Environmental Science

Paper II

Time Allowed : 75 Minutes]   **[Maximum Marks : 100**

Note : This Paper contains `Fifty (50)` multiple choice questions, each question carrying `Two (2)` marks. Attempt *All* questions.

1. In terms of concentration by volume, which of the following gases is more abundant in atmosphere :

    (A) Ar

    (B) CO_2

    (C) NO_2

    (D) CH_4

2. Primary climatic zones are formed on the basis of :

    (A) Temperature and rainfall

    (B) Relative humidity

    (C) Range of temperature

    (D) Rainfall

3. The average value of solar insolation (W/m^2) at the earth's surface is :

    (A) ~ 550

    (B) ~ 250

    (C) ~ 350

    (D) ~ 1450

4. Trade winds are found :

    (A) between pole and 30º latitude

    (B) between pole and 60º latitude

    (C) between equator and 30º latitude

    (D) between 30º and 60º latitudes

5. The most commonly used method for desalination/desalting of water is :

    (A) distillation

    (B) electrodialysis

    (C) flash evaporation

    (D) reverse osmosis

6. The biggest source of hydrocarbons in the atmosphere is :

    (A) petroleum burning

    (B) coal consumption

    (C) refuse burning

    (D) wood burning

7. Iodometry titration is used in estimation of :

   (A) Total hardness

   (B) Dissolved oxygen

   (C) COD

   (D) Chlorides

8. Hollow cathode lamp is used in which of the following analytical instruments :

   (A) HPLC

   (B) XRF

   (C) GC

   (D) AAS

9. Which one is *not* a biochemical action of arsenic in human body ?

   (A) Coagulation of proteins

   (B) Complexation with enzymes

   (C) Uncoupling of phosphorylation

   (D) Inhibition of oxygen transport

10. The metal considered as most toxic and most hazardous of the non-radioactive substances used in the industry is :

    (A) Beryllium

    (B) Chromium

    (C) Selenium

    (D) Cadmium

11. Which of the following ecosystems has inverted ecological pyramid of biomass ?

    (A) Forest

    (B) Pond

    (C) Desert

    (D) Soil

12. Which of the following is autotroph ?

    (A) Aspergillus

    (B) Plasmodium

    (C) Spirogyra

    (D) Amoeba

13. Translocation of carbonates in laterite soil is due to :

    (A) Shrubs

    (B) Herbs

    (C) Trees

    (D) Grass

14. The most important forest-product for neighbouring population is :

    (A) Timber

    (B) Grass

    (C) Gum

    (D) Fruits

15. Which of the following organisms is nodulating nitrogen fixer ?

    (A) Azotobacter

    (B) Rhizobium

    (C) Anabaena

    (D) Azospirillum

16. The tropical cyclones are associated with :

    (A) Clockwise circulating strong winds in northern hemisphere

    (B) Storm surge

    (C) Anti-clockwise circulating light winds in southern hemisphere

    (D) Light and variable winds

17. Earthquake related damage is mainly due to :

    (A) Body waves

    (B) S-waves

    (C) Surface waves

    (D) P-waves

18. Nearly....................of the global fresh water is frozen in ice caps.

    (A) 90%

    (B) 98%

    (C) 80%

    (D) 95%

19. Landslides are reported in Western Ghats which are caused due to :

(A) Hot summer winds

(B) Sea breeze

(C) Heavy rains

(D) Land breeze

20. The term TM refers to :

(A) Thematic Mapping

(B) Temperature Mapping

(C) Temperature Monitoring

(D) Total Mapping

21. The maximum theoretical efficiency of a photo-voltaic (PV) cell is approximately :

(A) 5%

(B) 10%

(C) 25%

(D) 45%

22. 1 ppm rise in CO_2 levels in atmosphere corresponds to how much carbon content ?

