HP BOARD OF SCHOOL EDUCATION DHARAMSHALA

CHAPTER WISE MARKS DISTRIBUTION

CLASS 12th SUBJECT: **BIOLOGY TOTAL** MARKS: 80

CHAPTER WISE MARKS DISTRIBUTION

CLASS 11th & 12th SUBJECT: **BIOLOGY TOTAL** MARKS: 80

OPEN SCHOOL QUESTION PAPER

Sr. No	Name of module	Chapters	Total Marks
I	Diversity of Living Organisms	Living World	6
		Biological Classification	
		Plant Kingdom	
		Animal Kingdom	
II	Structural Organisation in Plants and Animals	Morphology of Flowering plants	6
		Anatomy of Flowering plants	
		Structural Organization in Animals	
III	Cell: Structure and Function	Cell: The Unit of Life	9
		Biomolecules	
		Cell Cycle and Cell Division	
IV	Plant Physiology	Photosynthesis in Plants	8
		Respiration in Plants	
		Plant Growth and Development	
V	Human Physiology	Breathing and Exchange of Gases	9
		Body Fluid and its Circulation	
		Excretory Products and their Elimination	
		Locomotion and Movement	
		Neural Control and Coordination	

		Chemical Control and Integration	
VI	Reproduction	Plant Reproduction	8
		Human Reproduction	
		Reproductive Health	
VII	Genetics and Evolution	Principles of inheritance and variation	9
		Principles of inheritance and variation	
		Evolution	
VIII	Biology and Human Welfare	Human Health and diseases	8
		Microbes in Human Welfare	
IX	Biotechnology and its Applications	Biotechnology : Principles and Processes	9
		Biotechnology and Its Applications	
X	Ecology and Environment	Organisms and Populations	8
		Ecosystem	
		Biodiversity and Conservation	
			80

Class 10+2 BIOLOGY. Time allowed: 3 Marx- M. 80

Candidates are required to answer in their own words as far as practicable.
Marks allotted to each question are indicated against it .

(1) You must indicate in your answer-book the same question number as appears in your Question paper.

(ii) All questions are compulsory. Internal choices have. been given

(iii) Q. No 1-16 are multiple choice types, Carrying 1 mark each.

(iv) Q. No 17 to 23 are short answers like questions carrying 2 marks each.

(v) Q. No 24 to 28 are short answer types, carrying 3 marks each.

(vi) Q. No 29 to 33 are explanatory type questions carrying 4 marks.

(vii) Q. No 34-36 are long type questions carrying 5 marks.

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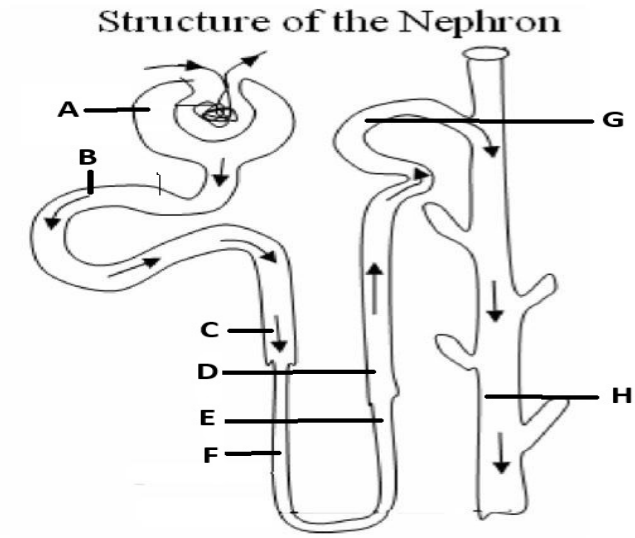
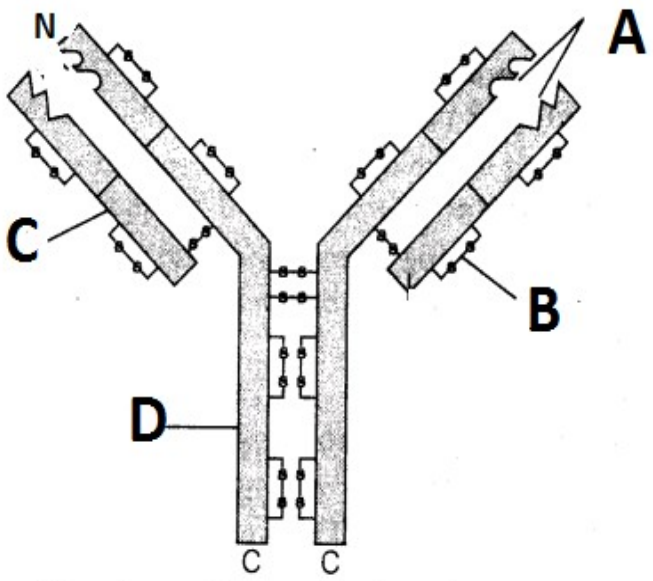
SECTION-A

