

**Benha University
Department of Zoology**

**Faculty of Science.
Biodiversity 220H**



**First Term 2014-15
Second year final
Exam.
Time: 2 hours**

Part A

Answer the following question:-

1- Define the following: (8 marks)

- a- Habitat destruction**
- b- Biodiversity Hotspot**
- c- Fragmentation**
- d- Mass Extinction**

2- What are Endangered Species? Give examples. (8 marks)

3- What are the components of biodiversity? (8 marks)

Part B

Answer the following question:-

Q1- Climate changes impacts on biodiversity in the Arctic; (Discuss). (8 marks)

Q2-Write short notes on the negative effects of global warming phenomenon on: (9 marks)

- 1- Human health**
- 2- Plants**
- 3- Coral reefs**

Q3- How to overcome global warming? (7 marks)

Benha University
Department of Zoology

Faculty of Science.
Biodiversity 220H



Model answer
First Term 2014-15
Second year final
Exam.
Time: 2 hours

Part B

Answer the following question:-

Answer Q1- Climate changes impacts on biodiversity in the Arctic:

- 1- *Melting of ice:* Ice decreases leads to less reflection of light, the result increases water temperature and melting of ice.
- 2- *Water acidification:* increase of CO_2 in air leads to increase of CO_2 in oceans, acidity of water increases and rate of CO_3^{2-} ions decrease, so animal and plants in ocean can't make shells or skeletons of calcium carbonate.
- 3- *Increasing water stratification:* warmer water tends to stay on top PH layer of cold water. As thickness of warmer water layer increases, colder water thickness, which contains food of phytoplankton, decreases, while phytoplankton can't live under depth of from 100 to 200 meters, so result is death of phytoplankton.
- 4- *Increasing ocean dead zones:* areas which lose presence of oxygen resulting from increasing warmer places of water, so aquatic animals died.

Answer Q2- short notes on the negative effects of global warming phenomenon on: (9 marks)

1- Human health:

- a- *Air pollution:* rising heat, burning coal and oil emits carbon and particle pollution, plants produce more allergenic pollen, affecting respiratory health threats like asthma.
- b- *Extreme heat:* heat waves send thousands to emergency room.
- c- *Infectious diseases:* hotter summer can make diseases, carrying insects more active for longer seasons.
- d- *Drought:* hotter days and nights and changing rainfalls, reduce water supply quantity and decrease food security.
- e- *Flooding:* climate changes may cause of increasing the rate of rainfalls and this may hart human and plants.

2- Plants:

Most plants have evolved to exist and thrive within a very narrow rang of climate conditions. When average global temperature increase, the general

trend is for plant species to migrate northward along with the northward shift in conditions are favorable to them. The practical results of this shift may include the eventual appearance of semitropical ecosystems in the united states

3- Coral reefs:

Around the world, coral reefs have been dying due to climate change. Coral bleaching results in white, dead-looking, coral. All of them are at risk. There is no hope of reefs surviving to even mid-century in any form that now recognize. If, and when, they go, they will take with them about one-third of the world's marine biodiversity. Then there is a domino effect, as reefs fail so will other ecosystems. This is the path of mass extinction event, when most life, especially tropical marine life, goes extinct.

Q3- How to overcome global warming:

- 1- Boosting energy efficiency**
- 2- Greening transportation**
- 3- Revving up renewables**
- 4- Phasing out fossil fuel electricity**
- 5- Managing forests and agriculture**
- 6- Exploring nuclear**
- 7- Developing and deploying new low-carbon and zero-carbon technologies**
- 8- Ensuring sustainable development**
- 9- Use Less Heat and Air Conditioning**
- 10- Use Less Hot Water**
- 11- Plant a Billion Trees**