SECOND YEAR HIGHER SECONDARY EXAMINATION – MARCH - 2022

SY – 26

PART – III

BIOLOGY (BOTANY & ZOOLOGY)

SCORING KEY (UNOFFICIAL)

PART -A

BOTANY

Qn. No.	Scoring indicators	Marks

PART - I

A **Answer any 3 questions from 1 – 4. Each carry 1 score**

1. (c) / Tapetum — 1
2. Hind II — 1
3. Blubber — 1
4. (c) / Producers — 1

B **Answer all questions from 5 – 6. Each carry 1 score**

5. Life span — 1
6. Enzyme Linked Immuno-sorbent Assay — 1

PART - II

A **Answer any 2 questions from 7 – 9. Each carry 2 scores**

7. Increased protein content and quality.
Increased oil content and quality
Increased vitamin content
Increased micronutrient and mineral content — ½ x 4 =2

8. GEAC will make decisions regarding the validity of GM research.
It makes decisions regarding safety of introducing GM-organisms for public services — 1 + 1 =2

9.

Asexual Reproductive Structures	Examples
Zoospores (b) Conidia (c) Buds Gemmules	(a) *Chlamydomonas* *Penicillium* *Hydra* (d) *Sponges*

½ x 4 =2

Qn. No.	Scoring indicators	Marks

B **Answer any 2 questions from 10 – 13. Each carry 2 scores**

10. Genetic mechanism to prevent self-pollination. 1 + 1 =2
Pollen from the same flower or other flowers of the same plant does not germinate in the stigma.

11. Wheat - Sonalika and Kalyan Sona.
Rice - IR-8, Taichung Native-1, Jaya and Ratna (Any 2 answer) ½ x 4 =2

12.

Population Interactions		
(a) – / negative	(b) – / Negative	Competition
(c) + / Positive	–	Predation
–	0	(d) Amensalism

½ x 4 =2

13. Hydrarch
Climax community – Forest stage / Forest 1 + 1 = 2

PART – III

A **Answer any 3 questions from 14 – 17. Each carry 3 scores**

14. Eli Lilly Company prepared DNA sequences corresponding to A and B chain of insulin.
A and B Chain DNA were introduced in plasmid of *E. coli* to produce the A and B chains.
Chain A and B were produced separately.
Chain A and B were extracted and combined by creating disulphide bonds 3

15. They have a thick cuticle / leaf reduced or absent / fleshy flattened stem etc.
Their stomata arranged in deep pits / Sunken stomata to minimize water loss through transpiration.
They have a special photosynthetic pathway (CAM).
Stomata closed during day time/
(Any 3 relevant points) 1+1+1 =3

16. Enhanced carbon dioxide concentration in the atmosphere.
Loss of Biodiversity.
Disturbs hydrologic (water) Cycle.
Soil erosion.
Desertification
(Any 3 relevant points) 1+1+1 =3

Qn. No.	Scoring indicators	Marks
17.	Energy at a lower trophic level is always more than at a higher level / when energy flows from one trophic level to the next level some energy is lost as heat at each step. / It always follows law of 10%.	3
B	**Answer the following question. Carry 3 scores**	
18.	(a) Compressed Natural Gas (b) It burns efficiently / It is cheaper than petrol or diesel / It cannot be siphoned off by thieves / It cannot be adulterated like petrol or diesel. (Any two points)	1 + 2 = 3

PART – IV

Answer any 1 question from 19 – 20. Each carry 5 scores

19. (a) Transfer of pollen grains from the anther to the stigma of a pistil is termed as pollination.

(b)
1. Autogamy - Pollination achieved within the same flower / Transfer of pollen grain from the anther to the stigma of the same flower.
2. Geitonogamy - The transfer of pollen grains from the anther to the stigma of different flowers of the same plant / Geitonogamy is genetically similar to autogamy since the pollen grains come from the same plant.
3. Xenogamy - The transfer of pollen grains from the anther to the stigma of different plants of the same species / Xenogamy is functionally and genetically similar to cross pollination since the pollen grains come from the different plant/ genetic variation occur.

(Any one points) — 1+4 =5

20. (a) Exonucleases & Endonucleases
(b) EG:-

EcoRI - derived from *Escherichia coli* RY 13 and it is Ist to be isolated.
E - Escherichia
co - coli
R - RY 13 strain
I - First order of isolation

Or

Ist letter - First letter in the Genus name of the bacteria from which the enzyme is derived.
IInd & IIIrd letters - first two letters of the species name of the bacteria.
IVth letter - First letter of the strain of bacteria.
Roman number - Order of isolation.

2+3 =5