SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2017

FINALIZED SCHEME FOR VALUATION

PART III :BIOLOGY- Part A. BOTANY Code No: 5017 Max.Score:30

Qn.No.		VALUE POINTS	Score	Total
1		Dormancy/Quiscent/ Seed viability	1	1
2		c) Bryophyllum	1	1
3		a)Pusa Swarnim iv) Brassica b)Pusa Snowball iii) Cauliflower c)Pusa Sawani ii) Bhindi d)Pusa Sadabahar i)Chilli OR Any two correct pairs give full score 2	½x4	2
4		Palindromic nucleotides/ Palindrome/ Palindromic sequence	1	1
5	a	Flowers do not open at all, the anthers and stigma lie close to each other, when the anther dehisce in the flower buds pollen grains come in contact with the stigma, there is no chance of cross-pollen landing on the stigma.(Any one of the above response)	1	1
	b	Geitonogamy is functionally cross pollination by pollinating agent/ pollination between different flowers of same plant. Genetically similar to autogamy - because pollen grains come from the same plant/ pollination between different flowers of same plant	½ ½	1

6		Pericarp/Any wall layer of pericarp	1	1
7		a) Antigen-antibody reaction (iv)ELISA b) α-lactaibumin (iii) Rosie c) α-1-antitrypsin (ii)Emphysema d) Gene therapy (i) ADA deficiency	½x4	2
8		Eli Lilly company prepared two DNA sequences corresponding to A and B chains of human insulin, introduced them in plasmids of E.coli to produce insulin chains A and B. Chains A and B were produced separately, extracted and combined by creating disulfide bonds to form human mature insulin. Any two points give full score 2. OR Diagrammatic sketch showing the preparation of recombinant insulin.	1+1	2
9		Carrying capacity/ (K)	1	1
10	a	Jhum cultivation	1	1
	b	Farmers cut down the trees of the forest and burn the plant remains. The ash is used as a fertilizer and the land is used for farming or cattle grazing. After cultivation the area is left for several years for reforestation. Any two points give full score 1	1	1

11	A OR B	• Pseudocopulation/Sexual deceit/ Mutualism/Symbiosis/Mutulastic co-evolution • Commensalism/mutualism • Commensalism • Parasitism • Parasitism • Predation (Name / type of interaction (beneficial, detrimental, neutral)/ symbol for its interaction/its explanation give full score 3) OR • Conform , regulate, partial regulate, migrate, suspend. Any three other adaptations among plants or animals give full score 3 / Diagrammatic representation showing conformers, regulators and partial regulators give full score.	½x6 OR 1x3	3 OR 3
12		Biofortification	1	1
13.A	a b	Gel electrophoresis Staining the DNA with ethidium bromide followed by exposure to UV radiation/ Bright orange coloured bands of DNA can be seen in a ethidium bromide stained gel exposed to UV light.	1 1	3

	c)	500bp DNA fragments separate according to their size/smaller fragments move farther. (give 1 Score without the answer of first part - c) (if correct response of any two questions give full score3)	½ ½	
	OR B	OR • Microinjection/ Recombinant DNA is directly injected into the nucleus of an animal cell. • Biolistics/ Gene gun Plant cells are bombarded with high velocity micro-particles of gold or tungsten coated with DNA . • Disarmed pathogen vectors/ which when allowed to infect the cell and transfer the recombinant DNA into the host. • Competent host/its explanation • Use vector like plasmid, bacteriophage, reterovirus etc (Any two methods of the above give full score 3)	OR 1 1 1	OR
14		b)Submerged plant stage/rooted submerged plants	½ x4	2

		d)Reed- swamp stage e)Marsh –meadow stage g)forest/trees or a)Phytoplanktons b)rooted –submerged plants c)rooted floating angiosperms d)free floating plants e)reed –swamp f)marsh-meadow g)scrub/shrub h)trees/forest Any four correct sequential stages of hydrosere except phytoplankton give full score 2		
15		Electrostatic precipitator has electrode wires that are maintained at several thousand volts which produce a corona that releases electrons. These electrons attach to dust particles giving them a net negative charge. The collecting plates are grounded and attract the charged dust particles. The velocity of air between the plates must be low enough to allow the dust to fall. Any two points give	1+1	2

