



(For All Sessions)

Biology (Objective)

Rup-11-1-23

(Group-I)

Time: 20 Minutes Marks : 17

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

- 1.1. In protostomes, the blastopore forms the:
(A) Anus (B) Brain (C) Mouth (D) Excretory pore
2. The body cavity of Nematodes is called:
(A) Blastocoel (B) Coelom (C) Pseudocoelom (D) Haemocoel
3. Which one is not accessory pigment?
(A) Chlorophyll "a" (B) Chlorophyll "b" (C) Xanthophyll (D) Carotene
4. Glycolysis occurs in:
(A) Mitochondria (B) Nucleus (C) Ribosomes (D) Cytosol
5. The stunted growth and chlorosis takes place by the deficiency of:-
(A) Iron (B) Magnesium (C) Nitrogen (D) Phosphorus
6. Lungs of birds have thin walled ducts called:
(A) Alveoli (B) Alveolar ducts (C) Bronchi (D) Parabronchi
7. The heart of which animal never receive oxygenated blood?
(A) Amphibians (B) Fishes (C) Birds (D) Reptiles
8. An hormone released by mesophyll cells at high temperature is:
(A) Abscisic Acid (B) Thyroxin (C) H_2SO_4 (D) HCl
9. The lowest level of biological organization is:
(A) Biosphere (B) Ecosystem (C) Community (D) Population
10. Fats and oils have specific gravity of about:
(A) 0.8 (B) 0.10 (C) 0.12 (D) 0.16
11. The coenzyme is closely related to:
(A) Apoenzyme (B) Holoenzyme (C) Polypeptide (D) Vitamins
12. The fluid which surrounds the thylakoid is called:
(A) Stroma (B) Matrix (C) Medium (D) Chlorophyll
13. Temperate phage may exist as:
(A) Capsid (B) Prophage (C) Viriod (D) Reterovirus
14. The structure which primarily involved in conjugation between bacterial cells is:
(A) Capsule (B) Slime (C) Flagella (D) Pili
15. Which are the major producers in aquatic ecosystem?
(A) Green algae (B) Diatoms (C) Slime molds (D) Euglenoids
16. Poisonous mushrooms are also called:
(A) Agaricus (B) Morels (C) Truffles (D) Toad stools
17. All seed producing plants are called:
(A) Bryophyta (B) Pteridophyta (C) Rhodophyta (D) Spermatophytes

(For All Sessions)

Biology (Subjective)

(GROUP-I)

Rwp-11-1-23

Time: 2:40 Hours

SECTION-I

2. Write short answers of any eight parts from the following: (8x2=16)

- i. Define biochemistry.
- ii. Differentiate between prosthetic group and co-enzyme.
- iii. How does binding site differ from catalytic site?
- iv. Explain effects of temperature at an enzyme's activity
- v. What is nuclear mitosis?
- vi. Differentiate between karyogamy and plasmogamy.
- vii. Differentiate between proterostomia and deuterostomia (any two points).
- viii. How does polyps differ from medusae?
- ix. Write any two characteristics of chordates.
- x. Explain swim bladder.
- xii. What is compensation point?
- xiii. How does electron transport chain necessary for living organisms?

3. Write short answers of any eight parts from the following: (8x2=16)

- i. Differentiate fresh water biology from Marine biology.
- ii. How hypothesis is formed by an observer?
- iii. Differentiate prokaryotes from Eukaryotes.
- iv. How F_1 particles play a role in energy production?
- v. Differentiate foraminiferans from Actinopods.
- vi. Write down four characters of Diatoms.
- vii. Why Apicomplexans are considered dangerous? How they can locomote?
- viii. Define imbibition.
- ix. Write down four economic importance of Algae.
- x. Differentiate Homospores from heterospores.
- xi. Why division Tracheophyta is considered as most successful on land give any two reasons?
- xii. In which group of vertebrates the division of heart is incomplete and why?

4. Write short answers of any six parts from the following: (6x2=12)

- i. Viruses are called obligate intracellular parasites. Why?
- ii. What are mesosome? Write down their function.
- iii. How scrapping occurs in garden snail.
- iv. Why digestive system of cockroach is more efficient than Hydra?
- v. Define peristalsis.
- vi. The ventilation of water is far more difficult than air. Give reasons.
- vii. Enlist properties of respiratory surfaces in animals.
- viii. How inhalation and exhalation occurs in cockroach?
- ix. Write down carbon dioxide concentration in arterial and venous blood.

SECTION-II

Note Attempt any three questions. Each question carries equal marks: (8x3=24)

5. (a) Describe the various steps of biological methods to solve a biological problem.
- (b) Write down the chemical composition of blood plasma.
6. (a) Discuss primary structure of protein
- (b) Explain Asexual reproduction in Fungi.
7. (a) Why use and misuse of antibiotics are important for human?
- (b) What are different adaptive characters developed in bryophytes for land habitat.
8. (a) Discuss the Linnaeus system of Binomial nomenclature in detail.
- (b) Prove that water is source of oxygen during photosynthesis.
9. (a) Explain structure and function of endoplasmic reticulum.
- (b) Write a note on digestion in hydra.

