MANAGEMENT AND CONSERVATION OF THE ENVIRONMENT

MARKING SCHEME

1.1994 QUESTION 1

State four measures that have been taken to conserve forests in Kenya

- Afforestation programs have been taken/ reforestation/national tree planting day
- Faster maturing trees with short growing periods have been introduced/tree with short growing periods have been introduced
- There is use of legislation to control tree harvesting
- The Government has created a department to deal with conservation and management of forests (Tree Belt Movement)
- Forest research station shave been established to conduct research on new tree species and diseases affecting trees
- Kenyans are being encouraged to use alternative sources of energy other than wood there is recycling of waste paper
- Forests are protected from natural hazards/fires through the use of guards
- Agro forestry programs
- Nyayo tea zone
- Public awareness on forestry conservation

2.1995 SECTION S QUESTION 1. (a, b & d)

(a) State four reasons why land/ground pollution is common in urban centers

- Shortage/scarcity of garbage bins
- Irresponsibility/carelessness of the residents
- Laxity in the collection of waste/delay in garbage collection/sabotage
- High turnover off garbage by the large population/industries
- Ignorance on the part of the residents
- Poorly enforced by-laws pertaining to dumping

(b) Explain four effects of this type of pollution on the environment: -

- It results to foul smell which causes air pollution, which is hazardous to human health/it can affect the respiratory system.
- When it rains, the waster is washed to rivers causing water pollution
- Rusted metal/piece of broken bottles/pieces of iron can cause accidents/cuts/injuries
- The garbage can be a breeding ground for rodents/flies/cockroaches which can cause disease outbreak e.g. plague
- Accumulation of garbage leads to blockages road, foot paths, drainage systems

- Garbage heaps are an eye sore as it make the environment unattractive
- Decomposing garbage produces inflammable gases e.g. methane, which is dangerous to life.

(c) Explain two ways in which farming activities contribute to water pollution:
- Poor farming methods such as ploughing down a slope/cultivating along river banks lead to soil erosion when it rains
- Chemicals used on farms/fertilizers pesticides and herbicides are washed by rainwater into rivers causing water pollution
- Animals from farms are taken to slaughterhouses. If such houses are poorly manage they discharge their wastes such as blood into rivers causing water pollution/ animals waster i.e. urine/dung dirtying water.

(d) Explain four ways through which the government promotes conservation of the environment.
- By setting aside forest reserves to protect water catchments areas
- By issuing presidential decrees on conservation o f indigenous trees
- By setting up a committee responsible for environmental conservation permanent presidential commission of Environment and Solid Conservation/National \ Environmental Secretariat
- By setting a::de a national tree planting day which is an annual activity/Afforestation/ reafforestation
- By introducing environmental education component in the school curriculum to educate future generations
- By enactment of legislation on the conservation of environment e.g. on waste disposal, dumping of industrial waste direct into rivers/cultivating along riverbanks
- Use of non-pollutant fuels
- Establishment of game parks and game reserves
- Encouraging NGOs to participate in environmental conservation
- International co-operation in environmental conservation

**3. 1997 SECTION B QUESTION 1 (b, c) **

(b) Name two rivers in Kenya which cause large scale flooding.
-Nyando - Nzoia - Tana
-Kauja/Gucha - Yala - Ewaso Nyiro

(ii)
- Flooding creates stagnant water in which disease-causing breed resulting in diseases, which affect and weaken people and sometimes cause death
- Flooding leads to loss of property/loves. It costs a lot of time and money to replace the property while human life cannot be replaced
- Flooding causes soil water logging which lowers crop production
- Floods disrupt farmers calendar/wash away crops.This leads to food shortages/famine.
- Floods wash away bridges and roads/airfields/ railways. This disrupts transport and communications.

