

SECTION A (MULTIPLE CHOICE QUESTIONS)**1. Choose the correct answer for each of the given options:**

- (i) Ribosomes are manufactured in:
- Endoplasmic reticulum
 - Golgi bodies
 - Mitochondria
 - Nucleus**
- (ii) Glycolysis takes place in:
- Vacuole
 - Chloroplast
 - Mitochondria
 - Cytosol**
- (iii) These Tracheophytes have neither roots nor leaves:
- Psilopsida**
 - Lycopsida
 - Sphenopsida
 - Postassium
- (iv) This controls the opening and closing of stomata
- Magnesium
 - Nitrogen
 - Phosphorous
 - Potassium**
- (v) These appendages helping the conjugation of bacteria
- Flagella
 - Pili**
 - Cilia
 - Capsule
- (vi) *Aspergillus flavus* produces carcinogenic toxin:
- Aflatoxin**
 - Neurotoxin
 - Haemotoxin
 - Mycotoxin
- (vii) *Lycopersicum esculentum* is the botanical name of:
- Brinjal
 - Potato
 - Tomato**
 - Apple
- (viii) It is a heterosporus plant:
- Rhynia
 - Selaginella**
 - Moss
 - Lycopodium
- (ix) Flow of energy in an ecosystem is:
- Multidirectional
 - Undirectional
 - Non-cyclic**
 - Cyclic
- (x) Absorption of water by a hydrophilic substance is called:
- Plasmolysis
 - Transpiration

c. Translocation

d. Imbibition

(xi) The movement of ions or molecules through carrier proteins is called:

a. Facilitated diffusion

b. Osmosis

c. Simple diffusion

d. Pressure potential

(xii) Chloroplast contains these stacks of thylakoid:

a. Stroma

b. Grana

c. Frets

d. Matrix

(xiii) Carnivorous plants grow in soil deficient of:

a. Phosphorous

b. Potassium

c. Nitrogen

d. Calcium

(xiv) Vacuole is surrounded by this membrane:

a. Leucoplast

b. Chloroplast

c. Chromoplast

d. Tonoplast

(xv) The number of chromosomes in the sporophyte of ulve is:

a. 12

b. 13

c. 24

d. 26

(xvi) These bacteria are surrounded by flagella:

a. Peritrichous

b. Amphitrichous

c. Monotrichous

d. Atrichous

(xvii) It is a C₄ plant:

a. Cactus

b. Pineapple

c. Sugarcane

d. Apple

(xviii) Rusts and smuts belong to

a. Zygomycota

b. Basidiomycota

c. Ascomycota

d. Deuteromycota

Time: 1 Hour 45 Minutes

Marks: 36

SECTION B (SHORT-ANSWER QUESTIONS) (22)

2. Attempt any Ten part questions. Each question carries one mark. Answer should not exceed more than two lines.

(i) Name the pathways available for water to enter the Xylem

(ii) Name the two diseases caused by Virus

(iii) Why is Deuteromycota called Fungi imperfecti?

(iv) Name the phases of Bacterial growth.

(v) Write the botanical names of any two of the following:

- Rice

- Potato
 - Almond
- (vi) Why are lysosomes called suicidal sacs?
- (vii) Write only the name of the methods of Genetic recombination in Bacteria.
- (viii) What is Double Fertilization?
- (ix) Why is ATP called the Currency of Energy?
- (x) Write the names of five groups of Vascular Plants.
- (xi) Draw a neat and labelled diagram of a Bacterial Cell.
- (xii) Name four groups of fungi
- (xiii) Name the 5 Kingdoms of living organism.
- (xiv) What are Prions?

3. Attempt any Six parts questions. Each questions carries two marks. Answer should not exceed more than five lines:

- (i) State the root pressure theory
- (ii) Draw graphical life cycle of Ulva.
- (iii) Write the salient features of Cyanobacteria.
- (iv) Differentiate between Lysogenic and Lytic cycle.
- (v) Write a note on transmission of HIV Virus.
- (vi) Define any two of the following:
- a. Plasmolysis
 - b. Diffusion
 - c. Water potential
- (vii) Write a note on any one of the following:
- a. Evolution of leaf
 - b. Evolution of Seed
- (viii) Draw a chart showing the efficiency of Food chain.
- (ix) Discuss the diversity of Kingdom Protocista.

SECTION C (DETAILED-ANSWER QUESTIONS)(14)

Note: Attempt any two questions from this section. All Questions carry equal marks

4 (a) Describe the floral characters and economic importance of family Rosaceae.

4(b) Write floral formula & draw floral diagram of Family Fabaceae.

5 Define Cellular Respiration. Elucidate oxidative degradation of pyruvic acid.

6 Draw & Describe structure & reproduction of Zygomycota fungi.

OR---With the help of diagram, describe the life cycle of Moss.

BOTANY

2018

Time: 15 Minutes

Max. Marks: 09

SECTION A (MULTIPLE CHOICE QUESTIONS)

1. Choose the correct answer for each of the given options:

- (i) Heterospory is an important character of
- a. Marchantia
 - b. Pinus
 - c. Cholera
 - d. Selaginella
- (ii) This groups of plants produces naked seeds:
- a. Bryophyta
 - b. Gymnosperms
 - c. Pteridophyta
 - d. Angiosperms
- (iii) Net gain of ATPs per molecule of glucose during aerobic respiration is:
- a. 36
 - b. **38**
 - c. 40
 - d. 42
- (iv) Site of dark reaction of photosynthesis within chlorophyll is:
- a. **Stroma**
 - b. Grana
 - c. Thylakoid
 - d. Frets
- (v) Release of droplets of water from hydathodes is called:

- a. Transpiration b. **Guttation** c. Vaporisation d. Respiration
- (vi) In plants, exchange of gases takes place through:
a. Lenticels b. Hydatodes c. **stomata** d. Cuticles
- (vii) The basic units of classification is:
a. Kingdom b. Family c. Genus d. **Species**
- (viii) The protein coat of virus is called:
a. Capsomere b. **Capsid** c. Genome d. Nucleocapsid
- (ix) The process requires energy:
a. **Active transport** b. Osmosis c. Diffusion d. Facilitated diffusion
- (x) Late blight of potato is caused by:
a. **Phytophthora** b. Puccinia c. Penicillium d. Aspergilhis
- (xi) Singer and Nicolson proposed a working model of:
a. Cell wall b. Chromosomes c. Ribosome d. **Plasma membrane**
- (xii) The final tool for biological classification is
a. Cytology b. **Genetics** c. Embryology d. Homology
- (xiii) Wheat, Oat and Rice all belong to family:
a. **Poaceae** b. Rosaceae c. Fabaceae d. Solanaceae
- (xiv) Digrammatic representation atrophic level is called:
a. **Pyramid** b. Food chain c. Energy flow d. Productivity
- (xv) The inner membrane of mitochondria has many infolding called:
a. Thylakoid b. Lamella c. **Cristae** d. Grana
- (xvi) Bacterial Cell wall is chemically composed of:
a. Cellulose b. Lipid c. **Peptidoglycan** d. Chitin
- (xvii) This division of fungi lacks sexual reproduction:
a. Zygomycota b. Ascomycota c. Basidiomycota d. **Deuteromycota**
- (xviii) Epipetalous stamens are found in family:
a. **Solanaceae** b. Rosaceae c. Poaceae d. Fabaccae

