

Roll No. ....

Question Booklet Number

O. M. R. Serial No.

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Question Booklet Number
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**M. Sc. (Microbiology) (Second Semester)**  
**EXAMINATION, 2025-26**  
**(New Syllabus Effective from 2023)**  
**MYCOLOGY AND PHYCOLOGY**

Paper Code								
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Questions Booklet  
Series

**D**

Time : 1:30 Hours ]

[ Maximum Marks : 75

**Instructions to the Examinee :**

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

**परीक्षार्थियों के लिए निर्देश :**

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

1. What morphological transition is often associated with the increased virulence of *Candida albicans* ?
  - (A) Yeast-to-Hyphae transition
  - (B) Loss of the nucleus
  - (C) Formation of flagella
  - (D) Production of ascospores
2. Why was *Pneumocystis* originally misclassified as a protozoan ?
  - (A) It has flagella
  - (B) It is sensitive to penicillin
  - (C) It lacks DNA
  - (D) Its life cycle stages (trophozoites and cysts) resemble those of protozoa
3. “Cryptococcosis” is an opportunistic infection often associated with exposure to :
  - (A) Cat fur
  - (B) Pigeon droppings
  - (C) Stagnant water
  - (D) Rotten fruit
4. Antifungal drugs like “Amphotericin B” work by targeting :
  - (A) Human cholesterol
  - (B) Fungal ergosterol in the cell membrane
  - (C) Bacterial peptidoglycan
  - (D) Viral RNA
5. An “Opportunistic” fungal infection is one that :
  - (A) Occurs only in healthy individuals with strong immunity
  - (B) Is caused only by edible mushrooms
  - (C) Takes advantage of a weakened immune system or altered microbiota
  - (D) Cannot be treated with medicine
6. Which of the following is a key characteristic of many systemic fungal pathogens like *Histoplasma* ?
  - (A) Dimorphism (growing as mold in the environment and yeast in the host)
  - (B) They are strictly unicellular
  - (C) They lack a cell wall inside the host
  - (D) They are only transmitted person-to-person
7. In “Blastomycosis,” the yeast cells found in host tissue are typically :
  - (A) Large with a broad-based bud
  - (B) Small and intracellular
  - (C) Shaped like a crescent moon
  - (D) Spirally coiled
8. The “Ringworm” lesion is characterized by a circular shape because :
  - (A) The fungus moves in a circle to find water
  - (B) The fungus grows outward from a central point while the center begins to heal
  - (C) The host’s blood vessels are circular
  - (D) It is caused by a circular worm, not a fungus

9. Which of the following genera is NOT a common dermatophyte ?
- (A) *Microsporum*
  - (B) *Trichophyton*
  - (C) *Epidermophyton*
  - (D) *Rhizopus*
10. Dermatophytes are fungi that have the unique ability to utilize which protein as a nutrient source ?
- (A) Keratin
  - (B) Hemoglobin
  - (C) Collagen
  - (D) Insulin
11. Leaf-cutter ants (*Attini*) cultivate “fungal gardens” primarily composed of :
- (A) Yeasts for alcohol production
  - (B) Slime molds to trap other insects
  - (C) *Myxomycetes* to clean the nest
  - (D) Basidiomycete mycelia (specifically “*gongylidia*”) for food
12. *Pneumocystis jirovecii* is a major cause of pneumonia in :
- (A) Professional athletes
  - (B) Immunocompromised individuals (e.g., AIDS patients)
  - (C) People living in high altitudes
  - (D) Infants with high vitamin D levels
13. *Candida albicans* is considered a “commensal” because :
- (A) It is a normal inhabitant of the human mouth, gut, and vagina without causing harm usually
  - (B) It is always a deadly pathogen
  - (C) It only grows on rotting wood
  - (D) It produces oxygen for the human body
14. “Subcutaneous mycoses” are typically introduced into the body through :
- (A) Inhalation of spores from the air
  - (B) Ingestion of contaminated water
  - (C) Traumatic implantation of fungi from soil or vegetation into the skin
  - (D) Genetic inheritance
15. Which fungal group is strictly specialized as obligate parasites of insects, often manipulating their behavior (e.g., “zombie ants”) ?
- (A) *Saccharomyces*
  - (B) *Entomophthorales* (e.g., *Cordyceps*)
  - (C) *Penicillium*
  - (D) *Agaricus*
16. Predaceous fungi (like *Arthrobotrys*) trap nematodes using :
- (A) Adhesive nets or constricting rings
  - (B) Toxic gases
  - (C) High-frequency sounds
  - (D) Photosynthetic lures

