

2013 June UGC NET Solved Question Paper in Environmental Sciences, Paper II

1. Assertion (A): Every country should integrate the principles of sustainable development into its policies and programmes.

Reason (R): Environmental resources are a Nation's wealth.

Choose the correct code from the following:

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (B) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (C) (A) is true, but (R) is false.
- (D) (A) is false, but (R) is true.

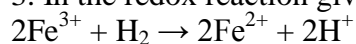
Answer: (B)

2. Wind rose represents statistical distribution of

- (A) Wind velocity in vector form
- (B) Wind speeds in scalar form
- (C) Wind speeds in π diagram
- (D) Wind speeds in the form of histograms

Answer: (A)

3. In the redox reaction given below, which one of the substrates in forward reaction is oxidized?



- (A) Fe^{3+}
- (B) H_2
- (C) H^+

(D) Fe^{2+}

Answer: (B)

4. If soil in a given area is wetted and allowed to drain till percolation is stopped, the amount of water thus retained is called

(A) Storage capacity

(B) Capillary capacity

(C) Hygroscopic capacity

(D) Field capacity

Answer: (D)

5. Quantity of 5M HCl required for preparing 1000 ml of 0.1 M HCl is,

(A) 20 ml

(B) 2 ml

(C) 200 ml

(D) 100 ml

Answer: (A)

6. The method which can be used for the softening of water having high calcium, high magnesium-carbonate hardness and some noncarbonated hardness

(A) single-stage lime process.

(B) Excess lime process.

(C) Single stage lime-soda ash process.

(D) Excess lime-soda ash process.

Answer: (D)

7. Spotted deer, Asiatic wild ass, Black buck are,

- (A) Endangered species
- (B) Vulnerable species
- (C) Threatened species
- (D) Key species

Answer: (B)

8. Specific mortality of members of a population is expressed by

- (A) Life table
- (B) Survivorship curve
- (C) Rate of mortality
- (D) Rate of fecundity

Answer: (B)

9. Which group of vertebrate comprises maximum number of endangered species?

- (A) Fish
- (B) Amphibia
- (C) Reptiles
- (D) Birds

Answer: (D)

10. Under anaerobic condition denitrifying Pseudomonas changes,

- (A) Nitrate to molecular nitrogen
- (B) Nitrate to ammonia
- (C) Nitrate to Nitrite
- (D) Nitrite to Nitrate

Answer: (A)

11. The Phenomenon of having higher number of species in Eco tone is called

- (A) Dominance effect
- (B) Edge effect
- (C) Abundance
- (D) Frequency

Answer: (B)

12. Which specific common feature is not found in zooplankton and rabbit?

- (A) Both are animals
- (B) Both are primary consumers
- (C) Both are carnivores
- (D) Both are herbivores

Answer: (C)

13. The following exogenous and endogenous factors are the cause of extinction of animal species:

- I. Ecological niche
- II. Decrease in reproductive potency.

III. Lesser adaptability to fluctuating environment.

Choose the correct answer from the codes given below:

Codes:

(A) I only

(B) II only

(C) I and II

(D) I, II and III

Answer: (D)

14. Positive mass balance of glaciers has been recently reported from

(A) Eastern Himalayas

(B) Nepal Himalayas

(C) Western Himalayas

(D) Karakoram

Answer: (D)

15. Which of the following will lead to reduction in greenhouse gases in atmosphere?

(A) Increased chemical weathering of rocks.

