SMART EXAM RESOURCES
9701 AS CHEMISTRY TOPIC QUESTIONS
TOPIC: ATOMIC STRUCTURE
SUB-TOPIC:SUB-ATOMIC PARTICLES IN ELECTRIC FIELD
SET-1

1.1.5-Behaviour-of-Proton-Neutron-Electron-Beams-in-Electric-Field-Set-1

1.

Beams of charged particles are deflected by an electric field. In identical conditions the angle of deflection of a particle is proportional to its charge / mass ratio.

In an experiment, protons are deflected by an angle of +15°. In another experiment under identical conditions, particle Y is deflected by an angle of –5°.

What could be the composition of particle Y?

	protons	neutrons	electrons
1	1	2	2
2	3	3	5
3	4	5	1

The responses **A** to **D** should be selected on the basis of

A	B	C	D
1, 2 and **3** are correct	**1** and **2** only are correct	**2** and **3** only are correct	**1** only is correct

No other combination of statements is used as a correct response.

2.

Beams of charged particles are deflected by an electrical field. The angle of deflection of a particle is proportional to its charge / mass ratio.

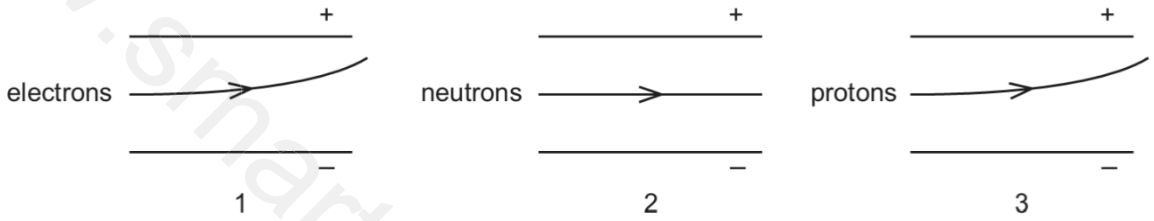
In an experiment protons are deflected by an angle of +15°. In another experiment under identical conditions $^{2}H^{-}$ ions are deflected by an angle of Y°.

What is the value of Y?

A –30.0 **B** –7.5 **C** +7.5 **D** +30.0

3.

The diagrams show the possible paths of subatomic particles moving in an electric field in a vacuum.



Which diagrams are correct?

A 1 and 2 only

B 1 and 3 only

C 2 and 3 only

D 1, 2 and 3

4.

Neutrons are passed through an electric field. The mass of one neutron relative to $\frac{1}{12}$ the mass of a ^{12}C atom and any deflection in the electric field is recorded.

Which row is correct?

	mass of neutron	behaviour of beam of neutrons in an electric field
A	0	deflected
B	1	deflected
C	0	not deflected
D	1	not deflected