1	In human being, the developing embryo resides in a) fallopian tubes b)uterus c) ovaries d) vagina	1
2	Branch of Biology that Deals with study of Fungi Is known as : a) mycology b) phycology c) microbiology d)Palynology	1
3	Okazaki fragments give rise to a) master strand b) sense strand c) lagging strand d) leading strand	1
4	Name the excretory organ of Pheritima posthuma (earthworm) a) nephridia b) malpighian tubules c) flame cell d) kidney	1
5	The purpose of biological treatment of waste water is to a) reduce BOD b) increase BOD c) reduce sedimentation d) increase sedimentation	1
6	The floral formula of Solanaceae is correctly represented as: **a.** ⊕K(5) C(5) A5 G(2) **b.** ⊕ K(5) C(5) A(10) G(1) **C.** ⊕ K(5) C(5) A(4) G(2) **d.** ⊕ K(5) C(5) A(5) G(2)	1

7	Which of following is known as stress hormone: a) ABA b) gibberellin c) 2,4-D d) Auxin	1
8	The reaction centre in PS II has an absorption maximum at (a) 660 nm (c) 680 nm (b) 780 nm (d) 700 nm	1
9	Identify the lipid structure in the diagram below: Glycerol backbone | |— Fatty acid Chain | |— Fatty acid Chain | |— Fatty acid Chain What type of lipid does the diagram represent? a) Phospholipid b) Triglyceride c) Cholesterol d) Sphingolipid	1
10	Name the enzyme involved in DNA replication and transcription respectively: a) DNA polymerase and RNA Polymerase b) RNA Polymerase and DNA polymerase c) DNA polymerase and Primase d) RNA Polymerase and Ligase	1
11	In the structure of DNA, nitrogenous bases pair in a specific manner. Adenine always pairs with thymine with —----- hydrogen bonds , and Guanine always pairs with cytosine with ….. hydrogen bonds respectively. a) 2 and 3 b) 2 and 2 c) 3 and 2 d) 3 and 3	1
12	The acrosome of the sperm helps in: A. Tail movement B. DNA replication C. Penetration of zona pellucida D. Activation of secondary oocyte	1
13	The role of selectable markers in a cloning vector is to: a) Help in separating DNA fragments b) Increase efficiency of transformation c) Identify recombinants from non-recombinants d) Facilitate replication of vector	1

14	The IUCN Red List provides information primarily about: A) Biodiversity hotspots B) Endangered species and their extinction risk C) Genetically modified organisms D) Invasive alien species	1
15	Which of the following statements about histamine is correct? A. It is released by mast cells and promotes phagocytosis B. It is released during allergic reactions and causes inflammation C. It directly neutralizes pathogens D. It is an anti-inflammatory agent	1
16	What prevents the backflow of blood during ventricular contraction? A. Bicuspid and tricuspid valves B. Semilunar valves C. Chordae tendineae D. SA node	1
	SECTION-B	
17	Describe the structure of female gametophyte of angiosperm OR Draw a well labelled diagram of the embryo sac.	1+1=2
18	Give the role of Sertoli cells and Corpus luteum.	1+1=2
19	Discuss Mendel's Law of Purity with suitable an example.	1+1=2
20	What are Genetic maps? How can genetic maps be prepared? OR OR Differentiate between DNA and RNA	1+1=2
21	What is triple fusion. What is the product of it. Name the nuclei involved in it.	(1+½+½=2)
22	Differentiate between Aerobic and anaerobic respiration.	2
23	Differentiate between essential and non essential amino acids	2
	SECTION-C	
24	a). Differentiate between SPERMATOGENESIS AND OOGENESIS b). Differentiate between Connecting links and missing links. OR OR OR OR a) Write the name of the causal organism, symptoms and mode of transfer of disease Ascariasis b) Differentiate between T- Lymphocyte and B-Lymphocyte.	1½+1½=3