17. "Fungistasis" refers to :
- (A) The permanent death of all fungal spores
  - (B) The inhibition of fungal growth/germination without killing the fungus
  - (C) The rapid evolution of new fungal species
  - (D) The movement of fungi toward light
18. The "Phylogeny of Fungi" indicates that the ancestral fungi were likely :
- (A) Terrestrial and non-motile
  - (B) Incapable of producing a cell wall
  - (C) Large, mushroom-like organisms
  - (D) Aquatic with flagellated cells
19. 'Haustoria' are specialized fungal hyphae used in :
- (A) Saprophytic decomposition of wood
  - (B) Parasitic absorption of nutrients from living host cells
  - (C) Dispersal of spores in the wind
  - (D) Protection against desiccation in lichens
20. Which pH range is generally preferred by most fungal species ?
- (A) Highly Alkaline (pH 9-12)
  - (B) Slightly Acidic (pH 4-6)
  - (C) Neutral (pH 7.0)
  - (D) Extremely Acidic (pH 1-2)
21. The "Hartig Net" is a diagnostic feature of Ectomycorrhiza. It is found in :
- (A) The intercellular spaces of the root cortex
  - (B) The intracellular space of the root cortex
  - (C) The xylem vessels of the plant
  - (D) The surface of the leaves
22. "White rot" fungi are unique because they have the enzymatic capacity to degrade :
- (A) Only starch
  - (B) Only cellulose
  - (C) Lignin
  - (D) Only simple sugars
23. "White rot" fungi are unique because they have the enzymatic capacity to degrade :
- (A) Only starch
  - (B) Only cellulose
  - (C) Lignin (the complex phenolic polymer of wood.)
  - (D) Only simple sugars
24. Fungi that grow specifically on animal dung are known as :
- (A) Keratinophilic
  - (B) Coprophilous
  - (C) Epixylous
  - (D) Lithophilic

25. In "Substrate Succession," the first fungi to colonize a fresh substrate are usually :
- Lignin-decomposing Basidiomycetes
  - Keratinophilic fungi
  - Cellulose-decomposing Ascomycetes
  - Sugar fungi (Zygomycetes) utilizing simple carbohydrates
26. The pheromones "Sirenin" and "Parasin" are characteristic of which group of fungi to attract male gametes to female gametes ?
- Basidiomycotina
  - Allomyces (Mastigomycotina)
  - Deuteromycotina
  - Myxomycotina
27. "Isidia" and "Soredia" in lichens are specialized structures for :
- Sexual reproduction involving ascospores
  - Anchoring the thallus to rocky substrates
  - Nitrogen fixation from the atmosphere
  - Asexual/Vegetative propagation of both symbionts
28. Which fungal group is most commonly associated with the formation of VAM ?
- Ascomycotina
  - Basidiomycotina
  - Glomeromycota
  - Myxomycotina
29. The "Arbuscules" in VAM fungi serve primarily as :
- Storage organs for lipids
  - Structures for asexual spore production
  - The main site for nutrient exchange between fungus and plant
  - Mechanisms for pathogenic invasion
30. Lichens are highly sensitive bioindicators of air pollution, specifically for which gas ?
- Carbon Dioxide CO<sub>2</sub>
  - Sulfur Dioxide SO<sub>2</sub>
  - Methane CH<sub>4</sub>
  - Hydrogen H<sub>2</sub>
31. "Planogametic copulation" in Mastigomycotina involves :
- The fusion of non-motile gametangia
  - The fusion of two motile gametes
  - The transfer of a nucleus through a fertilization tube
  - The engulfment of a spore by a hypha

