33. Modification of Axillary Buds of Stem into woody, straight and pointed thorns is found in
    a. Opuntia & Euphorbia
    b. Citrus & Bougainvillea
    c. Opuntia & Citrus
    d. Euphorbia & Bougainvillea

34. In a cereal grain, the single large & shield shaped cotyledon is represented by
    a. Scutellum b. Coleorhiza
    c. Coleoptile d. Prophyll

35. Highly thickened deal cells with narrow lumen which constitute hard shell of nuts are called
    a. Fibres b. Casparian strips
    c. Sclereids d. None of the above

36. The arrangement of xylem elements in which protoxylem is directed towards the periphery and metaxylem at the centre is
    a. Exarch b. Mesarch
    c. Endarch d. Diarch

37. What is the final electron acceptor in cellular respiration?
    a. Magnesium b. Sulphur
    c. Oxygen d. Manganese

38. When transport proteins in the membrane allow diffusion of two types of molecules across the membrane in the same direction. The process is
    a. Antiport b. Symport
    c. Uniport d. None of these

39. The function of leghaemoglobin in the root nodules is
    a. Oxygen Scavenger
    b. Inhibition of nitrogenase activity
    c. Expression of NIF gene
    d. Nodule differentiation

40. Transfer of pollen Grains from the anther to the stigma of another flower of the same plant is
    a. Xenogamy b. Autogamy
    c. Cleistogamy d. Geitonogamy

41. The Shenzhen code of nomenclature for algae, fungi and plants was published on
    a. June 2018 b. February 2018
    c. September 2018 d. October 2018

42. The term species was coined by
    a. Lamarck b. John Ray
    c. Hutchinson d. Benthamian & Hooker

43. Bacteria that can cause many types of infections are
    a. Gram-negative b. Gram-positive
    c. Both a & b d. None of the above

44. The standard size of a herbarium sheet is
    a. 29 × 41 cm b. 15 × 30 cm
    c. 21 × 36 cm d. 25 × 38 cm

45. Which of the following botanical garden was founded in 1786
    a. National Botanical garden, Lucknow
    b. Garden of IARI, New Delhi
    c. Garden of the Forest Research Institute, Dehra Dun
    d. Indian Botanical Garden, Howrah

46. Observations of mortality in a small population of the endangered lichen can be attributed to increase in concentration of which gas
    a. CO_2 b. SO_2
    c. NO_2 d. CH_4

47. Red tides are due to rapid multiplication of
    a. Dinoflagellates b. Cryophytes
    c. Euglenoids d. All of the above

48. Reserve food material in Rhodophyceae is
    a. Mannitol and Laminarins
    b. Starch
    c. Floridian Starch
    d. None of the above

49. Potato Spindle tuber disease is caused by
    a. Bacteria b. Virus
    c. Viroid d. Prion

50. A free living small green multicellular thalloid gametophyte in Pteridophytes is called
    a. Foot b. Seta
    c. Protonema d. Prothallus

1. When a huge amount of sewage is dumped into a river, its biochemical oxygen demand (BOD) will
   a. Increase
   b. Decrease
   c. Remain Unchanged
   d. Can't be predicted

2. Western Ghats is considered a hot spot of biodiversity in India because of
   a. High Elevation
   b. Tropical Climate
   c. Evergreen Forests
   d. High Endemism

3. The thickness of ozone is measured in
   a. Roentgen Units b. Dobson Units
   c. Meters d. All of these

4. Density of population(N) is
   a. Size(S) / Weight
   b. Space/ Number (N)
   c. Number (N) / Space
   d. Weight/ Size(S)

5. The flow of energy in an ecosystem can be explained with the help of
   a. Hardy-Weinberg Principle
   b. Laws of Thermodynamics
   c. Blackman`s law of limiting factors
   d. All of the above

6. The 1992 historic convention on Biological diversity (The Earth Summit) was held at
   a. Vienna
   b. Johannesburg
   c. Ottawa
   d. Rio de Janeiro

7. A system of crop rotation with legume or grassland pasture to improve soil fertility is called
   a. Contour cropping
   b. Strip farming
   c. Hey farming
   d. Shifting Agriculture

8. Variations in gene frequencies within population can occur by chance rather than by natural selection This is referred to as
   a. Genetic drift
   b. Genetic flow
   c. Genetic load
   d. Random mating

