

38 The table contains data for four different nuclei P, Q, R and S.

| nucleus | number of neutrons | nucleon number |
|---------|--------------------|----------------|
| P | 5 | 10 |
| Q | 6 | 10 |
| R | 6 | 14 |
| S | 8 | 16 |

Which two nuclei are isotopes of the same element?

- A** P and Q **B** P and S **C** Q and R **D** R and S

39 Which statement about β^- decay is correct?

- A** A neutron changes to a proton in the nucleus and an electron and an antineutrino are emitted.
- B** A neutron changes to a proton in the nucleus and an electron and a neutrino are emitted.
- C** A proton changes to a neutron in the nucleus and an electron and an antineutrino are emitted.
- D** A proton changes to a neutron in the nucleus and an electron and a neutrino are emitted.

40 What is the quark composition of a hydrogen-3 nucleus, ${}^3_1\text{H}$?

| | number of quarks | |
|----------|------------------|------|
| | up | down |
| A | 4 | 5 |
| B | 5 | 4 |
| C | 5 | 7 |
| D | 7 | 5 |





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