

MODEL QUESTION PAPER-1
FOR REDUCED SYLLABUS 2020-21
I PUC
BIOLOGY

Time: 3 ¼ hours

[Total No. of questions: 37]

Max.Marks: 70

General Instructions:

- i) This question paper consists of four parts – A, B, C and D. Part-D consists of two sections-Section-I and Section-II.**
- ii) All the parts are compulsory**
- iii) Draw diagrams wherever necessary. Unlabelled diagrams or illustrations do not attract any marks**

PART-A

I. Answer the following in A WORD or A SENTENCE each: (10x1=10)

1. Define metabolism.
2. Name the non-chordate phylum whose few members have the ability to fly.
3. What is aestivation?
4. Why does enzyme activity decrease at higher temperature?
5. Where are 70S type of ribosomes found in eukaryotic cells?
6. Which technique is used for the separation of leaf pigments?
7. Sino Atrial Node is known as the pacemaker of the heart. Justify.
8. What is fascia?
9. Name the granular bodies found in the cell body of neurons.
10. An ovarian hormone is known to induce changes in the secondary sex organs of human females to prepare for anticipated pregnancy. Name this hormone.

PART- B

II. Answer ANY FIVE of the following in 3-5 sentences each, wherever applicable: (5 x 2 = 10)

11. Write any two commercial uses of algae.
12. Define the following terms:
i) Epiphyllous stamens ii) Staminode
13. What are the twin characters of growth?
14. Give the suitable technical term to denote the following floral characters:
i) Stamens united into one bunch
ii) Carpels of a flower are fused
15. Write any two differences between primary and secondary metabolites.
16. Name any two synthetic auxins.
17. Distinguish between Inspiratory Reserve Volume (IRV) and Expiratory Reserve Volume (ERV).
18. What is myogenic heart? Give one example.

PART-C

III. Answer ANY FIVE of the following in 40-80 words each, wherever applicable: (5x3 = 15)

19. Write a note on the steps involved in sexual cycle of fungi.
20. There has been an increase in the number of chambers in heart during the evolution of vertebrates. Give the names of the classes of vertebrates having two, three and four chambered heart, respectively.
21. Write a note on adipose tissue.
22. What are the three distinct components of a nucleotide?
23. What would be expected to happen if,
i) Gibberellic acid is applied to sugarcane?
ii) Ethephon is applied to Cucumber plants?

- iii) You forget to add cytokinin to culture medium?
24. List any three factors that influence the formation of oxyhaemoglobin.
25. Name any three disorders of the circulatory system in humans.
26. Explain the structure of a meromyosin.

PART-D

SECTION-I

IV. Answer ANY FOUR of the following in 200-250 words each, wherever applicable: (4 x5=20)

27. Enumerate any five characteristic features of Gymnosperms.
28. Write any five differences between Chondrichthyes and Osteichthyes.
29. Distinguish between skeletal muscle and cardiac muscle with suitable diagrams.
30. Name the cell organelles in which following structures are found:
- i) Cisternae
 - ii) Cristae
 - iii) Thylakoids
 - iv) Nucleolus
 - v) Tonoplast
31. Draw a neat labelled diagram of a typical animal cell.
32. Explain Prophase and Metaphase stages of Mitosis division.

SECTION-II

V. Answer ANY THREE of the following in 200-250 words each, wherever applicable:(3 x5= 15)

33. Give the schematic representation of Calvin cycle.
34. What is respiration? Differentiate between Alcoholic fermentation and Lactic acid fermentation.
35. Glomerular filtration is considered as a process of ultrafiltration. Explain.
36. i) List out the functions of hypothalamus.
- ii) Define the following terms:
- a. Synapse
 - b. Nodes of Ranvier
 - c. Pia mater
37. Name the endocrine gland in which the following hormones are synthesized. Write one function for each hormone:
- i. Melatonin
 - ii. Glucagon
 - iii. Thyrocalcitonin
 - iv. Progesterone
 - v. Glucocorticoids

