Nuclear Physics Interview Questions And Answers Guide.

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Nuclear Physics Job Interview Preparation Guide.

Question # 1

What is e= mc2?

Answer:-

this is mass-energy lesion

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Question # 2

How asteroids are formed?

Answer:-

due to impact of planets, rocks are escape in the space and became asteroied. in some case the gasieous material and vepour produced in the supernowa are coegulated in the space and form asteroied.

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Question # 3

What is Fission and Fusion?

Answer:-

Fission: The breaking down of a Nucleus (not atom) into smaller nuclei. It is usually induced by a neutron.
For example, a Helium nucleus (called alpha particle) is divided into two 4He(+2) --> 2H(+1) + 2H(+1)
A lot of enery is released in the process.
Fusion: This happens when two nuclei combines to form a larger nuclei. Huge amount of enery is needed to start this. Because its not easy to bring two positively charged nuclei closer.
When they combine, a huge amount of energy is released.
This usually happens in the stars.
The enery required to start the fusion comes from the gravitational force between the particles.

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Question # 4

Explain history of nuclear reaction?

Answer:-

bigger nuclues broken to from two lighter nucleus and two or three neutrons is called nuclear fission used for making atom bomb
two ligther nucleus joined to form bigger nucleus is called nuclear fussion used for making hydrogen bomb

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Question # 5

What is the essential difference between an electron and a beta ray?

Answer:-

The electron of nuclear origin is called a beta-particle.There is otherwise no difference between an electron and a beta-particle.

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Question # 6

The velocity of a body was noted to be constant during five minutes of its motion. What was acceleration during this interval its?

Answer:-

since velocity of body remains constant during given time
period,so diff.of velocity(constant)with respect to time
will be ZERO.

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Question # 7

Name the Women scientist who has played the pivotal role in the development Missile technology of India and nick named as "Missile Woman"?

Answer:-

Tessy thomas

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Question # 8

Why is heavy water used as a moderator?

Answer:-

Heavy water is water highly enriched in the hydrogen isotope deuterium.we can compare the neutron inatractions with billiard ball collision, where neutron collids wth nucleus of other automs & lose energey.If the colliding nucleus size is small like hydrogen nucleus it will lose maximum energey.If nucleus is hevy the neutron hits the nucleus just changes its direction but not that much chnage in the energy of neutron. So we use heavy water as moderator to slow down neutrons.

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Question # 9

Tell me Is it possible that a nucleus has negative mass defect?

Answer:-

If the nucleus has had a mass defect it is likely that the strong force and the weak force have sustained a major reduction in equilibrium. This can cause the positive and negative charges to reverse and change energy levels. Such a phenomenon has been describe by Einstein in his paper on the speed of light and time reduction. You can check this with the use of an electron microscope to determine is the color spectrum had changed drastically. If so, then you may have a problem.

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Question # 10

What does held nucleons together in a nucleus?

Answer:-

Nuclear force. It is the nuclear force which binds the nucleons together and is responsible for the stability of nucleus.

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Question # 11

What is meant by the rest mass energy of an electron?

Answer:-

According to the Einstein's Theory of Relativity, the mass of a body (say a particle) depends on the energy and on the momentum (say the velocity) with which the particle moves. So, we have a problem: is there a mass value that every observers can relate to? Yes: is the rest mass, that is the mass you could measure in a frame of reference co-moving with the particle (in which the particle is still), that is the center-of-mass frame and that coincide with the minimum value measurable for every observers.

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Question # 12

Cadmium rods are provided in a nuclear reactor. Why?

Answer:-

cadmium rods are provided in nuclear reactors because when we start nuclear reacter then more energy is requird for start the reacter , we can not start nuclear reacter with less energy, the rod is used specially for stopping contact of newtron particls with the system

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Question # 13

What is fussion?

Answer:-

It is a nuclear reaction in which two nuclei combine to form a larger (with nearly combined mass) nuclei.
It releases lot of energy.
Sun and stars release energy in this fashion

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Question # 14

In radioactive dating we use half life to determine the age of a sample but not average life why?

Answer:-

It is a quantitative measure in which we compare the quantity of a radioactive substance in the sample to that in the atmosphere/fresh substance.

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Question # 15

Name any two elementary particles which have almost infinite life time?

Answer:-

Electron and proton have almost infinite life time.

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Question # 16

Can an electron be obtained (or come out) from the nucleus?

Answer:-

Yes, electron having an energy higher than the ordinary atomic electron may come out of the nucleus due to beta decay process. A negative beta is identical to an electron in all respect except with difference in kinetic energy.

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Question # 17

What is the difference between cathode ray and beta ray?

Answer:-

acctualy normal on the wave front called RAY, in the beta radiation there is wave packet and hence no wave frant. in cathod ray there is electromegnatic radiation and we can use word ray but in the case of beta partical we use word beta radiation insted of betaray

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Question # 18

How is energy transformed in windmills?

Answer:-

Essentially what happens is that as the energy from the wind rotates the vanes of the mill, coils of wire rotate inside a permanent magnet (generator) and produce electric voltage/current. This current is then sent onto the grid and used by us as electricity another form of energy. This is a very simple explanation and there is a lot more in the design of the system.

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Question # 19

What is nucleus?

Answer:-

It is the part of an atom where whole mass of the atom is

assume to be concentrated.Or it is the central part of an atom which contain proton and nuetron.

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