

ORGANISMS AND POPULATION

1. Velamen & spongy tissue is found in -
(A) Breathing roots (B) Parasitic roots
(C) Tuberos roots (D) Epiphytic roots
)
2. Root cap is absent in -
(A) Lithophytes (B) Xerophytes
(C) Hydrophytes (D) Mesophytes
3. Which of the following is the example of xerophytes -
(A) *Brassica* (B) *Cuscuta*
(C) *Capparis* (D) *Hydrilla*
4. Plants grow in saline water are known as -
(A) Lithophytes (B) Halophytes
(C) Mesophytes (D) Xerophytes
5. What is the best pH of the soil for cultivation of plants -
(A) 3.4 – 5.4 (B) 6.5 – 7.5
(C) 4.5 – 8.5 (D) 5.5 – 6.5
6. Forests near equator region are called -
(A) Deciduous (B) Tropical rain forests
(C) Coniferous forests (D) Temperate forests

7. Animals of desert are -
(A) Arboreal (B) Fassoiral
(C) Crepuscular (D) Nocturnal
8. Insectivorous plants grow in the soil which is deficient in -
(A) Mg (B) Ca
(C) P (D) N
9. Maximum photosynthesis take place by -
(A) Phytoplankton (B) Zooplankton
(C) Marsh plants (D) Woody plants
10. Pneumatophores are found in
(A) The vegetation which is found in marshy and salin lake.
(B) the vegetation which found in saline soil.
(C) Xerophytes
(D) Epiphytes
11. In which of the following plant sunken stomata are found
(A) Nerium (B) Hydrilla
(C) Mango (D) Guava
12. In which one of the following pairs is the specific characteristic of a soil not correctly matched -
(A) Terra rossa - Most suitable for roses

- (B) Chernozems - Richest soil in the world
- (C) Black soil - Rich in calcium carbonate
- (D) Laterite - Contains aluminium compound

13. In which one of the following habitats does the diurnal temperature of soil surface vary most ?
- (A) Forest
 - (B) Desert
 - (C) Grassland
 - (D) Shrub land
14. Photosynthetically active radiation (PAR) represents the following range of wave length -
- (A) 400 – 700 nm
 - (B) 500 – 600
 - (C) 450 – 950
 - (D) 340 – 450 nm
15. More than 70 % of world's fresh water is contained in -
- (A) Antarctica
 - (B) Polar ice
 - (C) Glaciers and Mountains
 - (D) Greenland
16. At which latitude, heat gain through insolation approximately equals heat loss through terrestrial radiation -
- (A) $42\frac{1}{2}^{\circ}$ North and South
 - (B) $22\frac{1}{2}^{\circ}$ North and South
 - (C) 40° North and South
 - (D) 66° North and South

| | | |
|-----------------------|-------------------|-------------------|
| (A) | (B) | (C) Partial |
| (A) Conformer | Regulator | regulator |
| (B) Regulator | Partial regulator | Conformer |
| (C) Partial regulator | Regulator | Conformer |
| (D) Regulator | Conformer | Partial regulator |

21. Both, hydrarch and xerarch successions lead to:

- (A) Excessive wet conditions
- (B) Medium water conditions
- (C) Xeric conditions
- (D) Highly dry conditions

22. Consider the following statements 1-4 each with one or two blanks:

1. Bears go into ____ (1) ____ during winter to ____ (2) ____ cold weather.
2. A conical age pyramid with a broad base represents ____ (3) ____ human population.
3. A wasp pollinating a fig flower is an example of ____ (4) ____.
4. An area with high levels of species richness is known as ____ (5) ____.

Which of the following options, gives the correct fill ups for the respective blank numbers from (1) to (5) in the statements ?

- (A) (1) - hibernation, (2) - escape, (3) - expanding, (5) - hot spot
- (B) (3) - stable, (4) - commensalism, (5) - marsh
- (C) (1) - aestivation, (2) - escape, (3) - stable, (4) - mutualism
- (D) (3) - expanding, (4) - commensalism, (5) - biodiversity park

23. Which of the following is a water polluting factor

- (A) Smoke
- (B) Industrial waste
- (C) Detergent
- (D) Acid rain

24. Which of the following is normally not an atmospheric pollutant

- (A) Carbon monoxide
- (B) Carbon dioxide
- (C) Sulphur dioxide
- (D) Hydrocarbons