Time:1 Hour 45 Minutes

Marks: 36

SECTION B (SHORT-ANSWER QUESTIONS) (22)

2. Attempt any Ten part questions. Each question carries one mark. Answer should not exceed more than two lines.

- (i) Mention any two differences between prokaryotic and eukaryotic cell.
- (ii) What is Isomorphic alternation of generation?
- (iii) Give two economic importance of Fungi.
- (iv) What is Bacteriophage?
- (v) Name various type a transpiration.
- (vi) Write the floral formula of family fabaceae
- (vii) Write the botanical names of any two of the following:
(a) Tobacco (b) Edible pea (c) Rose (d) Rice
- (viii) Give two symptoms of nitrogen deficiency in plants.
- (ix) Define Facilitated diffusion.
- (x) What are lichens?
- (xi) Name two techniques used to isolate the component cell.
- (xii) State the postulates of cell theory
- (xiii) Define Photorespiration.
- (xiv) Mention three steps of evolution of seeds in plants.
- (xv) What is Heterocyst?

3(a) Attempt any Six parts questions. Each questions carries two marks. Answer should not exceed more than five lines:

- (i) Draw a labelled diagram of fluid mosaic model of plasma membrane.
- (ii) Trace the evolution of leaf in plants

- (iii) Give the outline of the classification of kingdom Plantae.
- (iv) Draw diagrammatic lytic cycle of bacteriophage.
- (v) What is fermentation? Also name its types.
- (vi) Why is air considered better respiratory medium than water?
- (vii) Write four measures to control bacteria.
- (viii) Why do insectivorous plants trap insects while they also prepare carbohydrates by photosynthesis?
- (ix) Write note on any one of the following:
 - a. Nucleus
 - b. Mitochondria

SECTION C (DETAILED-ANSWER QUESTIONS)(14)

Note: Attempt any two questions from this section. All Questions carry equal marks

- 4. Define Transportation. Describe the mechanism of Ascent of sap.
- 5. Draw and describe the life cycle of Ulva or Fern.
- 6. Define Photosynthesis. Describe light reaction.
- 7. Draw and describe the life cycle of Basidiomycota with diagram.
- 8. Describe family Solanaceae under the following headings:
 - (i) Floral characters
 - (ii) Floral Formula
 - (iii) Floral Diagram
 - (iv) Four economic importance with botanical names.

BOTANY:

Time: 15 min

2017

Max. Marks: 09

Section "A" (Multiple Choice Questions)

Q1. Choose the correct answer for each from the given options:

- 1- Heterospary is a characteristics of:
 - a. Lycopodium
 - b. Selaginella
 - c. Equisetum
 - d. Ulva
- 2- Sexual reproduction is not found in:
 - a. Ascomycota
 - b. Deuteromycota
 - c. Zygomycota
 - d. Basidiomycota
- 3- Bacteria grow and multiply very rapidly in this phase:
 - a. LAG
 - b. LOG
 - c. Stationary
 - d. Decline
- 4- Dominant generation in Bryophytes is:
 - a. Thallus

- b. Gametophyte
 - c. Sporophyte
 - d. Antheridium
- 5- This type of Endocytosis involves intgestion of solid materials:
- a. Solidocytosis
 - b. Phagocytosis
 - c. Pinocytosis
 - d. Exocytosis
- 6- Complete oxidation of glucose molecules takes place in:
- a. Alcoholic fermentation
 - b. Lactic acid fermentation
 - c. Aerobic respiration
 - d. Anaerobic respiration
- 7- In angiosperm, reproductive part is the:
- a. Flower
 - b. Leaf
 - c. Root
 - d. Stem
- 8- Glycolysis in this part of the cell:
- a. Cytoplasm
 - b. Golgi bodies
 - c. Mitochondria
 - d. Chloroplast
- 9- All prokaryotes are classified in kingdom:
- a. Plantae
 - b. Protoctista
 - c. Fungi
 - d. Monera
- 10- Special leaves which bear sporangia are called:
- a. Paraphyses

- b. Protonema
 - c. Sporopollenin
 - d. Sporophylls
- 11- In aerobic respiration, complete oxidation of one glucose molecules produces:
- a. 42 ATP
 - b. 38 ATP
 - c. 34 ATP
 - d. 30 ATP
- 12- non-living part of a plant cell is:
- a. Tonoplast
 - b. Cell Wall
 - c. Cell membrane
 - d. Nuclear memberane
- 13- The water potential of pure water is:
- a. -10
 - b. 0
 - c. 10
 - d. 100
- 14- This protoctist has isomorphic alternation of generation:
- a. Phytophthora
 - b. Chlorella
 - c. Euglena
 - d. Ulva
- 15- Carnivorous plant trap insects to meet the deficiency of:
- a. Potassium
 - b. Phosphate
 - c. Nitrogen
 - d. Calcium
- 16- The primary electron acceptor of pigment system II or Ps II is:
- a. Plastroquinone
 - b. Plastocyanin
 - c. Ferredoxin
 - d. Pheophytin
- 17- Yeast generate reproduces by:
- a. Conidia
 - b. Sperm
 - c. Budding
 - d. Fission
- 18- Dark reaction of Photosynthesis occurs in:
- a. Stroma
 - b. Thylakoid
 - c. Cytoplasm of leaf cell
 - d. Grana

BOTANY

Time: / Hours 45

SECTION 'B' (SHORT-ANSWER QUESTIONS)

NOTE: Answer 11 questions from this section.

Q2

- (i) Define Isomorphic alternation of generation.
- (ii) State one function each of the following:
 - (a) Ribosome (b) Mitochondria
- (iii) How is bacterial cell wall different from plant cell wall?

2017

Minutes Marks: 36

(22)

- (iv) Name various types of Ascocarp.
- (v) Name various components of the nucleus.
- (vi) What is plasmid?
- (vii) What are Mycorrhiza?
- (viii) Define Heterogamy.
- (ix) Name three pathways of water absorption in plants.
- (x) Write the floral formula of family Solanaceae.
- (xi) Name any two diseases caused by virus.
- (xii) Write the botanical names of any two of the following:
 - Wheat
 - Apple
 - Tomato
 - Amaltas
- (Xiii) Name different parts of a Carpel.
- (xiv) Define Ascent of Sap.
- (xv) Which compound receives $\square\square_2$ during dark reaction?
- (xvi) Name only two types of fermentation.

Q3. Attempt any six part questions. Each questions carries two marks.

