**Gulistan Academy**

Physics (FSc.I) Max.Marks = 44

Chapter No. 4 Pass Marks = 44

1. **Multiple Choice Questions: (10)** Time = 1 hour
2. **Work done will be maximum if the angle between the force and displacement is**

(a) 180**O** (b) 0**O** (c) 45**O** (d) 90**O**

1. **Work done by variable force is determined by dividing**

(a) force into small intervals

(b) displacement into small intervals

(c) both force and displacement into small intervals

(d) force into small and displacement into large intervals

1. **A conservative force is**

(a) gravitational force (b) elastic spring force (c)electric force (d) all

1. **1 kilowatt-hour is equal to**

(a) 3600 **J** (b) 3.6 **MJ** (c) 3.6 **J** (d) 3.6 **kJ**

1. **A 70 kg man runs up a long flight of stairs in 4.0 s. The vertical height of the stairs is 4.5 m. His power output in watts is.**

(a) 7700 (b) 770 (c) 77 (d) 7.7

1. **The energy stored in a spring is**

(a) kinetic energy (b) potential energy (c) elastic potential energy (d) gravitational P.E.

1. **By increasing the distance of a body from the center of the earth, it’s Absolute P.E.**

(a) Also increases (b) decreases (c) first increase than decrease (d) remains same

1. **The escape velocity from the earth surface in kms-1 is**

(a) 4.2 (b) 11 (c) 9.5 (d) 7.5

1. **When two protons are brought close, their**

(a) Kinetic energy increases (b) P.E. increases (c) P.E. decreases (d) none of these

1. **The source of tidal energy is**

(a) Moon (b) Sun (c) Earth (d) Jupiter

1. **Give short answers of the following questions: (18)**
2. How can you calculate the work done by a variable force?
3. What do you mean by a conservative field?
4. Express the power in terms of Constant force and velocity.
5. An object has 1 J of P.E. Explain what does it means?
6. A brick of mass 2.0 kg is dropped from a rest position 5.0 m above the ground. What is its velocity at a height of 3.0 m above the ground?
7. How can you obtain energy from Waves?
8. How the Sun light be directly converted into the electricity?
9. Describe the method of fermentation of converting Biomass into fuels.
10. How large a force is required to accelerate an electron from rest to a speed of 2.0 x 107 ms-1 through a distance of 5.0 cm?

**Give the answer in detail:**

**Question No. 3: (5 + 3)**

1. Prove that the work done by a gravitational field is independent of the path followed.
2. Ten bricks, each 6.0 cm thick and mass 1.5 kg, lie flat on a table. How much work is required to stack them one on the top of another?

**Question No. 4: (5 + 3)**

1. Define Absolute P.E. and drive a relation for it.
2. A car of mass 800 kg travelling at 54 kmh-1 is brought to rest in 60 meters. Find the average retarding force on the car. What has happened to original K.E?