- People are displaced/homeless,

(c) Explain three methods through which floods can be controlled

- Construction of dams/check dams which help reduce velocity and volume of river downstrean:
- Construction of dykes/artificial leaves which restrict the outflow of rivers/canals.
- Construction of diversion channels/which help realign meanders and restrict the flow of the river/drain flooded areas
- Planting of vegetation/forest in the river catchments areas to reduce the surface run-off and increase seepage.
- Clearing of drainage systems/dredging/ deepening/widening to facilitate easy flow of water.

4. 1999 QUESTION 5 (a & b)

(a) Apart from desertification name two other environmental hazards experienced in Kenya

- Lightning
- Hailstorms
- Floods
- Soil erosion
- Land slides
- Strong winds
- Dust storms
- Pollution
- Outbreak of flies
- Pest/diseases/ Cholera/Typhoid

(b) State two cause of desertification

- Population pressure/clearing of forests for farming
- Global warming/depletion of ozone layers/ industrial pollution
- Accidental fires
- Poor methods of farming/overgrazing/ overstocking/poor irrigation methods

2000 Q 2(a)

- De-vegetation clearing of vegetation/ deforestation
- Overgrazing/ overstocking
- Fire outbreak
- Over cropping / monocropping/ monoculture
- Ploughing across the contours/ up-down the slope (along slope)
- Mining/ quarrying
- Cultivating along banks

- To maintain source of food supply/ maintain soil fertility
- To preserve genetic resources
- Protecting water catchments areas/ for aesthetic value
- For preventing desertification
- To sustain sources of raw materials for industries
- To preserve cultural heritage
- For medicinal value
- For keeping air clean

- For maintaining natural habitat for wild animals and plants
- Modification of climate

2001 Q 9

- (i) Land pollution/ soil. Ground
- Noise pollution/ sound
- Thermal pollution
- Radiation Any 2 x 1 = 2 marks)

- Discharge of industrial waste/ oil spillage/ radioactive waste into water bodies
- Disposal of domestic waste into water bodies
- Discharge of agriculture chemicals into rivers/ lakes by rain water
- Discharge of raw sewage into water bodies
- Abuse of water bodies by human beings
- Natural causes e.g. soil erosion/ terrestrial gas (Any 3 x 1 = 3 marks)

- Gases emitted from some factories contain substances which corrode roofs of houses and mental structures
- Some gases from factories contain substances which dissolve in water to form acid which make plants maim or kill animals
- Inhalation for smoke and soot particles / bad smell lead to discomfort / irritation of the respiratory system / discolouring of vegetable / building.
- Gases emitted from factories may contain poisonous substance which can lead to poor health / death when inhaled /plant leaves turn yellow.
- Gases / excess carbon dioxide increases the temperature affecting the climate of the affected areas / depletion of O – Zone layer.
- Smoke / dust / smog reduces visibility which way lead to motor accidents.
- Dust particles that settles on leaves inhibits photosynthesis

  (Any 3 x 2 = 6 marks.)
- Most of the land is low lying which causes the rain water of spread over wide area.
- The adjacent highlands receive torrential rainfall which releases large volumes of water resulting to rivers overflowing their banks.
- Silt has filled the river beds making them shallow thus spilling their water over banks
- The rivers are at their old stage, thus they have wide flood plains which allows water to spread over large areas.
- The area has black cotton soil which is non- porous and when soaks up allow water to flow and spread on the surface.
- The heavy rainfall received in the area id discharged into lake Victoria making its level to rise thus flooding the adjacent lowlands

  (Any 3 x 6= 18 marks)
- Dams have been constructed across the rivers to check their velocity thus reducing the incident of flooding.
- Several dykes have been constructed / artificial levees to restrict the rivers within their channels/ diversion channels have been constructed in the flood plain and water used for irrigation thus reducing the effect of the excess water.

  (Any 2 x 2 = 4marks)

- Strong winds destroy trees
- Winds blow off roofs of houses
- Winds cause strong sea storms and lead to boats capsizing / communication lines are destroyed / destruction of transport line.
- Winds cause soil erosion
- Winds spread air – borne diseases
- Winds spread bush fires (any 4 x1 = 4marks)

2003 Q 4

- To ensure that there is supply for present and future generations
- To maintain hydrological balance.
- By reducing surface runoff which ensures that rainwater seeps slowly into the ground.

