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Part III — BOTANY

(New Syllabus) (English Version)

Time Allowed: 3 Hours]

[Maximum Marks: 150

SECTION - A

Note: i) Answer all questions.

- ii) Choose and write the correct answer.
- iii) Each question carries one mark.

 $30 \times 1 = 30$

- 1. Photosynthesis takes place in
 - a) Mitochondria

b) Peroxisomes

c) Chloroplasts

- d) Ribosomes.
- 2. C Pathway is otherwise known as
 - a) EMP Pathway
 - b) Hatch and Slack Pathway
 - c) Photorespiration
 - d) Electron transport chain.
- 3. Which of the following is a total parasite?
 - a) Cuscuta

b) Viscum

c) Drosera

d) Monotropa.

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4.		nong's respiroscope demonstra	ates	the liberation of during
	a)	oxygen	b)	hydrogen
	c)	carbon dioxide	d)	nitrogen.
5.	TCA	cycle was described by		
	a)	Sir Hans Kreb	b)	Calvin
	c)	Kuhne	d)	Buchner.
6.	Isob	oilateral leaf is present in		
	a)	Cucurbita	b)	Sunflower
	c)	Grass	d)	Bean.
7.	Vas	cular Bundle in the leaf is		
	a)	collateral and open	b)	collateral and closed
	c)	bicollateral and open	d) •	radial and exarch.
8.	The	binomial of Sweet Pea is		
•	a)	Lab lab purpureus	b)	Arachis hypogea
	(c)	Lathyrus odoratus	d)	Pisum sativum.
9.	2n ·	+ 1		
	a)	Monosomy	b)	Nullisomy
	c)	Trisomy	d)	Tetrasomy.
10.	Ade	nine always pairs with		
	a)	Thymine	b)	Cytosine
٠	c)	Guanine	d)	Biliprotein.

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11.	Spec	cies plantarum was written by		
	a)	Carolus Linnaeus		
	√ b)	Bentham and Hooker		
	c)	Charles Darwin		
	d)	Adolf Engler.		
12.	Trin	nerous flowers are seen in		
	a)	Gymnosperms	b)	Non-flowering plants
	c)	Dicotyledons	d)	Monocotyledons.
13.	Aes	chynomene aspera is a		7.0.
	a)	Xerophyte	b)	Hydrophyte
	c)	Mesophyte	d)	Lithophyte.
14.	Rub	placeae is placed under the series	S .	
	a)	Inferae	b)	Heteromerae
	c)	Bicarpellate	d)	Unisexuals.
15.	The	fruit of the members of fabaceae	e is	
	a)	Berry	b)	Drupe
	c)	Legume	d)	Caryopsis.
16.	'Foo	lish Seedling' disease of rice is c	ause	d by
	a)	Auxin	b)	Gibberellin
	c)	Cytokinin	d)	Abscisic acid.
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17.	VV 111	ch one of the following terms wa	as coi	ned by 1.D. Lysenko?
	a)	Vernalization	b)	Photoperiodism
	c)	Phytochrome	d)	Maryland Mammoth.
18.	Whi	ch of the following is an aquatic	fern '	? ?
	a)	Azolla	b)	Nephrolepis
	c)	Anabaena	d)	Acacia.
19.		ich of the following alcohols i	is pre	epared by the fermentation of rice in
•	a)	Ethyl alcohol	b)	Sake
	c)	Methyl alcohol	d)	Alcohol.
20.	Whi	ich one of the following plants be	elongs	s to Poaceae ?
	a)	Groundnut	b)	Cotton
	c)	Teak	d)	Rice.
2 1.	Dou	ble Helix DNA model was propo	sed b	y
	a)	Watson and Crick	b)	Avery et al
-	c)	Griffith	d)	Stinberg.
22.			ses is	employed to introduce a foreign gene
	into	a cell?		
	a)	Electrolysis	b)	Electroporation
	c)	Sterilization	d)	Ligation.
23.		is the name given to	the c	chromosome that will serve to carry the
	gene	of interest to its new host.		
	a)	Source DNA	b)	Host DNA
	c)	Vector DNA	d)	DNA ligase.

