Birla Institute of Technology & Science – Pilani, Hyderabad Campus

First Semester 2022-2023 Comprehensive Examination (Closed book)

Integrated Biology BIO F214

Date: 30.12.2022 Duration: 180 minutes Weightage: 40 %=40X2=80 M

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Answer ALL the questions in the given sequence ONLY.

Q1. Illustrate the following

a. Did we evolve from Neanderthals. Justify (4M)

b. Bipedalism vs quadrupedalism. Discuss the advantages and disadvantages. (4M)

c. Describe Molting. (4M)

d. How bony fishes were successful under water despite having heavy skeleton structure (4M)

e. Explain the adaptations and evolutionary features of amphibians that enabled their survival on land. (4M)

f. Write a short note on Flatworms. (4M)

g. What is an open circulatory system? Explain with example. (4M)

Q2. a Elaborate how natural selection altered beak shape in finches. (5M)

b. Choanoflagellates are most likely the common ancestor of all animals. Justify. (4M)

c.Describe secondary endosymbiosis (include figure)? (5M)

d. Describe typical flower morphology in angiosperms with a figure. (5M)

Q3. Differentiate (with examples)

a. Arbuscular mychorrhiza vs ectomycorrhiza (6M)

b. Radial vs Bilateral symmetry (4M)

c. Lamarckism vs Darwinism (5M)

d. Protostome vs Deuterostome (5M)

Q4. a. Write a short note on Mushrooms. (4M)

b. Describe the natural selection that operated on the basis of climatic condition in *Fundulus heteroclitus* (mummichog fish) (4M)

c. Write a short note on Lichens. (5M)