1. 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

2. Air pollution causing photochemical oxidants production include
(a) Carbon monoxide, sulphur dioxide
(b) Nitrous oxide, nitric acid fumes, nitric oxide
(c) Ozone, peroxyacetyl nitrate, aldehydes
(d) Oxygen, chlorine, fuming nitric acid

3. Acid rain is due to
(a) Sulphur dioxide pollution
(b) Carbon monoxide pollution
(c) Pesticide pollution
(d) Dust particles

4. Carbon monoxide is a pollutant because
(a) It reacts with O_2
(b) It inhibits glycolysis
(c) Reacts with haemoglobin
(d) Makes nervous system inactive

5. Secondary pollutant which stops Hill reaction is
(a) Sulphuric acid
(b) Nitric acid
(c) Peroxyacetyl nitrate (PAN)
(d) Aldehydes

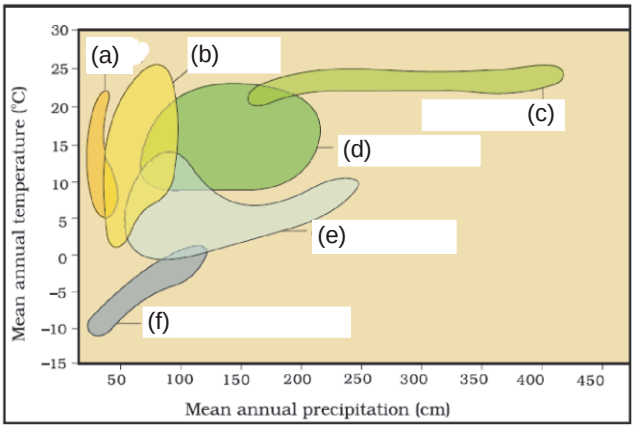
6. What is the intensity of sound in normal conversation
(a) 10-20 *dB* (b) 40-60 *dB*
(c) 90-120 *dB* (d) 120-150 *dB*

7. Biological Oxygen Demand (BOD) is a measure of
(a) Industrial wastes poured into water bodies
(b) Extent to which water is polluted with organic compounds
(c) Amount of carbon monoxide inseparably combined with haemoglobin
(d) Amount of oxygen needed by green plants during night

8. Which of the following plant is used for the purification of water
(a) *Biggiata* (b) *Chlorella*
(c) *Spirogyra* (d) *Eichhornia*

9. Which one of the following pairs is mismatched
(a) Fossil fuel burning - release of CO_2
(b) Nuclear power - radioactive wastes
(c) Solar energy - Greenhouse effect
(d) Biomass burning - release of CO_2

10. Following graph shows biome distribution with respect to annual temperature and precipitation:



(a) (a) Desert, (b) Grassland, (c) Temperate forest, (d) Tropical forest, (e) Coniferous forest, (f) Arctic and alpine

(b) (a) Grassland, (b) Desert, (c) Tropical forest, (d) Temperate forest, (e) Coniferous forest, (f) Arctic and alpine

(c) (a) Grassland, (b) Desert, (c) Temperate forest, (d) Tropical forest, (e) Coniferous forest, (f) Arctic and alpine

(d) (a) Desert, (b) Grassland, (c) Tropical forest, (d) Temperate forest, (e) Coniferous forest (f) Arctic & alpine tundra

11. How many statements are correct among the following:-

(a) The productivity and distribution of plants is also heavily dependent on water.

(b) Some organisms are tolerant a wide range of salinities called euryhaline while others are restricted to a narrow range called stenohaline.

(c) Mammals of colder climates generally have shorter ears and limbs to minimise heat loss, this is called the Allen's Rule.

