

UNIT 3 CHEMISTRY

SOURCES OF ENERGY – TOPIC TEST

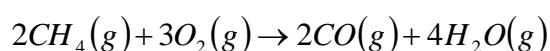
QUESTION 1

An example of non-renewable source of energy is:

- A Solar power
- B Biogas
- C Nuclear power
- D Wind power

QUESTION 2

Consider the following chemical reaction:



The reason the above equation represents an incomplete combustion is because:

- A Carbon monoxide, CO is one of the products
- B Water, H₂O is one of the products
- C Both CO and H₂O are produced
- D Methane gas never undergoes complete combustion

QUESTION 3

One advantage renewable energy sources have over non-renewable ones is:

- A Renewable is more efficient
- B Renewable lasts longer
- C Renewable has more uses
- D Renewable doesn't run out

QUESTION 4

Wind power is a renewable source of energy while coal, is non-renewable.

(a) Define renewable and non-renewable.

(b) List one advantage and one disadvantage for each of the above energy sources.

QUESTION 5

Nuclear power stations have been considered by some, a viable alternative to coal-fired power stations.

- (a) Mention one environmental consideration for each of the above energy sources

- (b) Compare the energy sources mentioned above in terms of; efficiency, amount of energy per Kg of fuel, green house emission and safety issues.

QUESTION 6

You have been asked to consider the suitability of three energy sources for household heating in a rural area. The three sources are: wood, natural gas and kerosene.

- (a) Classify each of the above as renewable or non-renewable

- (b) Make your choice of energy source in terms of practicality, safety and economy. Justify your choice.

SOLUTIONS

QUESTION 1 Answer is C

QUESTION 2 Answer is A

QUESTION 3 Answer is D

QUESTION 4

- (a) Renewable means that the energy source is continually being generated or replaced, non-renewable means that the source is found in definite amounts and will eventually run out.
- (b) Wind: Advantage - cheap or clean, disadvantage- not available everywhere.
Coal: Advantage - high-energy content, disadvantage- produces CO₂ or low efficiency.

QUESTION 5

- (a) Nuclear power- danger of radiation due to waste materials or high risk of contamination if an accident occurs.
Coal-fired- Emission of CO₂, which is a greenhouse gas.
- (b) Efficiency is very close, with nuclear power at around 34% and coal at around 30%.
Nuclear fuel gives the higher amount of energy per unit mass and does not give any greenhouse emissions. A coal power station is safer than a nuclear one, even at the time of an accident.

QUESTION 6

- (a) Wood is the only renewable source.
- (b) The answer should consider that wood a renewable source and would be more easily available in a rural area. Natural gas would be more expensive to install but not as expensive as kerosene. In terms of safety, wood would be the safest.
Wood would be the best choice.