- (i) Name only the sub-division Of Tracheophyta.
- (ii) Name only 4 group. of fungi with their reproductiv structures.
- (iii) Draw a labeled diagram of Bacteriophage virus.
- (iv) Why is ATP called energy currency?
- (v) State the postulates of cell theory.
- (vi) Discuss why transpiration Is a necessary evil.
- (vii) Why is photorespiration considered a wasteful process?
- (viii) How are bacteria classified on the basis of flagella?
- (ix) Draw a labeled diagram of any one of the follwomg:

- (i) L.S. of Ovule (ii) *TIS.* of Marchantia thallus

SECTION 'C' (DETAILED- ANSWER QUESTIONS)

NOTE: Answer 2 question from this section

(14)

- 4. Draw and describe the life cycle of Moss of Pinus.
- 5. Give the floral formula, floral diagram and one botanical name each from any two of the following:
 - Rosaceae
 - Fabaceae
 - Mimosaceae
- 6 Draw and describe the life cycle of Zygomycota or Ascomyeota fungi.
- 7. With the help of a flow chart, describe the breakdown of ghucoose into pyruvaree during glycolysis.
- 8. Define translocation. How does E. Munch hypothesis describe the translocation of food in plants?

BOTANY

2016

Time: 15 Minutes

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) The process of absorption of water and swelling up of hydrophilic substances is known as:

- a. Plasmolysis
 - b. Osmosis
 - c. Imbibition
 - d. Deplasmolysis
- (ii) The fungus phytophthora causes a disease known as:
- a. late blight of Potato
 - b. Late blight of Tomato
 - c. Early blight of Potato
 - d. Early blight of Tomato
- (iii) Photosynthetic Bacteria liberate:
- a. $\square\square_2$
 - b. $\square\square_2$
 - c. S
 - d. \square_2S
- (iv) Hydathodes take part in the process of:
- a. Transpiration
 - b. Guttation
 - c. Ascent of sap
 - d. Translocation
- (v) The member of pteridophyte, which is commonly called 'Horse tails', its example is:
- a. Selaginella
 - b. Equisetum
 - c. Psilotum
 - d. Adiantum
- (vi) Hepatitis-type which passes through blood from mother to child during pregnancy is:
- a. A
 - b. B
 - c. C
 - d. E
- (vii) Fertilization in spermatophytes does not need water because of: -
- a. Style
 - b. Anther
 - c. Pollen tube
 - d. Stigma
- (viii) The hollow filamentous appendages that help during conjugation are called:
- a. Flagella
 - b. Pili
 - c. Cilia
 - d. Capsule
- (ix) Yeast are unicellular and belong to:
- a. Deutromycota
 - b. Ascomycota
 - c. Basidiomycota
 - d. Zygomycota
- (x) Herpes, Shingles, Cancer and Poxes in human beings are caused by:
- a. Bacteria
 - b. Fungi
 - c. Viruses
 - d. Yeast
- (xi) Fixation of $\square\square_2$ is catalyzed by:

- a. Decarboxylase
 - b. Rubisco
 - c. PEPC
 - d. Pepsin
- (xii) Muscle fatigue may be caused by the accumulation of:
- a. Citric acid
 - b. Lactic acid
 - c. Hydrochloric acid
 - d. Nucleic acid
- (xiii) In Electron Microscope, the source of light is:
- a. Ordinary light
 - b. Infrared light
 - c. Electron beam
 - d. Ultra violet light
- (xiv) The Fungi, in which sexual Reproduction is Lacking, belong to the class:
- a. Zygomycota
 - b. Basidiomycota
 - c. Deutromycota
 - d. Ascomycota
- (xv) The basic unit of Biological classification is:
- a. Division
 - b. Species
 - c. Class
 - d. Order
- (xvi) Almond belongs to the family:
- a. Poaceae
 - b. Fabaceae
 - c. Rosaceae
 - d. Solanaceae
- (xvii) Ovary is slightly obliquely placed in this family:
- a. Caesalpiniaceae
 - b. Solanaceae
 - c. Rosaceae
 - d. Poaceae
- (xviii) Chloroplast contains densely packed stacks of thylakoids known as
- a. Stroma
 - b. Grana
 - c. Frets
 - d. Matrix

BOTANY

2016

Time: 1 Hours 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

Q2

- (i) Name four groups of Fungi with their reproductive organs.
- (ii) What is the cause of Lysosomal storage diseases? Name them.
- (iii) Write the salient features of Cyanobacteria.
- (iv) Write the botanical names of any four of the following:
 - a. Brinjal

- b. Tomato
 - c. Pear
 - d. Sweet pea
 - e. Rice.
- (v) Distinguish between any one of the following:
- (i) Angiosperm and Gymnosperm
 - (ii) Photosynthesis and Respiration
- (vi) Name major groups of Vascular plants with examples.
- (vii) Write note on the Evolution of Leaf or seed.
- (viii) Describe the deficiency symptoms of Nitrogen or Potassium in plants.
- (ix) Write a note on Nucleus or Endoplasmic reticulum.
- (x) What are the three different pathway available in root for water to enter Xylem?
- (xi) Define any two of the following:
- a. Active transport
 - b. Plasmolysis
 - c. Osmosis
 - d. Imbibitions
- (xii) Define Transpiration. Describe its various types in plant.
- (Xiii) Methods of Genetic recombination in Bacteria.
- (xiv) Write a note on oxidative phosphorylation.
- (xv) Write the economic importance of fermentation,
- (xvi) Write a note on Alternative mechanism of $\square\square_2$ fixation.

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 question from this section (14)

3. Describe floral character, floral formula, floral diagram and economic importance of family Sotanaceac or Fabaceae.
4. Describe the life cycle of Fern.
5. With the help of Fluid Mosaic Model write the structure, properties and functions of plasma membrane.

OR

Define Photosynthesis, Describe the light dependent reactions of Photosynthesis.

BOTANY

2015

Time: 15 Minutes

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) Flow of energy in an ecosystem is:
 - a. Cyclic
 - b. Non-Cyclic
 - c. Uni-directional
 - d. Multi-directional
- (ii) This is not a member of basidiomycota:
 - a. Jelly Fungi
 - b. Puffballs
 - c. Mushrooms
 - d. Neurospora
- (iii) Excess water in plants is forced out in the form of droplets through:

- a. Cuticle
 - b. Hydathode
 - c. Stomata
 - d. Lenticels
- (iv) Family in which ovary is obliquely placed is:
- a. Rosaceae
 - b. Solanaceae
 - c. Poaceae
 - d. Caesalpinaceae
- (v) This protein is present in microtubules:
- a. Actin
 - b. Tubulin
 - c. Keratin
 - d. Myosin
- (vi) A chromosome with equal arms is:
- a. Acrocentric
 - b. Telocentric
 - c. Submetacentric
 - d. Metacentric
- (vii) By this process pyruvate convert into three molecules of CO_2 :
- a. C3 cycle
 - b. C4 cycle
 - c. Glycolysis
 - d. Krebs cycle
- (viii) Asexual reproduction occurs in:
- a. Ascomycota
 - b. Basidiomycota
 - c. Deuteromycota
 - d. Zygomycota
- (ix) Late blight of Potato is caused by:
- a. Yeast
 - b. Puccinia
 - c. Ustilago
 - d. Phytophthora
- (x) During this stage bacteria grow & multiply rapidly:
- a. LAG phase
 - b. LOG phase
 - c. Stationary phase
 - d. Decline phase
- (xi) Mad cow disease is caused by:
- a. Virus
 - b. Viroid
 - c. Prion
 - d. Bacteria
- (xii) Enzyme responsible for the Carboxylation in Calvin Benson cycle is:
- a. Rubisco
 - b. Pepsin
 - c. Peptide
 - d. Isomerase
- (xiii) Dark reaction of Photosynthesis occur in:

