Name: _____

Class: _____

ACTIVITY SHEET

4.1 Multiple-choice questions

1 The nuclear model of a nuclide comprises:

A a nucleus consisting of protons, electrons, positrons and neutrons.

B a nucleus consisting of protons, electrons, neutrons, positrons and gamma rays.

C a nucleus consisting of electrons, neutrons, positrons, alpha particles and gamma rays.

D none of the above.

2 A nuclide is kept together by:

A radioactivity.

B the coulomb force.

C the strong nuclear force.

D the energy difference.

3 In fusion, two nuclides:

A repel each other by the Coulomb force so rapidly that heat is produced.

B repel each other by the strong nuclear force so rapidly that heat is produced.

C attract each other by the strong nuclear force and lose mass-energy.

D attract each other by the strong nuclear force and gain mass-energy.

4 A thermal nuclear power station is given the name because:

A radiation is produced during fission.

B it uses thermal neutrons to start the reactor.

C it creates thermal heat for power generation.

D it uses thermal heat to start the nuclear reaction.

5 A fast breeder reactor uses:

A fast neutrons for fission of uranium-238 and produces neptunium.

B fast neutrons for fission of uranium-235, and produces plutonium.

C moderated fast neutrons for fission of uranium-238 and produces neptunium.

D moderated fast neutrons for fission of uranium-235 and produces plutonium.

6 The main purpose of a moderator is to slow neutrons to thermal energies where they can be:

A absorbed in uranium-234.

B absorbed in uranium-235.

C absorbed in neutron poisons.

D used as heat exchangers.

7 In a nuclear power plant, the effect of an accident involving loss of coolant can be reduced significantly by:

A turning off the electricity supply to the reactor.

B slowing the fission neutrons when the core temperature rises.

C ensuring the efficiency of the reactor rises as the coolant is voided.

D allowing the energies of the fission neutrons to increase as the core temperature rises.

Extension

8 Write another three multiple-choice questions from the content of this chapter that you could contribute to your class to build up a question bank that others could use.