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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS, 2022/2023 ACADEMIC YEAR
END OF SEMESTER EXAMINATIONS
FOR THE DEGREE OF BACHELOR OF EDUCATION(ARTS)
KEC 2400:ENVIRONMENTAL EDUCATION

Date:13th April 2022

Time:2.30pm-4.30pm

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE COMPULSORY (30 MARKS)

- a) What is the meaning of the following concepts (5marks)
- i. Environmental education
 - ii. Environmental management
 - iii. Environmental Degradation
 - iv. Techno centrism
 - v. Green House Effect
- b) Explain **five** goals of environmental Education (5marks)
- c) Identify **five** components of environmental education identified by UNESCO 1977 (5marks)
- d) In your own words explain **five** ways you would take part in conservation of water at home (5marks)
- e) Assess five forms of positive technology which can be used to positively manage the environment (5marks)
- f) Illustrate five human activities which cause land pollution (5 marks)

QUESTION TWO (20 MARKS)

- a) Explore **five** environmental components (10marks)
- b) Assume you have been invited to give a sensitization speech to a group of students on importance of environment to human existence. Discuss the key points you would emphasize in your speech. (10marks)

QUESTION THREE (20 MARKS)

- a) Analyze the major goals of environmental education (10marks)
- b) Examine any **five** types of environmental degradation (10marks)

QUESTION FOUR (20 MARKS)

- a) Discuss any **six** basic principles which guide environmental management and education as identified by Galang, et al. (2003) (12marks)
- b) Examine **four** factors which cause global warming (8marks)

QUESTION FIVE (20 MARKS)

- a) Discuss **five** advantages of adopting cultural values approaches in environmental conservation (10marks)
- b) Examine any **five** core functions of National Environment Management Authority. (NEMA) (10marks)

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(EDUCATION)**

KEC 2400; ENVIRONMENTAL EDUCATION

MARKING SCHEME

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS.

QUESTIONS ONE (30 MARKS)

A)

- I. process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment
- II. Purposeful activity with the goal to maintain and improve the state of an environmental resource affected by human activities
- III. Process through which the natural environment is compromised in some way, reducing biological diversity and the general health of the environment
- IV. Reliance of technology in all the activities on technology including industries.
- V. process where solar radiation from the earth is prevented from escaping into the space by a 'blanket'/layer of gases in the atmosphere (5X1=5Marks)

B)

- To Increase public awareness and knowledge of environmental issues
- To teach individuals critical-thinking in relation to environmental conservation
- To teach individuals' problem-solving and decision-making skills
- To improve citizenry viewpoint on sustainable environmental management strategies
- Enhance societal creativity in environmental conservation (5marks)

C)

- Awareness and sensitivity to the environment and environmental challenges

- Knowledge and understanding of the environment and environmental challenges
- Attitudes of concern for the environment and motivation to improve or maintain environmental quality
- Skills to identify and help resolve environmental challenges
- Participation in activities that lead to the resolution of environmental challenge (5Marks)

D)

- Turn off the tap while brushing your teeth
- Fix leaky taps and pipes
- Use water efficiently e.g. efficient showers, reduce run off I agricultural land
- Collect and use rain water (5marks)
- Use kitchen sink water only when washing the dishes (5x1=5marks)

E);

- Renewable energy,
- ‘Smart technology’, self-monitoring, analysis, and reporting technology”
- Electric vehicles
- Carbon dioxide removal.
- Use of smart technology (5x1=5marks)

QUESTION TWO (20 MARKS)

A)

- Physical components are land, air and water.
- Biological components are plants and animals.
- Social components are population, social system, social change and social relations, urbanization, etc.
- Cultural components are-political, economic, moral and values of life religion, industries, etc.
- Psychological components are facts, self-concepts, level of aspiration, life space, topology, goals of life.

c)

- **Provides the supply of resources**
 - The environment offers resources for production.
 - It includes both renewable and non-renewable resources.
 - Examples: Wood for furniture, soil, land, etc.
- **Sustains life**
 - The environment includes the sun, soil, water, and air, which are essential for human life.
 - It sustains life by providing genetic and biodiversity.
- **Assimilates waste**
 - Production and consumption activities generate waste.
 - This occurs mostly in the form of garbage.
 - The environment helps in getting rid of the garbage.

- **Enhances the quality of life**
 - The environment enhances the quality of life.
 - Human beings enjoy the beauty of nature that includes rivers, mountains, deserts, etc.
 - These add to the quality of life. (5x2=10marks)

QUESTION THREE (20 MARKS)

a.

