

DEPARTMENT OF PRE UNIVERSITY EDUCATION
MODEL QUESTION PAPER
IPUC - BIOLOGY (36)
DISTRIBUTION OF MARKS - CHAPTER-WISE

2022-23

UNIT NO	HOURS	UNIT WISE MARKS	CHAPTER NO	CHAPTERS	HOURS	CHAPTER WISE MARKS
I	19	18	1	The living world	3	3
			2	Biological classification	2	3
			3	Plant kingdom	6	5
			4	Animal kingdom	8	7
II	17	16	5	Morphology of flowering plants	5	5
			6	Anatomy of flowering plants	4	4
			7	Structural organisation in animals	8	7
III	19	18	8	Cell-the unit of life	10	9
			9	Biomolecules	5	5
			10	Cell cycle and cell division	4	4
IV	31	30	11	Transport in plants	7	7
			12	Mineral nutrition	7	7
			13	Photosynthesis in higher plants	5	5
			14	Respiration in plants	5	5
			15	Plant growth and development	7	6
V	34	33	16	Digestion and absorption	4	5
			17	Breathing and exchange of gases	4	4
			18	Body fluids and circulation	5	5
			19	Excretory products and their elimination	4	4
			20	Locomotion and movement	5	5
			21	Neural control and coordination	6	5
			22	Chemical coordination and integration	6	5
	120	115			120	115
Knowledge = 40% (46 marks)				Easy = 40%	1 mark = 20 questions	
Understanding = 30% (35marks)				Average = 40%	2 marks = 08 questions	
Application/Appreciation = 15% (17marks)				Difficult = 20%	3 marks = 08 questions	
Skill = 15% (17 marks)				Total questions = 47	5 marks = 11 questions	

- NOTE:**
1. The question paper must be prepared based on the individual blue print on the basis of weightage of marks fixed for each chapter.
 2. A variation of 1% per objective weightage is allowed.
 3. A variation of 1 mark per unit/chapter is allowed. However, the total marks should not exceed 115 marks.
 4. At least one question each carrying 1 mark, 2 marks, 3 marks and 5 marks have to be derived from each unit.
 5. When a question carrying 5 marks is divided into sub-questions (3+2/2+2+1/1+1+1+1+1), the sub-questions have to be derived from the same chapter. One of the 5 marks questions should be subdivided into 5 questions carrying 1 mark each.
 6. When a question carrying 5 marks is divided into sub-questions, the sub-questions have to be derived from different topics of the same chapter.
 7. Skill based questions should not expect descriptive answers.
 8. MCQs and fill in the blank type of questions should be simple and straight forward.

DEPARTMENT OF PRE UNIVERSITY EDUCATION
BLUE PRINT-UNIT-WISE
MODEL QUESTION PAPER
BIOLOGY (36)
IPUC

2022-23

UNIT NO	UNIT	TEACHING HOURS	KNOWLEDGE				UNDERSTANDING				APPLICATION/ APPRECIATION				SKILL				TOTAL QUESTIONS				UNITWISE MARKS
			1M	2M	3M	5M	1M	2M	3M	5M	1M	2M	3M	5M	1M	2M	3M	5M	1M	2M	3M	5M	
		120	1M	2M	3M	5M	1M	2M	3M	5M	1M	2M	3M	5M	1M	2M	3M	5M	1M	2M	3M	5M	
I	DIVERSITY IN THE LIVING WORLD	19	2	2		1	1		1			1			1				4	3	1	1	18
II	STRUCTURAL ORGANIZATION IN PLANTS AND ANIMALS	17	2	1	1		1										1	1	3	1	2	1	16
III	CELL: STRUCTURE AND FUNCTION	19	3		1		1		1	1	1	1							5	1	2	1	18
IV	PLANT PHYSIOLOGY	31	3		1		2			2		1		1				1	5	1	1	4	30
V	HUMAN PHYSIOLOGY	34	1			3	2	1		1		1	1				1		3	2	2	4	33
TOTAL QUESTIONS		120	11	3	3	4	7	1	2	4	1	4	1	1	1		2	2	20	8	8	11	115
		120	40%				30%				15%				15%								
			46 marks				35 marks				17 marks				17 marks								

