

## ENVIRONMENTAL SCIENCE

1. The thickness of earth's core is
  - (A) 2883 km
  - (B) 2895 km
  - (C) 3475 km
  - (D) 6370 km
2. Which of the following groups of geological periods are included in Cenozoic era ?
  - (A) Holocene, Oligocene, Pliocene and Miocene
  - (B) Eocene, Oligocene, Miocene and Pliocene
  - (C) Cretaceous, Carboniferous, Cambrian and Devonian
  - (D) Miocene, Eocene, Jurassic and Triassic
3. To which group does the black cotton soil of India belong ?
  - (A) Laterite
  - (B) Podzol
  - (C) Chernozem
  - (D) Alluvial
4. Laterization occurs in :
  - (A) Warm, humid areas
  - (B) Poorly drained areas
  - (C) Cool temperate areas
  - (D) Riverine tracts
5. Which country loses higher amount of top soil from its croplands due to erosion ?
  - (A) Brazil
  - (B) China
  - (C) India
  - (D) USA

6. Gully erosion have already degraded the land in India to the tune of :
- (A) 10 lakh hectares
  - (B) 40 lakh hectares
  - (C) 70 lakh hectares
  - (D) 100 lakh hectares
7. The pedogenic regime of calcification is commonly associated with :
- (A) Hot and humid areas
  - (B) Cool and temperate areas
  - (C) Mid latitude steep lands
  - (D) Coastal areas
8. The essential constituent of igneous rock is :
- (A) Carbon
  - (B) Calcium
  - (C) Magnesium
  - (D) Silica
9. Which one of the longest dam in India ?
- (A) Bhakra
  - (B) Damodar
  - (C) Hirakud
  - (D) Narmada
10. Of which river system does the Teesta form a part ?
- (A) Ganga
  - (B) Brahmaputra
  - (C) Indus
  - (D) Godavari

11. The average density of population in India as per 2001 census was :
- (A) 39 persons / km<sup>2</sup>
  - (B) 117 persons / km<sup>2</sup>
  - (C) 324 persons / km<sup>2</sup>
  - (D) > 600 persons / km<sup>2</sup>
12. Which are the factors leading to the development of nucleated settlements?
- I Universal availability of rainfall
  - II Rough terrain
  - III Danger to life and property
  - IV Plain topography
- (A) I and IV
  - (B) I, II and IV
  - (C) II, III and IV
  - (D) III and IV
13. Copper—gold—iron—coal are connected with
- (A) Kolar—Kundermukh—Khetri—Jharia
  - (B) Khetri—Kolar—Kundermukh—Jharia
  - (C) Kundermukh—Kolar—Khetri—Jharia
  - (D) Kolar—Khetri—Jharia—Kundermukh
14. Hydropower derived from water, is one of the earliest sources of energy. Where was the first hydel plant set-up in 1897 in India?
- (A) Shimla
  - (B) Dehra Dun
  - (C) Kullu
  - (D) Darjiling
15. Which area of the J&K State does not contain limestone ?
- (A) Doda
  - (B) Kupwara
  - (C) Poonch
  - (D) Kargil

16. In Kashmir Valley the Kerawas (*Waduras*) better development in the :
- (A) Northern region
  - (B) Southern region
  - (C) Eastern region
  - (D) Western region
17. Fluidicity of water is maintained by
- (A) Delayed formation and dissociation of hydrogen bonds between water molecules.
  - (B) Rapid formation and dissociation of hydrogen bonds between water molecules
  - (C) Greater electronegativity of oxygen than hydrogen
  - (D) All the above
18. Dipole moment (degree of polarity) of water is :
- (A) 0.90 debye
  - (B) 1.49 debye
  - (C) 1.64 debye
  - (D) 1.84 debye
19. Little leaf/leaf rosetting is a deficiency disease of :
- (A) Fe (Iron)
  - (B) Mn (Manganese)
  - (C) Zn (Zinc)
  - (D) B (Boron)
20. Which of the following is *not* an essential micro-nutrient ?
- (A) Boron
  - (B) Nickel
  - (C) Manganese
  - (D) Molybdenum