- a. Granum
 - b. Mitochondria
 - c. Stroma
 - d. Ribosome
- (xiv) In woody stem transpiration takes place through:
- a. Stomata
 - b. Lenticels
 - c. Cuticle
 - d. Hydathodes
- (xv) Bacteria which can only survive in the presence of oxygen are:
- a. Obligate aerobes
 - b. Facultative anaerobes
 - c. Obligate anaerobes
 - d. Facultative anaerobes
- (xvi) Encephalitis and dengue fever are caused by:
- a. Rhinoviruses
 - b. Paramyxoviruses
 - c. Rhabdoviruses
 - d. Arboviruses
- (xvii) *Aspergillus flavus* produce this carcinogenic toxin:
- a. Aflatoxin
 - b. Mycotoxin
 - c. Neurotoxin
 - d. Haematoxin
- (xviii) In *Chlorella* reproduction takes place by means of:
- a. Zoospores
 - b. Gametes
 - c. Conidia
 - d. Aplanospores

BOTANY

Time: 1 Hour 45

2015

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

Q2

- (i) Who proposed cell theory? State postulates of the theory.
- (ii) Write note on Mitochondria of Plastids.
- (iii) State the role of water or chlorophyll in Photosynthesis.
- (iv) Name five kingdoms proposed by Whittaker.
- (v) Describe the importance and deficiency symptoms of nitrogen in Plants.
- (vi) State the structure of Rhynia Plant or write note on Lichen.
- (vii) Distinguish between any one of the following:
 - Aerobic Respiration and Anaerobic Respiration
 - Angiosperm and Gymnosperm
- (viii) Write note on transmission of HIV.
- (ix) State the economic importance of family Poaceae.
- (x) Write down the botanical names of any four of the following:
 - Rice
 - Potato

- Tomato
 - Wheat
 - Tamarind
- (xi) State four important events take place during light dependent reaction of photosynthesis.
- (xii) Explain Source — Sink Movement.
- (xiii) Draw a labeled diagram of any one of the following:
- L.S. of Male Cone of Pinus
 - L.S. of Ovule of an angiospermic plant
- (xiv) How Bacteria are classified on the basis of flagella.
- (xv) Draw an outline of classification of Kingdom Plantae.
- (xvi) Define any Two of the following:
- Plasmolysis
 - Diffusion
 - Water Potential
 - Imbibition

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 question from this section (14)

3. Describe lytic cycle of Bacteriophage and distinguish it from Lysogenic cycle.

OR

Describe the structure and reproduction in Ulva with reference to Isomorphic alternation of generation.

4. Describe floral characters, floral formula, floral diagram & economic importance of family Rosaceae or Fabaceae.

5. Describe the process of Glycolysis. Also draw flowchart OR Describe the mechanism of Ascent of Sap.

BOTANY

Time: 15 Minutes

2015

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

(i) The Amoeboid stage of Slime mold is. Called

- (a) Plasmodium
- (b) Water model
- (c) Entamoeba
- (d) none of these

(ii) These Fungi lack sexual reproduction:

- (a) Zygomycota
- (b) Ascomycota
- (c) Basidiomycota
- (d) Deuteromycota

(iii) This is heterosporous:

- (a) Rhynia
- (b) Selaginella
- (c) Moss
- (d) Lycopodium

(iv) Hydathodes take part in the process of:

- (a) Transpiration
- (b) Translocation

- (c) Guttation
- (d) Ascent of sap
- (v) Chloroplast contains densely packed stacks of thylakoids known as:
 - (a) Stroma
 - (b) Grana
 - (c) Frets
 - (d) Matrix
- (vi) *Lycopersicon-esculentum* is the biological name of:
 - (a) Brinjal
 - (b) Potato
 - (c) Tomato
 - (d) Apple
- (vii) Fertilization in Spermatophytes does not need water because of:
 - (a) roots
 - (b) pollen tubes
 - (c) styles
 - (d) stigma
- (viii) During pregnancy, this type of hepatitis passes through mother to child via blood:
 - (a) A
 - (b) B
 - (c) C
 - (d) D
- (ix) Oyster mushroom is an example of:
 - (a) Symbiotic fungi
 - (b) Parasitic fungi
 - (c) Saprophytic fungi
 - (d) Predator fungi
- (x) Bryophytes are:
 - (a) Non-vascular plants
 - (b) Vascular plants
 - (c) Aquatic plants
 - (d) none of these
- (xi) Seed plants are included in:
 - (a) Psilopsida
 - (b) Lycopsida
 - (c) Sphenopsida
 - (d) Spermopsida
- (xii) Process of absorption of water and swelling up of hydrophilic substance is known as:
 - (a) Plasmolysis
 - (b) De-plasmolysis
 - (c) Imbibition
 - (d) Osmosis
- (xiii) Late blight of potato is caused by:
 - (a) Phytophthora
 - (b) Puccinia
 - (c) Penicillium
 - (d) Mucor
- (xiv) *Ulva* is also known as:
 - (a) Sea-grass
 - (b) Sea-lettuce

- (c) Sea-urchin
- (d) none of these
- (xv) Bacteria grow and multiply very rapidly during:
 - (a) LAG phase
 - (b) LOG phase
 - (c) Stationary phase
 - (d) Declining phase
- (xvi) Cell membrane is composed of:
 - (a) Protein & Carbohydrate
 - (b) Carbohydrate Liçig
 - (c) Protein and Lipid
 - (d) Lipid
- (xvii) The process which cell membrane absorb solid particles is called:
 - (a) Pinocytosis
 - (b) Diffusion
 - (c) Phagocytosis
 - (d) Absorption
- (xviii) The final tool for classification is:
 - (a) Cytology
 - (b) Homology
 - (c) Biochemistry
 - (d) Genetics

BOTANY

2014

Time: I Hours 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

Q2.

- (i) Draw a labeled diagram of Fluid mosaic model of cell membrane.
- (ii) Define any one of the following:
 - (a) Facilitated diffusion (b) Active transport (c) Plasmolysis
- (iii) Trace the evolution of leaf in green plants.
- (iv) Draw a labeled diagram of any one:
 - (a) Bacteriophage virus (b) L.S. of Ovule
- (v) State the role of Phosphorus **OR** Potassium in the development of plants and its deficiency symptoms.
- (vi) Explain the two factors which affect the opening and closing of Stomata.
- (vii) How are Bacteria classified on the basis of Flagella?
- (viii) Name any four Viral disease with their respective causative agents.
- (ix) Why do biologists consider kingdom Protoctista as a polyphyletic group of organisms?
- (x) Write a note on Oxidative phosphorylation.
- (xi) Draw a diagram showing efficiency of Food chain.
- (xii) Name five major groups of Tracheophyta with examples.
- (xiii) Write a note on Lysosomal storage disease.
- (xiv) Discuss the techniques to isolate the components of a cell. (xv) Write a note on Cytoskeleton **OR** Nucleus.
- (xvi) Differentiate between Prokaryotes and Eukaryotes.
- Q Draw structure of Chlorella (no description is required)

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 question from this section (14)

3. Describe and draw the life cycle of a Basidiomycetes fungus. Define HIV virus. Describe the disease caused by this virus.
4. Discuss the life cycle of Moss.
5. Give floral characters, floral formula, floral diagram and economic importance of family Solanaceae.