(B) Volcanic eruption

(C) Lowering of mean sea level

(D) An increase in melting of glacial ice

Answer: (A)

16. The unconsolidated material with highest permeability is

- (A) Landslide with clayey component
- (B) Altered volcanic ash
- (C) Well sorted alluvial sand
- (D) Buried mud flows

Answer: (C)

17. Which of the following component of cryosphere has the longest life?

- (A) Sea ice
- (B) Icebergs
- (C) Valley glaciers
- (D) Ice sheets

Answer: (D)

18. Aerobic bacteria is most active in

- (A) Moist and saturated soil
- (B) Moist and non-saturated soil
- (C) Alluvial soil
- (D) Permafrost

Answer: (B)

19. Andisols are formed by

- (A) Biological activity

- (B) Erosion by wind
- (C) Erosion by waves
- (D) Volcanoes

Answer: (D)

20. In case of photovoltaic cell, the maximum theoretical efficiency of conversion is

- (A) ~ 45 %
- (B) ~ 30 %
- (C) ~ 25 %
- (D) ~ 50 %

Answer: (A)

21. Consider an ideal wind power generator of the wind speed increases 3 times, the power output would increase by how many times?

- (A) 3
- (B) 9
- (C) 27
- (D) 81

Answer: (C)

22. Identify the correct sequence in increasing order of total CO₂ emissions from various countries at present.

- (A) Britain < India < China < USA
- (B) India < Britain < China < USA
- (C) Britain < USA < India < China

(D) Britain < India < USA < China

Answer: (D)

23. Arsenic compounds cause

(A) Dwarfism

(B) Dermatitis

(C) Thyrotoxicosis

(D) Wilson's disease

Answer: (B)

24. What is the pE value in an acid mine water sample having $[\text{Fe}^{2+}] = 7.03 \times 10^{-3} \text{ M}$ and $[\text{Fe}^{3+}] = 3.71 \times 10^{-4} \text{ M}$

(A) 10.5

(B) 12.5

(C) 14.5

(D) 18.5

Answer: (C)

25. Assertion (A): Chronic exposure to ozone is a possible contributor to forest decline.

Reason (R): Surface ozone is a greenhouse gas.

Identify the correct code:

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

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

(C) (A) is true, but (R) is false.

(D) (A) is false, but (R) is true.

Answer: (B)

26. Identify the most dominant pollutant in terms of its concentration levels in urban atmosphere.

(A) Oxides of nitrogen

(B) Oxides of sulphur

(C) Particulate matter

(D) Carbon monoxide

Answer: (D)

27. The main constituents of photochemical smog are

(A) Oxides of sulphur and CO

(B) Oxides of sulphur and hydrocarbons

(C) Oxides of nitrogen and CO

(D) Oxides of nitrogen, hydrocarbons and ozone

Answer: (D)

28. The air borne fraction of carbon is

(A) ~ 0.72

(B) ~ 0.62

(C) ~ 0.46

(D) ~ 0.38

Answer: (C)

29. The noise index L_{eq} is used for noise standards in ambient environment of urban areas. The prescribed duration of the integration associated with L_{eq} is

- (A) 12 hours
- (B) 8 hours
- (C) 1 hour
- (D) 30 minutes

Answer: (B)

30. In alkaline soils, which of the following is not present in soluble state?

- (A) Phosphorous
- (B) Calcium
- (C) Nitrates
- (D) Potassium

Answer: (A)

31. Which one of the following is not a post audit activity under environmental audit process?

- (A) Review of draft report by Law department.
- (B) Issue of final report to functional specialist.
- (C) Develop action plan to establish responsibility.
- (D) Report audit findings.

Answer: (D)

32. Which one of the following pairs is correctly matched?

- (A) Specification for environmental management system ISO 14001
- (B) Environmental performance evaluation ISO 14040
- (C) Guidelines for environmental auditing ISO 14000
- (D) Environmental labels and declaration ISO 14004

Answer: (A)

33. In accordance with the Indian EIA notification 2006, within how many days if Environmental Appraisal Committee does not specify the Terms of Reference, the proponent can go ahead with its own Terms of Reference.

- (A) 15 days
- (B) 45 days
- (C) 60 days
- (D) 90 days

Answer: (C)

34. Which is the correct sequence for impact assessment process in EIA?

- (A) Description of Environment → Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs.
- (B) Identification of impacts → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs.
- (C) Identification of impacts → Description of Environment → Prediction of impacts → Evaluation of impacts → Identification of mitigation needs.
- (D) Prediction of impacts → Identification of impacts → Description of environment → Evaluation of impacts → Identification of mitigation needs.

