

**General instructions:**

- All parts are compulsory.
- Draw diagrams wherever necessary. Unlabelled diagrams do not attract any marks.

**PART – A**

**I . Select the correct alternative from the choices given below: 1 x 15 = 15**

- Which cell fixes atmospheric nitrogen in some cyanobacteria?  
a) Akinete      b) Heterocysts      c) vegetative cell      d) all of these cells.
- Chlamydomonas is an  
a) Green algae      b) Brown algae      c) Red algae      d) blue green algae.
- The animals in which the body cavity is absent are called  
a) Coelomates      b) Acoelomates      c) pseudocoelomates      d) none of these
- When stamens are attached to the perianth, they are called  
a) Epipetalous      b) epiphyllous      c) staminode      d) none of them
- The two kinds of woods that appear as alternate concentric rings constitutes  
a) Spring wood      b) autumn wood      c) annual ring      d) late wood.
- The fluid filled inner ear is called  
a) Ear drum      b) labyrinth      c) Pinna      d) Cochlea.
- Who saw and described the live cell for the first time  
a) Robert Brown      b) Theodore Schwann  
c) Rudolf Virchow      d) Anton Von Leeuwenhoek.
- Gums are called  
a) Primary metabolites      b) secondary metabolites  
c) polymeric substances      d) Alkaloids
- Mycorrhiza is a symbiotic association between  
a) Fungus and roots of trees      b) Fungus and algae  
c) Fungus and BGA      d) none of them.
- Nitrogen fixing nodules on the roots of Non leguminous plants are  
a) Rhizobium      b) Frankia      c) Azotobacter      d) Beijernickia.
- Cyclic photophosphorylation takes place in  
a) Stroma lamellae      b) stroma      c) granum      d) Thylakoids
- High rate of photosynthesis is observed by chl.a in region of  
a) Blue and red light      b) Yellow and red      c) Blue and green      d) Yellow and green light.
- Oxidation of one molecule of NADH gives rise to  
a) 3 molecules of ATP      b) 2 molecules of ATP  
c) 4 molecules of ATP      d) 1 molecule of ATP.
- Inflammation of joints is  
a) Tetany      b) Arthritis      c) Osteoporosis      d) Gout.
- Pineal gland secretes a hormone called  
a) Prolactin      b) Melatonin      c) Melanocyte stimulating hormone      d) oxytocin.

**II. Fill in the blanks by choosing the appropriate word:** **1 x 5 = 5**  
(Sarcoplasmic reticulum, intestinal juices, Goitre, abscisic acid, vasopressin)

16. Succus entericus is the name given to .....
17. In a muscle fibre  $\text{Ca}^{++}$  is stored in .....
18. Reabsorption of water from distal parts of the tubules is facilitated by hormone .....
19. Enlargement of thyroid gland is commonly called .....
20. The stress hormone in plants is.....

**PART- B**

**III. Answer (any five) of the following:** **2 x 5 = 10**

21. State any two economically important uses of archaebacteria and heterotrophic bacteria.
22. Differentiate between syngamy and triple fusion
23. Name any two phylum in which the organisms body show segmentation.
24. Draw the four types of aestivation in corolla.
25. Differentiate between dedifferentiation and redifferentiation.
26. Draw the four types of chromosomes based on the position of centromere.
27. Describe any four properties of enzymes.
28. Distinguish between blind spot and yellow spot.

**PART -C**

**IV. Answer (any 5) of the following:** **3 x 5 = 15**

29. Explain three types of cell junctions found in epithelium tissue.
30. a. Draw the neat labeled diagram of section of cilia/ flagella.(2m)  
b. What are microbodies?(1)
31. Write the functions of the following glands: liver, pancreas and gall bladder.
32. Differentiate between a) blood and lymph b) systole and diastole c) T - wave and P - wave
33. List out any six general characteristics of coelenterate.
34. Classify the three types of plastids and explain.
35. With a neat labeled diagram explain the three types of facilitated diffusion.
36. Explain any three disorders of skeletal system in humans.
37. Draw a neat labeled diagram of chloroplast.

**PART - D**

**V. Answer (any 3) of the following:** **5 x 3 = 15**

38. Schematically represent EMP Pathway.
39. List out any 5 physiological effects of Gibberellins.
40. a) Draw a neat labelled diagram of female reproductive system of cockroach.(4m)  
b) What type of fertilization is observed in cockroach.(1m)
41. List out the hormones secreted by the following:  
(a) Pancreas (b) Hypothalamus (c) Thymus (d) Pituitary (e) Thyroid
42. Explain the steps involved in the formation of a root nodule with neat labeled diagram.
43. Describe the important characteristics of gymnosperms.

**VI. Answer (any two) of the following:** **5 x 2 = 10**

44. (a) Why are xylem and phloem called complex tissues.(2m)  
(b) State the location and functions of different types of meristems. (3m)

45. Answer in one word

- (a) The fruit formed without fertilization of the ovary.
- (b) How many spermatheca are found in earthworm?
- (c) Where are the malphigian tubules located?
- (d) Name the tongue of cockroach.
- (e) Why frog is called ureotelic animal?

46 a) Explain the four factors affecting the rate of photosynthesis. (4m)

b) State the Blakmann's law of limiting factor(1m)

47. Draw a neat labeled diagram of human eye.

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