BOTANY 2006
Paper - I

Q.1 (a) Describe the general characteristics of Pteridophytes
(b) Enlist the important characteristics which are common to both pteridophytes and gymnosperms

Q.2 (a) Discuss cell structure, methods of reproduction and importance of blue green algae
(b) Draw a graphic representation of life cycle of Volvox

Q.3 (a) Describe the causing organisms, symptoms and possible methods to control the following plant diseases:

(1) Rust (2) Loose and covered smut
(3) Damping Off (4) Early Blight of Potato

(b) Write note on parasexuality

Q.4 (a) What is secondary growth ? Describe the events leading toe secondary growth in a typical dicotyledonous stem
(b) Write notes on:

(1) Abscission layer (2) Procambium

Q.5 (a) Describe different types of stomata present in plants
(b) Write notes on:
(1) Medullary bundles (2) Nodal anatomy
(3) Golgi complex (4) Cork cambium

Q.6 Draw a properly labeled diagrams of the following:
(a) L.S. of funaria capsule (b) T.S. of cycas leaflet
(c) L.S. of Dicot stem (d) Graphic life cycle of Polysiphonia

Q.7 (a) What is nomenclature? Describe the history and principles of nomenclature
(b) Explain the role of anatomy and cytology in relation to taxonomy
(C) Describe any six rules of nomenclature

Compulsory Question

Q.8 Write only the correct answer in the Answer book. Do not reproduce the question:

1) Plant attached to another plant, not growing parasitically upon it but only using it for support is called:
a. Epiphyte
b. Epiblast
c. Epicotyle
d. Epigemic
e. None of these

2) Production of morphologically different leaves on the same plant is known as:
a. Heteromorphy
b. Heterospory
c. Heterophylly
d. Heteroecious
e. None of these

3) Study of fossil plant is called:
a. Paleozoic
b. Paleogeny
c. Palentology
d. Paleospory
e. None of these

4) In which group of plants, stomata open at night:
a. C3 Plants
b. Hydrophytes
c. Mesophytes
d. CAM Plants
e. None of these

5) Wall of an ovary after it has matured into fruit is called:
a. Peribellem
b. Pericarp
c. Pericardium
d. Perisome
e. None of these

6) Filament of alga spirogyra shows:
a. True branching
b. False branching
c. Dichotomous branching
d. No branching
e. None of these

7) Plants that do not produce seeds and have vascular tissues are called:
a. Cryptogams
b. Vascular cryptogams
c. Phanerogams
d. Atracheats
e. None of these

8) Rice belongs to family:
a. Asteraceae
b. Malvaceae
c. Poaceae
d. Solonaeae
e. None of these

9) Which of the following microorganism is most widely used in genetic engineering:
a. E.coli
b. Amoeba
c. Chlorella
d. Spyrogyra
e. None of these

10) Mycoplasms are tiny microorganisms which are bounded by:
a. Cellulose cell wall
b. Pellicle
c. Pectin coat
d. Protein coat
e. None of these

11) A stele in which large overlapping leaf gaps dissect the vascular system into strands, each with the phloem surrounding the xylem is:
a. Dictyostele
b. Protostele
c. Siphonostele
d. Solenostele
e. None of these

12) What is the shape of helical viruses?
a. Rod shae
b. Spherical
c. Oval
d. Elliptical
e. None of these

13) Lichens which grow on leaves of other plants are known as:
a. Terricolous
b. Sexicolous
c. Folicolous
d. Corticoous
e. None of these

14) In which of the following, edible product is obtained from the rhizome?
a. Sugar beet
b. Ginger
c. Onion
d. Potato
e. None of these

15) Gametophyte of fern is called:
a. Protocorn
b. Prothallus
c. Thallus
d. Notothallus
e. None of these

16) Colourless plastids found in cells of plant tissue are called:
a. Chromplasts
b. Leucocytes
c. Leucoplasts
d. Lycoplasts
e. None of these

17) Stalk of an individual flower of an inflorescence is called:
a. Pedicarp
b. Peduncle
c. Pericardium
d. peristome
e. None of these

18) Fruit of grasses in which pericarp is united with testa is called:

a. Caryopsis
b. Carpus
c. Clestocarp
d. Carancle
e. None of these

19) Who proposed the natural system of classification?
a. Benthem & Hooker
b. Darwin
c. Lamarck
d. Oswald Tippo
e. None of these

20) Which of the following fungus is edible?
a. Pythium
b. Penicillium
c. Phyllactinia
d. Albugo
e. None of these

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Paper - II

Q.1 (a) Discuss the uptake and role of Nitrogen and Phosphorous in green plants
(b) How would you determine whether a plant nutrient is essential or non essential?

