

SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2016

FINALIZED SCHEME OF VALUATION

Subject - Biology - Part A Botany

Code No. 1017

Qn.No	SUB QTN	SUB QTN	Scoring Indicators	Split Score	Total Score
1			c) Parthenogenesis	1	1
2			d) Perisperm	1	1
3	a		Cycles of gaseous matter are called gaseous cycle. The reservoir of gaseous type of nutrient cycle exists in the atmosphere. These cycles occur at faster rate. (Any one relevant point or example or schematic representation about gaseous cycle give 1 score)	1	2
	b		Cycles of mineral matter are called sedimentary cycle. These cycles are slow. The reservoir for mineral matter is located in earth's crust. (Any one relevant point or example or schematic representation about sedimentary cycle give 1 score)	1	
4			b) Biomagnification	1	1
5			<ul style="list-style-type: none"> • Eli lily prepared two DNA sequences corresponding to A and B, chains of human insulin by using r DNA techniques. • Introduced them in plasmids of E.coli to produce insulin chains. • Chains A and B were produced separately. • These separately prepared chains were extracted and combined by creating disulfide bonds to form human insulin. (Any two points from above or summarised explanation about it or diagrammatic representation of preparation of human insulin by rDNA technology give 2 score)	1+1	2
6	a	1	<ul style="list-style-type: none"> • Screening germ plasm for resistance sources. • Hybridisation of selected parents. • Selection and evaluation of hybrids. • Testing and release of new varieties. Or any four steps of plant breeding give 2 scores.	1/2 1/2 1/2 1/2	3
		2	Pusa Sadabahar, Parbhani kranti, Chilly and Mung bean. (any two example for virus resistant plants give 1 score)	1	
			OR	OR	OR

	b	<p>Plants obtained by tissue culture are genetically identical are known as somaclones.</p> <ul style="list-style-type: none"> • Isolation of somatic cells from two different varieties of plants. • Digestion of cell walls by enzymes. • Fusion of protoplasts of two selected varieties forming somatic hybrid protoplast. • Somatic hybrid protoplast is then grown in suitable culture medium and produce desired somatic hybrid or the diagrammatic representation of somatic hybridisation give 2 scores 	<p>1</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	3
7		<p>Fruit is developed from (thalamus) parts of the flower other than ovary. Such fruits are called false fruits.</p> <p>Eg:-Apple, Strawberry, Cashew (any one relevant example give 1 score)</p>	<p>1</p> <p>1</p>	2
8		<ul style="list-style-type: none"> • Pollen release and stigma receptivity are not synchronised. • Anther and stigma are placed at different positions. • Self- incompatibility. • Unisexual flowers on monoecious • Dioecious plants (any two out breeding devices give 2 scores) 	<p>1</p> <p>1</p>	2
9		<ul style="list-style-type: none"> • Deciduous forest • Tropical rain forest • Forest • Desert • Sea coast (Any two these give 1 score) 	<p>1/2</p> <p>1/2</p>	1
10		<p>Pyramid of biomass in sea / lake is generally inverted because the biomass of fishes (top carnivores) far exceeds that of phytoplankton (primary producers) or diagrammatic representation of inverted pyramid of biomass with correct labelling give 2 scores</p>	2	2

11	a	<p>1.Mutualism/symbiosis The interaction between two organisms both are mutually benefited or Species A + Species B + or Explanation with example</p> <p>2.Commensalism:- The interaction between two organisms , one is benefited and other is neither benefited nor harmed or Species A + Species B 0 or Explanation with example.</p> <p>3.Parasitism :- The interaction between host and parasite ,in this parasite is benefited and host is harmed or + - or Explanation with example</p> <p>4.Predation-. - + Explanation with example</p> <p>5.Competition. - - Explanation with example</p> <p>6.Ammensalism - 0 Explanation with example (Name of any three of the above interactions with example give 3 scores)</p>	<p>1/2 1/2 1/2 1/2 1/2</p>	3
		OR	OR	OR
	b	<p>Temperature Water Light Soil (Any three above mentioned environmental factors with explanation in single sentence give full score 3)</p>	1/2 x 6=3	3
12		<p>Compressed natural gas.</p> <ul style="list-style-type: none"> • CNG burns most efficiently and very little unburnt gas is left. • It is cheaper than diesel and petrol. • It can not be adulterated like petrol or diesel. . It cannot be siphoned off . Eco friendly (any two of the above responses give 1 score) 	<p>1 1/2 1/2</p>	2
13		<p>The use of bio-resources by multinational companies and other organizations without proper authorisation from the countries and the people concerned without compensatory payment. (Any relevant explanation of biopiracy give 2 scores)</p>	2	2
14		<ul style="list-style-type: none"> • Cutting down use of fossil fuel. • Improving efficiency of energy usage. • Reducing deforestation. • Planting trees. • Slowing down the growth of human population. • Reduce the emission of greenhouse gases into the atmosphere etc (any two correct responses give 1 score) 	<p>1/2 1/2</p>	1

15		<p>A Motor</p> <p>B Foam braker</p> <p>C Flat bladed impeller</p> <p>D Acid / Base for pH control</p> <p>Or any two labelling or brief account on bioreactor give full score 2</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	2
16	a	Bacteria, E.coli, Agrobacterium tumifaciens, Retrovirus, Plasmid, Ti plasmid, p BR322, Bacteriophage, Yeast (any one organism or components used as vector give 1 score)	1	2
	b	DNA polymerase is the enzyme which catalyses the polymerisation of deoxyribonucleotides into new DNA strand or extension of primer in PCR or DNA polymerase a commonly used tool in rDNA technology. (Any one function give 1 score	1	
17		d) Pistillate	1	1
		TOTAL SCORE	30	30