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DIRECTORATE OF GOVERNMENT EXAMINATION HIGHER SECONDARY SECOND YEAR EXAMINATION - MARCH 2024 **BIO - BOTANY ANSWER KEY**

Note: 1. Answers written only in BLACK or BLUE should be evaluated

2. Choose the correct answer and written and write the option code with corresponding answer.

Maximum Marks:35

SECTION - A

Answer all the questions.

8×1=8

Q.	Option	A Type	Q.	Option	В Туре
No		edak terkenak in da ke kan gad fot ka gunt	No.		
1	(b)	Dobson	1	(d)	400 – 700 nm
2	(d)	Dominant epistasis	2	(d)	(1)-(iv), (2)-(iii), (3)-(i), (4)-(ii)
3	(a)	10	3	(c)	Brazil
4	(d)	(A) is correct, (R) is wrong	4	(d)	Dominant epistasis
5	(d)	400 – 700 nm	5	(b)	Dobson
6	(d)	(1)-(iv), (2)-(iii), (3)-(i), (4)-(ii)	6	(d)	(A) is correct, (R) is wrong
7	(c)	Brazil	7	(c)	Confer resistance to antibiotics
8	(c)	Confer resistance to antibiotics	8	(a)	10
-		SEC	CIONI	D	

SECTION - B

Answer any Four questions.

4x2=8

Q. No	Answer		Total
		OMA DES	Marks
9	Names of the scientists – Rediscovered Mendelism	Make III a	
	Hugo de Vries	ting the	2
	Carl Correns	1+1	
	Erich von Tschermak (Any Tw	(o)	



10	Phytoremodiation		
10	Phytoremediation		
	contaminated soil, and this make suitable for cultivation is known as		
	Phytoremediation.		2
0	(or)		
44	Use of plants to bring about remediation of environmental pollutants		
11	Enzymes – Required for Genetic engineering		
	Restriction enzymes	1+1	2
	DNA ligase		
	Alkaline phosphatase. (Any Two)		
12	Embryoids		
10	 The callus cells undergoes differentiation and produces somatic embryos, known as Embryoids. (or) Somatic embryogenesis is the formation of embryos from the callus tissue directly and these embryos are called Embryoids (Any One) 		2
13	The pyramid of energy is always upright The bottom of the pyramid of energy is occupied by the producers. There is a gradual decrease in energy transfer at successive tropic levels from producers to the upper levels.		2
14	Microbial inoculants – Soil fertility		
	 Efficient in fixing nitrogen solubilising phosphate Decomposing cellulose. They are designed to improve the soil fertility, plant growth Increase the number and biological activity of beneficial microorganisms in the soil. 		2
	(Any Two)		

SECTION - C

Answer any three questions. Question No. 19 is compulsory.

3x3 = 9

Q.	Answer	Marks	Total
No			Marks
15	Genetic Map		
	The diagrammatic representation of position of genes and related distances between the adjacent genes is called genetic mapping.	1	
	Uses:		
	It is used to determine gene order, identify the locus of a gene and calculate the distances between genes. It is useful in predicting results of dibubild and till the locus.	2	3
	 It is useful in predicting results of dihybrid and trihybrid crosses. It allows the geneticists to understand the overall genetic complexity of particular organism. (Any Two) 		

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16	Cryopreservation.		
	Cryopreservation (-196°C)	_	
	Cryopreservation also known as cryoconservation is a process by which		3
	process by which protoplast, cells, tissues, organells, organs, Pollen		3
	grains extracellular matrix, enzymes. Subjected to preservation by	2° 11 11	
	cooking to very low temperature of -196°C using liquid nitrogen.		
17	Habitat and Niche	7,	
	Habitat Niche	C 2	
	A specific physical space A functional space		-
	occupied by an organism. occupied by an organism	1	3
	in the same eco-system		
	Same habitat may be A single niche is occupied	1	
	shared by many by a single species		
	Organisms.	1	.
	Habitat specificity is Organisms may change		
	exhibited by organism. their niche with time and		
	season		
18	Forest help – maintain the climate		
	 Increasing Rainfall and O₂ level. 		
	 Reducing CO₂ from atmosphere and increasing air quality. 	. ginge	3
7	Reducing global warming and controlling climate changes.	1 - 20 - 17	
	Increasing ozone level.		
	Increasing soil fertility. (Any Three or Related Points)		
19	Structure of ovule		100
	Diagram – 2		3
	Parts - 1		
	. 22		

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SECTION - 4 www.Trb Tnpsc.com

Answer all the questions.

2x5 = 10

Q.	Answer	Marks	Total
No			Marks
20	Single cell protein		-
(a)	The dried cells of microorganisms that are used as protein supplement in	11	-
	human foods or animal feeds are called Single cell proteins.		4
·	Applications of Single-Cell Protein		5
	It is used as protein supplement.		
	It is used in cosmetics products for healthy hair and skin.	4×1	
	 It is used as the excellent source of proteins for feeding cattle, birds, fishes etc. 		
	 It is used in industries like paper processing, leather processing as foam stabilizers. 		
	 It is used in food industry as aroma carriers, vitamin carrier, 		
ĺ.	emulsifying agents to improve the nutritive value of baked products, in		-
	soups, in ready-to-serve-meals, in diet recipes.		
,	(Any Four)		190
20	Millets		14.7
(b)	Definition	2	5
	Types and Examples	3	
21	Inheritance of chloroplast	Euro e	
(a)	• Examples	e ; 1 e	
	Explanation	2	5
	Diagram	2	
21	Steps involved in microsporogenesis	1 1	-
(b)	• Steps	4	5
	• Diagram	1	