Q1/B/

An object moving at half the speed of light relative to a particular observer has a rest mass of 1 kg. What is it's mass measured by the observer mentioned above?

Q2 /what is the postulates of the special theory of relativity? (10 Marks)

Q3/ Drive an equation of Mass & Energy Equivalence.

Q4/ How many types of decay we have?

Q5/ Why atoms is the ejected piece an alpha-particle, and not something else?

Q6/ If you have (up) and (down) quarks combine them to make Neutron.

1) An object has a constant acceleration. If the object has speed v at time t, then what is the speed at time 2t ? A. v/4 B. v/2 C. v D. 2v E. 4v

2) Light travels in the medium at the speed of

a) 300,000,000 m/s

- b) 300,000,000 km/s
- c) 300,000,000 cm/s
- d) 300,000,000 mm/s

3) A red and green laser are each rated at 2.5mW.Which one produces more photons/second?

A. Red B. Green 3. C. Same

- 4) For which work did Einstein receive the Nobel Prize?
- A. Special Relativity, E=mc2
- B. General Relativity Gravity bends Light
 - **C. Photoelectric Effect & Photons**

5) A 10 eV electron has a wavelength of \sim 0.4 nm What is the wavelength of a 40 eV electron?

A. 0.8 nm

.

B. 0.4 nm

C. 0.2 nm

Q1/

- 2) Light is :
- a) Wave and Particle
- b) particle
- c) not mentioned above
- d) Wave
- 6) Proton and Neutron can be in the:
- a) Same quantum state
- b) Not mentioned above
- c) Different quantum state
- 4) For which work did Einstein receive the Nobel Prize?

a. Photoelectric Effect & Photons

- b. Special Relativity, E=mc2
- c. General Relativity Gravity bends Light

3) Q)A red and green laser are each rated at 2.5mW Which one produces more photons/second?

a. Green b. Red c. Same

1)Energy is :

a) not continuous

- b)continuous
- c)not continuous + continuous
- d) Not mentioned above
- 5) Quarks exchange:

a) color

- b)sigma particles
- c) zeta particles
- d) gluons.

Q2/ What is the origin of quantum mechanics?

- Q3/ Calculate the wave length of a ball ,0.43 travelling with 30m/s ,h=6.6* 10-34
- Q4/ how many types of decay we have ?
- Q5/ Why does a piece come out of the atom?
- Q6/ Why is the ejected piece an alpha-particle, and not something else?