24.	Somatic hybrids are produced through			
	a)	Asexual fusion	"b)	Protoplasmic fusion
	c)	Vegetative propagation	d)	Grafting.
2 5.	The	lock and key theory of enzyme	action	n was proposed by
	a)	Buchner	b)	Kuhne
	c)	Fischer	d)	Koshland.
26.	The	binomial of garlic is		
	a)	Allium cepa	b)	Allium sativum
	c)	Aloe vera	d)	Lilium candidum.
27.	Ado	nidia merillia is otherwise known	ı as	Oliver
	a)	Palmyra Palm	b)	Wine Palm
	c)	Royal Palm	d)	Manila Palm.
28.	The	other name of pith is		
	a)	fibre cell	b)	stone cell
	c)	supporting cell	d)	medulla.
29.	Poly	arch condition is found in		
	a)	Monocot stem	b)	Dicot stem
	c)	Monocot root	d)	Dicot root.
30.		ricot stem, hypodermis is made	-	
	a)	Collenchyma cells	b)	Parenchyma cells
	c)	Sclerenchyma cells	d)	Phloem.
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SECTION - B

Note: i) Answer any fifteen questions.

Each question carries three marks.

 $15 \times 3 = 45$

- 31. Define Herbarium.
- 32. Mention the binomial of any three medicinal plants of Malvaceae.
- 91/9. COL 33. What is syngenesious stamen? Give an example.
- 34. What is allicin?
- 35. Define aerenchyma. Give an example.
- 36. What are B chromosomes?
- 37. What are tightly linked genes?
- 38. What are the loops found in the clover leaf structure of t-RNA?
- 39. Write any three therapeutic drugs manufactured through recombinant DNA.
- 40. Why is SCP not popular for human consumption?
- 41. What is enzyme-substrate complex?
- 42. Why are chloroplasts in C 4 plants called dimorphic chloroplasts?
- 43. Write three differences between photo-respiration and dark-respiration.
- 44. Define Anaerobic Respiration.
- 45. What are called phytohormones? Give an example.
- 46. What is apical dominance?
- 47. Define Vernalization.

- 48. What is phytochrome?
- 49. What is colchicine? Mention its uses.
- 50. What are the two types of mycorrhiza? Give examples.

SECTION - C

- Note: i) Answer any seven questions.
 - ii) Answer to Question No. **54** is compulsory and this question should not be left as option.
 - iii) Each question carries five marks.
 - iv) Draw diagrams wherever necessary.

 $7 \times 5 = 35$

- 51. Give any five salient features of ICBN.
- 52. What are the differences between ray and disc florets?
- 53. Explain the characteristics of meristematic cells.
- 54. Distinguish the anatomy of dicot roots from that of monocot roots.
- 55. Draw and label the parts of a T.S. of Dicot leaf.
- 56. Write the types of chromosomes based on shape and position of the centromere.
- 57. Draw the structure of Watson and Crick model of DNA and label the parts.
- 58. Write the most important events of recombinant DNA technology.
- 59. Write a short note on protoplasmic fusion.
- 60. What is fermentation? Explain.
- 61. Explain the experiment to measure the actual longitudinal growth of plant by Lever auxanometer.
- 62. List out any five aims of plant breeding.

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SECTION - D

Note: i) Answer any four questions.

- ii) Each question carries ten marks.
- tii) Draw diagrams wherever necessary.

 $4 \times 10 = 40$

- 63. Write the outline of Bentham and Hooker's classification of plants and explain.
- 64. Describe Clitoria ternatea in botanical terms.
- 65. Tabulate the differences between dicot stem and monocot stem.
- 66. Give an account of chromosomal aberration on the basis of its structure.
- 67. Write an essay on plant tissue culture.
- 68. Draw Krebs cycle without explanation.
- 69. Give an account on the physiological effects of auxins and gibberellins.
- 70. Write about the economic importance of Rice and Groundnut.