(d) If the age distribution is plotted for the population, the resulting structures is called an average pyramid

(a) Both (a) & (b) (b) Both (c) & (d)

(c) (a),(b) & (c) (d) All are correct

12. Percentage of water left in the soil when a plant wilts is known as

(a) Wilting coefficient (b) Field capacity

(c) Water retaining power of the soil (d) Turgidity

13. In terrestrial plant gaseous exchange takes place through stomata. Gaseous exchange in lower hydrophytes takes place through

(a) Lenticels (b) Stomata

(c) Hydathode (d) Diffusion from general surface

14. After exponential increase, population growth declines and stagnates. The growth curve is

(a) S- shaped (b) J-shaped

(c) Straight line (d) Circular

15. Characteristic feature of mangrove plants is

(a) Apospory (b) Heterospory

(c) Parthenocarpy (d) Vivipary

16. Which of the following pair is incorrect –

(a) Secondary producer – Herbivores

(b) Mutualism –Relationship of Fig & Wasp

(c) Competitive exclusion – Relationship of Balanus barnacle & chathamalusbarnacle

(d) Camouflage –Praying mentis

17. Which of the following is an example of hibernation in beer and aestivation in fishes –

(a) Migration (b) Regulation

(c) Conform (d) Suspend

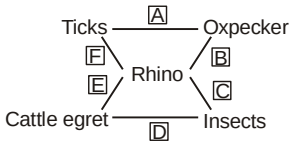
18. Ecotone is

(a) Transitional area between two communities (b) Interaction between two populations

(c) Development of ecads (d) Development of ecotypes

19. On the african plain, large herbivores like black rhinoceros disturb insect communities as they move. Birds like cattle egret feeds on the displaced insects. Neither the displacement of insects nor the activity of birds has any effect on the rhino. Oxpecker (a small dark bird) removes ticks from the skin of the rhino. The bird gets food & the mammals get relief from parasites.

An outline of these inter-relief from parasites. Match the alphabets with the relationship that the organisms possess among themselves and then write only appropriate number in the space against each alphabet.



(a) Predation (b) Parasitism (c) Commensalism (d) Amensalism

(5) Mutualism (6) Competition

20. An unrestricted reproductive capacity is called

(a) Birth rate (b) Biotic potential

(c) Carrying capacity (d) Fertility

21. Annual migration does not occur in case of

(a) Arc Tern (b) Salamander

(c) Salmon (d) Siberian Crane

22. Which of the following are likely to be present in deep sea water?

(a) Eubacteria (b) Blue-green algae

(c) Saprophytic fungi (d) Archaebacteria

23. Alexander Von Humbolt described for the first time:

(a) Ecological Biodiversity (b) Laws of limiting factor

(c) Species are relationship (d) Population Growth equation

24. Match the following:

Column-I	**Column-II**
(a) Ranthambore National Park	(i) Assam
(b) Kaziranga National Park	(ii) Rajasthan
(c) Jim corbett National Park	(iii) Orissa
(d) Nandan kanan zoological Park	(iv) Uttarakhand

(a) a–i, b–ii, c–iii, d–iv

(b) a–ii, b–iii, c–iv, d–i

(c) a–ii, b–i, c–iv, d–iii

(d) a–iii, b–ii, c–i, d–iv

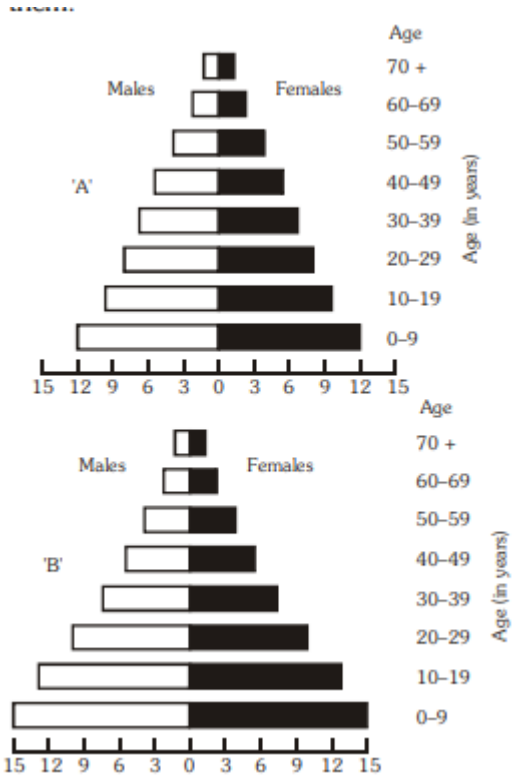
25. The population of an insect species shows an explosive increase in numbers during rainy season followed by its disappearance at the end of the season. What does this show ?

