APEEJAY SCHOOL, SHEIKH SARAI

FIRST TERMINAL EXAMINATION, 2019-20 SS-35

CLASS-XI

BIOLOGY

SET-A

Time allowed : 3 Hrs. M.M. : 70

General Instructions :

1. *All questions are compulsory.*
2. *The question paper consists of four sections A, B, C and D.*
3. *Internal choice is given in all the sections.*
   A student has to attempt only one of the alternatives in such questions.
4. *Section-A contains 5 questions of 1 mark each.*
5. *Section-B has 7 questions of 2 marks each.*
6. *Section-C is of 12 questions of 3 marks each*
7. *Section-D has 3 questions of 5 marks each.*
8. *Wherever necessary, the diagrams drawn should be neat and properly labelled.*

SECTION-A

1. What is the nature of the cell wall in diatoms ? (1)
2. Name any one botanical gardenin India. Also, name the largest botanical garden in the world. (1)
3. What is taxon ? Give an example. (1)

   OR

   Brinjal and potato belong to the same genus but different species. What separate the two species ?
4. What is a satellite chromosome? (1)
5. Under uncontrolled cell division, what is the pathological conditions that occurs? (1)

   OR

   What do you understand by 'phycobiont' and 'mycobiont' ?

SECTION-B

6. How is taxonomic key helpful in identification and classification of an organism. (2)

P.T.O.

7. Why are some fungi grouped under fungi imperfecti ? (2)

OR

Explain the myth of 'fairy rings' created by the mushrooms after heavy rains in the forest.

8. Telophase is the reverse of prophase. Elucidate the statement. (2)

9. Differentiate between : (2)

(a) Hardwood and Softwood

(b) Endarch and Exarch

OR

How is a cork formed in the plant? What is its commercial source?

10. What is the fluid mosaic model of the plasma membrane? Draw the diagram. (2)

11. What do you mean by double fertilization and triple fusion? (2)

12. Write four characteristic features of phylum Annelida. (2)

SECTION-C

13. (a) What do you understand by mycorrhizal and coralloid roots ? Write the name of gymnospersm having coralloid roots. (3)

(b) Name the plants with

(1) Haplontic life cycle

(2) Diplontic life cycle

(3) Haplo-diplontic life cycle

OR

What is heterospory ? What is its significance ? Give two example of heterosporous pteridophytes.

14. Explain the different forms of lipids with examples for each. (3)

15. Differentiate between Chlorophyceae, Phaeophyceae and Rhodophyceae on the basis of cell wall, stored food, major photosyntheic pigments. (3)

16. Write a short note on (a) Chrysophyta (b) Dinoflagellates. (3)

17. (a) In which phylum do you find cnidoblasts ? What is their function ? (3)

(b) Write the difference between polyp and medusa.

(c) What is the function of flame cells? In which phylum are they found?

18. Write about the following features of arthropods : (3)

(a) Body exoskeleton

(b) Appendages

(c) Organs of respiration

(d) Balance organs

(e) Organs of excretion

(f) Eyes

OR

Write the difference between (3 points)

(a) Chordates and non-chordates

(b) Chondrichthyes and Osteichthyes

19. (a) Why is the maize grain considered as a fruit and not as a seed? (3)

(b) Ginger grows underground like any other root. They why is it considered a stem and not root?

(c) Why is sunflower not a flower?

OR

Explain any three modifications of roots with examples.

20. What is a cambial ring comprised of? How are growth rings in a tree trunk formed ? What is its importance ? (3)

21. Differentiate between anatomy of monocot stem and dicot stem. Draw diagrams also. (3)

22. (a) What are the different cell junctions found in tissues? (3)

(b) Write about the Haversian system in histology of bone.

(c) Which type of epithelium is found in urinary bladder.

23. Explain : (3)

(a) Synaptonemal complex

(b) Metaphase plate

OR

Write about anaphase and telophase stage of mitosis. Draw well leballed diagrams for both the stages.

24. (a) What is a mesosome? (3)

(b) What are histones? What role do they play?

(c) What does "S" stand for in the 70S and 80S ribosome?

SECTION-D

25. Describe the different types of placentation found in flowering plants. Draw diagram for each. Also give example of each. (5)

OR

Write the floral formula and floral diagram for

(a) *Brassica campestris* (Mustard)

(b) *Pisum sativum* (Pea)

26. Answer in one line : (5)

(a) What is the scientific name of Cockroach?

(b) Where are the ovaries in a cockroach located?

(c) How many segments do the abdomen of cockroach contain?

(d) Where are the hepatic caeca in a cockroach located? What its function?

(e) Write one morphological difference between male and female cockroach.

OR

Explain the circulatory system of cockroach with the help of well labelled sketch.

27. (a) The living state is a non-equilibrium steady-state to be able to perform work. Comment.