25. DDT is a

- (A) Non-biodegradable pollutant
- (B) Biodegradable pollutant
- (C) Antibiotics
- (D) None of the above

26. Some effects of sulphur dioxide and its transformation products on plants include

- (A) Chlorophyll destruction
- (B) Plasmolysis
- (C) Golgi body destruction
- (D) None of the above

27. BOD stands for

- (A) Biological organism death
- (B) Biochemical organic matter decay
- (C) Biotic oxidation demand
- (D) Biochemical oxygen demand

28. Lichens do not like to grow in cities

- (A) Because of absence of the right type of algae and fungi
- (B) Because of lack of moisture
- (C) Because of SO₂ pollution
- (D) Because natural habitat is missing

29. Green house effect is due to the presence of

- (A) Ozone layer in the atmosphere
- (B) Infrared light reaching the earth
- (C) Moisture layer in the atmosphere
- (D) CO₂ layer in the atmosphere

30. Ozone layer in upper atmosphere (stratosphere) is destroyed by or which one of the chemicals is responsible for the reduction of ozone content of atmosphere

- (A) Hydrochloric acid
- (B) Photochemical smog
- (C) Chlorofluoro carbon (CFC)
- (D) Sulphur dioxide

31. The pollutants emitted by jet aeroplanes in outer atmosphere flourocarbons are known as

- (A) Smog
- (B) Photochemical oxidants
- (C) Aerosols
- (D) Loess

32. Acid rain is caused due to increase in concentration of (in atmosphere)

- (A) SO₂ and NO₂
- (B) CO and CO₂
- (C) CO and SO₃
- (D) O₃ and dust

33. PAN is formed by

- (A) Biochemical reactions
- (B) Hydrochemical reactions
- (C) Photochemical reactions
- (D) Thermochemical reactions

34. Parasite can be best defined as an organism which depends on others for

- (A) food (B) shelter
(C) food and shelter (D) reproduction

35. Gases referred to as “green house gases” are

- (A) CO₂, O₂, NO₂, NH₃
(B) Chlorofluoro carbon, CO₂, NH₃, N₂
(C) CH₄, N₂, CO₂, NH₃
(D) Chlorofluoro carbon, CO₂, CH₄, NO₂

36. Match the following and choose the correct combinations from the options given

Column I

Column II

- | | |
|--------------------|------------------------------|
| (1) DDT | (p) CO, CO ₂ |
| (2) PAN | (q) Smog |
| (3) Acid rain | (r) Biological magnification |
| (4) Global warming | (s) SO ₂ |

- (A) (1)-(s), (2)-(r), (3)-(q), (4)-(p)
(B) (1)-(p), (2)-(r), (3)-(q), (4)-(s)
(C) (1)-(q), (2)-(r), (3)-(s), (4)-(p)
(D) (1)-(r), (2)-(q), (3)-(s), (4)-(p)

37. Which one of the following pairs is mismatched?

- (A) Fossil fuel burning - release of CO₂
- (B) Nuclear power - radioactive wastes
- (C) Solar energy - Greenhouse effect
- (D) Biomass burning - release of CO₂

38. Lichens are important in the studies on atmospheric pollution because they

- (A) Can grow in polluted atmosphere.
- (B) Can readily multiply in polluted atmosphere.
- (C) Efficiently purify the atmosphere.
- (D) Are very sensitive to pollutants like sulphur dioxide.

39. The major factor in causing global warming is

- (A) Increase in oxygen concentration in atmosphere.
- (B) Decrease in carbon dioxide concentration in atmosphere.
- (C) Increase in carbon dioxide concentration in atmosphere.
- (D) Decrease in atmospheric nitrogen.

40. Acid rain is caused by or recent reports of acid rain in some industrial cities are due to the effect of atmospheric pollution by

(A) Excessive release of CO₂ by burning of fuels like wood and charcoal, cutting of forests and increased animal population.

(B) Excessive release of NO₂ and SO₂ in atmosphere by burning of fossil fuel.

(C) Excessive release of NH₃ by industrial plants and coal gas.

(D) Excessive release of CO in atmosphere by incomplete combustion of coke, charcoal and other carbonaceous fuel in paucity of oxygen.