25	(a) Name and state the law given by Lindeman which tells us how much energy entering a particular trophic level of organisms is available for transfer to the next higher trophic level. (b) How much energy will be available to hawks in the food chain comprising hawk, snake, paddy and mice, if 10,000 J of energy is available to paddy from the sun? OR OR a) What are sacred groves? What is their role in conservation? b) Name the 2 types of growth curves. Which one growth curve is more realistic and Why?	1½+1½=3
26	Write a brief note on a) Principle and 2 application of PCR b) Gel Electrophoresis: Role of ethidium bromide	1½+1½=3
27	Define Primary productivity? Write down the different types of productivity . b) How is biodiversity important for ecosystem functioning?	1½+1½=3
28	Name the microbes from which Cyclosporin A an immunosuppressive agent and Statins are . .. …. obtained b) What does it mean if a water sample has a high BOD?	1½+1½=3
	SECTION-D	
29	Identify and Name the label A,B,C,D,E,F,G AND H.  	(½+½+½+½+ ½+½+½+½= 4)

30	IDENTIFY and Name the terms A, B,C and D in the given diagram of Antibody molecule ? (½+½+½+½=2)  Structure of an antibody molecule B) The yellowish fluid colostrum secreted by mother during the initial days of lactation has abundant antibodies (IgA) to protect the infant. Is this an example of passive immunity or active immunity? Justify . (**1+1=2)**	2+2=4
31.		1+1+1+1=4

S. No.	Characteristics	C3 Plants	C4 Plants	Characteristics
a	Cell type in which the Calvin take Place			Mesophyll/ Bundle sheath/both
b	Which is the primary CO2 acceptor			RuBP/PEP /PGA
c	Number of carbons in the primary CO2 acceptor			5 / 4 / 3
d	Name the enzyme fixing CO2			RuBisco/PEP carboxylase/Hexokinase

32	) Draw a well labelled diagram of Human Lungs. b) Explain the generation and conduction of nerve impulses. **OR OR** a)Differentiate between cranial Nerves and Spinal nerves b) Differentiate between diabetes mellitus & diabetes insipidus	2+2=4
33	a) Why is Taq Polymerase used in PCR? Name its source. b) What are molecular scissors? Give one example.	2+2=4
	SECTION-E	
34	a) Write ANY 4-5 features of Bryophytes OR Pteridophytes b) Difference between Chondrichthyes and Osteichthyes c) Name the primary composition of the cell wall of Bacteria and Fungi.	2+2+1=5
35	a)) Discuss the fluid mosaic model of plasma membrane with a labelled diagram. (2) b)Name the stage of cell cycle at which one of the following events occur: (i) Chromosomes are moved to the spindle equator. (ii) Centromere splits and chromatids separate. (iii) Pairing between homologous chromosomes takes place. .. (½+½+½+½=2) (iv) Crossing over between homologous chromosomes takes place. Why does starch change the colour of iodine, but cellulose does not? (1)	2+2+1=5
36.	a) How does the first transgenic cow Rosie different from normal cow with respect to milk .. ……quality? (2) b) Explain the following terms a) Origin of replication b) Bioreactor c)Gene therapy. (1+1+1=3)	2+3=5

HIMACHAL PRADESH BOARD OF SCHOOL EDUCATION, DHARMSHALA
BLUE PRINT OF BIOLOGY SOS DIRECT
MODULE WISE DISTRIBUTION OF MARKS

SN	NAME OF MODULE	MODULE WISE BREAK UP OF MARKS (NO. OF QUESTIONS)					MARKS ALLOTTED
	CHAPTER	1 MARKS	2 MARKS	3 MARKS	4 MARKS	5 MARKS	Grand Total
1	Diversity of Living Organisms	1				1	6
2	Structural Organisation in Plants and Animals	2			1		6
3	Cell: Structure and Function	2	1			1	9
4	Plant Physiology	2	1		1		8
5	Human Physiology	1			2		9
6	Reproduction	2	3				8
7	Genetics and Evolution	2	2	1			9
8	Biology and Human Welfare	1		1	1		8
9	Biotechnology and its Applications	1		1		1	9
10	Ecology and Environment	2		2			8
Grand Total		**16**	**14**	**15**	**20**	**15**	**80**

========== **End of question paper**==========

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