32. In a lichen thallus, the “Helotism” theory suggests that the relationship between fungus and alga is :
- (A) Master-slave relationship where the fungus enslaves the alga
  - (B) Purely mutualistic with equal benefit
  - (C) Commensalism where the alga benefits and fungus is unaffected
  - (D) Parasitism where the fungus eventually kills the alga
33. Heterothallism in fungi, first discovered by A. F. Blakeslee, is primarily a mechanism to ensure :
- (A) Rapid asexual multiplication
  - (B) Obligate self-fertilization
  - (C) Intraspecific genetic recombination
  - (D) Resistance to antifungal agents
34. Comparing the significance of Yeasts vs. Filamentous fungi in biotechnology : Yeasts are preferred for “Single Cell Protein” (SCP) primarily because :
- (A) They contain more chitin
  - (B) They grow slower, allowing for better quality control
  - (C) They do not require any oxygen
  - (D) They are easier to harvest and have a higher protein-to-nucleic acid ratio
35. A fungus producing holobasidia with four sterigmata and exhibiting a saprophytic lifestyle is most likely :
- (A) *Ustilago* (Smut)
  - (B) *Agaricus* (Mushroom)
  - (C) *Puccinia* (Rust)
  - (D) *Synchytrium*
36. What is the biochemical significance of the “Acrasin” (cAMP) signal in cellular slime molds ?
- (A) It induces the formation of a diploid zygote
  - (B) It triggers the aggregation of myxamoebae into a “pseudoplasmodium”
  - (C) It acts as a toxin to kill competing bacteria
  - (D) It initiates the breakdown of the cellulose cell wall
37. Fungi secrete “Exoenzymes” at the hyphal tip. What maintains the high concentration of these enzymes at the apex ?
- (A) Reverse osmosis
  - (B) Lack of a cell wall at the extreme tip
  - (C) Gravity-fed cytoplasmic streaming
  - (D) The Spitzenkörper (apical vesicle cluster)

38. Deuteromycotina is often viewed as a “taxonomic holding pen” rather than a natural phylogenetic group. Why ?
- (A) Members have no DNA
  - (B) It groups fungi based on the absence of a sexual cycle rather than shared ancestry
  - (C) All members are strictly unicellular
  - (D) It only contains aquatic fungi
39. The “Dolipore Septum” is a complex septal structure found almost exclusively in :
- (A) Zygomycotina
  - (B) Ascomycotina
  - (C) Basidiomycotina
  - (D) Myxomycotina
40. In Basidiomycotina, the “Clamp Connection” is a structural adaptation specifically evolved to :
- (A) Ensure each new cell in a dikaryotic hypha receives one of each nuclear type
  - (B) Prevent the leakage of cytoplasm
  - (C) Anchor the fungus to the substrate
  - (D) Facilitate the rapid dispersal of basidiospores
41. When comparing coenocytic hyphae (Zygomycotina) to septate hyphae (Ascomycotina), what is the functional disadvantage of the coenocytic structure during localized injury ?
- (A) Rapid loss of cytoplasm due to lack of Woronin bodies or septal plugs
  - (B) Inability to transport nuclei to the apex
  - (C) Faster rate of ATP depletion
  - (D) Increased susceptibility to osmotic pressure
42. The “Plasmodium” of Myxomycotina is considered a “supercell” because :
- (A) It is composed of thousands of individual amoebae acting independently
  - (B) It is a multinucleate mass of protoplasm without internal cell walls
  - (C) It contains specialized tissues for nutrient transport
  - (D) It lacks a plasma membrane
43. In *Saccharomyces cerevisiae*, the “Shmoo” formation is a morphological response to :
- (A) High glucose concentration
  - (B) Pheromone signaling between mating types ( $a$  and  $\alpha$ )
  - (C) Depletion of nitrogen in the medium
  - (D) Transition to the diploid asexual phase