MODEL QUESTION PAPER-2
FOR REDUCED SYLLABUS 2020-21
SUBJECT: BIOLOGY (36)
1st year PUC

Time: 3 Hours and 15 minutes

Max Marks: 70

GENERAL INSTRUCTIONS:

- i) This question paper consists of four parts A, B, C and D. Part D consists of two parts, Section-I and Section-II.**
- ii) All the Parts are Compulsory.**
- iii) Draw diagrams wherever necessary. Unlabeled diagrams or illustrations do not attract any marks.**

PART-A

Answer the following questions in One Word or One Sentence each: 10x1=10

1. What is binomial nomenclature?
2. Name the family to which brinjal belongs.
3. Name a polymer of fructose.
4. Define Photosynthesis.
5. What is the average life span of RBCs?
6. Which part of the flower is brightly coloured to attract insects for pollination?
7. Why mitochondria are called “power houses of cell”?
8. In which part of the brain, you find ‘corpora quadrigemina’?
9. While observing an animal, it is found that the animal has single opening outside that serves as both mouth and anus. What type of digestive system does it represent?
10. Name the tissue which provides structural frame to our body.

PART-B

Answer any FIVE of the following questions in 3-5 sentences each, wherever applicable: 5x2=10

11. Mention four classes of Pteridophytes.
12. Mention any two types of simple epithelial tissue.
13. What is respiratory quotient? Write RQ value of fats.
14. Mention the stages involved in the mechanism of muscle contraction.
15. List any two characteristics of living organisms.
16. Write any two characteristics of visceral muscle.
17. Which cell division conserves specific chromosome number across generations in sexually reproducing organisms? How?
18. Draw a neat labeled diagram of nucleus.

PART-C

Answer any FIVE of the following questions in 40-80 words each, wherever applicable: 5x3=15

19. Define the following.
(i) Metagenesis (ii) Metamerism (iii) Bioluminescence
20. What is inflorescence? Mention two major types.
21. List the events of pachytene stage.
22. Classify the plastids based on the type of pigments they contain.
23. Which hormone deficiency is responsible for the following?
i) *Diabetes mellitus* ii) Goitre iii) Dwarfism
24. i) “Very often sea and its tides appear red”. Give biological reason.
ii) “Lichens are good pollution indicators”. Justify the statement.
iii) “Viruses did not find a place in Biological Classification”. Why?
25. “Some tissues of Heart, Kidney and Gastro Intestinal tract produce Hormones”.
Substantiate the statement by naming the hormones produced by them.
26. Draw a labeled diagrammatic presentation of ATP synthesis in Mitochondria.

PART-D

Section-I

Answer any FOUR of the following questions on 200-250 words each, wherever applicable: 4x5=20

27. Write the salient features of Bryophytes.
28. Mention one function for each of the following organelles:
 - i) ER ii) Golgi apparatus iii) Chloroplast iv) Lysosome v) Ribosome
29. List five main groups of natural plant growth regulators.
30. What are nephrons? Write the functions of nephron tubules in urine formation.
31. Enumerate the salient features of Class Amphibia.
32. Draw a neat labeled diagram of human respiratory system.

Section-II

Answer any THREE of the following questions in 200-250 words each, wherever applicable: 3x5=15

33. Classify the enzymes based on the type of reactions they catalyse.
34. State Blackman's law of limiting factors. Explain the external factors affecting photosynthesis.
35. "In our body nerve impulses are generated and conducted by active transport of ions". Justify the statement with suitable explanation.
36. i) Draw a neat labeled diagram of areolar connective tissue (3).
ii) Sketch and label adipose tissue (2).
37. Explain blood clotting mechanism in human beings.