OR

Explain the events that take place during light reaction of photosynthesis.

BOTANY

2013

Time: 15 Minutes

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) Para sexuality occurs in:
- (a) Deutermycota
 - (b) Ascomycota
 - (c) Zygomycota
 - (d) Basidiomycota
- (ii) Phytophthora infestans causes disease known as:
- (a) Early blight of potato
 - (b) Late blight of potato
 - (c) Late blight of tomato
 - (d) Early blight of tomato
- (iii) In this Taxonomic family the ovary is obliquely placed:
- (a) Poaceae
 - (b) Rosaceae
 - (c) Solanaceae
 - (d) Caesalpinaceae.
- (iv) This special type of fertilization occurs Only in angiospermic plant:
- (a) Polygamy
 - (b) Pollination
 - (c) Double Fertilization
 - (d) Parthenogenesis
- (v) Datura Alba is an example of family:
- (a) Fabaceae
 - (b) Poaceae
 - (c) Mimosaceae
 - (d) Solanaceae
- (vi) This organelle releases oxygen:
- (a) Ribosomes
 - (b) Mitochondria
 - (c) Chloroplast
 - (d) Golgi bodies
- (vii) Plant-like protoctist is/are:
- (a) Algae
 - (b) Fungi
 - (c) Slime mold
 - (d) Protozoa
- (viii) Rice belongs to this family:

- (a) Poaceae
 - (b) Rosaceae
 - (c) Solanaceae
 - (d) Caesalpiiriaceae
- (ix) Yeasts are unicellular and belong to:
- (a) Ascomycota
 - (b) Dueteromycota
 - (c) Zygomycota
 - (d) Basidiomycota
- (x) Mitochondria are the centres of:
- (a) Aerobic Respiration
 - (b) Photosynthesis
 - (c) Transpiration
 - (d) Anareoblc Respiration
- (xi) Mucor and Rhizopus belong to:
- (a) Zyciomycota
 - (b) Basidiomycota
 - (c) Ascomycota
 - (d) Deuteromycota
- (xii) This main constituent of plant cell wall is used to manufacture paper:
- (a) Cellulose (b) Pectin (c) Lignin (d) none of these
- (xiii) A mutualistic association between fungi and roots of vascular plants Is called:
- (a) Lytic cycle
 - (b) Mycorrhizae
 - (c) Lichens
 - (d) Lysogenic cycle
- (xiv) Non-vascular plants are known as:
- (a) Pteridophyta
 - (b) Bryophyta
 - (c) Gymnosperms
 - (d) Angiosperms
- (xv) Carnivorus plants grow in habits with low content of this element:
- (a) Calcium (b) Nitrogen (c) Phosphorus (d) Potassium
- (xvi) The fungi, in which sexual reproduction is lacking, ielongto class:
- (a) Zygomcota
 - (b) Bsidigmycota
 - (c) Deutromycota
 - (d) Asconycota
- (xvii) In electron microscope, the source of light used is:
- (a) Ordinary daylight
 - (b) Ultraviolet light
 - (c) Beam of electrons
 - (d) Infrared light
- (xviii) Animal-like phase of slime-mold is:
- (a) Fruiting bodies (b) Spirangia (c) Plasmodium (d) Spores

BOTANY

Time: I Hours 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

Q2.

- (i) Explain the role of water during photosynthesis.
- (ii) Describe the silent features of Blue-green algae.
- (iii) Write a short note on Mycelium.

OR

State the names of the four groups of Fungi along with their reproductive structures.

- (iv) Draw the outline of the classification of kingdom plantae
- (v) Write the botanical names of 4 of the following plants:
 - (a) Rice (b) Wheat (c) Tomato (d) Kachnar (e) Almond
- (vi) What changes are proposed by Margulis and Schwartz in the five kingdom system of R. Whittaker?
- (vii) Draw a labelled diagram of any One of the following:
 - (a) L.S. of male cone of Pinus (b) T.S. of Marchantia Thallus
- (viii) Write note on any one of the following:
 - (a) Rhynia (b) Photorespiration
- (ix) Describe anaerobic breakdown of Pyruvic acid.
- (x) Write only the names of any five important diseases caused by Viruses & also mention names of each Virus.
- (xi) Differentiate between Aerobic & Anaerobic Respiration.
- (xii) Write a note on deficiency symptoms of Nitrogen.
- (xiii) Write a note on Lichens OR Yeast
- (xiv) Draw a chart showing the Efficiency of food chain.
- (xv) Write a note on Plastid OR Mitochondria.
- (xvi) Write a note on any One of the following:
 - (a) Osmosis (b) Imbibition (c) Facilitated diffusion

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 question from this section (14)

- 3. Define Photosynthesis. Describe the fixation of CO₂ during Benson and Calvin cycle.
- 4. Give the Floral characters, Floral formula, Floral diagram & Economic importance of family Rosaceae OR Fabaceae
- 5. Define source to sink movement How does the Pressure flow hypothesis. explain the mechanism of translocation of food? OR describe the life cycle of Fern

BOTANY

2012

Time: 15 Minutes

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) Serious infection of lungs is:
 - (a) Aspergillosis (b) Histoplasmosis
 - (c) Monilliasis (d) Amoebiasis
- (ii) *Aspergillus flavus* produces carcinogenic toxin called:
 - (a) Aflatoxin (b) Neurotoxin
 - (c) Haematoxin (d) Mycotoxin
- (iii) *Capsicum annum* (Red Pepper) is an example of:
 - (a) Solanaceae (b) Fabaceae (c) Poaceae (d) Rosaceae
- (iv) Pollen grains are produced in:
 - (a) Stigma (b) Ovary (c) Anther (d) Ovule

