 - c) to get an academic degree
 - d) To discover new facts or to make fresh interpretation of known facts
21. A researcher is interested in studying the prospects of political party in an urban area. What tool should he prefer for the study
- a) Rating Scale
 - b) Interview
 - c) Questionnaire
 - d) Schedule
22. Which one of the following is an indication of the quality of a research journal?
- a) Impact factor
 - b) h-index
 - c) g-index
 - d) i10-index

23. GIS stands for.....
- a) Geographical Information System
 - b) Geological Information System
 - c) Geometamorphic Information System
 - d) None of these
24. Which of the following is mainly responsible for the causes of water pollution?
- a) Afforestation
 - b) Oil refineries
 - c) Paper factories
 - d) Both b and c
25. Which one of the following references is written according to American Psychological Association (APA) Format?
- a) Sharma, V. (2010). Fundamentals of Computer Science. New Delhi: Tata McGraw Hill
 - b) Sharma, V. 2010. Fundamentals of Computer Science. New Delhi: Tata McGraw Hill
 - c) Sharma. V. 2010. Fundamentals of Computer Science, New Delhi: Tata McGraw Hill
 - d) Sharma, V. (2010), Fundamentals of Computer Science, New Delhi: Tata McGraw Hill

Section II

26. The dominant source of pollution due to oxides of nitrogen (NO_x) in urban areas is
- a) Road transport
 - b) Commercial Sector
 - c) Energy use in industry
 - d) Power plants
27. Which of the following is not a water-borne disease?
- a) Typhoid
 - b) Hepatitis
 - c) Cholera
 - d) Dengue
28. Which of the following natural hazards is not hydro-meteorological?
- a) Snow avalanche
 - b) Sea erosion
 - c) Tropical cyclone
 - d) Tsunami
29. Identify the air pollutant in urban areas which irritates eyes and also respiratory tract of human beings.
- a) Particulate matter
 - b) Oxides of nitrogen
 - c) Surface ozone
 - d) Carbon monoxide

30. Which of the following is the largest source of water pollution in major rivers of India?
- a) Untreated sewage
 - b) Agriculture run- off
 - c) Unregulated small scale industries
 - d) Religious practices
31. How many Sustainable development goals are there?
- a) 12
 - b) 15
 - c) 17
 - d) 20
32. Which of the following pollutants can cause cancer in humans?
- a) Pesticides
 - b) Mercury
 - c) Lead
 - d) Ozone
33. Which of the following phenomena is not a natural hazard?
- a) Wildfire
 - b) Lightning
 - c) Landslide
 - d) Chemical contamination

34. Which of the following combinations represent renewable natural resources?
- a) Fertile soil, fresh water and natural gas
 - b) Clean air, phosphates and biological diversity
 - c) Fishes, fertile soil and fresh water
 - d) Oil, forests and tides
35. In the recently launched Air Quality Index in India, which of the following pollutants is not included?
- a) Carbon monoxide
 - b) Fine particulate matter
 - c) Ozone
 - d) Chlorofluorocarbons
36. Which of the anthropogenic activity accounts for more than ~2/3rd of global water consumption?
- a) Agriculture
 - b) Hydropower generation
 - c) Industry
 - d) Domestic and Municipal usage
37. One of the anthropogenic sources of gaseous pollutants chlorofluorocarbons (CFCs) in air is
- a) Cement industry
 - b) Fertiliser industry
 - c) Foam industry
 - d) Pesticide industry

38. Which of the following element make e-waste hazardous in nature?
- a) Lead
 - b) Glass
 - c) Plastic
 - d) Iron
39. The term biomass most commonly refers to.....
- a) Inorganic matter
 - b) Chemicals
 - c) Ammonium compounds
 - d) Organic matter
40. Which of the following is the most dangerous type of radiation.....
- a) Alpha radiation
 - b) Beta radiation
 - c) Gamma radiation
 - d) None of the above
41. From the sun the solar energy is radiated in the form of waves
- a) Electromagnetic waves
 - b) Infrared waves
 - c) Transverse waves
 - d) None of the above
42. The biogas is referred to as
- a) Bio ethanol
 - b) Biodiesel
 - c) Bio butanol
 - d) Bio methane

43. What is the hazardous pollutant released from electron tubes?
- a) Arsenic
 - b) Barium
 - c) Cobalt
 - d) Cadmium
44. Which of the following is used to produce biogas from biomass?
- a) Anaerobic treatment
 - b) Aerobic treatment
 - c) Fermentation
 - d) Pyrolysis
45. Which of the following is a substrate for biogas production?
- a) Municipal and residential waste
 - b) E-waste
 - c) Metallic waste
 - d) Gaseous effluents
46. The source of energy used for satellites is
- a) Solar Cells
 - b) Edison Cells.
 - c) Fuel Cells
 - d) Cryogenic Cells

47. Minamata disaster' in Japan was caused by pollution due to.....
- a) Lead
 - b) Mercury
 - c) Cadmium
 - d) Zinc
48. Biomagnification means increase in the
- a) Increase in concentration of pollutants in living organisms
 - b) number of species
 - c) size of living organisms
 - d) biomass
49. In a fuel cell driven vehicle, the energy is obtained from the combustion of
- a) Methane
 - b) Hydrogen
 - c) LPG
 - d) CNG
50. Which of the following best indicates the steps of anaerobic digestion?
- a) Waste water feed → biogas storage → generator → biogas
 - b) Waste water feed → digester → biogas → biogas storage → generator
 - c) Generator → waste water feed → digester → biogas → biogas storage
 - d) Waste water feed → biogas → digester → biogas storage → generator

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- ROUGH WORK -