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

- 1.1. The amount of CO_2 in Arterial blood per 100ml is:

(A) 50ml	(B) 54ml	(C) 73ml	(D) 79ml
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2. The process of Guttation takes place through:

(A) Stomata	(B) Lenticels	(C) Bark	(D) Hydathodes
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3. Red blood cells are formed in:

(A) Heart	(B) Lungs	(C) Red bone marrow	(D) Kidney
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4. Which one is not a viral disease?

(A) Mumps	(B) Cow pox	(C) Tetanus	(D) Small pox
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5. The normal percentage of glucose in human body is:

(A) 8%	(B) 0.08%	(C) 0.8%	(D) 7.4%
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6. The lock & key model was proposed by:

(A) Koshland	(B) Emil Fischer	(C) M. Mischer	(D) P.A. Levene
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7. The chromosome number of Garden Pea is:

(A) 14	(B) 48	(C) 08	(D) 26
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8. The botanical name of brinjal is:

(A) Solanum melogena	(B) Solanum specie	(C) Solanum tubersum	(D) Lycopersicum esculentum
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9. The example of disinfectant is:

(A) Lifebuoy	(B) Dettols	(C) Antibiotics	(D) Phenols
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10. The example of actinopods is:

(A) Forams	(B) Radiolarians	(C) Vorticella	(D) Stentor
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11. The scientists who study the fungi are known as:

(A) Phycologist	(B) Bryologist	(C) Mycologist	(D) Psychologist
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12. The fruit type of family solanaceae is known as:

(A) Caryopsis	(B) Berry	(C) Pod	(D) Lomentum
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13. Which phylum includes the series Deuterostomia?

(A) Mollusca	(B) Nematoda	(C) Annelida	(D) Echinodermata
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14. Trochophore larva is found in the life history of:

(A) Leech	(B) Nereis	(C) Earthworm	(D) Loligo
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15. The first action spectrum was obtained by:

(A) Niel	(B) Bohar	(C) Engelmann	(D) Garaham
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16. What percentage of surface area is covered by stomata?

(A) 10 - 12 %	(B) 6 - 8 %	(C) 3 - 6 %	(D) 1 - 2 %
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17. Stunted growth of root is caused by the deficiency of:

(A) Phosphorus	(B) Nitrogen	(C) Magnesium	(D) Calcium
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ology (Subjective)**SECTION-I**

Rwp-11-2-23

2. Write short answers of any eight parts from the following:

(8x2=16)

- i. What are terpenoids, give example?
- ii. In what way enzyme concentration affects the rate of enzyme action?
- iii. What are inhibitors? Give example.
- iv. Define co-factor, give example.
- v. Differentiate Ascomycetes with Basiliomycetes and give example.
- vi. Compare spores with conidia.
- vii. Define polymorphism, give example.
- viii. Compare parazoa with metazoa.
- ix. Differentiate acoelomate with coelomate.
- x. Justify earth worm as natural plough.
- xi. What are accessory pigments? Give their role.
- xii. Differentiate between chlorophyll "a" and "b".

3. Write short answers of any eight parts from the following:

(8x2=16)

- i. Differentiate between deductive and inductive reasoning.
- ii. Define biome. How it is named?
- iii. Why mitochondria are called power house of cell?
- iv. How ribosomes of prokaryotes differ from eukaryotes?
- v. What are diatoms?
- vi. Give importance of dinoflagellates.
- vii. What are Kelps?
- viii. Discuss role of both nuclei in ciliates.
- ix. Write down names of living and extinct members of psilopsida.
- x. Define circinate venation. In which class of pteropsida it is important character?
- xi. What is incipient plasmolysis?
- xii. What do you know about hypertension?

4. Write short answers of any six parts from the following:

(6x2=12)

- i. What are symptoms of AIDS?
- ii. How chemosynthetic bacteria are autotrophic in nature?
- iii. What is filter feeding nutrition? Give example.
- iv. Which plant nutrients cause chlorosis?
- v. Differentiate between cutaneous respiration and pulmonary respiration.
- vi. Give names of hormones secreted by human digestive system.
- vii. What are Alveoli? Give their function.
- viii. What changes occur in diving mammals during diving reflex?
- ix. What is photorespiration? Give its consequences.

SECTION-II**Note Attempt any three questions. Each question carries equal marks:**

(8x3=24)

5. (a) Relate cloning with sexual reproduction?
(b) Explain circulatory system of cockroach?
6. (a) Describe at least four comparisons between DNA and RNA.
(b) Write down methods of nutrition in fungi.
7. (a) Write down characteristics of cyanobacteria.
(b) Describe evolution of leaves.
8. (a) Give the biological classification of corn, Zea mays.
(b) Describe the Calvin cycle with reference to carbon fixation and reduction.
9. (a) Write a note on structure and function of Golgi apparatus.
(b) Explain the mechanism of absorption of food in small intestine.