2004 Q 8b-d

- The stagnant water become breeding ground for vectors that cause water related diseases.
- Flood causes loss of property/ lives
- Floods away crops leading to food shortages/ Famine
- Floods wash away bridges/ roads/ telephone lines/ Air fields
- Disrupting transport and communication
- People are displaces by floods/ are made homeless (Any 4 x 2 = 8 marks)

- The presence in the environment of contaminants, which are injurious to human. Land plant and animal life 2 marks
- The garbage may result to foul smell/ air pollution, which is hazardous to human health.
- When it rains, the dumped waste. Garbage is washed to rivers ceasing water pollution
- Garbage can is a breeding ground for rodents/ flies/ cockroaches, which can cause disease outbreak e.g. plague
- Accumulation of garbage leads to blockage of roads/ drainage systems
- Garbage heaps is an eye sore as they make the environment ugly. Oil spillage/ Industrial wastes leads to destruction of flora.

  Any 3 x 2 = 6 marks)
- Burning waste materials
- Digging pits for throwing rubbish
- Minimizing use of harmful chemicals/ sue of organic manure
- Creating awareness on the dangers of land pollution and how to control it.
- Recycling of waste materials/ treatment of industrial waste
- Government legislation against dumping.
- Setting up proper garbage collection/ management program.

  Any 4 x 1 = 4 marks

2007 Q 10 (a-c)

- Oil leaks from ships/ trucks
- Industrial effluent when discharged into rivers/ lakes
- Washing away (into rivers and lakes) chemical/ fertilizers/ pesticides/ insecticides
- Washing/ bathing/ watering animals in rivers/ lakes
- Disposing of raw sewages into rivers/ lakes

- Surface turnoff/ soil erosion into water depositing silt
- Dumping of solid waste into water courses
- Give two effects of water pollution on the courses
- It may cause death of aquatic life
- It destroys aesthetic/ beauty of beach/ water bodies
- It leads to spread of waterborne diseases
- Causes foul smell
- Results to sutrophictaion/ water hyacinth/ water weeds/ alga

- Dykes are constructed along river banks levee of rivers to increase their height in order to prevent water from over flowing
- Dredging of river channels to deepen/ widen them to make it possible for them to accommodate excess water
- Dams are build across the rivers to control the amount of water discharges downstream/ construction of earth dams to hold back water
- Training/ re- directing a river/ straightening of a river to control its wild flow (training means cut meander loops
- Planting of trees in the catchment areas to reduce surface run off and increase infiltration
- Diverting tributaries to other rivers to reduce the volume

- Contour farming
- It helps to rap water hence improving soil moisture content
- It helps to reduce the speed of water down slope thus preventing the removal of top soil.

- The mulch adds humus in the soil as it decomposes thus enriching the soil
- It enhances the retention of water in the soil by protecting from direct sunlight / wind.
- It controls / stop run –off / speed of surface run – off by acting as ac over to the soil
- It provides a suitable habitat for organism that aerate the soil by burrowing.
- Crop rotation
- Since different crops utilize different mineral, rotation helps in balancing the mineral content in the soil.

2009 Q 5

- Lighting
- Floods
- Drought / desertification
- Landslides
- Heat waves

- Windstorms destroy trees and crops
- They blow off roofs of houses
- They disrupt transport and communication lines
- The cause strong sea storms
- Accelerate erosion

2012 Q5

(a)

- Trapping
- Use of chemicals
- Clearing bushes
- Sterilizing males
- Creating buffer zone

(b)

- Garbage heads are unattractive/ugly
- Garbage produces foul smell
- Garbage washed into water surfaces causes pollution
- Organisms that thrives in garbage may transmit diseases
- Some wastes may cause injury
- They block damage system
- They may cause obstruction of roads / pavements
- Some toxins from garbage cause soil pollution