”Nobel-prize physics in…”

1. The BB84 protocol is based on:

a. on 4 qubits

b. two basis

c. polarizer and Malus-law

d. one quantum channel for communication

e. none of them

2. High energy protons are emitted from the paraffin by (the radiation of):

a. alpha particle b. beta particle c. UV photon d. gamma photon e. none of them

3. The nuclear force is:

a. depends on the charge of the particles (n & p)

b. can keep the nucleus stable with the condition of $Z = N$ if $A < 40$

c. independent of whether the particle is neutron or proton in the interaction

d. powerfully attractive in short distance (≈1 fm), but it rapidly decreases

e. none of them

4. The energy of the fission

a. for one nucleus is less then the fusion energy per nucleus

b. comes from the following: the total binding energy of the resulting elements must be smaller than that of the starting element

c. in the nuclear power plants is used from the spontaneous fission

d. and the chain reaction can be cntrolled

e. none of them

5. If the neutron multiplication factor is 2. The reactivity is:

a. 1 b. 1/2 c. 2 d. 1/4 e. none of them