PHYSICS 2018

Time: 20 Minutes Max. Marks: 17

SECTION "A" (MULTIPLE CHOICE QUESTION)

1. Choose the correct answer for each from the given options:

(i) The practical application of the phenomenon of mutual inductance is:

• AC generator • Transformer • Rectifier • Dynamo

(ii) de Broglie's wavelength is given as:

• $\lambda = \frac{mv}{h}$ • $\lambda = \frac{h}{mv^2}$ • $\lambda = \frac{h}{mv}$ • $\lambda = \frac{mh}{v}$

(iii) Emitter base junction is forward blased in:

• Neither PNP nor NPN Transistor • NPN Transistor
• Both PNP & NPN Transistor • PNP Transistor

(iv) Heat energy cannot be measured in:

• Joule • Kelvin • calorie • british thermal unit

(v) This is not a scalar quantity: • Electromotive force
• Electric flux • Electric intensity • Electric potential

(vi) When it is desired to increase the current in the circuit without affecting its voltage, the batteries must be connected in: • series • parallel • complex circuit
• some in series and some in parallel

(vii) This particle has no charge, no rest mass and can interact with all charged as well as neutral particles:

• Alpha particle • Neutron • Photon • Positron

(viii) A metallic wire of length L, resistance R and resistivity ρ is cut into two equal parts. The resistivity of each part would be: • ρ • 2ρ • $\rho/2$ • $\rho/4$

(ix) tesla (T) is equal to:

• Newton x coulomb • Newton x ampere
• $\frac{\text{Newton}}{\text{ampere x meter}}$ • $\frac{\text{Newton x meter}}{\text{ampere}}$

(x) An electron can revolve in the n^{th} orbit if, and only if, its angular momentum is equal to:

• h • nh • h/π • $nh/2\pi$

(xi) This one is used as fuel for conventional nuclear reactor

• $_{92}U^{235}$ • $_{90}Th^{227}$ • $_{94}Pu^{239}$ • $_{88}Rs^{223}$

(xii) In electric circuits, Rheostat can be largely used as the:

• source of current • source of potential
• potential divider • power supply

(xiii) Lyman found a series of lines in the spectrum of hydrogen atom in this region of:

• Ultraviolet • Visible • infra-red • Far infra-red

(xiv) The method of finding theage of a specimen by C^{14} is called:

• Radio therapy • source of potential • potential divider • power supply

(xv) The rate of flow of blood in the human body can be traced by using this radioisotope:

• $_{20}Ca^{45}$ • $_{6}C^{12}$ • $_{1}H^{3}$ • $_{11}Na^{24}$

(xvi) The kinetic energy per mole of an ideal gas molecules is

• $\frac{3}{2}RT$ • $\frac{2}{3}KT$ • nRT • $\frac{3}{2}KT$

(xvii) The half life of radium is 1600 years. After 6400 years, the sample of surviving radium will be its:

• $\frac{1}{4}$th • $\frac{1}{8}$th • $\frac{1}{16}$th • half