

ANSWER KEY

SAY - JUNE - 2023

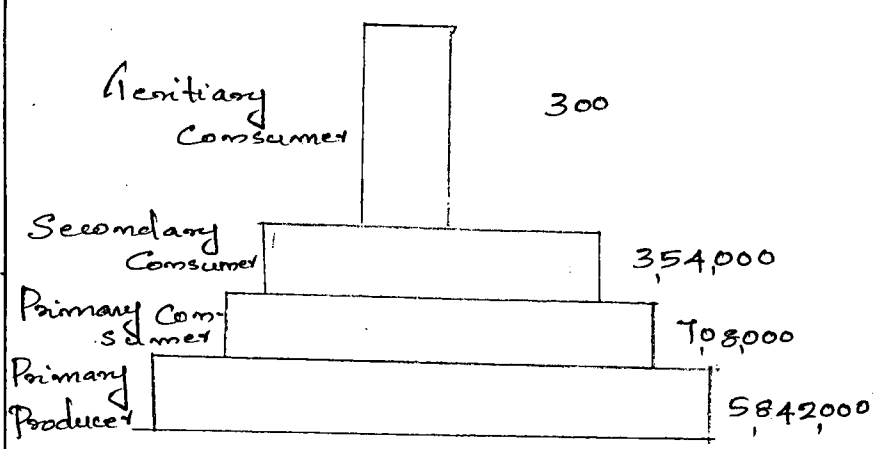
SECOND YEAR HIGHER SECONDARY EXAMINATION

PART: III

SUBJECT: BOTANYCODE NO: S-2226VERSION: 130 SCORES1 HOURS

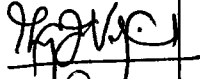
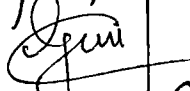

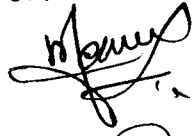

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
Answer any 3 questions (1-5)				
I 1.		Grass	1	1
2.		Natalily / birth rate	1	1
3.		Vegetative cell	1	1
4.		Gel Electrophoresis : Separation of DNA Fragments	1	1
5.		Transgenic animals GMO	1	1
Answer any nine questions (9-16)				
II 6.		Proinsulin - Contains 2 short poly peptide chains, chain A and chain B, also contains an extra stretch called C peptide.	1	2.
		Mature insulin - Contains only 2 short poly peptide chains, does not contain C peptide.	1	
7.		Fruits which develop without Fertilisation Sakom E.g. Banana (Any one Example)	1	2

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
8.	(a)	A- Antipodals. B- Synergids	1/2 1/2	2
	(b)	Guide pollen tubes into synergids	1	
9.		<ul style="list-style-type: none"> • Great DNA with specific concentrations of divalent cation. • Incubate the cells with recombinant DNA on ice, followed by placing them briefly at 42°C (heat shock) and then putting them back on ice. 	1 1	2.
10.		<p>Ectoparasites : Parasites that feed on the external surface of the host organisms.</p> <p>Endo parasites : Those that live inside the host body at different sites.</p>	1 1	2
11.		<p>leaching</p> <p>Catabolism</p> <p>Hemificalon</p> <p>Mineralisation</p>	1/2 1/2 1/2 1/2	2
12.	a)	Amplification of Gene of Interest	1	2
	b)	Tag polymerase	1	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
13.		<p>Bt Cotton - Cry gene</p> <p>Mebideggone nicognika - RNA interference</p> <p>Gene Therapy - ADA deficiency.</p> <p>ELISA - Antigen-antibody reaction.</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	2
14.		<p>Gross Primary Productivity: Rate of production of organic matter during photosynthesis in an ecosystem</p> <p>Net Primary Productivity: Gross primary productivity minus respiration losses</p> <p>or</p> <p>$NPP = GPP - R$</p>	<p>1</p> <p>1</p>	2
15.		 <p>The diagram is an energy pyramid with four levels. From bottom to top, the levels are: Primary Producer (5842000), Primary Consumer (108000), Secondary Consumer (354000), and Tertiary Consumer (300).</p>	2	2
16.	<p>a)</p> <p>b)</p>	<p>K = Carrying Capacity</p> <p>Exponential growth / Geometrical growth / Sigmoid curve</p>	<p>1</p> <p>1</p>	2

III

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
17.		<p style="text-align: center;">ANSWER ANY 3 (17-20)</p> <ul style="list-style-type: none"> • Pollen grains are light and non-sticky. • Well exposed stamens. • Large and often feathery stigma • Single ovule in each ovary. • Numerous flowers packed into an inflorescence. <p style="text-align: right;">(Any 3)</p>	<p style="text-align: center;">1 1 1</p>	<p style="text-align: center;">3</p>
18.	<p>a)</p> <p>b)</p>	<p>Sequence of base pairs that reads same on the two strands when orientation of reading is kept the same</p> $ \begin{array}{c} 5' - G \boxed{AATTC} - 3' \\ 3' - CTTAAG - 5' \end{array} $ <p style="text-align: center;">or</p> <p>ECOR I cuts the DNA between bases G and A of this nucleotide sequence.</p> <p>c) sticky ends facilitates the action of enzyme DNA ligase / sticky ends can form hydrogen bonds with their complementary counterparts.</p>	<p style="text-align: center;">1 1 1</p>	<p style="text-align: center;">3</p>
19.	<p>Parasitism</p> <p>Mutualism</p> <p>Commensalism</p>	<ul style="list-style-type: none"> • ticks on dogs • lice on man • Fungi and roots of higher plants • Lichens • Orchid and Mango tree • Cattle egret and grazing cattle 	<p style="text-align: center;">1/2 1/2 1/2 1/2 1/2 1/2</p>	<p style="text-align: center;">3</p>

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
20.		<p>GM Plants</p> <ul style="list-style-type: none"> • Crops more tolerant to abiotic stresses. • reduced reliance on chemical Pesticides. • reduce post harvest losses. • increased efficiency of mineral usage by plants. • enhanced nutritional value of Food. • to create tailor made plants <p>(any three points)</p> <ol style="list-style-type: none"> 1. MANOJ JOSE - 9249733524  2. Kumari Jini - 9447032776  3. Reje. J - 9495118104  4. Mohamed Rajeev Kochivalappil - 9446770963  5. Dr. Rajasree.R. 9446195178  	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>3</p>