- (v) Flow of Energy in an Ecosystem is:
 (a) cyclic (b) non-cyclic (c) un-idirectional (d) multi-directional
- (vi) Chromosomes with equal arms are called:
 (a) Telocentric (b) Metacentric
 (c) Submetacentric (d) Acrocentric.
- (vii) Energy is required for:
 (a) active transport (b) diffusion (c) facilitated diffusion (d) all of these
- (viii) This type of Hepatitis is passed from mother to child during pregnancy:
 (a) A (b) B (c) C (d) D
- (ix) Dark reaction of Photosynthesis occurs in:
 (a) Stroma (b) Granum (c) Mitochondria (d) Ribosome
- (x) Late blight of Potato is caused by:
 (a) Yeast (b) Puccinia (c) Ustilago (d) Phytophthora
- (xi) Measles and mumps in humans are caused by:
 (a) Rhino viruses (b) Adenoviruses
 (c) Paramyxoviruses (d) Rhabdoviruses
- (xii) The primary electron acceptor in Photosystem I is:
 (a) Plastoquinone (b) Plastocyanin
 (c) Pheophytin (d) Ferredoxin
- (xiii) These extremely thin appendages help during conjugation in Bacteria:
 (a) Flagella (b) Pili, (c) Cilia (d) Tentacles
- (xiv) This organelle has some autonomous existence in the cell:
 (a) Endoplasmic reticulum (b) Peroxisome
 (c) Mitochondrion (d) Golgi body
- (xv) Mitochondria are the centers of:
 (a) Aerobic respiration (b) Photosynthesis
 (c) Transpiration (d) Anaerobic respiration
- (xvi) Those non-motile spores are formed from certain vegetative cells during unfavourable conditions in Nostoc:
 (a) Heterocyst (b) Hormogonium
 (c) Akinete (d) Coenobium
- (xvii) Photosynthetic bacteria liberate:
 (a) CO₂ (b) O₂ (c) S (d) H₂S
- (xviii) Yeast are unicellular and belong to:
 (a) Basidiomycota (b) Ascomycota (c) Deuteromycota (d) Zygomycota

BOTANY

2012

Time: 1 Hours 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

Q2.

- (i) Write two features of Cyanobacteria.
- (ii) Differentiate between any two:
 (a) Angiosperms and Gymnosperms
 (b) Algae and Fungi
- (iii) Draw a labelled diagram of any one:
 (a) L.S. Female cone of Pinus
 (b) L.S. of Ovule

- (iv) Give the Economic importance of family Poaceae.
- (v) Write a note on Yeast or Lichens.
- (vi) Write a note on Cell Theory.
- (vii) Write a note on the efficiency of Energy flow and its significance.
- (viii) Why is ATP called Energy carry?
- (ix) Write a note on Viroids and prions
- (x) Name four group of Fungi with their reproductive structure.
- (xi) Write botanical names of any four of the following Plants
 - (a) Potato
 - (b) Tamarind Rice
 - (c) Tomato Rose
 - (d) Sweet pea
- (xii) Draw a labeled diagram of Bacteria cell.
- (xiii) Write a note on Chloroplast or Mitochondria.
- (xiv) Write three steps involved in the Evolution of seed.
- (xv) Name five kingdoms proposed by Whittaker.
- (xvi) Distinguish between Osmosis and Diffusion.

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 question from this section (14)

- 3. Describe the structure and reproduction in Ulva with reference to Isomorphic alternation of generation.
- 4. Give floral characters, floral formula, floral diagram and economic importance of family Solanaceae & Fabaceae.
- 5. Describe the aerobic degradation of Pyruvic acid. OR Define Transpiration & its types. Describe the structure and mechanism of opening and closing of Stomata.

BOTANY

Time: 15 Minutes

2011

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) The bacterial cell wall is digested by enzyme called:
 - (a) Lysozyme
 - (b) Amylase
 - (c) Phosphatase
 - (d) Hesokinase
- (ii) The basic unit of biological classification is:
 - (a) Division
 - (b) Species
 - (c) Class
 - (d) Order
- (iii) The main constituent of plant cell wall which is used to manufacture paper is called:
 - (a) Cellulose
 - (b) Pectin
 - (c) Lignin
 - (d) none of these
- (iv) The fastest mode of asexual reproduction found in unicellular organisms is:
 - (a) Fission
 - (b) Conjugation

- (c) Mitosis
- (d) Meiosis
- (v) The Marine alga which is commonly called sea-lettuce is:
 - (a) Chioreila
 - (b) Ulva
 - (c) Spirodyra
 - (d) Englena
- (vi) The pathogenic organism causing late blight of potato is:
 - (a) Albugo Candida
 - (b) Phytophthora Infestans
 - (c) Alternaria solani
 - (d) Mucor mucedo
- (vii) The type of alternation of generation in Ulva Is:
 - (a) Autotrophic
 - (b) Heterotrophic
 - (c) Heteromorphic
 - (d) Isomorphic
- (viii) A mutualistic association between fungi and roots of vascular plants is called:
 - (a) Lytic cycle
 - (b) Mycorrhizae
 - (c) Lichen
 - (d) Lysogenic cycle
- (ix) The formation of a new mycelium from each broken piece of hyphal fungi is called:
 - (a) Karyogamy
 - (b) budding
 - (c) Fragmentation
 - (d) plasmogamy
- (x) Production of two types of spores in selaginella is called
 - (a) Heterospory
 - (b) Homospory
 - (c) Vivipary
 - (d) Oogamy
- (xi) The pistil of the flower has these three parts:
 - (a) Anther, connective & filament
 - (b) Stigma style & ovary
 - (c) Thalamus, calyx and corolla
 - (d) Root, shoot
- (xii) Special type of fertilization that occurs in an angiospermic plant is known as:
 - (a) Pollination
 - (b) Polygamy
 - (c) double fertilization
 - (d) Parthenogenesis
- (xiii) Datura alba (Thorn Apple) is an example family:
 - (a) Fabaceae
 - (b) Poaceae
 - (c) Mimosaceae
 - (d) Ioniaceae
- (xiv) The process of respiration occurs in all living cells of plants constantly.
 - (a) during day time only
 - (b) during sun light

- (a) during day and night
 - (b) during night time only
- (xv) The process which converts organic acid into three molecules of CO₂ is:
- (a) C₃ cycle
 - (b) C₄ cycle
 - (c) TCA cycle
 - (d) Calvin Cycle
- (xvi) Isolation of cellular components to determine their chemical composition is called:
- (a) Fractionation
 - (b) Segregation
 - (c) Purification
 - (d) Fragmentation
- (xvii) Singer and Nicholson (1972) proposed a working model of plasma membrane which is called:
- (a) Watson and Crick Model
 - (b) Fluid Mosaic Model
 - (c) Induce fit Model
 - (d) Dalton's Atomic Model

BOTANY

2011

Time: 1 Hour 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

- 2.(i) What are the three principles of cell theory?
- (ii) Describe the types of plastids.
- (iii) What are modifications proposed by Margulis & Schwartz in the Whittaker's scheme of five kingdom system?
- (iv) Write a note on Control of Bacteria.
- (v) What are the salient features of Cyanobacteria?
- (vi) Describe the reproduction in Ulva.
- (vii) Write a note on anyone:
 - (a) Mitochondria (b) Nucleus
- (viii) Distinguish between aerobic and anaerobic respiration.
- (ix) What is the economic importance of fermentation?
- (x) Write a note on evolution of leaf.
- (xi) What are the three steps in the evolution of seed?
- (xii) Draw floral formula & floral diagram of family Fabaceae.
- (xiii) What is the role of phosphorus in plants? Give its deficiency symptoms.
- (xiv) How does exchange of gases take place in plants?
- (xv) Give two familiar plants & their botanical names belonging to following families. Rosaceae, Solanaceae, Poaceae.
- (xvi) Draw diagram of anyone of the following.
 - (a) T.S. of Marchantia thallus
 - (b) L.S. of female cone of Pinus

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 questions from this section (14)

3. Give a detailed account of the life cycle of Bacteriophage.
4. What are fungi? Describe its one division in detail.
5. Give floral characters, floral formula, floral diagram or & economic importance of family Rosaceae or Solanaceae.