Q.2 (a) What do you know about plant growth hormones? Discuss the role of Cytokinis in plants
(b) Write short note on Vernalization

Q.3 (a) Discuss the process of CO2 fixation in C3 plants. How does it differ from C4 plants?

(b) Draw a figure to show the cyclic and non-cycilic photphosphorelation in plants

Q.4 Write notes on following:
(a) Glycolssis
(b) Ammonia assimilation in plants
(c) Energy flow in Ecosystem
(d) soil texture

Q.5 (a) what is soil salinity and water logging. Describe their causes and methods of soil reclamation with particular reference to Pakistani soils.
(b) enlist the major sources of air, water and soil pollution

Q.6 (a) what do you know about linkage and crossing over
(b) what is polyploidy ? Discuss its importance
(c) Write note on genetic code
(d) what is meiosis ? Discuss its significance

Q.7 (a) briefly discuss different theories of evolution. Which theory you think explain best the process of evolution and why
(b) write note on adaptative mutations

Compulsory Question

Q.8 Write only the correct answer in the Answer book. Do not reproduce the question:

1) A group of major regional biotic communities occupying a climatic region of earth is known as:
a. Biotype
b. Biome
c. Biozone
d. Biosphere
e. None of these
2) Alleles separated during gamete formation are again brought together during:
a. Mutation
b. Pollination
c. Fertilization
d. Crossing over
e. None of these

3) How many ATP molecules are produced when one hexose is completely oxidized through aerobic pathway of respiration:
a. 28
b. 32
c. 36
d. 39
e. None of these

4) Which of the following enzyme break down H2O2:
a. Kinase
b. Fumarase
c. Catalase
d. Cellulase
e. None of these

5) Which one of the following is a plant growth regulator:
a. 2, 4-D
b. Nitrous Oxide
c. Sorbitol
d. None of these

6) Protein synthesis in plant cell takes place in:
a. Glyoxisomes
b. Peroxisomes
c. Ribosomes
d. All of these
e. None of these

7) Stage of first prophase of meiosis during which chromosomes are thin and attached at both ends to nuclear membrane is called:
a. Prophase
b. Telophase
c. diplotene
d. leptotene
e. None of these

8) Average thickness of nuclear membrane is:
a. 10 A
b. 100 A
c. 1000 A
d. 10000 A
e. None of these

9) The structure of DNA was given by:
a. Branton
b. Hatch and Slack
c. Bonet
d. Leininger
e. None of these

10) Seeds that require light or germination are said to be:
a. Photoblastic
b. Photodormant
c. Photozoic
d. Photophile
e. None of these

11) Which one of the following amino acids contain only two carbon atoms:
a. Glycine
b. Glutamate
c. Serine
d. Methionine
e. None of these

12) Biotic components of an Ecosystem include:
a. Producers
b. consumers
c. decomposers
d. all of these
e. None of these

13) Which one of the following is a fatty acid:
a. a-ketoglutarate
b. Lignin
c. Pectin
d. Linolenic
e. None of these

14) Temperate forest in Pakistan is found:
a. Along the Himalayas
b. Along Coastal areas of Sindh
c. Cholistan desert
d. On the bank of river Ravi
e. None of these

15) An enzyme-cofactor complex is:
a. Apoenzyme
b. Holoenzyme
c. Co.enzyme
d. Isoenzyme
e. None of these
16) Which of the following microorganism fix atmospheric nitrogen:
a. Rhizobium
b. Volvox
c. E.Colli
d. All of these
e. None of these

17) Non genetic RNA which brings in amino acids to site of protein synthesis:
a. r-RNA
b. m-RNA
c. t-RNA
d. hn RNA
e. None of these

18) Which of the following enzymes is not involved in respiration?:

a. Succinate dehydrogenase
b. Fumarase
c. Citrate synthase
d. Glycollate oxidase
e. None of these

19) Oxygen released by green plants comes from :
a. H_2O
b. CO_2
c. Glucose
d. Proteins
e. None of these

20) Zone of soil immediately surrounding root is :
a. Rhizosphere
b. Rhizome
c. Rhizomorph
d. Rhizozone
e. None of these