44. Which phase is longest in the life cycle of a typical Basidiomycete compared to an Ascomycete ?
- (A) The haploid Monokaryon phase
  - (B) The diploid Zygote phase
  - (C) The Dikaryotic (n+n) mycelium phase
  - (D) The asexual conidial phase
45. In the life cycle of *Aspergillus*, the formation of Cleistothecia represents :
- (A) An asexual survival strategy
  - (B) A mass of sterile paraphyses
  - (C) A specialized structure for conidia dispersal
  - (D) A sexual fruiting body containing asci
46. Which molecular mechanism is the primary trigger for “breaking” dormancy in the spores of ascomycotina ?
- (A) Permanent inactivation of trehalose
  - (B) Hydration leading to the activation of plasma membrane  $H^+$ -ATPase
  - (C) Synthesis of a new chitinous cell wall
  - (D) Transition from aerobic to anaerobic respiration
47. In the growth of a fungal colony, the “Peripheral Growth Zone” is defined as the area where :
- (A) Spore dormancy is most active
  - (B) Hyphal branching is inhibited by nutrient depletion
  - (C) The average hyphal growth unit remains constant and maximum
  - (D) Secondary metabolites like penicillin are primarily synthesized
48. During the transition from a non-motile unicell (like Yeast) to a pseudohyphal state, which cellular process is primarily responsible for the failure of daughter cells to separate ?
- (A) Inhibited karyokinesis
  - (B) Delayed chitin ring degradation at the bud neck
  - (C) Complete absence of cytokinesis
  - (D) Suppression of apical dominance
49. Which group is characterized by the presence of motile cells (zoospores) ?
- (A) Zygomycotina
  - (B) Mastigomycotina
  - (C) Ascomycotina
  - (D) Deuteromycotina
50. Which group of fungi is commonly known as “Sac Fungi” ?
- (A) Basidiomycotina
  - (B) Zygomycotina
  - (C) Ascomycotina
  - (D) Myxomycotina

51. *Chlorella* is often used in “Space Research” because :
- (A) It glows in the dark.
  - (B) It can survive in a vacuum.
  - (C) It is highly efficient at recycling CO<sub>2</sub> and providing O<sub>2</sub> and food in closed systems.
  - (D) It prevents radiation sickness
52. Which of the following is a “Phycotoxin” produced by certain algae that can accumulate in shellfish ?
- (A) Penicillin
  - (B) Caffeine
  - (C) Insulin
  - (D) Saxitoxin
53. *Spirulina* belongs to which group ?
- (A) Green algae
  - (B) Cyanobacteria
  - (C) Brown algae
  - (D) Diatoms
54. “Algal Biofuels” are considered superior to corn ethanol because :
- (A) Algae grow faster and do not compete with food crops for arable land
  - (B) Algae produce petrol directly
  - (C) Algae don’t need water to grow
  - (D) Algae are cheaper than sand
55. Certain green algae (like *Chlamydomonas reinhardtii*) can produce hydrogen gas under :
- (A) Anaerobic (sulfur-depleted) conditions
  - (B) High oxygen conditions
  - (C) Extreme cold
  - (D) High nitrogen levels
56. *Spirulina* is widely commercialized as a “Superfood” primarily because of its high content of :
- (A) Silica
  - (B) Proteins (up to 60-70% dry weight) and Vitamins
  - (C) Cellulose
  - (D) Toxic alkaloids
57. The “Ochroless” mutant of *Chlorella* is often researched for :
- (A) Creating colorful paints
  - (B) Cleaning oil spills
  - (C) Use as a weapon
  - (D) Single Cell Protein (SCP) production
58. *Dunaliella salina* is commercially cultivated in large ponds mainly to produce :
- (A) Vitamin C
  - (B) Beta-carotene
  - (C) Methane gas
  - (D) Table salt
59. “Algin” or Alginates, used in dental impressions and textile printing, are characteristic of :
- (A) *Laminaria and Sargassum*
  - (B) *Polysiphonia*
  - (C) *Spirogyra*
  - (D) *Anabaena*

