IMPORTANT QUESTIONS
Class – XI (2019-20)
Sub. – PHYSICS

Short Answer Type Questions.

Q.1- What is the relation between bar and torr?

Q.2- How many electrons would weigh 1kg?

   (Given mass ofoneelectron   =9.11x 10^{-31}kg)

Q.3- Give two areas in which Physics and Technology are closely interlinked.

Q.4- Name the different types of forces and their range.

Q.5- Name the contribution made by the following physicists:

   a) Maxwell   b)Max Planck   c) C.V.Raman   iv) deBroglie.

Q.6- What is unified field theory?

Q.7- Name the force which builds the universe.

Q.8- Name two Indian born physicists who have been awarded Nobel Prize in physics.

Q.9- What do you mean by mass-energy equivalence? Give example.

Q.10- Out of the four fundamental forces which one is (a) Strongest and (b) weakest?

Q.11- Which of the length measurements is the most accurate and why?

   a) 5000.0cm.   b)0.0005 cm   c) 6.00 cm.

Q.12-In Cgs system, the value of Stefan's constant (σ) is 5.67x10^{-5} erg s^{-1} cms^{-2} k^4

Write down its value in SI units.

Q.13- Rule out or accept the following formulae for kinetic energy on the basis of
   dimensional arguments:

   (i) $\dfrac{3}{16}mv$ (ii) $\dfrac{1}{2}mv^2$+ma

Q.14- The radius of a solid sphere is measured to be 11.24 cm. What is the surface area of
   the sphere to appropriate significant figures?

Q.15- If x=at +bt^2, where x is in metre and t in hour, what will be the unit of 'a' and 'b'?

Q.16- The length and breadth of a rectangle are (5.7+ 0.1) cm and (3.4 + 0.2) cm. Calculate
   area of the rectangle with error limits.

Q.17- If A = (12.0 $\pm$ 0.5) cm, find:

   (B=18.0$\pm$0.3) cm

   (i) A +B   (ii) A-B

Q.18- Magnitude of force F experienced by a certain object moving with speed v is given by
   F= kv^2 where K is a constant. Find the dimensions of k.

Q.19- Using the principle of homogeneity of dimensions find which of the following is
   correct.

(i) $T^2 = 22$

(i) $T^2 = \dfrac{22}{G}$

(i) $T^2 = \dfrac{23}{GM}$

Where T is the time period, G is gravitational constant, M is mass and r is radius of orbit.

Q.19- A physical quantity Q is given by

$$Q = \frac{A^2 B^{\frac{3}{2}}}{c^{+4} D^{\frac{1}{2}}}$$

The percentage error in A, B, C, D are 1%, 2%, 4%, 2% respectively. Find the percentage error in Q.

Q.20- The time of oscillation (t) of a small drop o liquid under surface tension depends upon the density p, radius r and surface tension (T). Find the relation of time of oscillation.

Q.21- The density p of a piece of metal of a mass m and volume V is given by the formula

$\rho = \dfrac{m}{V}$;If m = 375.32 $\pm$ 0.01 g, and

V= 136.41 $\pm$ 0.01 cm^3

Find % error in ρ

Q.22- The force experienced by a mass moving with a uniform speed v in a circular path of radius r experiences a force which depends on its mass, speed and radius.

Prove that the relation is F=$\dfrac{mv^2}{r}$

Q.23- The viscous force 'F'' action on a body of radius 'r' moving with a velocity 'v' in a medium of coefficient of viscosity 'η' is given by F=6 $\eta \pi r v$ Check the correctness of the formula.

Q.24- What is principal of homogeneity.

Q.25- Derive the formulas for error in sum, error in difference, error in product error in divide, error in powers.