

1. A radioactive isotope called yttrium-90 can be used to treat liver cancer.

- i. Yttrium-90 has a short half-life of 64 hours.

Explain why a short half-life is important for the patient.

[2]

- ii. Problems of using yttrium-90 to treat liver cancer include:

- poor appetite, abdominal pain, fever or sickness
- people in contact with the patient can be exposed to small doses of radiation.

Explain why patients are treated with yttrium-90 despite these problems.

[2]

2. What happens in the process of nuclear fusion?

- A** A chain reaction starts.  
**B** A heavy nucleus splits and releases energy.  
**C** A uranium nucleus absorbs a neutron.  
**D** Light nuclei join to form a heavier nucleus.

Your answer

☐

[1]

3. Which row describes nuclear **fusion**?

	What happens	Where it occurs
<b>A</b>	heavy nuclei split	in nuclear power stations
<b>B</b>	heavy nuclei split	in the Sun
<b>C</b>	light nuclei combine	in nuclear power stations
<b>D</b>	light nuclei combine	in the Sun

Your answer

☐

[1]

END OF QUESTION PAPER