(A) 1.2 Gtonnes

(B) 2.12 Gtonnes

(C) 4.6 Gtonnes

(D) 11.2 Mtonnes

23. For an ideal wind turbine the power output varies with wind speed V as proportional to :

(A) V

(B) V^2

(C) V^3

(D) $V^{3/2}$

24. Which of the following areas have a maximum potential for geothermal energy in India ?

(A) Western Ghats

(B) Ladakh

(C) Punjab

(D) Pondicherry

25. Biofuels are being increasingly used as these are :

   (A) Less polluting and renewable

   (B) More affordable

   (C) Having more energy content

   (D) Water efficient

26. Which of the following indices is employed in noise standards ?

   (A) L_{10}

   (B) L_{eq}

   (C) L_{dn}

   (D) L_{90}

27. The microbes inhabit marine habitat due to their ability to grow at :

   (A) Neutral pH

   (B) Low water activity

   (C) Low temperature

   (D) Alkaline pH

28. Osmosis means :

   (A) Flow of water from high to low concentration of solute

   (B) Flow of solute from low concentration to high concentration

   (C) Flow of water from low to high concentration of solute

   (D) Flow of solute from high concentration of solute to low concentration of solute

29. Aceticlastic bacteria produce methane from :

   (A) CO_2

   (B) CH_3COOH

   (C) CO_2 and H_2

   (D) H_2 and CO

30. Which of the following is unique parameter of biomass ?

   (A) MLVSS

   (B) Sludge

   (C) MLSS

   (D) Total Solids

[P.T.O.

31. 'Leopold' is an example of.............. .

    (A) Simple matrix

    (B) Stepped matrix

    (C) Descriptive checklist

    (D) Questionnaire checklist

32. The non-technical summary of EIA is known as :

    (A) Environmental Management System

    (B) Environmental Policy

    (C) Environmental Impact Statement

    (D) Environmental Audit

33. For impact identification in EIA which technique is easy to use and understand :

    (A) Checklists

    (B) Networks

    (C) Overlay maps

    (D) Mathematical models

34. The National Committee on Environmental Planning (NECPC) was constituted in :

    (A) 1979

    (B) 1972

    (C) 1982

    (D) 1986

35. The World Summit was held at Stockholm in 1972 under the title :

    (A) Human and Environment

    (B) Climate Change

    (C) Population Explosion

    (D) Biodiversity

36. Transboundary movement of ivory products is banned by :

    (A) Forest Conservation Act

    (B) Environment Protection Act

    (C) Indian Forest Act

    (D) Wildlife Protection Act

37. The rate of solid waste generation per capita per day by Indian population is :

   (A) 0.35 kg

   (B) 0.5 kg

   (C) 0.2 kg

   (D) 1.5 kg

38. Biomedical waste is hazardous due to the presence of :

   (A) Cellulosic matter

   (B) Waste food

   (C) Pathogens

   (D) Fruit waste

39. Public Insurance Liability Act was enacted in the year :

   (A) 1991

   (B) 1987

   (C) 1986

   (D) 1996

40. Carbon intensity means :

   (A) CO_2 emissions/GDP

   (B) CO_2 emissions/m^2

   (C) CO_2 emissions per person

   (D) CO_2 emissions

41. The null hypothesis pertaining to individual regression co-efficient is tested using................ .

   (A) t-statistic

   (B) F-statistic

   (C) Chi-square statistic

   (D) Z-statistic

42. Bivariate correlation co-efficient represents degree of...............between two variables.

   (A) Difference

   (B) Association

   (C) Convergence

   (D) Divergence

43. Percentage variation in dependent variable attributed to independent is reflected in the value of............. .

   (A) Correlation co-efficient

   (B) Co-efficient of determination

   (C) Regression co-efficient

   (D) 't' value

44. For the large sample size 't' distribution approaches................. .

   (A) Normal distribution

   (B) Poisson distribution

   (C) Binomial distribution

   (D) F-distribution

45. Which of the following represents sample statistics ?

   (A) μ

   (B) σ

   (C) $\bar{x}$

   (D) σ^2

46. Kyoto protocol envisages reduction of CO_2 emissions with reference to 1990 levels by which of the following percentages :

   (A) 10.2

   (B) 5.2

   (C) 15.8

   (D) 25.5

47. Renewable sources of energy are *not* very popular as they are not yet :

   (A) Efficient

   (B) Accessible

   (C) Acceptable

   (D) Affordable

48. Ramsar Convention is for protection and conservation of :

   (A) Wildlife

   (B) Wetland

   (C) Desert

   (D) Atmospheric ozone

49. Which of the following groups of organisms can be used for restoration of wasteland ?

   (A) Blue green algae

   (B) Fungi

   (C) Heterotrophic bacteria

   (D) Protozoans

50. As per resolution of Johannesburg Summit in year 2002, people not having access to safe drinking water and sanitation should be brought down by...................by the year 2015.

   (A) 10%

   (B) 25%

   (C) 50%

   (D) 75%

ROUGH WORK

ROUGH WORK