

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF PUBLIC HEALTH

PUHE 447: ECOLOGY AND HEALTH

STREAMS: PUHE (Y4S1)

TIME: 2 HOURS

DAY/DATE: FRIDAY 13/12/2024

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS:

1. Do not write anything on the question paper.
2. Mobile phones and any other reference materials are NOT allowed in the examination room.
3. The paper has three sections. Answer ALL questions in Sections I, II and III.
4. All your answers for Section I (MCQs) should be on one page.
5. Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.
6. Write your answers legibly and use your time wisely

SECTION 1: MULTIPLE CHOICE QUESTIONS [10 MARKS]

1. Gases that trap heat in the atmosphere and cause global warming are called greenhouse gases. Which of the following combinations are not included under the greenhouse gases?
 - [a]. Carbon dioxide and methane
 - [b]. Nitrous oxide, Hydrofluorocarbons
 - [c]. Carbon monoxide, Sulphur dioxide
 - [d]. Carbon dioxide, water vapour
2. Which of the following represents detritus food chain?
 - [a]. Oak tree → Insects → Warbler
 - [b]. Dead leaves → Woodlouse → Black bird
 - [c]. Phytoplanktons → Zooplankton → Small fish → Large fish

- [d]. None of the above
3. The process by which individuals are included into a population is known as:
- [a]. Immigration
 - [b]. Emigration
 - [c]. Migration
 - [d]. None of the above
4. Vertical distribution of different species occupying different level is called:
- [a]. Fragmentation
 - [b]. Stratification
 - [c]. Humification
 - [d]. None of the above
5. The places on earth occupied by large number of endemic species which face the threat of habitat loss are called:
- [a]. Ecological hot spots
 - [b]. Mega diversity zones
 - [c]. Safari parks
 - [d]. Ecosystems
6. Which of the following statements is true about Ozone?
- [a]. Conversion of Ozone to oxygen is an endothermic reaction
 - [b]. Ozone is a triatomic linear molecule
 - [c]. Ozone has double bonds
 - [d]. Low level ozone (tropospheric ozone) is an atmospheric pollutant
7. Which cycle shows movement of water
- [a]. Carbon cycle
 - [b]. Nitrogen cycle
 - [c]. Hydrological cycle
 - [d]. Biogeochemical cycle
8. Filariasis disease is caused by
- [a]. Worms
 - [b]. Virus
 - [c]. Protozoa

[d]. Bacteria

9. The limitations of ecological pyramids are:

[a]. It does not take into account the same species belonging to two or more trophic levels

[b]. Saprophytes are not given any place in ecological pyramids

[c]. It assumes a simple food chain and does not accommodate food webs

[d]. All the above

10. The interaction between Acacia tree and Ants is an example of:

[a]. Amensalism

[b]. Mutualism

[c]. Commensalism

[d]. Parasitism

SECTION II: SHORT ANSWER QUESTIONS [40 MARKS]

1. Define the following terms as used in environmental relationships [2 marks]
 - a) Symbiotic relationship
 - b) Commensalism
2. Explain the two (2) components of ecology [4 marks]
3. State five (5) levels of organization in the environment from the largest to the smallest. [5 marks]
4. Highlight five (5) factors of Darwinism in natural selection [5 marks]
5. Explain six (6) human activities that affect health and environment. [6 marks]
6. Describe eight (8) effects of water pollution on human health and the environment [8 marks]
7. Explain five (5) differences between the reproductive strategies 'r' and 'k' as discussed in life history patterns [10 marks]

SECTION III: LONG ANSWER QUESTIONS [20 MARKS]

1. Climate change can affect health directly or indirectly.
 - i. Discuss the health impacts caused by human-induced (anthropogenic) climate change. [15 marks]
 - ii. Explain five (5) mitigation measures of climate change effects on health [5 marks]
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