Botany – HSE - II

SCORING KEY

Q,No	Scoring Indicators	Splitted score	Total score
1	Thom	1	1
2	Ori(Origin of replication)	1	1
3	a) Parthenogenesis b) Apomixis	1 1	2
4	a) Emasculation-Bagging-Cross polination-Re bagging	2	2
5	Gel electrophoresis PCR- Ethidium bromide - Molecular diagnosisRestriction endonuclease pBR 322- EcoRI - Cloning vector	1/2 1/2 1/2 1/2 1/2	2
6	Endonulease Cut DNA at specific sites within the DNA Exonuclease Remove nucleotide from the end of DNA	1 1	2
7	RNAi/RNA interference RNAi takes place in all eukaryotic organisms as a method of cellular defences. This method involves silencing of a specific mRNA due to a complementary dsRNA molecules that bind to and prevents translation of the mRNA	1	2
8	Study of normal physiology and development Study of disease Biological products Vaccine safety Chemical safety testing (Any four)	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$	2
9	ADA deficiency Deletion of the gene for adenosine deaminase	1 1	2
10	Thick cuticle Sunken stomata/arranged in deep pits CAM pathway Leaves reduced to spines	$\frac{1/2}{1/2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
11	Competition Mutualism/Symbiosis Commensalism Ammensalism	$\frac{1/2}{1/2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
12	Lichens Bryophytes Bigger plants Climax community / Forest	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$	2

13	Ecological pyramids do not take into account the same species belonging to two or more trophic levels. It assumes a simple food chain, something that almost never exists in nature; It does not accommodate a food web. Saprophytes are not given any place in ecological pyramids	1/2 1/2 1/2 1/2	2
14	Grass- 1^{st} trophic levelGrasshopper- 2^{nd} trophic levelBirds- 3^{rd} trophic levelMan- 4^{th} trophic level	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$	2
15.	Increase the protein content and quality Oil content and quality Vitamin content Micro nutrient and mineral content	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$	2
16	 a. Taq polymerase b. Small chemically synthesised oligonucleotides that are complementary to the regions of DNA c. Denaturation Annealing Extension 	1/2 1 1/2 1/2 1/2 1/2	3
17	 a) i - A peptide ii - B peptide iii - C peptide b) Eli Lilly prepared two DNA sequences corresponding to A and B chains of human insulin and introduced them in to the plasmids of <i>E.coli</i> to produce insulin chains. Chain A and B were produced separately, extracted and combined by creating disulphide bond 	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$ $1^{1/2}$	3
18	 i- Natality/Birth rate ii- Mortality/Death rate iii- Immigration iv- Emigration Natality and immigration Increase the population Density	$\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$ $\frac{1/2}{1/2}$	3
	Mortality and EmigrationDecrease the Population Density	1/2	