21. Synthetic polymer which resembles natural rubber is :
- (A) Neoprene
  - (B) Chloroprene
  - (C) Glyptal
  - (D) None of the above
22.  $F_2C = CF_2$  is a monomer of :
- (A) Teflon
  - (B) Glyptal
  - (C) Nylon-6
  - (D) Buna-S
23. Sucrose is made up of :
- (A) D-glucose + L-fructose
  - (B) D-glucose + D-fructose
  - (C) L-glucose + L-fructose
  - (D) L-fructose + L-glucose
24. The vitamin that contains nitrogen and sulphur is :
- (A) Vitamin A
  - (B) Vitamin B<sub>1</sub>
  - (C) Vitamin B<sub>12</sub>
  - (D) Vitamin C
25. Which biogeochemical cycle does *not* necessarily have to involve decomposers
- (A) Carbon
  - (B) Nitrogen
  - (C) Phosphorus
  - (D) None of the above

26. Nitrification is a process in which :
- (A) Ammonia is converted into Nitrate
  - (B) Ammonia is converted into Nitrite
  - (C) Nitrite is converted into Ammonia
  - (D) Nitrate is converted into Ammonia
27. How much solar energy is required to run the hydrological cycle in nature ?
- (A)  $6.0 \times 10^{20} \text{ KJ Yr}^{-1}$
  - (B)  $7.1 \times 10^{20} \text{ KJ Yr}^{-1}$
  - (C)  $8.2 \times 10^{20} \text{ KJ Yr}^{-1}$
  - (D)  $9.3 \times 10^{20} \text{ KJ Yr}^{-1}$
28. Water cycle is made up of two overlapping cycles. These are :
- (A) Groundwater and atmospheric water cycle
  - (B) Surface water and atmospheric cycle
  - (C) Larger global and smaller local  $\text{H}_2\text{O}$  cycle
  - (D) Oceanic and freshwater cycles
29. Which part of human body is most affected by chronic lead toxicity ?
- (A) Muscles and bones
  - (B) Nervous system
  - (C) Reproductive system
  - (D) Blood-vascular system
30. Which one of the following metals causes systematic poisoning in man ?
- (A) Zinc
  - (B) Manganese
  - (C) Selenium
  - (D) Lead

31. Aspirin is an acetylation product of :
- (A) *o*-hydroxyl benzoic acid
  - (B) *o*-dihydroxy benzene
  - (C) *m*-hydroxyl benzoic acid
  - (D) *p*-dihydroxy benzene
32. Which of the following is non-narcotic analgesic drug ?
- (A) Aspirin
  - (B) Phenyl-butazone
  - (C) Both (A) and (B)
  - (D) Paracetamol
33. Organic compounds first evolved on earth and required for origin of life were :
- (A) Urea and amino acids
  - (B) Proteins and nucleic acids
  - (C) Proteins and amino acids
  - (D) Urea and nucleic acids
34. Eukaryotes developed around :
- (A) 1.6 billion years ago
  - (B) 2.0 billion years ago
  - (C) 2.5 billion years ago
  - (D) 2.8 billion years ago
35. Emersion effect is related to
- (A) Decrease in photosynthesis in presence of high light intensity
  - (B) Decrease in photosynthesis when lights of two different wavelengths are provided together
  - (C) Increase in photosynthesis in presence of monochromatic light
  - (D) Increase in photosynthesis when lights of two different wavelengths are provided together

36. Photophosphorylation is synthesis of :
- (A) ADP from ATP
  - (B) Glucose 6-phosphate from glucose
  - (C) ATP from ADP
  - (D) NADP<sup>+</sup> from NAD<sup>+</sup>
37. Connecting link between glycolysis and Krebs cycle is / before entering Krebs cycle pyruvate is changed to :
- (A) Oxaloacetate
  - (B) PEP
  - (C) Pyruvate
  - (D) Acetyl CoA
38. Substrate phosphorylation occurs during
- (A) Fumaric acid → Malic acid
  - (B) Oxalo-succinic acid → α-ketoglutaric acid
  - (C) Succinic acid → fumaric acid
  - (D) α-ketoglutaric acid → Succinic acid
39. Widely used tool in genetic engineering of crop plants is :
- (A) Protoplast fusion
  - (B) Transposon
  - (C) Microinjection
  - (D) Agrobacterium mediation
40. Restriction endonucleases (enzymes) are used in genetic engineering because they :
- (A) can join DNA fragments
  - (B) cut DNA at specific base sequence
  - (C) cut DNA at variable sites
  - (D) are proteolytic enzymes which degrade harmful proteins