Answer: (A)

35. Quantifying the energy and raw material requirement as a part of life cycle assessment, is termed as

- (A) Life Cycle improvement analysis.
- (B) Life Cycle impact analysis.
- (C) Life Cycle inventory.
- (D) Life Cycle pre-requisites.

Answer: (C)

36. Which of the following pertains to “high-waste approach” in dealing with the solid and hazardous wastes?

- (A) Burying and burning
- (B) Recycling
- (C) Composting
- (D) Reusing

Answer: (A)

37. Assertion (A): Dumping of sewage to river water may decrease oxygen even below 4 mg/l.

Reason (R): Dumping of sewage pollutes river water heavily.

Identify the correct answer:

- (A) Both (A) and (R) are true with (R) being the correct explanation.
- (B) Both (A) and (R) are true, but (R) is not the correct explanation.
- (C) (A) is true, but (R) is wrong.
- (D) Both (A) and (R) are wrong.

Answer: (A)

38. In most of the studies, a large sample size is anticipated to

- (A) Get a low level of precision.
- (B) Maximize the sampling error.
- (C) Get a high level of precision.
- (D) Maximize the standard deviation.

Answer: (C)

39. The geometric mean of 4, 8 and 16 is

- (A) 9.3
- (B) 8.0
- (C) 4.8
- (D) 10.2

Answer: (B)

Answer: (A)

41. The mean and standard deviation of a Binomial distribution are 9 and 1, respectively. The first moment of the distribution is

- (A) 9
- (B) 3
- (C) 1
- (D) 0

Answer: (D)

42. Which one of the following is used in manufacturing flexible plastic bags and sheets?

- (A) Polystyrene (PS)
- (B) Polyethylene terephthalate (PET)
- (C) Low density polyethylene (LDPE)
- (D) TEFLON

Answer: (C)

43. Which one of the following is a non-formal environment education and awareness programme?

- (A) Environmental appreciation courses.
- (B) National Environment Awareness Campaign.
- (C) Environmental Education in school system.
- (D) Environmental Management Business Studies.

Answer: (B)

44. Bio parks are conceived, developed and managed with a goal of conservation of biodiversity through,

- (i) Development of educational and scientific activities.
- (ii) Promoting silviculture and monoculture.
- (iii) Promoting local community welfare without harming the natural habitat.

Choose the correct answer from the codes:

Codes:

- (A) (i) and (ii)

(B) (ii) and (iii)

(C) (i) and (iii)

(D) (i), (ii) and (iii)

Answer: (C)

45. In about a 7 metre deep pond the series of vegetation development will be

(A) Submerged → Floating → Reed → Herb

(B) Floating → Submerged → Reed → Herb

(C) Floating → Reed → Submerged → Herb

(D) Submerged → Reed → Floating → Herb

Answer: (A)

46. In terrestrial ecosystems, roughly how much NPP ends up being broken down by decomposers?

(A) 90 %

(B) 70 %

(C) 50 %

(D) 10 %

Answer: (A)

47. Which of the following BOD level waste water is permitted to be released inlands by industries under water (Prevention and Control of Pollution) Act, 1974?_

(A) 30 mg/l

(B) 80 mg/l

(C) 100 mg/l

(D) 150 mg/l

Answer: (A)

48. Hydraulic conductivity is a function of

(A) medium alone

(B) Fluid alone

(C) Either fluid or medium

(D) Both fluid and medium

Answer: (D)

49. Dachigan sanctuary is associated with

(A) Hangul

(B) Rhinoceros

(C) Barking deer

(D) Leopard

Answer: (A)

50. Rio+20 summit was held in

(A) Durban

(B) Johannesburg

(C) Rio de Janeiro

(D) Cancun

Answer: (C)