OR Define photosynthesis. Describe the light reaction of photosynthesis.

BOTANY

2010

Time: 15 Minutes

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) The oldest known vascular plant is:
(a) Fern (b) Cycas (c) Rhynia (d) Marctantja
- (ii) This pair of diseases is viral:
(a) Yellow fever and Typhoid (b) Measles & Tetanus
(c) Tuberculosis and AIDS (d) Rabie8 & Mumps
- (iii) Energy is required for:
(a) Active transport (b) Diffusion
(c) Facilitated diffusion (d) All of the
- (iv) The flow of energy in an ecosystem is:
(a) Cyclic (b) Non-directional
(c) Unidirectional (d) Multidirectional
- (v) The example of prokaryotes is:
(a) Euglena (b) Yeast
(c) Paramecium (d) Bacteria
- (vi) Phytophthora is an example of:
(a) slime mold (b) water mold
(c) bread mold (d) toad stool
- (vii) The centre of aerobic respiration is:
(a) Mitochondria (b) Ribosome
(c) Dictyosome (d) Lysosome
- (viii) Spikelet inflorescence belongs to the family:
(a) Solonaceae (b) Mirnosaceae
(c) poaceae (d) Fabaceae
- (ix) The one which is motile is:
(a) oospore (b) zoospore
(c) zygospore (d) aplanospore
- (x) The mode of nutrition in purple-sulphur bacteria is:
(a) Heterotrophic (b) Parasitic
(c) Photosynthesis (d) Chemosynthesis
- (xi) The members of this group are called horse-tail:
(a) Spermopsida (b) Lycopsida
(c) Psilopsida (d) Sphenopsida
- (xii) In the woody stem the exchange of gases takes place through:
(a) Cuticle (b) Stomata
(c) Lenticels (d) Hydathodes
- (xiii) The total stem parasite is:
(a) Loranthes (b) Utricularia
(c) Viscum (d) Cuscuta
- (xiv) Ovary is slightly obliquely in this family:
(a) Caesalpiniaceae (b) Solonaceae
(c) Rosaceae (d) Poaceae
- (xv) Diadelphous stamens are present in:
(a) Fabaceae (b) Caesalpiniaceae

- (c) Poaceae (c) Roaceae
- (xvi) Fungi in which sexual reproduction is lacking are called:
 (a) Ascomycota (b) Zugomycota
 (c) Basidiomycota (d) deuteromycota
- (xvii) The boindicator of air pollution is:
 (a) phytophthora (b) Marchantna
 (c) Lichens (d) Bacteria
- (xviii) This is considered the final tool for the classification of organisms:
 (a) Biochemistry (b) Genetics
 (c) Cytology (d) Homology

BOTANY

2010

Time: I Hours 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)

NOTE: Answer 11 questions from this section.

2.

- (i) Describe the technique to Isolate the component of a Cell
- (ii) What are the measures to control bacteria?
- (iii) Write any two botanical names of plants belonging to the following families:
 (a) Rosaceao (b) Solonaceae (c) Poaceao
- (iv) Draw a labeled diagram of T.S. of Marchantia thallus.
- (v) Describe briefly the method of asexual reproduction in Zygomycota.
- (vi) Who proposed Cell Theory? Write 3 main principle of theory.
- (vii) Write a note on Lysogenic Cycle of Bacteriophage.
- (viii) Define any Four of the following:
 (a) Heterospory (b) Heterogamy (c) Mycorrhlza (d) Akinetes (e) Species
- (ix) Describe the structure and function of Chloroplast
- OR
- Mitochondria. (Diagram is not required)
- (x) Mention the ways of the transmission of HIV virus.
- (xi) Give four important events that take place during light reaction of Photosynthesis
- (xii) Define any Four of the following:
 (a) Diffusion (b) Phygocytosis (c) GuttatiOn
 (d) Imbibition (e) Plasmolysis (f) Active TransPOlt
- (xlii) What Is Heterospory? Give 3 steps in evolution of seed
- (xlv) Describe briefly the importance and deficiency symptoms of nitrogen.
- (xv) Give the economic importance of the family poaceae
- (xvi) Define insectivorous plants. Describe the structure of any one insectivorous plant.

SECTION 'C' (DETAILED QUESTION ANSWERS)

NOTE: Answer 2 question from this section (14)

3. What is triple fusion? Describe the process of fertilization in an angiosperm plant. What changes occur in the ovule after fertilization?
4. Describe the life cycle of Fern. Illustrate your answer reference to alternation of generations.
5. Differentiate Photosynthesis and Respiration. Describe in detail the process of Glycolysis Or Krebs Cycle.
- OR

How does the pressure flow hypothesis explain the movement of sugar through the plant?
Illustrate your answer with the help of a diagram.

BOTANY

2009

Time: 15 Minutes

Max. Marks: 09

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

- (i) Which organelle release oxygen?
(a) Ribosome (b) Mitochondria (c) Chloroplast (d) Golgi Bodies
- (ii) Isomorphic Alternation of Generation is found in:
(a) Marchantia (b) Funaria (c) Chlorella (d) WY!
- (iii) The fungi In which sexual reproduction Is lacking belongs to the class:
(a) Zygomycota (b) Basidiomycota
(c) Deuteromycota (d) Ascomycota
- (iv) The oxygen produced during photosynthesis comes from:
(a) Water (b) Soil (c) CO_2 (d) CO_2 & H_2O both
- (v) The excess of water In plants is forced out In the form of droplets through:
(a) Lenticles (b) Stomata (c) Hydathodes (d) Cuticle
- (vi) Which one is a membrane —bounded organelle?
(a) Vacuole (b) Mitochondria (c) Ribosome (d) Centriole
- (vii) The production of two different types of gametes by plants is known as:
(a) Isogamy (b) Polygamy (c) Homogamy (d) Heterogamy
- (viii) The fermentation of soya sauce is done by:
(a) Penicillium (b) Aspergillus (c) yeast (d) Neurospora
- (ix) The non-vascular plants are known as:
(a) Pteridophyta (b) Bryophyta
(c) Gymnosperms (d) Angiosperms
- (x) Alternate mechanism of carbon dioxide fixation during the dark reaction occurs In:
(a) C_4 plants (b) C_3 plants (c) C_6 plants (d) None of them
- (xi) Carnivorous plants grow in habitats with the known content of:
(a) Phosphorus (b) Calcium (c) Potassium (d) Nitrogen
- (xii) What are the function of Lysosome?
(a) intracellular Digestion (b) Protein Synthesis
(c) Lipids Formation (d) Intercellular Digestion
- (xiii) Rice belongs to the family:
(a) Poaceae (b) Solanaceae (c) Rosaceae (d) Fabaceae,
- (xiv) It is not the pathway of water to enter the xylem through root:
(a) Apoplast (b) Symplast (c) Stomata (d) Cell to Cell
- (xv) It is a polymer that resists all kinds of environmental damages:
(a) Sporopollenin (b) Wax (c) Cuticle (d) Lignin
- (xvi) In electron microscope the source of light used is:
(a) Ordinary daylight (b) Ultraviolet light
(c) beam of electron (d) infrared light
- (xvii) Plant like protist is:
(a) Algae (b) Fungi (c) Slime mold (d) Protozoa
- (xviii) Tomato belongs to the family:
(a) Solanaceae (b) Poaceae (c) Fabaceae (d) Rosaceae
(b)