41. Which of the following cluster is purely useful animals to man :
- (A) *Apis, Laccifera and Hirudanaria*
  - (B) *Naja, Heloderma and Python*
  - (C) *Apis, Bombyx and Cirrhina mirigala*
  - (D) *Bubalus bubalus, Panthera leo and Neptunus*
42. Which of the following plants yield cardiac stimulant and tonic :
- (A) *Rauwolfia*
  - (B) *Aconitum*
  - (C) *Digitalis*
  - (D) *Dioscorea*
43. Lichens, bioindicators of air quality, are extremely sensitive to two common atmospheric pollutants
- (A)  $\text{NO}_2$  and  $\text{SO}_2$
  - (B)  $\text{O}_3$  and  $\text{SO}_2$
  - (C)  $\text{CO}_2$  and  $\text{NO}_2$
  - (D)  $\text{O}_3$  and  $\text{NO}_2$
44. Photochemical smog consists of :
- (A)  $\text{O}_3$ ,  $\text{SO}_x$  and hydrocarbons
  - (B)  $\text{O}_3$ , PAN and  $\text{NO}_x$
  - (C)  $\text{SO}_2$ ,  $\text{CO}_2$  and hydrocarbon
  - (D)  $\text{SO}_2$ , PAN and smoke
45. Which algal group is the best indicator of water pollution ?
- (A) Cyanophyceae
  - (B) Chlorophyceae
  - (C) Bacillariophyceae
  - (D) Desmidiaceae

46. Which minerals are found in the run-off from agricultural land and treated and untreated sewage effluents, which are highly responsible for eutrophication of water bodies ?
- (A) Phosphorus and carbon
  - (B) Potassium and arsenic
  - (C) Nitrogen and phosphorus
  - (D) Sodium and calcium
47. Which among the following is generally the best way to extract energy from biomass having a high moisture content ?
- (A) Gasification
  - (B) Pyrolysis
  - (C) Anaerobic digestion
  - (D) Hydrolysis and distillation
48. Least polluting energy generating technique among the following is :
- (A) Magnetic hydrodynamics
  - (B) Thermal power
  - (C) Fission based nuclear energy
  - (D) Photovoltaic
49. Which of the following species of rhinoceros is said to be most critically endangered species ?
- (A) Indian one-horned rhino
  - (B) Javan rhino
  - (C) African black rhino
  - (D) Sumatran rhino
50. An example of *in situ* biological conservation method is to establish :
- (A) Seed Banks
  - (B) Botanical gardens
  - (C) Zoos
  - (D) Biosphere reservoir

51. Which of the following diseases are caused by pathogenic protozoa
- I Coccidiosis
  - II Babesiosis
  - III Snoring disease
  - IV Johne's disease
- (A) I and II  
(B) I, II and IV  
(C) II and IV  
(D) I, II and III
52. The helminth parasite of man which inhabits the lymph vessels and causes elephantiasis :
- (A) Enterobius
  - (B) Ancylostoma
  - (C) Wucheria
  - (D) Taenia
53. Mammals like aye-aye and jumping hares are found in :
- (A) Palaearctic region
  - (B) Oriental region
  - (C) Ethiopian region
  - (D) Nearctic region
54. Which zoogeographical region is the largest :
- (A) Oriental
  - (B) Neotropical
  - (C) Australian
  - (D) Palaearctic
55. The biodegradative ability of *Pseudomonas* is attributed to :
- (A) Resistance to adverse conditions
  - (B) Presence of plasmids
  - (C) Presence of sialic acid in cell wall
  - (D) Presence of hydroxylose enzyme

56. Mycorrhiza helps in the uptake of which nutrient :
- (A) Nitrate
  - (B) Potassium
  - (C) Phosphorus
  - (D) Molybdenum
57. The relationship between standard deviation and variance is :
- (A) Standard Deviation =  $-\sqrt{\text{Variance}}$
  - (B) Standard deviation =  $+\sqrt{\text{Variance}}$
  - (C) Standard Deviation =  $-(\text{Variance})^2$
  - (D) Variance =  $\sqrt{\text{Standard Deviation}}$
58. Standard deviation expressed as a percentage of mean is called :
- (A) Coefficient of variation
  - (B) Mean deviation
  - (C) Standard error
  - (D) None of the above
59. The value of probability is always :
- (A) Less than 1
  - (B) Less than 0
  - (C) Greater than 1
  - (D) Between 0-1
60. The value of correlation coefficient between two variables lie between :
- (A) 0 and  $\alpha$
  - (B)  $-\alpha$  and  $+\alpha$
  - (C) 0 and 1
  - (D) -1 and +1