

SECOND YEAR HIGHER SECONDARY MODEL EXAMINATION, FEBRUARY 2020

SCORING KEY

BOTANY

Babu G, HSST Jr Botany, GHSS Elavally, Thrissur

MAXIMUM SCORE 30

Qn No	Value Points	Split Score	Total Score	
I. Any 3 from 1 to 5				
1	a) Embryo sac	1	1	
2	d) Eutrophication	1	1	
3	Atlas 66	1	1	
4	Commensalism	1	1	
5	Rohu	1	1	
II. Any 9 from 6 to 16				
6	a Nourishes the developing Pollengrain	1	2	
	b Possess dense cytoplasm, Contains more than one nucleus	1		
7	A		B	
	a) Chlamydomonas	ii) Zoospore	½	2
	b) Conidia	iv) Pencillium	½	
	c) Sponge	i) Gemmule	½	
	d) Hydra	v) Buds	½	
8	a Method of producing thousands of plants through tissue culture	1	2	
	b The capacity of a plant cell/explant to generate a whole plant	1		
9	DNA is negatively charged. By applying electricity in the matrix DNA fragments move towards the anode/ positive electrode. Agarose gel is used as the matrix. DNA fragments separate according to their size	2	2	
10	a Recombinant DNA is directly injected into the nucleus in animal cells	1	2	
	b Plant cells are bombarded with high velocity microparticles of gold or tungsten coated with DNA	1		
11	a Polymerase Chain Reaction	½	2	
	b Denaturation, Primer Annealing, Primer Extension	1½		
12	A) Pro-insulin; B) Mature Insulin/Insulin	1+1	2	
13	a Animals that have had their DNA manipulated to possess and express foreign gene are called transgenic animals	1	2	
	b To study normal physiology and development/Study of diseases/Synthesis of Biological products/Vaccine safety testing/Chemical safety testing (any 2)	1		
14	Humification is the accumulation of dark colored amorphous substance called Humus that is highly resistant to microbial action and undergoes decomposition very slowly.	1	2	
	Mineralisation is the further degradation of Humus by certain microbes to release inorganic nutrients	1		
15	a Grass → Grasshopper → Bird	1	2	
	b Second trophic level/Primary consumer	1		
16	Burns most efficiently/Cheaper than petrol or diesel/Cannot be siphoned off by thieves/ Cannot be adulterated (any 2)	1+1	2	
III. Any 3 from 17 to 20				
17	Thick cuticle on the leaf surface. Stomata arranged in deep pits/sunken stomata. Special photosynthetic pathway called CAM. Stomata remain closed during day time. In some plants leaves are reduced to spines and modified stem performs photosynthesis. (any 3)	1+1+1	3	
18	a A) Immigration, B) Nataly, C) Mortality, D) Emigration	1	3	
	b A) Immigration is the number of individuals of the same species that have come into the habitat from elsewhere during a specific time period	1		
	D) Emigration is the number of individuals of the population who left the habitat and gone elsewhere during a specific time period.	1		
19	Reduce growth and yield of crops/Cause premature death of plants/Affect respiratory system of humans and animals/Breathing and respiratory problems, irritation, inflammations and damage to lungs and death (any 3)	1+1+1	3	
20	Pollen release and stigma receptivity are not synchronised/Pollen and stigma placed at different positions/Self incompatibility/Production of Unisexual flowers (any 3)	1+1+1	3	
