ENERGY

1. a)

- Provision of water for domestic use
- Provision of water for irrigation
- The dams serve as bridges across the river
- The dams and the reservoirs are fresh water fisheries
- The reservoirs have modified the local climate.

b)

- Changes in the river regime
- Silting or reservoirs
- Poor maintenance of machinery at the power houses
- Inadequate capital to purchase spare parts.

c)

- Limited number of suitable sites
- Inadequate capital for investment
- Scarcity of skilled labour.
- Uranium
- Cool/peat

2. b)

- Presence of large volume of water from a river/lake /large catchment area to provide water to drive turbines
- Regular/constant supply of water to ensure continuous generation of power
- Hard basement rock to provide a firm foundation for the construction of a dam

- Presence of rapids/water falls/nick points to provide a massive hydraulic force/head for power generation
- Presence of a deep valley/a river gorge to reduce the cost of the construction of the dam
- Non-porous rock to prevent seepage.

3. a)
    - It would encourage setting up of industries in the rural areas thus stimulating
    - decentralization of industries.
    - It would attract /improve social amenities in rural areas reducing the need for
    - people to move to urban centres
    - More people would invest in the rural areas which would lead to higher standards of living
    - It would encourage development of horticultural farming/to have ideal storage of perishable products.

    b)
    - It leads to closure of some industries
    - It led to unemployment/redundancy/early retirement of workers
    - It led to an increase in the cost of production of goods
    - It led to an increase in the cost of electricity
    - It led to power rationing

4. a)
    - High volume of water e.g. River Tana, Nile, Niger, etc.
    - Regular flow of water throughout the year

- Several falls and rapids provide good sites
- Presence of hard basement rocks

b)

- Inadequate technological resources
- Lack of adequate capital
- Lack of sufficient skilled manpower

5. a) i)

S – Masinga

T- Kindarum

ii) U- Mutonga

b)

- Wind
- Wood fuel
- Solar
- Geothermal/underground stream

6. a) L- Gas

M-Oil/petroleum

N- Water

b)

- Wax
- Bitumen/tar
- Sulphur

- Lubricants
- Resin/petro-chemicals

c)

- Proper maintenance and manufacture of fuel efficient vehicles.
- Improvement of public transport system encouraging people to walk, use public
- means of transport/use bicycles
- Making domestic appliances like refrigeration and cookers more energy efficient
- Switching off electrical gadgets when not in use
- Development of energy saving jikon and other techniques and technologies
- Developing alternative sources of energy other than petroleum.

7.

- It's highly pollutant
- Non-renewable
- Dirty
- Bulky to transport
- Limited in usage

8. **Expansion and establishing more power plants**

- Increasing importation of bulky HEP from Uganda and SA to add to the national grid
- Encouraging and streamlining public transport so as to attract more commuters other than use of private vehicles reduce number of vehicles on the roads.
- Improvement expansion of road network to ensure easy flow of traffic to reduce fuel consumption
- Contacting foreign investors to explore oil in Kenya

- Encouraging use of bicycle by lowering or eliminating tariffs

9. **What are the causes of energy crisis?**

- Increase in oil prices
- Depletion of wood fuel in developing countries
- Exhausting of coal mines
- Economical and political embargoes
- Over development of oil and its products
- Artificial shortages may be created
- Waste and misuse of energy

10.

- Uses of nuclear energy
- Generation of electricity
- Production of heat
- Making atomic weapons

11.

- Uses of wind energy
- Used to turn propellers and rotors that run machines e.g windmills
- Pumbing water
- Grinding grains
- Generation of electricity

12.

- Coal
- Nuclear

- Peat
- Petroleum and natural gas

13.

- Why has coal as a source of fuel/energy declined? Explanation:-
- Has low calorific value. It's dirty compared to other sources of energy/pollution
- It is bulky and cumbersome to transport
- Development of other sources of energy e.g. like oil, solar, nuclear and HEP
- Coal seams are exhaustible
- Inadequate capital
- Inadequate technological know how
- Over-dependency on other sources of energy e.g. HEP and petroleum
- Low demand for power
- Inadequate skilled personnel

14.

- Switching off power source when not in use
- Use of energy saving means e.g. use of public as opposed to private vehicles
- Exploiting the renewable sources of energy e.g. solar, HEP
- Aforestation, reforestation, agro forestry
- Buy product which consume less energy e.g. do away with fuel guzzling vehicles

15. i) Source of energy derived from organic matter

16. a) Energy is a resource of fuel used to operate machinery

b)

- Hydro-electric power

- Geothermal power
- Wind energy
- Solar energy
- Sea energy/wave energy/Tidal
- Biomass energy

c)

- Coal is bulky making it difficult and costly to transport
- It contribute a lot to air pollution through soot and smoke
- It has low caloric value
- It causes a lot of environmental degradation during mining by leaving
- Ugly cars on the land scape

17 a) Seven Folks Scheme

b)

- They have provide water for domestic use and irrigation
- They have served as a bridge across the river.
- They are tourist attractions
- They have acted as fresh water fisheries
- They have led to micro-climate along the area

c)

- changes in river regimes
- Inadequate funds for maintenance
- Silting of the reservoirs
- Inadequate skills and technology

- Mismanagement of funds

18 a)

- Turkwell Gorge Dam on River Turkwell.
- Gogo Falls on River Kuja
- Sondu-miriu project on river Miriu

b)

- It has promoted the growth of industries within the region
- It has earned the country revenue through the exportation of electricity
- It has earned the country revenue through the exportation of electricity
- It has acted as a bridge across the lake
- It has acted as a bridge across the lake
- It is a tourist attraction

c)

- Limited number of suitable sites
- Inadequate capital for investment
- Inadequate technology
- Scarcity of skilled labour

19.

- They have enhanced fishing
- Provision of water transport
- Promoted agriculture through irrigation
- Some have enhanced flood control

- Creation of micro-climate

20. It is used in the domestic sector for various purpose e.g. cooking, lighting, heating etc. It is the engine that runs the industrial sector.

21 a)

- Energy crisis is the price and supply uncertainties they are is usually accompanies by the rapid depletion of fossil fuels
- b)
- Overdependence on oil and its products
- Depletion of wool fuel in the developing countries
- Economic and political embargoes against the leading producers
- Exhaustion and deeping of coal mines
- Artificial shortages caused when some countries decide to conserve their resources e.g. U.S.A
- Wastage and misuse of energy

22.

- The country does not produce crude oil hence relies on importation thus ignoring other sectors of the economy
- Oil imports affects the countries' balance of payments
- When oil prices are high, the cost of manufactured goods and services increases causing inflation in the country
- The Oil producing and Exporting Countries dictate the prices without consulting the consumer countries such as Kenya. This necessitates higher taxation to increase revenue for importing oil

- Frequent shortage of petroleum products to leads to destruction of forests.

23. a) Management of energy implies the need and careful use of energy resources while conservation of energy means the efficient use of energy to avoid wastage.

b)

Proper maintenance and manufacture of fuel efficient vehicles.

Improvement of the public transport system encouraging people to walk/use bicycles

Making domestic appliances like refrigerators, televisions and cookers more energy efficient and switching off.

Electrical gadgets when not in use

Development of energy saving techniques and technology

Development and use of alternative sources of energy other than petroleum.