(b) Explain through the Watson-Crick model, the secondary structure exhibited by the nucllеic acids.

(c) Amino acids exist as Zwitter ion. Give its structure. Why is it formed? (5)

OR

(a) Write the type of bond found in following :

(1) Protein

(2) Fat

(3) Water

(4) Polysaccharide

(b) Describe the four levels of protein structure.

APEEJAY SCHOOL, SHEIKH SARAI

FIRST TERMINAL EXAMINATION, 2019-20 **SS-36**

CLASS-XI

BIOLOGY

SET-B

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7. Differentiate between : (2)
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(a) Write the type of bond found in following :

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(b) Describe the four levels of protein structure.

Navnita

Roll No.	
Name	
Class & Section	

APEEJAY COMMON ANNUAL EXAMINATION, 2019-20

BIOLOGY (044)

Time Allowed : 3.00 Hrs. **Class – XI** **Maximum Marks : 70**

General Instructions :

(1) ***There are a total of 27 questions and five sections in the question paper. All questions are compulsory.***

(2) ***Section A contains question numbers 1 to 5, multiple choice questions of one mark each. Section B contains question numbers 6 to 12, short answer type I questions of two marks each. Section C contains question numbers 13 to 21, short answer type II questions of three marks each. Section D contains question number 22 to 24, case-based short answer type questions of three marks each (1+1+1).***

Section E contains question numbers 25 to 27, long answer type questions of five marks each.

(3) ***There is no overall choice in the question paper. However, internal choices are provided in two questions of one mark, one question of two marks, two questions of three marks and all three questions of five marks. An examinee is to attempt any one of the questions out of the two given in the question paper with the same question number.***

SECTION-A

1. The embryo sac of an angiosperm is made up of : (1)

   (a) 7 cells and 7 nuclei (b) 8 cells and 7 nuclei

   (c) 7 cells and 8 nuclei (d) 8 cells and 8 nuclei

2. Two common characters found in centipede, cockroach and crab are : (1)

   (a) Jointed legs and chitinous exoskeleton

   (b) Green glands and tracheae

   (c) Book lungs and antennae

   (d) Compound eyes and anal cerci

OR

A list of animals is given below. Identify the animals with open circulatory system and choose the correct answer:

(i) Nereis (ii) Cockroach

(iii) Earthworm (iv) Prawn

(a) (i) and ii) (b) (ii) and iv)

(c) (ii) and m) (d) (iii) and iv)

3. Leg-haemoglobin helps in : (1)

(a) Nitrogen fixation (b) Protecting Nitrogenase from O_2

(c) Destroys bacteria (d) Transport of food in plants

OR

The process in which water is lost in the form of liquid droplets :

(a) Guttation (b) Transpiration

(c) Evaporation (d) Osmosis

4. Which of the following is true regarding glycolysis : (1)

(i) Takes place in cytosol

(ii) Produces no ATP

(iii) Has no connection with electron transport chain

(iv) Reduces two molecules of NAD+ for every glucose

Choose the correct option :

(a) Only (i) (b) (i), (ii) and (iii)

(c) (i) and (ii) (d) none of these

5. Organic compounds which contain an amino group and an acidic group as substituents on the alpha carbon. (1)

(a) Carbohydrates (b) Proteins

(c) Amino acids (d) Nulceic Acids

SECTION-B

6. Heterospory is the characteristic feature of the life of few Pteridophytes. (2)

   (a) State the evolutionary significance of this in the plant kingdom.

   (b) Which development led to this very significant step in evolution?

7. Why Mitosis is called equational cell division? Where does it occur?

8. After keeping a freshly collected Spirogyra filament in 10% sodium chloride solution, it is observed that protoplasm shrinks in size. (2)

   (a) Name the phenomenon occurring in the above case?

   (b) What will happen if filament is kept in distilled water?

9. Define dedifferentiation and redifferentiation. (2)

10. Explain the heart sounds produced during a cardiac cycle. (2)

11. Briefly explain the process of digestion of fats in the small intestine. (2)

12. The pituitary gland is divided anatomically into two parts. Name one hormone secreted by each of these parts and mention the function of each. (2)

OR

Name the hormones secreted by α-cells and β-cells of the pancreases. How is glucose homeostasis in our blood maintained by these hormones?

SECTION-C

13. Give a comparative account of the classes of Kingdom Fungi under the following :

   (a) Mode of nutrition

   (b) Mode of reproduction

   (c) Mycelium

OR

Name the three divisions of Algae and compare them on the basis of :

(a) Major pigments (b) Stored food

(c) Cell wall

14. Represent diagrammatically the (a) coelomate (b) acoelomate and (c) pseudocoelomate conditions among animals ? (3)

OR

(a) What are the differences between a virus and a viroid?

(b) Define 'symbiots' and give an example of the same.

