Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: GCSE Triple Science Atomic Structure (High Demand Questions)

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

(a) cannot predict <u>which</u> dice / atom will 'decay'

accept answers given in terms of 'roll a 6'

1

cannot predict <u>when</u> a dice / atom will 'decay'

1

(b) 3.6 to 3.7 (rolls)

*allow **1** mark for attempt to read graph when number of dice = 50*

2

(c) 90

1

(d) uranium

1

(e) beta

1

proton number has gone up (as neutron decays to proton and e^-)

1

(f) prevents contamination

or

prevents transfer of radioactive material to teacher's hands

1

which would cause damage / irradiation over a longer time period.

1

[10]

Q2.

(a) Nucleus splitting into two fragments and releasing two or three neutrons

1

(at least one) fission neutron shown to be absorbed by additional large nucleus and causing fission

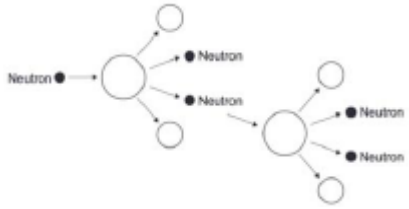
1

two or three additional neutrons released from fission reaction

1

*This diagram would gain all **3** marks:*

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(b) lowering the control rods increases the number of neutrons absorbed

accept converse description

1

(so) energy released decreases

1

*allow changing the position of the control rods affects the number of neutrons absorbed for **1** mark*

(c) rate of increase between 240 and 276 (MW / min)

2

*allow **1** mark for attempt to calculate gradient of line at 10 minutes*

[7]

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