The Open University of Sri Lanka
Faculty of Natural Sciences
MS.C/ B. Ed Degree Programme

Department	: Zoology
Level	: 10
Name of the Examination	: Final Examination
Course Code and Title	**: ZYPA 602/NEP 2214**
	Biodiversity Conservation and Management
Academic Year	: 2018/2019
Date	: 16.02.2020
Time	: 9.30 a.m.- 12.30 noon.
Duration	: 3 hours

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **06 (six) in** questions 2 pages .
3. Answer any **04 (four)** questions only. All questions carry equal marks.
4. Answer for each question should commence from a new page.
5. Draw fully labelled diagrams where necessary
6. Having any unauthorized documents/ mobile phones in your possession is a punishable offense
7. Use blue or black ink to answer the questions.
8. Circle the number of the questions you answered in the front cover of your answer script.
9. Clearly state your index number in your answer script

1. You have accessed the story below on your smart phone. Answer the questions about this story.

Could Future Homes on the Moon and Mars Be Made of Fungi?

". . . Instead of habitats made of metal and glass, NASA is exploring technologies that could grow structures out of fungi to become our future homes". The myco-architecture Project by NASA is prototyping technologies that could "grow" habitats on the Moon, Mars and beyond out of life – specifically, fungi and the unseen underground threads that make up the main part of the fungus, known as mycelia. " Ultimately, the project envisions a future where human explorers can bring a compact habitat built out of a lightweight material with dormant fungi that will last on long journeys to places like Mars. The part of a fungus you probably haven't seen is mycelia. With the right conditions, they can be coaxed into making new structures – ranging from a material similar to leather to the building blocks for a Mars habitat. Fungal mycelia are life forms that to eat and breathe. That's where cyanobacteria comes in – a kind of bacterium that can use energy from the Sun to convert water and carbon dioxide into oxygen and fungus food.
Source NASA

1.1.What type of biodiversity value (i-v) for fungi is exemplified most by the above paragraph ?

(i) Indirect value (ii) Direct value (whether extractive or non=extractive) (iii) Bequest value (iv) Ethical value (v) Optional Use value

Explain your selection giving definitions of the different values (i) to (v)

(ii) To what Kingdoms do the two kinds of organisms mentioned above belong to? What is the major difference between them?

1.2. How would the use of myco-architecture benefit forest biodiversity? Explain the most important benefit very briefly.

1.3 Using your knowledge of the different kinds of fungi in the world, what kind of fungal organism would be most suited for the Martian Environment where one has to produce one's food? Explain.

2. Plants and animals are traded for a range of uses – live animals for the pet trade, reptile skins for leather products, marine species for food and knick-knacks, and plants for horticulture. Tigers are particularly at risk from such trade.

2.1 What kind of trade threatens tigers the most? (answer in one sentence)

2.2 Explain the benefits of *in-situ* and *ex-situ* conservation and briefly justify the method of conservation action you would recommend to conserve tigers in the Indian sub-continent.

2.3 Drawing from your knowledge of management approaches for biodiversity conservation, what main species and ecosystem based management approach/es would you recommend to be used inside Protected Areas established especially for the tiger? Answer very briefly.

3. Sri Lanka is preparing a National Policy on Access to Biological Resources and Benefit sharing.

3.1 Which Article deals specifically with this matter in the Convention on Biological Diversity (CBD)?

3.2. Write a brief essay on this CBD Article, including the kinds of biological material that are excluded by the CBD, how benefits should be shared, and the two most important terms to be met for "Access" under this Article.

3.4 What are the other key conventions that have a direct bearing on conserving species diversity in the world?

4. Imagine that you are working as an advisor to the Minister handling the subject of wildlife and forests in Micronesia.

4.1 How would you explain to him or her the meaning of "ecotourism" and how it can be used to help conserve biological diversity? Explain how ecotourism differs from other forms of nature tourism that can have negative impacts, and outline the requirements for ecotourism in the real sense.

5. Discuss with examples from Sri Lanka the causes and major mechanisms of Biodiversity losses.

6. Discuss with examples the options and strategies available in relation to the conservation of Biodiversity in Sri Lanka.