

Final exam (Second term) 2025- 2026
Course Title: Systematic Botany & Plant Physiology (10101)
Level: 1st level (Sciences).
Degree: B.Sc. Faculty of Science.

Q1-Choose only one answer for each sentence from the following
(35 marks)

1- In alternation of generations, the gametophyte is:

- | | |
|---------------------------------|---------------------------------|
| A) Diploid and produces spores | B) Haploid and produces gametes |
| C) Diploid and produces gametes | D) Haploid and produces zygote |

2- In bryophytes, the dominant generation is:

- | | |
|---------------|----------------|
| A) Sporophyte | B) Embryo |
| C) Seed | D) Gametophyte |

3- Gymnosperms are characterized by:

- | | |
|-------------------|-----------------------|
| A) Enclosed seeds | B) Flowers |
| C) Naked seeds | D) No vascular tissue |

4- Pteridophytes reproduce by:

- | | |
|-----------|------------|
| A) Spores | B) Fruits |
| C) Seeds | D) Flowers |

5- Capsid is made up of:

- | | |
|----------------|------------|
| A) Nucleotides | B) Lipids |
| C) Capsomeres | D) Enzymes |

6- Bacteria with flagella all over the surface are:

- | | |
|------------------|------------------|
| A) Monotrichous | B) Lophotrichous |
| C) Amphitrichous | D) Peritrichous |

7- Autotrophic bacteria use..... as their carbon source:

- | | |
|--------------------|-------------|
| A) Glucose | B) Proteins |
| C) CO ₂ | D) Lipids |

8- Heterotrophic bacteria obtain carbon from:

- | | |
|--------------------|----------------------|
| A) CO ₂ | B) Inorganic salts |
| C) Sunlight | D) Organic compounds |



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Ministry of Education

Examination time: 2 hours.
Examination Date: 8-5-2026.
Number of pages: 2 pages.
Total Marks: 60 marks.

9- Viruses can be seen using:

- A) Light microscope
B) Compound microscope
C) Electron microscope
D) Hand lens

10- Positive chemotaxis means:

- A) Movement away from stimulus
B) Movement toward favorable stimulus
C) No movement
D) Random movement

11- Deutromycota are called Fungi Imperfecti due to lacking..... reproduction.

- a- Asexual b- Sexual c- Vegetative d- Transformation

12- In transduction, the genetic material is transferred to the recipient bacterial cell by.....

- a- Conjugation b- Transformation c- Binary fission d- Phage

13- The ascomycetes are characterized by the development of spores called.....

- a- Basidiospores b- Sporangiospores c- Ascospores d- Sperms

14- Sexual reproduction in algae occurs by the following, Except.....

- a- Binary fission b- Oogamy c- Anisogamy d- Isogamy

15- The water soluble biliproteins called phycoerythrin and phycocyanin occur generally in the and, respectively.

- a- Cyaophyta, Chlorophyta b- Rhodophyta, Cyanophyta
c- Chlorophyta, Phaeophyta d- Bacillariophyta, Cyanophyta

16- Algae that grow attached to the rocks are known as

- a- Lithophytes b- Aerophytes c- Thermophytes d- Cryptophytes

17- are spherical bodies in the chloroplasts and are the centers of starch formation.

- a- Stroma b- Grana c- Pyrenoids d- Thylakoids

18- is flask shape ascocarp.

- a- Perithecium b- Basidium c- Zygosporangium d- Zygote

19- The reserve food material in Chlorophyta is.....

- a- Floridean starch b- Cyanophyceean starch
c- Laminarin starch d- True starch

20- is a modified hyphal outgrowth with a large surface area which pushes into living cells without breaking their plasma membrane.

- a- Spore b- Symmetry c- Haustorium d- Capsid

21- In true solution particles are:

- a) Visible by naked eyes. b) Visible by ordinary eye. c) Invisible.

22- When a beam of light falls on lyophobic solution, it is:

- a) Scattered. b) Straight line. c) Reserved.

23- Swelling of substance when immersed in water is called:

- a) Viscosity. b) Diffusion. c) Imbibition.

24- Plasma membrane is _____ membrane:

- a) Impermeable. b) Permeable. c) Semipermeable.

25- Gelation is the conversion of a sol to gel; it needs _____ temperature:

- a) High. b) Cool. c) Different.

26- When plant cell is immersed in hypertonic solution, the cell becomes:

- a) Turgid. b) Flaccid. c) Dead

27- _____ consists of many dissolved osmotically active substances:

- a) Cell wall. b) Protoplasm. c) Cell sap.

28- _____ depends on the charges between molecules or ions:

- a) Mechanical adsorption. b) Electrical adsorption. c) Chemical adsorption.

29- Movement of molecules of a substance from the region of higher concentration to lower concentration without the involvement of a separating membrane is called:

- a) Osmosis. b) Diffusion. c) Active transport.

30- Rate of diffusion is _____ proportional to viscosity:

- a) Directly. b) Inversely. c) No answer.

31- _____ increase the permeability of plasmamembrane due to dissolving of lipid components of plasmamembrane and death of cells:

- a) Temperature. b) anaesthetics. c) Light.

32- When a plant cell is placed in water, swells up as a result of:

- a) Antagonism b) plasmolysis c) endosmosis

33- Respiration in plants is a type of:

- a) Anabolism b) Catabolism c) Diffusion

34- Dark reactions use ATP and NADPH to:

- a) Break proteins. b) Produce oxygen c) Fix carbon dioxide into sugars

35- Oxidoreductases belong to EC class:

- a) EC 1 b) EC 2 c) EC 3

Q2- Circle true (✓) or false (X) for each sentence from the following (5 Marks)

1. Photosynthesis occurs in mitochondria.
2. In hypotonic solution, the cell loses water and becomes flaccid.
3. Permeability is inversely proportional with the rise in temperature.
4. Diffusion is directly proportional with the concentration gradient.
5. EC 6 enzymes are called ligases.

Q3- Answer the following questions: (10 Marks)

1. Write about the symbiotic mode of nutrition as seen in fungi.
2. Viruses form unique bridge between living and non-living things.
Discuss.

Q4- Answer the following questions: (10 Marks)

Write short notes on the Structure of Enzyme and mention the types of enzymes according to structure.