**BLUE PRINT- CHAPTER-WISE
MODEL QUESTION PAPER
BIOLOGY (36)
IPUC**

2022-23

Unit no	Hours	Ch no	Chapters	Hours	KNOWLEDGE				UNDERSTANDING				APPLICATION/ APPRECIATION				SKILL				TOTAL QUESTIONS				Marks	TOTAL MARKS
					1 M	2 M	3 M	5 M	1 M	2 M	3 M	5 M	1 M	2 M	3 M	5 M	1 M	2 M	3 M	5 M	1 M	2 M	3 M	5 M		
I	19	1	1. The living world	3	1	1														1	1			3	18	
		2	2. Biological classification	2						1													1			3
		3	3. Plant kingdom	6		1							1			1				1	2					5
		4	4. Animal kingdom	8	1			1	1											2			1			7
III	17	5	5. Morphology of flowering plants	5		1											1			1	1			5	16	
		6	6. Anatomy of flowering plants	4	1		1												1		1			4		
		7	7. Structural organisation in animals	8	1				1									1	2			1		7		
III	19	8	8. Cell-The unit of life	10	1			1			1		1						2	1		1		9	18	
		9	9. Biomolecules	5	1		1					1							2		1			5		
		10	10. Cell cycle and cell division	4	1						1								1		1			4		
IV	31	11	11. Transport in plants	7	1			1			1								2			1		7	30	
		12	12. Mineral nutrition	7	1				1			1							2			1		7		
		13	13. Photosynthesis in higher plants	5			1						1								1	1				5
		14	14. Respiration in plants	5														1					1			5
		15	15. Plant growth and development	7	1										1					1			1			6
V	34	16	16. Digestion and absorption	4				1															1	5	33	
		17	17. Breathing and exchange of gases	4					1									1		1		1		4		
		18	18. Body fluids and circulation	5								1											1	5		
		19	19. Excretory products and their elimination	4						1				1							2			4		
		20	20. Locomotion and movement	5				1															1	5		
		21	21. Neural control and coordination	6				1															1	5		
		22	22. Chemical coordination and integration	6	1				1						1					2		1		5		
	120		Total	120	11	3	3	4	7	1	2	4	1	4	1	1	1	2	2	20	8	8	11	115		

DEPARTMENT OF PRE UNIVERSITY EDUCATION

MODEL QUESTION PAPER - 2022-23

BIOLOGY (36)

1 PUC

TIME: 3 HOUR 15 MINUTES

MAX. MARKS: 70

General instructions:

1. The question paper consists of four parts A, B, C and D.
2. Part-A consists of I & II and Part-D consists of V & VI.
3. All the parts are compulsory.
4. Draw diagrams wherever necessary, unlabelled diagrams or illustrations do not attract any marks.

PART – A

I. Select the correct alternative from the choices given:

15 x 1 = 5

1. Binomial nomenclature system of naming the organisms was proposed by
a) Aristotle b) Carolus Linnaeus c) Bentham and Hooker d) Robert Brown
2. Identify the correct sequence of events with reference to double fertilisation in angiosperms
a) Entry of pollen tube into synergids → Syngamy → Triple fusion
b) Syngamy → Entry of pollen tube into synergids → Triple fusion
c) Triple fusion → Syngamy → Entry of pollen tube into synergids
d) Entry of pollen tube into synergids → Triple fusion → Syngamy
3. In some animals, body cavity is not lined by mesoderm and instead, the mesoderm is present as scattered pouches in between the ectoderm and endoderm. Such animals are known as
a) Pseudocoelomates b) Acoelomates c) Coelomates d) Coelenterates
4. Large, empty and colourless cells present in the adaxial epidermis of grass leaves are called
a) Lenticels b) Guard cells c) Bulliform cells d) Subsidiary cells
5. The main function of the compound epithelium is
a) Secretion b) Absorption c) Communication d) Protection

