INDIAN SCHOOL MUSCAT

SECOND PRELIMINARY EXAMINATION

SET C

FEBRUARY 2019

CLASS XII

Marking Scheme – BIOLOGY [THEORY]

Q.NO.	Answers	Marks (with split up)
1.	**UNCOMMON QUESTIONS**	1
2.		1
3.	Ig A and Ig E	1
4.		1
5.	Genetic diversity	1
6.	.In 60% of the flowering plants including peas pollen grains are shed at 2 celled stage. The 2 cells are generative and vegetative cell. In 40% of the flowering plants including wheat this occur at 3 celled stage where generative cell divides mitotically to form 2 male gametes. germ pores are present on the exine.	2
7.	1)The first form of life originated from pre existing non-living organic molecule like RNA protein etc. 2) Origin of life was succeeded by chemical evolution. i.e. formation of divers organic molecules from inorganic molecules.	2
8.	a) Catalyses the transcription of precursor of mRNA called heterogenous nuclear RNA b) The genetic code is degenerate as one aminoacid is coded by more than one codon. c) The genetic code is unambiguous as one codon codes for only one particular aminoacid.	2
9.	colostrums provides passive immunity to the new born baby. Passive immunity should be provided,i.e passive immunization should be done for a person who require urgent immune response so as to prevent fatality. Eg: Tetanus infection. OR Meristem culture. Meristem is virus free.	2
10.	Glomus, Staphylococcus, Methanobacterium, Penicillium notatum	2
11.	a) ADA deficiency is caused by the deletion of the gene coding for the enzyme, adenosine deaminase. The immune system of the body gets affected, as this enzyme is crucial for the functions of the immune system. b) A retroviral vector is used for transferring the ADA gene. Lymphocytes are the recipient cells.	2
12.	JFM is a program initialed by Govt. of India in 1980 under which Govt. works closely with local communities for protecting and managing forests. Forests are conserved by locals in a	2

	sustainable manner as locals are also benefitted with forest products like fruits, gum, rubber, medicine etc. **OR** Evil quartet	
13.		3
14.	They reduce the cost of developing seeds by artificial hybridization method. The desired traits are maintained with no segregation year after year.	3
15.		3
16.	Two species of sugarcane Saccharum barberi and Saccharum officinarum were crossed to get a variety which had thick stem, high sugar content, high yield and ability to grow in North India.	3
17.		3
18.		3
19.	Salmonella typhi causes typhoid. Diagnostic symptoms are constipation, stomach pain, headache, weakness, loss of appetite, high fever. The disease is transmitted through contaminated food and water.	3
20.		
21.		3
22.		3
23.	a) Population density can be counted by physical counting, percent cover or total biomass, from relative density such as bacteria in water, counting pug marks or counting faecal pellets of an animal in forest. b) It will let us know the status of habitat, whether competition for survival exists or not, whether population is increasing or declining.	3
24.		3
25.	Narrowly utilitarian, Broadly utilitarian and ethical reasons with explanation. Hot spots maintain number and distribution of various species. keeps a check on introduction of exotic species by humans maintain genetic diversity carries out resilience in species for environmental adaptation. (any two) **OR** If a succession takes place in an area where no organism existed ever, it is called primary succession and if it was inhabited by some living organisms but was destroyed due to any natural calamity it is called secondary succession. Bare rock-Lichens- bryophytes-herbs-shrubs-bigger plants-forest.	5
26	A cell within ovule differentiates and becomes a megaspore mother cell.. It divides by meiosis and tetrad is formed. Three cells degenerate and one remains functional. The nucleus of the functional cell divides by mitosis without cell wall formation up to eight nuclei and get rearranged. Diagram **OR** Fertilisation and implantation explanation	
27	Griffith's experiment	5

	They worked to determine the transforming principle. Purified proteins, DNA and RNA from heat killed S cells to see which out of three could transform R cells into S cells they established that DNA transformed the non virulent strain to virulent. **OR** Correct cross with ratio	