Higher Secondary Second Terminal Examination, December 2018

Answer Key

BIOLOGY

SSE 26 **(Second Year)** **Prepared By : Anoop Chandran S**

Qn No.	Sub. Qn	Value Points	Split score	Total Score
		PART A BOTANY		
1		Mycorrhiza		**1**
2		(c) or offset		**1**
3		Dead organic matters / Decomposers.		**1**
4		RNA interference or RNAi		**1**
5		• Produced to DNA strands corresponds to Chain A and Chain B of insulin • Introduced them to the plasmid of *Ecoli* • Bacteria produced A and B chains separately. • Both chains are linked together by disulphide linkage To produce Human Insulin.	½ ½ ½ ½	**2**
6		Superior males of one breed is mated with superior females another breed so as to combine desirable charecters. Hisardale.	**1** **1**	**2**
7		Pyramid of numbers in grass land ecosystem. PC 21 PP 4	**1** **1**	**2**
8		Blubber. It act as an insulator and reduces loss of body heat.	**1** **1**	**2**
9		Polymerase Chain Reaction. (1 score) (It is also Known as People's Choice Reaction) Denaturation / Primer annealing / Primer Extension.	**1** **1**	**2**
10		Filiform Apparatus. Guide pollen tube toward egg cell.	**2**	**2**

SSE 26

11		Restriction Endo nucleases. ECOR1, HIND II, etc..	**1** **1**	**2**
12		Rosie Human alpha lactalbumin	**1** **1**	**2**
13		Phytoplankton → Submerged plant stage → submerged Free floating → Reed swamp stage → Marsh meadow Stage →Scrub stage → Forest	**2**	**2**
14		**A** **B** a) Desert Lizard iii) Bask in sun b)Kangaroo rat i) Concentrated Urine c)Snail iv) Aestivation d)Zooplankton ii) Diapause	½ ½ ½ ½	**2**
15		*Bacillus thuringiensis* - Cry IAc, CryIAb, CryII Ab	**2**	**2**
16		(a)One species is benefited and the other is harmed. (b)Commensalism (c)One organism is benefited and the other may or may not Be harmed. (d) Parasitism	½ ½ ½ ½	**2**
17	**(a)** **(b)**	Selectable markers are genes which help us to identify the Recombinants and non recombinants and there by selecting The recombinants. amp^R , tet^R i) They posses an Origin of Replication (Ori) ii) They has a cloning site.	**1** **2**	**3**
18		Natality and Immigration Natality : It simply refer to the birth rate in a population Immigration : It refers to the number of individuals of a Spieces that comes to a habit at a time period.	**1** **2**	**3**

SSE 26

19	**(a)** **(b)**	Gel Electrophoresis • Fragmented DNA is loaded at the wells • Electricity is applied and DNA moves towards anode Since It is negatively charged. • Depending on the size of fragments the separation is Possible due to sieving property of agarose gel. • Smaller fragments will move at a faster rate.	**1** **2**	**3**
		PART – B – ZOOLOGY		
1		(b) or Co – dominance		**1**
2		Pyrimidines : Cytosine, Uracil , Thymine		**1**
3	**(a)** **(b)**	ZIFT – Zygote Intra Fallopian Transfer ICSI – Intra Cytoplasmic Sperm Injection		**1**
4	**(a)** **(b)**	Sustained fever, Head ache, stomach pain, weakness, Constipation etc. *Salmonella typhi* - Widal Test.		**2**
5	**(a)** **(b)**	Hardy – Weinberg Principle. Gene flow / Genetic drift / mutation / recombination / Natural selection		**2**
6		(a) – (iii) (b) – (i) (c) – (iv) (d) – (ii)	**½** **½** **½** **½**	**2**
7	**(a)** **(b)**	George Gamow Universal / unambiguous or specific / degenerate / There are no punctuations.		**2**
8	**(a)** **(b)**	Francis Crick It states that genetic information flows from DNA → RNA → protiens	**1** **1**	**2**

SSE 26

<table>
<tr><td>9</td><td></td><td>Benign Tumors – Normally remain confined to a region
Donot spread and cause little damage.
Malignant Tumors – Grow very rapidly, invading,
Damaging the surrounding tissues.</td><td></td><td>2</td></tr>
<tr><td>10</td><td></td><td><table><tr><td></td><td>TY</td><td>Ty</td><td>tY</td><td>ty</td></tr><tr><td>Ty</td><td>TTYy</td><td>TTyy</td><td>TtYy</td><td>Ttyy</td></tr><tr><td>ty</td><td>TtYy</td><td>Ttyy</td><td>ttYy</td><td>ttyy</td></tr></table>Tall and green : 3
Dwarf and Green ; 1 Ratio = 3:1</td><td></td><td>2</td></tr>
<tr><td>11</td><td>(a)
(b)</td><td>Down syndrome
45A + XX or XY</td><td>1
1</td><td>2</td></tr>
<tr><td>12</td><td></td><td>(c) → (e) → (f) → (a) → (d) → (b)</td><td></td><td>2</td></tr>
<tr><td>13</td><td></td><td>Homologous organs
Organs similar in structure and origin but differ in functions
Eg: Forelimbs of humans and cheetah. Thorn and tendrils
Of Bougainvilla and cucurbita.
Analogous Organs
Organs which are dissimilar anatomically but perform same
Functions.
Eg: Wings of Butterfly and birds/ Eye of octopus and
Mammals etc.</td><td>1

1</td><td>2</td></tr>
<tr><td>14</td><td></td><td>Physical Barriers / Physiological Barriers / Cellular Barriers / Cytokine Barriers</td><td>½ x4</td><td>2</td></tr>
<tr><td>15</td><td>(a)

(b)</td><td>i) Capping – An unusual nucleotide Methyl guanosine tri phosphate is added to 5’ end of hnRNA
ii)Exons – Exons are coding sequence of hnRNA
iii)Introns – Non coding sequences of hnRNA
iv)Splicing – Process of removing introns and joining exons
hnRNA is the precursor of mRNA and contain both coding and non coding sequences (Exons and Introns)</td><td>2

1</td><td>3</td></tr>
</table>

SSE 26

16	**(a)** **(b)** **(c)**	chorionic villi and uterine tissue integrated with each other forming a functional and structural unit between maternal body and developing foetus called placenta hCG, hPL , estrogen , Progesterone Provide oxygen and nutrients to the foetus and removal of Waste from the embryo.	**1** **1** **1**	**3**
17		(a)Barrier Methods. (b)Intra Uterine Devices(IUDs) (c)Vasectomy (d) Lactational amenorrhea / Periodic abstinence (e) Cervical caps / vaults / Diaphram (f)Hormone releasing IUDs / copper releasing IUDs.	**½ X 6**	**3**
18	**(a)** **(b)** **(c)**	Female posses two types of gametes in terms of sex Chromosomes. ZZ – ZW type XX – XY type – Humans , Drosophilla.. XX – XO type – Grasshopper.	**1** **1** **1**	**3**
		**********		

Prepared By:
Anoop Chandran S
anoopchandrac17@gmail.com