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# Part III — BIOLOGY

(English Version)

Time Allowed: 3 Hours ] [ Maximum Marks: 150

N. B.: Candidates should answer Part - I (Botany) & Part - II (Zoology) in separate answer-books.

### PART - I ( BOTANY )

( Marks : 75 )

### SECTION - A

		Note: i)	Answer all	the qu	iestions.
		ii)	Choose and	d write	e the correct answer.
		iii)	Each quest	ion ca	arries one mark. $14 \times 1 = 14$
١.	Wh	ich one of the follow	wing plant he	ormon	es was first discovered ?
	a)	Auxin		b)	Gibberellin
	c)	Cytokinin		d)	Ethylene.
2.	'Ha	djor' bone joiner is	a trade name	e of	
	a)	Aegle marmelos		b)	Solanum nigrum
	c)	Acalypha indica	Cauro and	d)	Cissus quadrangularis.
3.	Dar	rk respiration is the	function of		
	a)	peroxisomes	in the little	b)	mitochondria
	c)	chloroplast		d)	ribosomes.

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4.	Which one of the following is used as green manure?				
	a)	Sesbania	b)	Azotobacter	
	c)	Pseudomonas	d)	Rhizobium.	
5.	In F	Ricinus communis, the stamens	are		
	a) `	monadelphous	b)	diadelphous	
nei .	c)	dimorphic	d)	polyadelphous.	
6.	Whi	ich one of the following organism	s is a	a single cell protein?	
	a)	Gossypium	b)	Ricinus	
	c)	Allium	d)	Pseudomonas.	
7.	Lac	unate collenchyma is seen in			
	a)	Helianthus	b)	Datura	
	c)	Ipomea	d)	Nicotiana.	
8.	Fishing nets are manufactured from the fibres of				
	a)	Aloe vera	b)	Allium cepa	
	c)	Phormium tenax	d)	Lilium Candidum.	
9.	Complete oxidation of one molecule of glucose yields				
	a)	38 ATP	b)	36 ATP	
	c)	35 ATP	d)	2 ATP.	
10.	The	natural system of classification	was p	oublished by	
	a)	Engler and Prantl	b)	Bauhin and Linnaeus	
	c)	Bentham and Hooker	d)	Camp and Gily.	
11.	. The innermost layer of the cortex is				
	a)	endodermis	b)	rhizodermis	
	c)	epidermis	d)	pericycle.	

12.	Hugo de Vries first used the term 'mutation' based on his observation on					
	a)	Sorghum	b)	Neurospora		
	c)	Oenothera lamarckiana	d)	Cicer gigas.		
13.	A to	xic protein called delta endotoxi	n is i	nsecticidal and it is produced by		
	a)	Bacillus thuringiensis	b)	Escherichia Coli		
	c)	Bacillus lactii	d)	Streptomyces griseus.		
14.	Cist	ron is a unit of				
	a)	mutation	b)	heredity		
	c)	function	d)	recombination.		
		SEC	TION	I-B		
		Note: i) Answer any seven	n que	stions.		
		ii) Each question car	rries	three marks. $7 \times 3 = 21$		
15.	. What is 'Binomial nomenclature' ? Give example.					
16.	. Draw the structure of parenchyma. Label the parts.					
17.	. Draw the structure of t-RNA and label the parts.					
18.	3. Write any three transgenic dicotyledonous plants.					
19.	9. Write any three differences between photorespiration and dark respiration.					
	O. Is it possible to shorten the time of crop maturity? Support your answer.					
		at is humulin ?	I fant	33. Describe Eletras communa in botan		
21.	*****	at is manner.		annual states on Visit in which the altiW .El		
22.	Wri	te any three anatomical differen	ces b	etween monocot root and dicot root.		
23.	Name any three fibre plants of Malvaceae.					
24.	Wh	at is Richmond Lang effect?				
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#### SECTION - C

- Note: i) Answer any four questions including Question No. 25 which is compulsory.
  - ii) Draw diagrams wherever necessary.
  - iii) Each question carries five marks.

 $4 \times 5 = 20$ 

- 25. Discuss the outline of Bentham and Hooker's classification of plants.
- 26. How is DNA cut?
- 27. Give an account of mutagenic agents.
- 28. Describe the structure of chloroplast.
- 29. Draw C 4 cycle without explanation.
- 30. Draw and label the parts of a transverse section of a dicot leaf.
- 31. Write any five aims of plant breeding.

#### SECTION - D

- Note: i) Answer any two questions.
  - ii) Draw diagrams wherever necessary.
  - iii) Each question carries ten marks.

