United International University

School of Science and Engineering

Mid-term Examination; Year 2021; Trimester: Summer
Course: BIO 3105; Title: Physics; Sec: A-C
Full Marks: 20; Time: 1 hr + 15 mins uploading time

*There are Four Questions, **1 and 2 are mandatory** to answer, and answer **3 or 4** (anyone). Please upload your answer as a pdf file with a name "Sp2021_ID_Sec".*

1.	(a) For a reversible denaturation sketch a pictorial view of protein after removing the agent.	1	CO1
	(b) Sketch a diagram showing molecules dissolve inside water.	1	CO1
	(c) Sketch Lewis diagram for C_3H_8 and NH_4OH.	1	CO1
	(d) Name the possible combinations of genetic code where only one pyrimidine is fixed in the first position of triplets.	1	CO1
2.	(a) Do you think some genetic disorder can be carried through all the gametes from Meiosis? Give details in a sample diagram.	3	CO3
	(b) Do you think biorobot can be used in farming? Design such a robot for a particular part of farming when you have a large land, and you are the only one operating it.	3	CO3
	(c) How do you think the two structures below should differ in characteristics? Give their similarities.	2	CO3

	(d) Suppose you have Persian cat with a variation of dark brown eye, which is a dominant trait, and another one of light brown eyes. In the second generation what would be the percentage of dark brown eyes?	3	CO3
3.	(a) Explain the constituents of nitrogenous bases used in both DNA and RNA and show their differences in that pictorial view.	3	CO2
	(b) Explain the differences, as well as similarities between phenotype and genotype with proper examples.	2	CO2
4.	(a) Give details on how your body structure resembles with your grandfather. Please use the understanding from DNA and/or RNA structure.	3	CO2
	(b) Mention the relations between aneuploidy and down syndrome.	2	CO2

CO1: Define/Justify/Sketch different biological quantities with examples.
CO2: Explain/Show/Discuss the various biological systems.
CO3: Apply the knowledge of biological systems in a real life problem.