15. In nearly all animal tissues, specialized junctions provide structural and functional links. How many types of such junctions are present? List their names and state their functions. (3)

16. State how placenta is related to female reproductive part in flowering plants. Mention the types of placentation found in the angiosperms. (3)

17. How do enzymes speed up the rate of a chemical reaction? Explain using a suitable graphical representation. (3)

18. Explain 9+2 arrangement of Cilium. Support your answer with a labelled diagram. (3)

19. What is respiratory quotient? Compare its value for carbohydrates, proteins and lipids? Which out of the three respiratory substrates have maximum RQ and why? (3)

20. Draw a neat sectional view of the heart and label the following parts : (3)

(a) Nodal tissue from where the heart-beat generates.

(b) Chordae tendinae

(c) An artery which carries deoxygenated blood.

(d) Bundle of His

21. Write two points of differences between : (3)

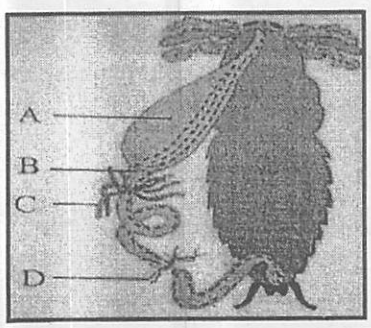
(a) Actin and myosin

(b) Red and white muscles

(c) Pectoral and Pelvic girdle

SECTION-D

22.



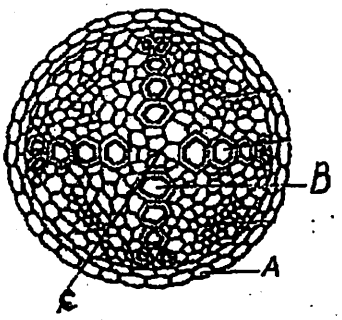
Observe the given diagram :

(a) Identify the parts A and D

(b) Discuss the role of part B in the process of digestion.

(c) What function does the part D has?

23.



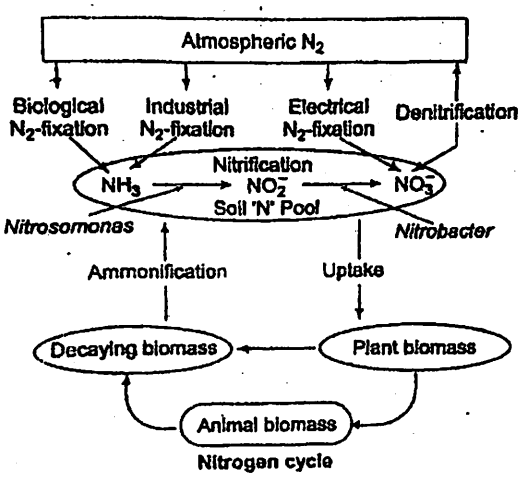
A class XI student made a temporary preparation of T.S. of sunflower root and observed it under the microscope and drew the given diagram.

(a) What is part A depicting ? List its one characteristic feature.

(b) Name parts B and C

(c) What type of arrangement does xylem show? Name this type of arrangement.

24.



24. Nitrogen is an important nutrient for all living organisms. It forms amino acids and proteins. It occurs as N_2 in atmosphere and cannot be directly utilised. Plants compete with microbes for the limited nitrogen that is available in the soil. And hence nitrogen becomes a limiting nutrient for both natural and agricultural ecosystems.

(a) State the methods by which atmospheric nitrogen can be fixed and used by plants.

(b) Name one bacterium which reduces nitrate back into N_2 .What is this process called?

(c) Name the enzyme which is exclusively present in prokaryotes and is essential for nitrogen fixation.

SECTION-E

25. (i) How do neutral solutes move across the plasma membrane? Can the polar molecules also move across it in the same way? If not, how are these transported? What is the requirement for carrying ions across the membrane?

(ii) Give specific term for each of the following :

(a) Cluster of ribosomes found in cytoplasm.

(b) Intensive infolding of the inner membrane of mitochondria.

(c) Stacks of closely packed thylakoids.

(d) Stalked particles on the inner membrane of mitochondria.

OR

(i) Briefly explain the Metaphase, Anaphase and Telophase of mitosis with the help of diagrams.

(ii) Explain the following terms :

(a) Synaptonemal complex (b) Chiasmata

26. Draw the diagrammatic representation of Hatch and Slack pathway. What type of plants show this pathway? Give one example. Their leaf anatomy) is different from other plants. How?

OR

Draw schematic representation of the various steps of Glycolysis. How is glycolysis different from citric acid cycle? State two points.

27. Draw and explain the schematic representation of generation and conduction of nerve impulse from point A to point B.

OR

With the help of diagrammatic representation, explain the mechanism of hormone action :

(a) Protein hormone (b) Steroid hormone