

Units , Measurements and Dimensions

Time:1 hr

Note: All questions are compulsory.

Max marks: 35

Very short questions _____ **1*5=5 marks**

Ques no:1 What is nuclear weak force?

Ques no:2 Give the relative strength of various forces in nature.

Ques no:3 What is meant by units? Explain with examples.

Ques no:4 What do you mean by the term measurement?

Ques no:5 What is the order of magnitude of the following:

- (a) Size of atom. (b) Velocity of light. (c) Size of the nucleus.

Short questions _____ **2*9=18**

Ques no:1 What is physics ? Discuss the relation between physics and technology.

Ques no:2 State law of conservation of angular momentum.

Ques no:3 What is science? What is the main aim of science?

Ques no:4 Integrate the following functions:

- (a) $1/\sqrt{x}$ (b) $(x-1/x)^2$

Ques no:5 Give one example each of gravitational force and EM force.

Ques no:6 Derivative:

- (a) $1/\sqrt{x}$ (b) $x^5/2-5/x^2$

Ques no:7 Expand the following using logarithmic formula:

$$T=2\pi\sqrt{l/g}$$

Ques no:8 Solve $(1+x)^3$ using binomial theorem.

Ques no:9 Solve the equation for:

$$Px^2+qx+r=0$$

Long questions _____ **6*2=12**

Ques no:1 Define gravitational and EM force.

Ques no:2 S.I. unit for some physical quantities:

- (a) Acceleration due to gravity
(b) Impulse
(c) Stress
(d) Moment of inertia
(e) Power
(f)