41. Which of the following situation is true for commensalism?

(A) Both the species are benefitted

(B) One species is benefitted and the other is harmed

(C) One species is harmed and the other remains unaffected

(D) One species is benefitted and the other is neither benefitted nor harmed

42. The branch of Botany dealing with the distribution of plants on the earth's surface is called

(A) Ecology

(B) Phytology

(C) Phytogeography

(D) Phytosociology

43. Population whose members reproduce asexually are termed

- (A) Panimictic
- (B) Amphimictic
- (C) Apomictic
- (D) Ecotype

44. On based temperature plants are classified by

- (A) Warming
- (B) Climent
- (C) Haeckel
- (D) Raukiaer

45. Community is an aggregation of

- (A) individuals of same kinds
- (B) individuals of different kinds
- (C) individuals of a population
- (D) Populations of different species

ANSWERS

- | | | | | | |
|------|-------|-------|-------|------|---|
| 1. A | 2. A | 3. C | 7. A | 4. A | |
| 5. D | 6. A | A | B | 8. B | B |
| 9. B | 10. C | 11. A | 12. D | A | |
| 13. | 14. C | 15. C | 16. B | B | |
| 17. | 18. D | 19. C | 20. B | A | |
| 21. | 22. A | 23. A | 24. D | B | |
| 25. | 26. D | 27. C | 28. C | C | |
| 29. | 30. C | 31. C | 32. D | A | |
| 33. | 34. C | 35. D | 36. C | D | |
| 37. | 38. D | 39. C | 40. C | B | |
| 41. | 42. D | 43. | 44. | D | |
| 45. | | | | | |

SOLUTIONS

23. Water pollution is mainly caused by industrial wastes, sewage, insecticide, herbicides, etc. Because carbon dioxide
24. is necessary for photosynthesis in plants and non-harmful for human beings. DDT is a non-biodegradable pollutant.
25. These are persistent pollutants and are not decomposed naturally or by activity of microorganisms and thus are not recycled back into the atmosphere. Plants are more sensitive to SO₂ than animals and man. In
26. most plants chlorophyll pigment destroyed under intense

exposure to SO₂ due to conversion of chlorophyll a to phaeophytin a.

27 BOD \propto Water pollution.

. Because they are very sensitive to sulphur dioxide and in
28 cities the amount of SO₂ is high so lichen do not grow in
. cities.

29. About 50% of increase in earth's temperature is due to CO₂; 20% due to chlorofluorocarbons.

30. CFC is strong enemy of ozone and causes depletion of ozone layer.

31. Chemicals released in the atmosphere with force in the form of mist or vapours are called aerosols. Jet aeroplanes release aerosols which contain CFC.

32. The main precursors of acid rain are SO₂ and NO₂ in atmosphere which form H₂SO₄ (Sulphuric acid) and HNO₃ (nitric acid) with H₂O and these come down with rain. Such rains are called acid rains.

33. PAN (Peroxyacetyl Nitrate) is formed due to photochemical reaction occurring between nitrogen oxides and hydrocarbons.

34. Parasite is an organism which lives in or on the body of the second organism called host and obtains food from it. Hence, it depends on host for food and shelter.

35. These gases causes global warming of atmosphere which is called 'greenhouse effect' and these gases are called greenhouse gases.
37. Solar energy is not responsible for greenhouse effect instead it is a source of energy for the plants and animals.
38. Lichens (*Usnea*) are extremely sensitive to SO₂ and could be regarded as indicators of SO₂ pollution (indicators of pollutants. Lichens have given Indices of Atmospheric Purity (IAP)
39. CO₂ concentration is increasing day by day in the atmosphere. CO₂ has capacity of absorbing heat radiation and thus increases global temperature (global warming).
40. When SO₂ pollution in air is much higher. Sometimes, SO₂ mixes in the air with small particles of metals near the factories and gets oxidised into sulphur trioxide SO₃. These gases are harmful and they react with water to form sulphuric acid (H₂SO₄) or sulphurous acid (H₂SO₃) and come down to earth with rain water; it is called acid rain or acid precipitation.
41. In commensalism, only one species is benefitted and the other is neither benefitted nor harmed.
42. Term 'phytogeography' is made up of two words phyton = plant and geography i.e. geography of plant distribution.
43. Apomixis is the formation of new individuals directly through asexual reproduction without involving the

formation and fusion of gametes. So, those populations whose members reproduce by the process of apomixis are called apomictic.

44. According to Raunkiaer temperature is of the greatest importance in the distribution of plants and the entire vegetation of the earth can be divided into following 4 classes:

(1) Megatherms (2) Mesotherms (3) Microtherms (4) Hekistotherms

45. Community is a localized association of several populations of different species in a common environment.