SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2024

FINALIZED SCHEME OF VALUATION -BOTANY

Subject - Biology - Part A Botany **Code No. SY 526**

Q.Part No	Qn.No	Sub Qn No	Scoring Indicators	Split Score	Total Score
I	1		Scutellum	1	1
	2		Spooling /Gel electrophoresis/Elution	1	1
	3		Probe	1	1
	4		Deep sea hydrothermal Ecosystem/Deep Sea	1	1
II	5	a)	A - Vegetative cell B- Generative cell	1/2 1/2	2
		b)	The vegetative cell is bigger, has abundant food reserve and a large irregularly shaped nucleus. **(Any Two points 1/2+1/2)**	1	
	6		Filiform apparatus Function- They play an important role in guiding the pollen tubes into the synergid or embryo sac/Guiding the pollen tube.	1 1	2
	7		i.Genetic Engineering/rDNA technology/It's definition ii.Bioprocess engineering/Chemical Engineering/It's definition.	1 1	2
	8		i. **Micro-injection**-Is a method in which, recombinant DNA is directly injected into the nucleus of an animal cell. **(For Explanation only also give 1 score)** ii. **Biolistics / Gene Gun**-Is another method, suitable for plant cells which, are bombarded with high velocity micro-particles of gold or tungsten coated with DNA . **(For Explanation only also give 1 score)**	1 1	2
	9		Rosie Alpha-Lactalbumin	1 1	2
	10		A B 1.Biopiracy - B. / Basmathi Rice 2.Gene Therapy - A. /ADA Deficiency 3.RNA Interferance - D. /Meloidegyne incognitia 4.Bacillus thuringiensis - C. /Cry gene	 1/2 1/2 1/2 1/2	2
	11	1)	a. exponential / geometric/J-shaped curve. b. Logistic/Verhulst-Pearl Logistic Growth/ S shaped curve/Sigmoid curve.	1/2 1/2	2
		2)	Carrying capacity	1	
	12		1.The loss of unnecessary sense organs, 2. Presence of adhesive organs or suckers to cling on to the host, 3. Loss of digestive system 4. High reproductive capacity. 5. The life cycles of parasites are often complex, involving one or two intermediate hosts or vectors to facilitate parasitisation of its primary host. 6.The human liver fluke (a trematode parasite) depends on two intermediate hosts (a snail and a fish) to complete its life cycle. 7.The malarial parasite needs a vector (mosquito) to spread to other hosts. **(Any two special adaptations 2 scores)**	1+1	2
	13	a)	Flow of energy is always unidiredtional and a part is lost as heat/Only 10% of energy is transfered to next trophic level/ 10% law. **(Any one reason 1 score)**	1	2
		b)	Pyramid of number and Pyramid of biomass	1/2+1/2	

	14		1st Trophic level - Phytoplankton 2nd Trophic level- Zooplankton 3rd Trophic level- Fish 4th Trophic level- Man **OR** Phytoplankton-Zooplankton-Fish-Man (2marks)	1/2 1/2 1/2 1/2	2
	15	a) b)	GPP- Gross Primary productivity NPP- Net Primary productivity GPP-R = NPP	1/2 1/2 1	2
III	16	1) 2)	a. Antipodals b. Polar nuclei / Secondary Nucleus/Central cell c. Synergids d. Egg / Female gamete Central cell/ Zygote/Secondary Nucleus **(If any 3 correct points in question 16.1) give 3 scores)**	1/2 1/2 1/2 1/2 1	3
	17		GM plants have been useful in many ways. Genetic modification has: (i) made crops more tolerant to abiotic stresses (cold, drought, salt, heat). (ii) reduced reliance on chemical pesticides (pest-resistant crops). (iii) helped to reduce post harvest losses. (iv) increased efficiency of mineral usage by plants (this prevents early exhaustion of fertility of soil). (v) enhanced nutritional value of food, e.g., golden rice, i.e., Vitamin 'A' enriched rice. (vi) In addition to these uses, GM has been used to create tailor-made plants to supply alternative resources to industries, in the form of starches,fuels and pharmaceuticals. **(Any 3 points 3 scores) (Any 3 points with meaning of any of the above points can be given full score 3)**	1+1+1	3
	18	1 2 3	(a) Denaturation (b) Annealing (c) Extension PCR /Polymerase Chain Reaction Taq DNA Polymerase enzyme /Taq polymerase	1/2 1/2 1/2 1/2 1	3
	19	a) b) c)	Commensalism Interaction between two organisms in which one is benefited and other is neither harmed or benefited / + and 0 interaction **(Any one point)** Mutualism Interaction in which both the interacting species are benefited / + and + interaction **(Any one point)** Parasitism Interaction where one species (parasite) depends on the other species (host) for food and shelter/ host is harmed , parasite is benefited / + and - interaction/Free lodging and meals **(Any one point)**	1/2 1/2 1/2 1/2 1/2 1/2	3
			TOTAL SCORE	38	38

			PARTICIPANTS OF SCHEME FINALIZATION- BOTANY 2024		
		1	GOPAKUMAR S (156068) 1054 - M.V HSS, THUNDATHIL, TRIVANDRUM, Pin-695581		
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		6	SETHUMADHAVAN T (411825) 9029 - GOVT AP HSS, ELAPPULLY, PALAKKAD, Pin-678622		
		7	MANOJ JOSE (233222) 11039 - MSM HSS,KALLINGALPARAMBA,MALAPPURAM, Pin-676551		
		8	ROSHNI BALAKRISHNAN (691417) 11213 - Chekkutty Haji Memorial HSS, Pookolothur,Malappuram., Pin-676123		
		9	MUHAMED RAFEEQUE KODIVALAPPIL (233926) 13048 - D I SABHA HSS,KANNUR,KANNUR, Pin-670003		
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