 $2 \times 10 = 20$ 

- 32. Describe Ricinus communis in botanical terms.
- 33. Write an essay on Xylem tissues.
- 34. Explain the basic techniques of plant tissue culture.
- 35. What is glycolysis? Explain the steps involved in it.

## PART - II ( ZOOLOGY )

(Marks: 75)

## SECTION - A

Note: i) Answer all questions.

		iii) Each question c		s one mark. $16 \times 1 = 16$
1.	The	e pathogenic form of Entamoeba l	nistol	ytica is
	a)	encysted spores	b)	vegetative trophozoite
	c)	merozoite	d)	schizont.
2.	The	e germ theory of diseases was es	tablis	shed by
	a)	Louis Pasteur	b)	Robert Koch
	c)	Lister	d)	Alexander Flemming.
3.	Wh	ich one of the following is antivir	al?	
	a)	Lysozyme	b)	Interferon
	c)	Protein	d)	Hormone.
4.	Nar	me the human disease due to aut	osom	al dominant gene.
	a)	Sickle cell anaemia	b)	Thalassemia
	c)	SCID	d)	Huntington's chorea.
5.	The	e term 'Superbugs' refers to		
	a)	arthropods	b)	insects
	c)	beetles	d)	genetically engineered bacteria.
6.	The	e most abundant Greenhouse gas	s is	3. Pertua altropia caspes
	a)	NO 2	b)	ČO <sub>2</sub>
	c)	0 3	d)	SO <sub>2</sub> .
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7.	The hazardous bio-medical wastes are disposed of by means of			
	a)	bio-remediation	b)	deep well injection
	c)	surface impoundments	d)	incineration.
8.	The	milk of which of the following	ng co	ws is characterised by high carotene
	con	tent?		the brossesand on
	a)	Sindhi	b)	Haryana
	c)	Gir	d)	Jersy.
9.	The	blood cell count is made by usin	ng	arroga harogeni (a
	a)	Glucometer	b)	Sphygmomanometer
	c)	Haemoglobinometer	d)	Haemocytometer.
10.	Mur	rels belong to the order		of Louis Pasteur
	a)	Channiformes	b)	Perciformes
	c)	Siluriformes	d)	Salmoniformes.
11.	The	German scientist who segregate	ed ger	rmplasm from somatoplasm for the first
		was		el Protein
	a)	Lamarck	b)	Malthus
	c)	Weismann	d)	Hugo de Vries.
12.	Defi	ciency of Vitamin D causes		0138. (6)
	a)	Nyctalopia	b)	Xerophthalmia
	c)	Osteomalacia	d)	Pellagra.
13.	Part	ial albinism causes		2000 10
	a)	leucoderma	b)	vitiligo
	c)	melanoma	d)	dermatitis.

- 14. The artificial kidney is
  - a) donor kidney
- b) dializer
- c) tissue matched kidney
- d) preserved kidney.
- 15. In the presence of testosterone, FSH in male promotes
  - a) protein synthesis
- b) secretion of androgens
- c) formation of sperms
- d) growth of Graafian follicles.
- 16. Tumour (Cancer) inducing viruses are called
  - a) Pathogenic viruses
- b) Oncogenic viruses

c) Para viruses

d) Variola viruses.

### SECTION - B

- Note: i) Answer any eight questions.
  - ii) Each question carries three marks.

 $8 \times 3 = 24$ 

- 17. What is PUFA? Give an example.
- 18. Identify two reasons for cataract.
- 19. Define Zoonoses.
- 20. What are haptens?
- 21. Define Xenograft.
- 22. What is proteomics?
- 23. What is gene therapy? Name the two types of gene therapy.
- 24. What is Karyogram?
- 25. What is known as global warming?
- 26. List out the different types of diseases of cattle.
- 27. Mention the important points to be considered during selection of eggs.
- 28. Define the Germplasm theory.

### SECTION - C

- Note: i) Answer any three questions including Question No. 31 which is compulsory.
  - ii) Each question carries five marks.

 $3 \times 5 = 15$ 

- 29. Explain the different types of bone fracture.
- 30. Enumerate the adaptations of pathogenic microbes.
- 31. What are the symptoms of graft rejection?
- 32. Give the symbolic representation of pedigree chart.
- 33. What are the objections to Darwinism?

### SECTION - D

Note: i) Answer any two questions.

ii) Each question carries ten marks.

 $2 \times 10 = 20$ 

- 34. Describe the mechanism of breathing with proper illustration.
- 35. Explain the physiological effects of insulin and glucagon.
- 36. Give an account on poverty.
- 37. Explain the stages involved in the rearing of poultry.