BOTANY**2009**

Time: I Hours 45

Minutes Marks: 36

SECTION 'B' (SHORT-ANSWER QUESTION) (22)**NOTE: Answer 11 questions from this section.****Q2.**

- (i) Draw an outline of the classification of the Kingdom plantae.
- (ii) Describe the structure and function of Mitochondria (No diagram is needed).
- (iii) Draw only a labeled diagram of a Bacteriophage.
- (iv) Describe the Binomial Nomenclature with one example OR write a short note on Lichens.
- (v) Describe the different types of nutrition In bacteria
- (vi) Describe the different types of Reproduction in Nostoc. (No diagram required).
- (vii) Draw only the diagrammatic Life Cycle of Uiva. (No description is needed).
- (viii) Describe the main features of basidiomycota or Deuteromycota.
- (ix) Explain the economic importance of Fungi.
- (x) State the structure of Rhynia plant (Diagram is not required).
- (xi) Distinguish between any One of the following parts.
 - (a) Photosynthesis and Respiratory
 - (b) Aerobic Respiratory and Anaerobic respiration
- (xii) Why do we say that sporophyte of anthoCerOt9 S'° many advanced characters suitable for land environment?
- (xiii) Draw a labeled diagram of the male Cone of Pinus in longitudinal section.
- (xiv) Describe the role of water or the role of light during photosynthesis.
- (xv) State three events that take place during the light- dependent reaction of photosynthesis.
- (xvi) Describe Photorespiration or write down the economic importance of Poaceae.

SECTION 'C' (DETAILED QUESTION ANSWERS)**NOTE: Answer 2 question from this section (14)**

3. Describe the floral characters, floral formula, floral diagram and economic importance of the family Solanaceae or Fabaceae.
 4. Define Ascent of Sap. Describe its mechanism.
OR Describe the characteristics, structure and classification of a Virus.
 5. Define photosynthesis. Describe the fixation of carbon dioxide during photosynthesis.
- Q3 What do you mean by energy flow In an Ecosystem? What is the role of his flow in the living world?

BOTANY**2008**

Time: I Hours 45

Minutes Marks: 36

NOTE: Answer any Three questions. All questions carry equal marks. Attempt all the parts of a question together in sequence. Draw neat and labeled diagrams. Where necessary.**Q1.**

- (a) Fill in the blanks with the correct answers: (03)
 - Mitochondria is known as the ----- of the cell.
 - In bacteria locomotary organs are called -----.
 - The word 'virus' is derived from the Latin word which means----- --.
 - causes many diseases such as yellow fever, measles. AIDS etc.
 - Late blight potato is caused by ----- --.
 - In Basidiomycetes reproductive organs are called ----- --.

- (b) (i) What is the technique of isolating the components of a cell?
(ii) Give the salient features of cyanobacteria.
- (c) What is heterotrophic nutrition? Give various types of heterotrophic according to the mode of nutrition.

Q2.

- (a) Write True or False for the following statements:

- Microscope is an instrument to observe very small objects.
- The cell wall is the controlling part of a cell.
- Bacteria were discovered by Leeuwenhoek in A.D. 1676.
- Bryophytes are vascular plants
- Gymnosperms are open - seeded plants.
- Fern prothallus is not a heart - shaped structure.

- (b) (i) Write a short note on any One of the following:

- Source Sink Movement
- Advantage and Disadvantage of Transpiration
- Plasmolysis and Deplasmolysis

- (ii) Draw a neat and labelled diagrammatic life cycle of Ulva.

- (c) Define Respiration. Describe the aerobic degradation of pyruvic acid. OR Define photosynthesis. Describe the mechanism of a light reaction in photosynthesis. (06)

Q3.

- (a) Choose the correct answer for each from the given options

- (i) Alternate mechanism of carbon dioxide fixation during a dark reaction Occurs in.

- C₃ plants
- C₄ plants
- C₂ plants
- None of them

- (ii) Chlorophyll In the chloroplast is located in

- Grana
- Stroma
- Ribosome
- Pyrenoid

- (iii) Cold diseases are caused by:

- (a) Rhinovirus (b) Rhabdovirus (c) Bacteria (d) Retrovirus

- (iv) The multinucleate unseptate mycelium is called:

- (a) Lichen (b) Coenocytic (c) Columella (d) Nostoc

- (v) The non - vascular plants are called:

- (a) Angiosperm (b) Gymnosperm (c) Bryophyta (d) None of them.

- (vi) The nutrition in which energy is used by the oxidation of inorganic substances is called:

- (a) phototropic (b) Chemotrophic (c) Heterotrophic (d) Parasite

- (b) (i) Write a short note on any One of the following:

- (a) Lichen (b) Slime mold (c) Importance of bacteria

- (ii) Draw a neat and labelled diagram of L.S. of Selaginella strobilus.

- (c) Define a HIV. Describe the disease caused by this virus under the following heads:

- (i) Transmission (ii) Symptoms (iii) Preventive Measures

Q4.

- (a) Write True or False for the following statements:

- Hepatitis is a heart disease.
- Cell membrane is a respiratory organ in bacteria.
- Ulva shows isomorphic alternation of generations.
- Rhynia is a Bryophyta.

- Phloem helps in translocation of food.
 - Vexillary aestivation is present in the family Fabaceae.
- (b) (i) Describe the Cell Theory.
(ii) Define the role of A.T.P. as energy currency.
- (c) Write Short notes on any Three of the following:
(i) Evolution of Leaf (ii) Nucleus (iii) Plastid (iv) Mitochondria (v) Ribosome

Q5.

- (a) Match the items of Column 'A' with those of Column B:

Column "A"	Column "B"
(a) Tobacco	(i) Mimosoideae
(b) Touch –Me—not	(ii) Poaceae
(c) Maize	(iii) Solanaceae
(d) Bryophyta	(iv) Psilotum.
(e) Psilopsida	(v) Marchantia
(f) Pteridophyta	(vi) Fern

- (b) (i) Distinguish between any Two parts of the following:
- Light Microscope and Electron Microscope
 - Prokaryote and Eukaryote
 - Cell Wall and Cell membrane
- (ii) Describe the structure of Angiospermic ovule or T.S. of Marchantia thallus.
- (c) Describe only the floral character, floral formula and floral diagram with economic importance of the family Rosaceae or Mimosaceae.