60. What is the primary ecological danger of a “Harmful Algal Bloom” (HAB) ?
- (A) It makes the water too salty.
  - (B) It causes oxygen depletion (hypoxia) and produces neurotoxins.
  - (C) It increases the temperature of the ocean.
  - (D) It prevents rain from falling.
61. “Phycocolloids” are polysaccharides derived from algal cell walls that have the ability to :
- (A) Explode under pressure
  - (B) Form gels or viscous solutions in water
  - (C) Act as a substitute for plastic
  - (D) Conduct electricity
62. Which genus of red algae is popularly known as “Nori” and used extensively in sushi wrapping ?
- (A) Sargassum
  - (B) Gelidium
  - (C) Porphyra
  - (D) Ulva
63. Phycoviruses play a crucial role in marine ecology by :
- (A) Helping algae grow faster
  - (B) Helping algae move
  - (C) Providing nutrients to the algae
  - (D) Controlling algal blooms through “viral lysis”
64. “Eutrophication” of a water body typically leads to :
- (A) Death of all algae
  - (B) Massive algal blooms due to excess nutrient runoff
  - (C) Increased water clarity
  - (D) Decrease in bacterial population
65. Which term describes algae that grow attached to the surface of other plants ?
- (A) Epizoic
  - (B) Epiphytic
  - (C) Endophytic
  - (D) Benthic
66. “Aplanospores” are different from “Zoospores” because :
- (A) They are larger
  - (B) They are always diploid
  - (C) They are non-motile and lack flagella
  - (D) They are produced only by red algae
67. Which algal group has been traditionally used as a “model organism” for studying photosynthesis and the circadian rhythm ?
- (A) *Vaucheria*
  - (B) *Euglena*
  - (C) *Agaricus*
  - (D) *Penicillium*

68. The “Coenobium” thallus is a colony with :
- (A) A fixed/definite number of cells arranged in a specific pattern
  - (B) An indefinite number of cells
  - (C) Only one large cell
  - (D) No cell walls
69. Which group is the primary producer in the “Oceanic Pastures” and responsible for nearly 20- 40% of global oxygen production ?
- (A) Myxomycetes
  - (B) Bacillariophyta (Diatoms)
  - (C) Yeasts
  - (D) Lichens
70. When a diatom cell reaches a critically small size due to repeated vegetative division, it restores its size via :
- (A) Auxospore formation
  - (B) Binary fission
  - (C) Budding
  - (D) Fragmentation
71. “Palmella stage” in algal reproduction is a response to :
- (A) Excess water
  - (B) Desiccation or unfavorable environmental conditions
  - (C) High light intensity
  - (D) Presence of predators
72. Algae that are found growing on the surface of ice or snow are termed :
- (A) Lithophytes
  - (B) Halophytes
  - (C) Cryophytes
  - (D) Epiphytes
73. “Diatomaceous earth” is formed by the accumulation of fossilized diatom walls. What is its primary industrial use ?
- (A) Production of fuel
  - (B) Filtration and as a mild abrasive in toothpastes
  - (C) Nitrogen fixation in soil
  - (D) Synthesis of plastic
74. The “Triphasic” life cycle is a unique characteristic of many :
- (A) Green algae
  - (B) Red algae
  - (C) Brown algae
  - (D) Blue-green algae
75. Many members of Pyrrophyta exhibit the phenomenon of “Bioluminescence.” This refers to :
- (A) The ability to fix nitrogen
  - (B) Changing color based on temperature
  - (C) Moving toward light
  - (D) The production and emission of light by a living organism

76. "Endozoic" algae are those that live :
- (A) On the surface of rocks
  - (B) Inside the bodies of animals (e.g., *Zoochlorella* in *Hydra*)
  - (C) In the snow at high altitudes
  - (D) In boiling hot springs
77. Euglenoids lack a rigid cell wall; instead, they have a flexible, proteinaceous layer called the :
- (A) Capsule
  - (B) Pellicle (Periplast)
  - (C) Frustule
  - (D) Theca
78. The "Red Tides" in oceans are frequently caused by the rapid bloom of :
- (A) Dinoflagellates (e.g., *Gonyaulax*)
  - (B) Green algae
  - (C) Diatoms
  - (D) Brown algae
79. The cell wall of Diatoms (Frustule) is uniquely impregnated with which substance ?
- (A) Calcium carbonate
  - (B) Lignin
  - (C) Silica (Hydrated silicon dioxide)
  - (D) Peptidoglycan
80. "Cyanophycean granules" are a storage form of :
- (A) Starch
  - (B) Protein
  - (C) Lipids
  - (D) DNA
81. The "Pneumatocysts" (Air bladders) in brown algae like *Sargassum* provide :
- (A) Oxygen for respiration
  - (B) Buoyancy to keep the thallus near the water surface for light
  - (C) Protection from predators
  - (D) A site for meiosis
82. The reserve food "Laminarin" and "Mannitol" are specific to :
- (A) Cyanophyta
  - (B) Chlorophyta
  - (C) Phaeophyta
  - (D) Rhodophyta
83. In Chlorophyta, the storage product (Starch) is typically formed inside the chloroplast around a proteinaceous body called :
- (A) Nucleus
  - (B) Pyrenoid
  - (C) Mitochondrion
  - (D) Golgi body
84. In the complex life cycle of Polysiphonia, the "Carposporophyte" is :
- (A) Diploid and dependent on the female gametophyte
  - (B) Haploid and free-living
  - (C) Produced by asexual budding only
  - (D) The site of meiosis

