## **MODEL QUESTION PAPER SET-2:2021-22**

MM: 70 BIOLOGY THEORY Time: 3 Hrs

## **Entire Syllabus**

## The question paper is divided into Four sections:

- (1) Section A: Q. No. 1 contains Ten multiple choice type of questions carrying One mark each.
  - Q. No. 2 contains Eight very short answer type of questions carrying One mark each.
- (2) **Section B:** Q. No. 3 to Q. No. 14 contains Twelve short answer type of questions carrying two marks each. Internal choice is provided (Any 8)
- (3) **Section C:** Q. No. 15 to Q. No. 26 contains Twelve short answer type of questions carrying Three marks each. Internal choice is provided (Any 8)
- (4) **Section D:** Q. No. 27 to Q. No. 31 contains five long answer type of questions carrying Four marks each. Internal choice is provided (Any 3)
- (5) Use log Table if necessary. Use of Calculator is not allowed.

	SECTION A	
Q.1	Select & Write the correct Answer	10M
i.	Bt cotton is one of the best transgenic plants known for its property.	1M
	<ul><li>a) high protein content</li><li>b) high vitamin A content</li></ul>	
	c) insect resistance d) edible vaccine	
ii.	Biopatent are awarded for	1M
	<ul><li>a) strains of microbes and cell lines</li><li>b) DNA sequences</li></ul>	
	c) GMO d) All of these	
iii.	Which of the hormones can replace vernalization?	1M
	<ul><li>a) Auxin</li><li>b) Cytokinin</li></ul>	
	c) Gibberellins d) Ethylene	
iv.	How many codons are needed to specify three amino acids?	1M
	<b>a</b> ) 3 <b>b</b> ) 6 <b>c</b> ) 9 <b>d</b> ) 12	
V.	Hormone thyroxine, adrenaline and non-adrenaline are formed from	1M
	a) Glycine b) Arginine	
	c) Ornithine d) Tyrosine	
vi.	The nasal cavity is divided into right and left nasal chambers by a	1M
	a) Sphenoid b) Palatine c) mesethmoid d) zygomatic	
vii.	Ethanol is commercially produced through a particular species of	1M
	a) Aspergillus b) Saccharomyces c) Clostridium d) Trichoderma	
viii.	Which of the following leads to anthropogenic extinction?	1M
	<ul><li>a) Earthquakes</li><li>b) Volcanic eruptions</li></ul>	
	c) Overexploitation of resources d) Forest fires	
ix.	Gene frequency in a population remain constant due to	1M
	a) Mutation b) Migration	
	c) Random mating d) Non- random mating	
х.	In soil, water available for absorption by root is	1M
	<ul><li>a) Gravitational water</li><li>b) Capillary water</li></ul>	
	c) Hygroscopic water d) Combined water	

2021 – 22 : SET – 2

MH-BO	ARD	LLEN
Q.2	Short Answers (1 Mark Each)	<b>8M</b>
i.	Give one example for each-	1M
	a) mutualism b) Interspecific competition	
ii.	Name the organ which prevents the entry of food into the trachea while eating.	1M
iii.	Give the full form of IAA.	1M
iv.	Define heredity.	1M
v.	Why are farmers and gardeners advised to buy new $F_1$ hybrid seeds every year?	1M
vi.	Name the four regions of a typical root.	1M
vii.	Krishna was going to school and on the way he saw a major bus accident. His heart beat increased and hands and feet become cold. Name the part of the nervous system that had a role to play in this reaction.	1M
viii.	How we can calculate the length of DNA molecule?	1M
	SECTION B	
	Attempt Any Eight Questions	16M
Q.3	Write a short note on Pleiotropy.	<b>2M</b>
<b>Q.4</b>	Explain any four effects after application of gibberellins.	<b>2M</b>
Q.5	Sketch and label Antibody.	<b>2M</b>
<b>Q.6</b>	Name any two enzymes and antibiotics with their microbial source.	<b>2M</b>
Q.7	Distinguish between Hibernation and Aestivation.	<b>2M</b>
<b>Q.8</b>	Which are the two types of goiter?	<b>2M</b>
Q.9	Write a note on coagulation of blood.	<b>2M</b>
Q.10	Describe structure of root hair	2M
Q.11	A PCR machine can rise temperature up to 100°C but after that it is not able to lower the	2M
	temperature below 70°C automatically. Which step of PCR will by hampered first in this faulty	
	machine? Explain why?	
Q.12	Describe the characters of Dryopithecus	2M
Q.12 Q.13	Give scientific reason: Castor seed is endospermic or albuminous.	2M
Q.13 Q.14	Distinguish between primary succession and secondary succession.	2M
Q.14	SECTION C	21V1
	Attempt Any Eight Questions	24M
Q.15	Loss of biodiversity can harm ecosystem. Justify.	3M
Q.16	Explain the types of biofertilizers.	3M
Q.17	Describe the effects of drug alcohol abuse.	3M
Q.18	What is cerebrospinal fluid? Enlist its functions.	3M
Q.19	Distinguish between Arteries and Veins.	3M
Q.20	Which one of the plant growth regulators would you use if you are asked to:	3M
Q.20	i. induce rooting in a twig	3111
	ii. quickly ripen a fruit	
	iii. delay leaf senescence	
	iv. induce growth in axillary buds	
	v. 'bolt' a rosette plant	
Q.21	vi. induce immediate stomatal closure in leaves  Enlist the properties of water which makes it a significant molecule that connects physical world	3M
V.21	with biological processes.	J111
Q.22	By taking industrial melanism as one example. Explain the concept of natural selection.	3M

2021 – 22 : SET – 2

ALLEN_	MH-BC	DARD
Q.23	On a crime scene in a hotel, forensic investigators found the blood spots and hairs near the dead body of a person. Police arrest the suspected individuals. Which technique would be applied by forensic investigators to identify and confirm the criminal? Explain the technique in detail.	3M
Q.24	Write a short note on thalassemla.	<b>3M</b>
Q.25	How is gonorrhea caused? Mention its symptoms. What is the cure and prevention for gonorrhea?	3M
Q.26	Describe three devices by which cross pollination is encouraged in angiosperms by avoiding self pollination.	3M
	SECTION D	
	Attempt Any Three Questions	12M
Q.27	Draw neat and labelled diagram of anatropous ovule and explain its structure in detail.	4m
Q.28	Describe the various methods of birth control to avoid pregnancy.	4m
Q.29	Explain the steps in process of rDNA technology with suitable diagrams.	4m
Q.30	Describe the parts of diencephalon in detail. Add a note on functions of hypothalamus.	4m
Q.31	<ul><li>i. With the help of neat and labelled diagram, describe the internal structure of human heart.</li><li>ii. What is role of papillary muscles and chordae tendineae in human heart?</li></ul>	4m

Together we will make a difference

2021 – 22 : SET – 2