(a) The population of its predators increases enormously
(b) S-shaped or sigmoid growth of this insect
(c) The food plants mature and die at the end of the rainy season.
(d) Its population growth curve is of J-type

26. In a pond there are 400 lotus plant last year, through reproduction 16 new lotus plants are added, taking the current population to 416, then calculate the birth rate.

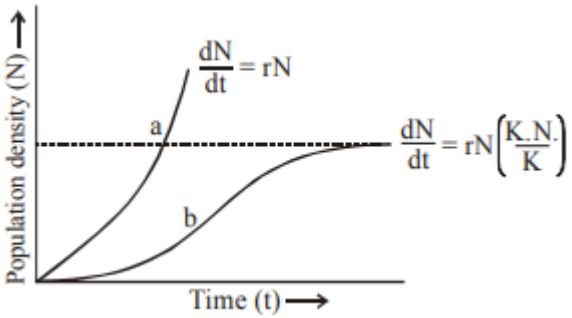
(a) 0.4 offspring per year
(b) 0.6 offspring per year
(c) 0.08 offspring per year
(d) 0.04 offspring per year

27. A country with a high rate of population growth took measures to reduce it. The figure below shows age-sex pyramids of populations A and B twenty years apart. Select the correct interpretation about them:



(a) "A" is the earlier pyramid and no change has occurred in the growth rate
(b) "A" is more recent and shows slight reduction in the growth rate
(c) "B" is the earlier pyramid and shows stabilised growth rate
(d) "B" is more recent showing that population is very young

28.



(a) a = logistic plot b = exponential plot k = carrying capacity
(b) a = exponential plot b = logistic plot k = carrying capacity
(c) a = carrying capacity b = exponential plot k = logistic plot
(d) a = carrying capacity b = logistic plot k = exponential plot

29. Which of the following flowers only once in its life-time ?
(a) Bamboo species
(b) Jackfruit
(c) Mango
(d) Papaya

30. In a growing population of a country
(a) pre-reproductive individuals are more than the reproductive individuals.
(b) reproductive individuals are less than the postreproductive individuals.
(c) reproductive and pre-reproductive individuals are equal in number.
(d) pre-reproductive individuals are less than the reproductive individuals.

1. (d) Lichens (Usnea) are extremely sensitive to SO_2 and could be regarded as indicators of SO_2 pollution (indicators of pollutants. Lichens have given Indices of Atmospheric Purity (IAP)

2. C

3. (a) Sulphur dioxide forms sulphuric acid by reacting with atmospheric moisture (H_2O) and causes acid rain.

4. (c) Carbon monoxide is the main air pollutant. It first reduces the oxygen carrying capacity of haemoglobin and then causes asphyxiation.

5. (c) PAN prevents photolysis of water in photosynthesis or hill reaction.

6. (b)

7. (b)

8. (d) *Eichhornia, Azolla, Lemna, Salvinia,* etc. have potential of environmental clean up because they can tolerate, uptake and even accumulate heavy metals and other toxicants in their cells.

9. (c) Solar energy is not responsible for green house effect instead it is a source of energy for the plants and animals

10. (d)

11. (c)

12. (a)

13. (d)

14. (a)

15. (d)

16. (c)

17. (d)

18. (a)

19. A = 1 , B = 5 , C = 4 , D = 1 , E = 3, F = 2

20. (b)

21. (b)

22. (d)

23. (c)

24. (c)

25. (d)

26. (d)

27. (b)

28. (b)

29. (a)

30. (b)