Physics - FSC Part 1 Physics Chapter 4 Short Questions Preparation

Q1. Define kilowatt hour (kWh).

Ans 1: Kilowatt hour is the work done in one hour by an agency whose power is one kilowatt.
1 kWh = 3.6×10^6

Q2. How many most common methods can be used for the conversion of biomass into fuel? Write their names.

Ans 1: There are two methods for conversion of biomass into fuel:

- Direct Combustion Method
- Fermentation Method

Q3. A boy uses a catapult to throw a stone which accidentally smashes a greenhouse window.What energy changes are involved?

Ans 1: Initially, the catapult had elastic P.E when the stone is thrown, its P.E is converted into K.E On striking the window, this energy is converted into sound energy, heat energy work done in breaking the window into pieces and kinetic energy of pieces.

Q4. What is conservation field ? Give example . (OR) Loop?

Ans 1: **Conservation Field:**A field is said to be conservation field if the work down in it along a closed path is equal to zero.
Example:

1. Gravitational field
2. Electrostatic Field
3. Magnetic field

Loop:A closed path is that path in which a body reaches to its starting point again after passing through several points.

Q5. What is geothermal energy? How is it generated ?

Ans 1: The heat energy extracted from inside the Earth in the form of steam or hot water is called geothermal energy.
It can be generated by the following processes

- Radioactive Decay
- Residual Heat of Earth
- Compression of Material

Q6. Define Kinetic energy ?

Ans 1: **Kinetic Energy (K.E):**The energy in the body due to its motion is known as kinetic energy.

Q7. How energy is obtained from direct combustion and fermentation.

Ans 1: Direct Combustion: It is applied to get energy from waste product commonly known as solid waste and confined it into chamber and ignite it.The heat produced is then used in a boiler to run the turbine of generator

Fermentation: Biofuel such as ethanol is a replacement of gasoline which is obtained by fermentation of biomass using. Enzymes and by decomposition through bacterial action in the absence of air . The rotting of biomass in a closed tank called digester produces biogas which can be piped out to use for cooking and heating.

Q8. Show that 1 kWh = $3.6x10^6$J

Ans 1: As
1 kWh=1000 Wx 3600 s
1 kWh =3600000 j
1 kWh = $3.6x10^6$ j

Q9. How electrical energy can be obtained from sunlight by indirect conversion method?

Ans 1: By using semiconductor devices, the solar cell also called photo voltaic cell: sunlight can be directly converted into electricity. These solar cells are made of silicon wafers. Electron in the silicon gain energy from sunlight to create voltage.Voltage can be increased by increasing the number of solar cells.

Q10. How can we gain energy from tides?

Ans 1: The tides raise the water in the sea roughly twice a day.If the water at the high tides is trapped in a basin by constructing a dam, then it is possible to use this as a source of energy. There dam is filled at high tide and water is released in a controlled way at low tide to drive the turbines and generate electricity.