MODEL QUESTION PAPER -3
FOR REDUCED SYLLABUS 2020-21
SUBJECT: BIOLOGY (36)
1st year PUC

Time: 3 Hours and 15 minutes

Max Marks: 70

GENERAL INSTRUCTIONS:

- i) This question paper consists of four parts A, B, C and D. Part D consists of two parts, Section-I and Section-II.**
- ii) All the Parts are Compulsory.**
- iii) Draw diagrams wherever necessary. Unlabelled diagrams or illustrations do not attract any marks.**

PART-A

Answer the following questions in One Word or One Sentence each:

10x1=10

1. Write the scientific name of mango.
2. Mention the function of flame cells.
3. Name the type of inflorescence in which the main axis terminates in a flower.
4. While describing floral characters, the symbol "♂" is used. What does this represent?
5. Name one structural protein secreted by the cells of connective tissue.
6. What are polysomes?
7. Which polysaccharide is present in the exoskeleton of insects?
8. Which enzyme fixes CO₂ in C-4 pathway in mesophyll cells?
9. Why are neurotransmitters needed for our nervous system?
10. Which contractile protein present in the light band of skeletal muscle?

PART-B

Answer any FIVE of the following questions in 3-5 sentences each, wherever applicable: 5x2=10

11. Mention any two defining properties of life forms.
12. Give two examples for heterosporous pteridophytes.
13. Differentiate between tight and adhering junctions.
14. Write a note on lysosomes.
15. Name the respective stages of meiosis-1 in which synapsis and crossing over occur.
16. Explain the steps of glycolysis in which ATP is utilized.
17. Name the two regions of nephron that play a significant role in concentrating the filtrate or urine.
18. Which hormones are popularly called "hormones of Fight or Flight"?

PART-C

Answer any FIVE of the following Questions in 40-80 words each, wherever applicable: 5x3=15

19. What are photosynthetic autotrophs and chemosynthetic autotrophs? Name the cell of *Nostoc* in which nitrogen fixation takes place.
20. Write the scientific name of i) Tape worm ii) Silk worm iii) Sea Horse
21. Mention the function of i) contractile vacuoles ii) Mesosome iii) SER
22. "Mitosis is absolutely necessary for a diploid organism". Justify this and list out the significance of mitosis.
23. In aerobic respiration, how many ATPs are synthesized when,
i) One molecule of glucose is oxidized?
ii) One molecule of NADH is oxidized?
iii) One molecule of FADH₂ is oxidized?
24. What are actinomorphic and zygomorphic flowers? Give one example for each.
25. Describe renin-angiotensin mechanism.
26. Write a note on troponin.

PART-D

Section-I

Answer any FOUR of the following questions on 200-250 words each, wherever applicable: 4x5=20

27. Mention the different methods by which vegetative, asexual and sexual reproduction takes place in algae.
28. " Birds are very well adapted for aerial mode of life". Justify the statement with any five adaptive characters.
29. Answer the following:
- Differentiate between tendon and ligament. (2)
 - Write a note on compound epithelium. (3)
30. Draw a neat labelled diagram of mitochondria and explain the structure.
31. "The activity of an enzyme can be affected by a change in the conditions like Temperature and concentration of substrate". Explain this with suitable graphical representations.
32. Schematically represent the Z scheme of light reaction.

Section-II

Answer any THREE of the following questions in 200-250 words each, wherever applicable: 3x5=15

33. Name the following: i) the fungus that causes bakane disease ii) stress hormone iii) the PGR that causes apical dominance iv) fruit ripening hormone v) the hormone that helps to overcome apical dominance
34. Explain the transport of carbon dioxide in humans.
35. Draw a neat labelled representative diagram of a section of human heart.
36. i) How the neural system of Hydra is different from the neural system of an insect? (2)
ii) Mention one function each for a) Medulla oblongata b) thalamus c) corpus callosum (3)
37. " Hormones are called intracellular messengers". Justify the statement by giving one each function for i) Thymosin ii) Erythropoietin iii) Estrogen iv) Insulin v) Testosterone.
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