6. Several ribosomes attached to a single mRNA thus forming a chain is called
a) Polysome b) Centrosome c) Chromosome d) Lysosome
7. Mitochondria produce cellular energy in the form of
a) NADPH b) ATP c) CTP d) TTP
8. A bond that links individual monosaccharides in a polysaccharide is termed as
a) Peptide bond b) Hydrogen bond c) Glycosidic bond d) Phosphoester bond
9. The phase during which DNA synthesis takes place in cell cycle is
a) G₁ phase b) G₂ phase c) M phase d) S phase
10. Symbol used to denote the water potential is
a) ψ b) π c) Θ d) ϵ
11. Movement of food through phloem is
a) Unidirectional b) Multidirectional c) Bidirectional d) Antiport
12. The element helps to maintain an anion-cation balance in cells, involved in protein synthesis and opening and closing of stomata is
a) Nitrogen b) Magnesium c) Iron d) Potassium
13. The living differentiated cells that have lost capacity to divide, can regain the capacity of division under certain conditions. It is known as
a) Redifferentiation b) Differentiation c) Dedifferentiation d) Plasticity
14. Major cause for emphysema is
a) Air pollution b) Cigarette smoking c) UV radiation d) Contaminated water
15. An example for steroid hormone is
a) Cortisol b) Epinephrine c) Insulin d) Thyroxine

II. Fill in the blanks by choosing the appropriate word/words from those given in the bracket. **5 x 1 = 5**

(Erythropoietin, Cardiac muscles, Skin, Collagen, Hydroponics)

16. In amphibians, respiration can also take place through.....
17. Intercalated discs are found in -----
18. ----- is the most abundant protein in animal world.
19. The technique of growing plants in a nutrient solution without soil is known as -----
20. The juxtaglomerular cells of kidney produce a peptide hormone called -----

PART – B

III. Answer any FIVE of the following questions in 3-5 sentences each, wherever applicable:

5 x 2 = 10

21. List any four taxonomical aids.
22. Mention the different classes of pteridophytes with an example for each class.
23. “Mosses have great ecological importance”. Substantiate the statement with two reasons.
24. Based on the position of floral parts on thalamus name the types of flower in brinjal and cucumber.
25. Write the functions of rough endoplasmic reticulum and smooth endoplasmic reticulum.
26. “Photorespiration is a wasteful process.” Justify.
27. Differentiate between ureotelic animals and uricotelic animals.
28. How Henle’s loop maintains the high osmolarity of medullary interstitial fluid?

PART – C

IV. Answer any FIVE of the following questions in 40-80 words each, wherever applicable:

5 x 3 = 15

29. Briefly describe the salient features of kingdom fungi.
30. Draw the floral diagram for family Liliaceae.
31. List the salient anatomical features of monocot root.
32. Classify the enzymes based on the type of reaction they catalyse.
33. Explain briefly the telophase events in mitosis.
34. Briefly describe the stages of Calvin cycle.
35. Draw a neat labelled diagram of human respiratory system.
36. Write any one function of the following hormones:
i) Melatonin ii) Glucagon iii) Progesterone

PART- D

V. Answer any THREE of the following questions in 200-250 words each, wherever applicable:

3 x 5 = 15

37. Assign the following animals to their respective phyla.
i) Hydra ii) Scorpion iii) Liver fluke iv) Star fish v) Apple snail

38. Draw a neat labelled diagram of alimentary canal of cockroach.
39. Differentiate between plant cell and animal cell.
40. Describe the symplastic pathway of water movement in the root.
41. Explain the development of root nodules in soyabean.
42. Schematically represent the Citric acid cycle.

VI. Answer any TWO of the following questions in 200-250 words each, wherever applicable:

2 x 5 = 10

43. Write the physiological effects of gibberellins on plants.
44. List the role of carbohydrate digesting enzymes in different parts of human digestive system.
45. Describe double circulation in humans.
46. i) Mention the different types of joints with an example. (3)
ii) Name the two contractile proteins. (2)
47. i) Define resting potential and action potential. (2)
ii) List the layers of cranial meninges. (3)