9. In Angiosperms triple fusion is required for the formation of
   a. Embryo b. Endosperm
   c. Seed Coat d. Fruit Wall

10. Which one the following is an example of false fruit
    a. Apple b. Coconut
    c. Mango d. Grape

11. Seed Variability is tested by
    a. 2,3,5, triphenyl tetrazolium chloride
    b. Indole Butyric Acid
    c. 2,4 dichlorophenoxy acetic acid
    d. Ethylene

12. The spraying of phenyl mercuric acetate in leaves
    a. Increases transpiration
    b. Decreases transpiration
    c. Increases rate of photosynthesis
    d. Causes guttation

13. Function of zinc in plants is
    a. Sugar transport
    b. Cell elongation
    c. Activation of enzymes
    d. Pollen germination

14. Which one the following stimulates the closure of stomata and increases the tolerance of plants to various types of stresses
    a. Ethylene b. Auxin
    c. Abscisic Acid d. Cytokinin

15. Which one of the following is a model organism for genetic investigation?
    a. Trichoderma
    b. Drosophila melanogaster
    c. Pelomyxa Palustris
    d. Paramecium aurelia

16. Downs syndrome is an example of
    a. Monosomy b. Trisomy
    c. Disomy d. Tetrasomy
17. Which semi dwarf variety of rice was developed at International Rice Research Institute (IRRI) Philippines
    a. IR-8 b. Sonalika
    c. Jaya d. Ratna
18. DNA ligase helps in the
    a. Removal of nucleotide synthesis
    b. Linking of discontinuously synthesized fragments
    c. Energy supply for DNA synthesis
    d. Fragmentation of DNA strand
19. Removal of RNA Polymerase III from nucleoplasm will affect the synthesis of
    a. rRNA b. mRNA
    c. hnRNA d. tRNA
20. A free-living fungus used as a biological disease control agent
    a. Aspergillus
    b. Trichoderma
    c. Rhizopus
    d. Penicillium
21. The minerals involved in Splitting of water during Photosynthesis are
    a. Magnesium & Chlorine
    b. Potassium & Manganese
    c. Manganese & Chlorine
    d. Molybdenum & Manganese
22. Which of the following wall layers help in the dehiscence of the anther
    a. Epidermis b. Endothelium
    c. Middle layers d. All of these
23. Photorespiration happens in C3 plants when the carbon dioxide concentration reaches a critical level of about
    a. 100 ppm b. 70 ppm
    c. 60 ppm d. 50 ppm
24. The average trophic efficiency of transfer of energy from one trophic level to the higher trophic level is called
    a. Linderman's trophic efficiency rule
    b. Exploitation efficiency
    c. Assimilation efficiency
    d. Gross Primary Production
25. Cell elongation in internodular regions of the green plants takes place due to
    a. Cytokinin
    b. Gibberellin
    c. Ethylene
    d. Indole Acetic Acid
26. Two linked genes a & b show 20% recombination. The individuals of a dihybrid cross between ++/++ ×ab/ab shall show gametes
    a. ++80: ab 20
    b. ++50: ab 20
    c. ++40: ab 40: +a10: +b10
    d. ++ 30: ab 30: +a20: + b20
27. Which of the following is a sex-linked recessive disease?
    a. Haemophilia
    b. Sickle Cell Anaemia
    c. Phenylketonuria
    d. All of the above
28. The DNA dependent DNA polymerases catalyse the polymerization in which of the following directions
    a. 3'–5' b. 5'–3'
    c. 5'–5' d. 3'–3'
29. CAM plants avoid photorespiration by
    a. Performing Calvin Cycle at night
    b. Fixing CO_2 into organic acid during night & releasing CO_2 during day
    c. Using PEP carboxylase to fix CO_2 to RUBP
    d. Keeping stroma closed during the night
30. Synthesis of one molecule of glucose involves how many turns of Calvin Cycle
    a. 3 b. 12
    c. 16 d. 6
31. Coralloid Roots are found in
    a. Pinus b. Cycas
    c. Gentium d. Ephedra
32. Special Roots in Rhizophora which come out of the ground and grow vertically upwards are called
    a. Stilt Roots
    b. Prop Roots
    c. Nodulated Roots
    d. Pneumatophores