85. A “Siphonous” thallus (as seen in Vaucheria) is characterized by :
- (A) Many cells with one nucleus each
  - (B) A large, multinucleate mass of protoplasm without cross-walls (coenocytic)
  - (C) A single cell with many flagella
  - (D) A leaf-like structure with a midrib
86. Flagellated motile stages are completely absent in the life cycle of :
- (A) Chlorophyta
  - (B) Phaeophyta
  - (C) Rhodophyta
  - (D) All of the above
87. In Phaeophyta, the “Trumpet Hyphae” found in large kelps are used for :
- (A) Anchoring to rocks
  - (B) Producing spores
  - (C) Conduction of photosynthates (similar to sieve tubes)
  - (D) Storing air
88. “Alginic acid” used commercially in ice creams and cosmetics, is extracted from the cell walls of :
- (A) Red algae
  - (B) Brown algae
  - (C) Green algae
  - (D) Diatoms
89. “Volvox” represents which type of thallus organization ?
- (A) Colonial motile (Coenobium)
  - (B) Unicellular motile
  - (C) Siphonous
  - (D) Parenchymatous
90. Which type of sexual reproduction involves the fusion of two morphologically and physiologically identical gametes ?
- (A) Isogamy
  - (B) Anisogamy
  - (C) Oogamy
  - (D) Triple fusion
91. Floridean starch is the characteristic reserve food material found in :
- (A) Green algae
  - (B) Brown algae
  - (C) Red algae
  - (D) Blue-green algae
92. “Phytoplankton” refers to algae that are :
- (A) Deep-sea bottom dwellers
  - (B) Microscopic, free-floating organisms in the water column
  - (C) Growing exclusively on rocks
  - (D) Parasitic on fish

93. Algae that grow in highly saline environments, such as salt lakes, are known as :
- (A) Epiphytes
  - (B) Halophytes
  - (C) Lithophytes
  - (D) Parasites
94. The cell walls of Chlorophyta are primarily composed of :
- (A) Chitin
  - (B) Silica
  - (C) Cellulose and Pectin
  - (D) Alginic acid
95. An “Akinete” is a specialized Cyanophycean cell designed for :
- (A) Rapid sexual reproduction
  - (B) Perennation (survival during unfavorable conditions)
  - (C) Increasing buoyancy
  - (D) Photosynthesis only
96. The “Eyespot” (Stigma) in algae is primarily involved in :
- (A) Starch storage
  - (B) Nitrogen fixation
  - (C) Phototactic movement (sensing light direction)
  - (D) Cell wall synthesis
97. “Chromatic Adaptation” (Gaidukov Phenomenon) in Cyanophyta refers to the ability to :
- (A) Change flagellar position based on light
  - (B) Produce spores in the dark
  - (C) Move from water to land
  - (D) Change pigment composition (Phycocerythrin/Phycocyanin ratio) based on the wavelength of light
98. Which specialized cell in Cyanophyta is the site for atmospheric nitrogen fixation ?
- (A) Akinete
  - (B) Heterocyst
  - (C) Hormogonium
  - (D) Necridium
99. If an alga has “Whiplash” and “Tinsel” flagella, it is most likely classified under :
- (A) Chlorophyta
  - (B) Cyanophyta
  - (C) Phaeophyta (Heterokonts)
  - (D) Rhodophyta
100. Which pigment is considered the “primary” photosynthetic pigment present in all algal groups ?
- (A) Chlorophyll a
  - (B) Chlorophyll b
  - (C) Fucoxanthin
  - (D) Phycocyanin

*(Only for Rough Work)*

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

**Example :**

**Question :**

Q. 1 (A) ● (C) (D)

Q. 2 (A) (B) ● (D)

Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

**Impt. :** On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

**उदाहरण :**

**प्रश्न :**

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

**महत्वपूर्ण :** प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।