



TEST PAPER: PHYSICS

Time: 45 Minutes

Class: I.C.S.E. 10

Max. Marks: 30 Marks

Date: 31st October 2018

Marking Scheme: All questions carry 10 marks each. Subparts (A) and (B) carry 3 marks each and subpart (C) carries 4 marks.

Question 1:

1. What are isotopes, isobars and isotones? Also give an example of each.
2. Write Einstein's mass energy equivalence relation and calculate the nuclear energy in MeV released due to loss of mass by 1 a.m.u.
3. State four difference between Nuclear fission and Nuclear fusion

Question 2:

1. State one safety precaution for each of the following
 - i. In handling a radioactive source
 - ii. In establishment of nuclear power plant
 - iii. In safe disposal of nuclear waste
2. State one medical use, one scientific use and one industrial use of radio isotopes.
3. Answer the following questions:
 - i. What are background radiations? State the two sources of background rations along with an example of each
 - ii. How does the mass number and atomic number of an element change when it undergoes gamma decay?

Question 3:

1. Arrange Alpha, Beta and Gamma rays in ascending order of:
 - iii. Penetrating power
 - iv. Ionizing power
 - v. Biological effect
2. An element A_ZX decays to ${}^{223}_{85}R$ after emitting 2 alpha and 1 Beta particle. Find the atomic number and atomic mass of element X
3. A Uranium nucleus ${}^{238}_{92}U$ undergoes several disintegrations and ultimately decays into lead Nucleus ${}^{206}_{82}Pb$. How many alpha and Beta particles are emitted in the process?