- **Ensure that ecosystem services** and biodiversity are protected and maintained for equitable use by future human generations,
- **Maintain ecosystem integrity** as an end in itself by taking into consideration ethical, economic, and scientific (ecological) variables.
- Identify the factors that have a stake in the conflicts that may rise between meeting the needs but protecting the environment by;
- **Identification:** Via complaints/concerns from the community we identify a certain environmental problem
- **Evaluation:** Inspections with relevant Government Departments (Provincial and National) we determine the extent of the problem
- **Control:** The problem is brought to the attention of the transgressor/polluter and the person/company who is informed to stop the illegal activity and address the problem or concerns which include the rehabilitation of the

B)

- **Land and soil degradation:** Degradation of soil quality from poor farming practices, excessive use of fertilizers and pesticides, leakage from landfills etc.
- **Water degradation:** Pollution of water from trash dumped in oceans, illegal dumping, disposal of large amounts of industrial waste into nearby rivers or lakes etc.
- **Atmospheric degradation:** This includes air degradation, particle pollution and the depletion of the ozone layer.
- noise pollution,
- light pollution that are part of environmental degradation.

QUESTION FOUR (20 MARKS)

A)

- Nature knows best. Environment should be maintained as natural as possible
- All forms of life are equally important. There is interdependence of living things
- Everything is connected to everything else. Each life form has a contribution towards the others
- Everything changes. Environment is not static but dynamic, we should always steer the change towards a positive change
- Everything must go somewhere. Wastes and pollutants are always released to another part of the world
- Ours is a finite Earth. If the earth is destroyed we have no other world to escape (6x2=12marks)

B)

- **Carbon dioxide (CO₂):** Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH₄):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.
- **Nitrous oxide (N₂O):** Nitrous oxide is emitted during agricultural, land use, industrial activities, combustion of fossil fuels and solid waste, as well as during treatment of wastewater.
- **Fluorinated gases:** Hydro fluorocarbons, per fluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. CFC-free aerosol sprays also emit volatile organic compounds (VOCs) that add to ground-level ozone levels, a main ingredient that causes asthma.

(4X2=8marks)

QUESTION FIVE (20 MARKS)

c)

- Socially and culturally conditioned relationships between people and nature create justifications and motivations for conservation that are meaningful for different groups, helping to align conservation programmes with communities' own conservation priorities.
- Helping communities to maintain the integrity and vigour of the cultural institutions that underpin their sense of identity can also strengthen their capacity to respond and adapt to internal and external change.
- Harmonizing the cultural values, although cultural approaches are highly contextual to local situations, communities are not homogeneous, and the risk that selecting a particular set of values identified by a dominant or more vocal group may disadvantage other groups must be recognized and responded to carefully.
- Cultural values approaches may require compromises to be made by both conservationists and communities, to avoid incompatible demands can result from the characteristics of ecological systems and maximize on community participation. Recognizing cultural values can help ensure local and indigenous community rights are respected, and raise awareness of the rights of communities to enjoy their culture, amongst national and international conservation organizations.
- Cultural norms determine relations between people and nature, and when mediated through cultural institutions and traditions can enforce compliance more effectively than foreign sanctions.
- Utilizing cultural values is difficult and time consuming, is reliant on building trusting relationships with local people, and requires well-trained facilitators. (10marks)

d)

- Coordinating the various environmental management activities being undertaken by the lead agencies.
- Promote the integration of environmental considerations into development policies, plans, programmes and projects, with a view to ensuring the proper management and rational utilization

of environmental resources, on sustainable yield basis, for the improvement of the quality of human life in Kenya.

- To take stock of the natural resources in Kenya and their utilization and conservation.
- To establish and review land use guidelines.
- Examine land use patterns to determine their impact on the quality and quantity of natural resources.
- Carry out surveys, which will assist in the proper management and conservation of the environment.
- Advise the Government on legislative and other measures for the management of the environment or the implementation of relevant international conventions, treaties and agreements.
- Advise the Government on regional and international conventions, treaties and agreements to which Kenya should be a party and follow up the implementation of such agreements.
- Undertake and coordinate research, investigation and surveys, collect, collate and disseminate information on the findings of such research, investigations or surveys.
- Mobilize and monitor the use of financial and human resources for environmental management.
- Identify projects and programmes for which environmental audit or environmental monitoring must be conducted under this Act.
- Initiate and evolve procedures and safeguards for the prevention of accidents, which may cause environmental degradation and evolve remedial measures where accidents occur e.g. floods, landslides and oil spills.
- Monitor and assess activities, including activities being carried out by relevant lead agencies, in order to ensure that the environment is not degraded by such activities. Management objectives must be adhered to and adequate early warning on impending environmental emergencies is given.
- Undertake, in cooperation with relevant lead agencies, programmes intended to enhance environmental education and public awareness, about the need for sound environmental management, as well as for enlisting public support and encouraging the effort made by other entities in that regard.
- Publish and disseminate manual codes or guidelines relating to environmental management and prevention or abatement of environmental degradation.
- Render advice and technical support, where possible, to entities engaged in natural resources management and environmental protection, so as to enable them to carry out their responsibilities satisfactorily.

(10Marks)