Physics Paper – XII (01) (19)

Name

Roll No

1۔ ہر سوال کے سامنے چار دائرے دیے گئے ہیں، صرف صحیح جواب والا دائرہ بھر دیں۔
2۔ دائروں کو شیڈ (بھرنے) کے لئے نیلے یا کالے رنگ کا مار کر استعمال کریں۔
3۔ جواب میں ایک سے زائد دائرے بھرنے سے جواب غلط تصور ہو گا۔

Time Allowed: 20 Minutes | SECTION – A | Marks : 18

1	Impedance of R.C series A.C circuit is...	○ $Z=\sqrt{R^2+X_L^2}$	○ $Z=\sqrt{X_C^2+X_L^2}$	● $Z=\sqrt{R^2+X_C^2}$	○ None of these
2	Velocity of electromagnetic waves in free space is given by.....	○ $C=\mu_o \in_o$	○ $C=\sqrt{\mu_o \in_o}$	● $C=\frac{1}{\sqrt{\mu_o \in_o}}$	○ $C=\frac{1}{\mu_o \in_o}$
3	Range of wavelength of visible light is in between.....	○ 300 nm to 500 nm	● 400 nm to 700 nm	○ 500 nm to 800 nm	○ 50 nm to 100 nm
4	A wire is stretched to double of its length. The strain is.....	○ 0.2	○ 0.1	○ Zero	○ 0.5
5	Which one is.Ferromagnetic in nature?	○ Soft Iron	● Nickle	○ Copper	○ None of these
6	If the K.E of a free electron doubles, its de Broglie wavelength changes by the factor.....	○ $\sqrt{2}$	● $\frac{1}{\sqrt{2}}$	○ 2	○ $\frac{1}{2}$
7	The positron has charge which is in magnitude equal to the charge on.....	○ Electron	○ Proton	○ B-Particle	● All these
8	Webber per second is equal to.....	○ Joule	● Volt	○ Tesla	○ None of these
9	Unit of decay constant λ is.....	○ ms	○ m^{-1}	○ m	● S^{-1}
10	Laser is a device which can produce.....	○ Intense beam of light	○ Coherent beam of light	○ Mono-chromatic beam of light	● All these
11	Mass equivalent to 931 Mev energy is.....	○ 6.02×10^{-23} kg	● 1.766×10^{-27} kg	○ 2.67×10^{-27} kg	○ 6.02×10^{-27} kg
12	Pair production occurs only when energy of photon is at least equal to.....	○ 1.02 kew	○ 1.02 ev	● 1.02 Mev	○ 1.02 Gev
13	When a wire is stretched and its radius becomes "$\frac{r}{2}$" ; then its resistance will be.....	● 16 R	○ 4R	○ 2R	○ Zero
14	One gauss (1G) is equal to.....	○ 10^4 T	● 10^{-4} T	○ 10^2 T	○ 10^{-2} T
15	Galvanometer is used for detection and measurement of small.....	○ Voltage	● Current	○ Resistance	○ Conductance
16	A photon while passing through in magnetic field are deflected towards....	○ North Pole	○ South Pole	○ Are ionized	● None of these
17	The device in which induced emf is statically induced emf is.....	● Transformer	○ A.C generator	○ Alternator	○ Dynamo
18	The inductive reactance of coil depends upon frequency of.....	● A.C	○ D.C	○ Both A.C & D.C	○ None of these

correct Ans = 1

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PHYSICS (New)

Inter Part – II

(Fresh/Reappear)

Note: Time allowed for Section – B and Section – C is 2 Hours and 40 minutes.

Section – B

Marks: 40

Q-II Attempt any TEN parts. Each part carries FOUR marks.

1. Show that reactance is measured in ohms for both inductors and capacitors.
2. Explain different combination of series and parallel combination of capacitors.
3. Distinguish between crystalline, amorphous and polymer solids.
4. What is the nature of force between two parallel current carrying wires (in same direction)?
5. What is induced emf? Write both dynamically and statically induced emf?
6. Explain back emf in term of A.C motor.
7. How does doubling the frequency affect the reactance of inductor?
8. Define Shear Modulus, Young Modulus and Bulk Modulus.
9. Why X–rays have different properties from light even though both originate from orbital transition of electrons in excited atoms?
10. Discuss different types of Quarks.
11. Some stars are observed to be reddish, and some are blue. Which stars have the high surface temperature? Explain.
12. Why the rest mass of photon is equal to zero?
13. What is meant by the statement that a laser beam is coherent, mono chromatic and parallel?

Section – C

Marks: 27

Note: Attempt any THREE questions. All questions carry equal marks.

Q-III (a) Explain uncertainty principle. **(5)**

(b) Find the shortest wavelength photon emitted in a Lyman Series of hydrogen atom. **(4)**

Q-IV (a) Write note on energy band theory, also define conductor, insulator, semi conductor and super-conductor. **(5)**

(b) An electron moves with a speed of V = 0.85C. Find its total energy and K.E in electron volt. **(4)**

Q-V (a) Explain the Resonance of R.L.C series circuit. Show that resonance occurs at a frequency determined by $f = \frac{1}{2\pi\sqrt{LC}}$ **(5)**

(b) The RMS value of currant in an A.C circuit is 10A. What is peak current? **(4)**

Q-VI Explain any two of the following:

(a) Transformer **(4.5)**

(b) Kirchhoff's Current Law **(4.5)**

(c) Nuclear Fusion Reaction. **(4.5)**