		full score 2		
16		• The pollen releasė and stigma receptivity are not synchronised/ Either the pollen is released before the stigma become receptive (or) stigma become receptive much before the release of pollen. • The anther and stigma are placed at different positions so that the pollen cannot come in contact with the stigma of the same flower. • Self- incompatibility / This is the genetic mechanism prevents self pollen from the same flower or other flowers of the same plant from fertilizing the ovules by inhibiting pollen germination or pollen tube growth in the pistil. • Unisexuality / Production of unisexual flowers – male flowers with stamens /staminate flower and female flowers with pistil /pistillate flowers. • Monoecious / Both the male & female flowers are present on the same plant . • Dioecious / Male & Female flowers are present on different plants.(Any two of the above responses give full score)	1+1	2

17		Man 4th trophic level ↑ Fish 3rd trophic level ↑ Zooplankton 2nd trophic level ↑ Phytoplankton 1st trophic level Any two correct sequence with or without TL give 1 score	½ x4	2
		Total Score	30	30

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2. Beena kumari. R.N.
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SUBJECT : ZOOLOGY **CODE. NO: 5017 B**

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1	•	Homozygous recessive phenotype is B/1/7	1	2
	•	A : B : C : D = 3 : 1 : 9 : 3 or 21 : 7 : 63 : 21 or 9 : 3 : 3 : 1	1	
2		3 or 0·20	1	1
3		in situ – conservation in natural habitat eg – National park / wild life sanctuary / Biosphere reserves (any one eg) ex situ – conservation in man made/artificial habitats eg: Zoological park / botanical garden / wild life safari park (or any other eg)	½ ½ ½ ½	2
(a) 4		3 or Syphilus, Gonorrhoea. or any attempt	1	1
(a) 5		3 or Bird female or any attempt	1	1
6		Colostrum / Breast milk / Mothers milk	1	1

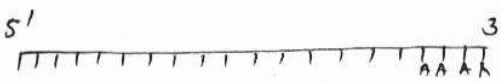
1/5

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
7		LH Male - Act on leydig cells / stimulate the secretion of androgen / stimulate spermatogenesis (any one point) Female - Rupture of graffian follicle / induce ovulation / maintains corpus luteum (any one point) FSH Male - Acts on sertoli cells, spermatogenesis, spermiogenesis (any one) Female - growth and development of ovarian follicles or ovulation (any one)	½ ½ ½ ½	2
8		Disease - Sickle cell Anaemia Reason - Replacement of glu with valine at 6th position or point mutation / Substitution / # GAG to GUG	1 1	2

2/5

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
⊛9	a	Frequency of M - 0.75	1½	
		Frequency of N - 0.25		3
	b	The frequencies follows Hardy - Weinberg equilebrium - so no evolution	1½	
		or		
	a	Adaptive radiation	1	
		Explanation	1½	3
	b.	Additional example	½	
		or		
		any attempt give full marks		
10		Prevents pollution / Improves soil structure and function (any two)	1	2
		Bacteria / Fungi or any other example	1	
11		Assisted Reproductive Technologies or any correct definition	1	2
		GIFT - Female AI - Male	1	

3/5

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
12		2 or NH_3, CH_3, H_2O, H_2.	1	1
13		b and c or 2	1	1
⊛14			1	2
		Reason – Poly adenylation is always at the 3' end	1	
		or		
		any other attempt give full score		
15	1	DNA finger printing	1	3
	2	Any four relevant steps	2	
		or		
		Operon concept	1	
		Lac operon – diagram or explanation	1	
		Switching off / stopping	1	
16		Morphine		
		Use – Pain killer / Sedative (for medical purpose)	1	

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
		abuse - (not for medical purpose) as narcotic drug / produce temporary euphoria (any one point)	1	2
17		Active Immunity Antibodies produced by self / long lasting / slow ~~Non specific~~ eg: Vaccination (any one) Passive Immunity Antibodies inoculated / Lasts for short period / ~~Specific~~ Takes time eg: Antitoxin / anti venom (any one)	1 1 1	2

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