

Roll No

Name

1- ہر سوال کے سامنے چار دائرے دئے گئے ہیں، صرف صحیح جواب والا دائرہ بھریں۔

2- دائروں کو شیڈ (بھریں) کے لئے لیے پانچ لے رنگ کا پین استعمال کریں۔

3- جواب میں ایک سے زائد دائرے بھرنے سے جواب غلط تصور ہوگا۔



Time Allowed: 20 Minutes

SECTION - A

Marks : 18

The strength of electric field is equal to.....	<input type="radio"/> Electrostatic potential	<input type="radio"/> Electric potential	<input checked="" type="radio"/> Potential gradient	<input type="radio"/> Potential difference
What will be the Electric flux of the surface which is placed perpendicular to the electric field?	<input checked="" type="radio"/> $\Phi = EA_1$	<input type="radio"/> $\Phi = 0_1$	<input type="radio"/> $\Phi = EA \cos \theta$	<input type="radio"/> None of these
Which one of the given is a vector quantity?	<input type="radio"/> Current	<input type="radio"/> Electrostatic potential	<input checked="" type="radio"/> Electric field intensity	<input type="radio"/> E. flux
The current in 2 $\Omega$ resistor is equal to.....	<input type="radio"/> 1.43 A	<input type="radio"/> 0.73 A	<input type="radio"/> 1.29 A	<input checked="" type="radio"/> 1 A
Ampere's law is applicable to.....	<input checked="" type="radio"/> Any closed path	<input type="radio"/> Circular path	<input type="radio"/> Rectangular path	<input type="radio"/> None of these
The magnetic flux will be maximum for an angle of.....	<input type="radio"/> $180^\circ$	<input type="radio"/> $90^\circ$	<input type="radio"/> $60^\circ$	<input checked="" type="radio"/> $0^\circ$
A high voltage in a TV receiver is 17 KV and the Max allowable current is 150 $\mu$ A. The least permissible value of load resistance is.....	<input type="radio"/> $3.3 \times 10^6 \Omega$	<input checked="" type="radio"/> $113.3 \times 10^6 \Omega$	<input type="radio"/> 1	<input type="radio"/> 0
Which of the given induced emf is statically induced emf?	<input type="radio"/> Dynamo	<input type="radio"/> Alternator	<input type="radio"/> AC generator	<input checked="" type="radio"/> Transformer
Eddy current is produced when.....	<input checked="" type="radio"/> A metal is exposed to changing magnetic field	<input type="radio"/> A metal is kept in steady Mag. Field	<input type="radio"/> A circular coil is placed in steady Mag. Field	<input type="radio"/> Current is passed through a coil
Electromagnetic Theory of relationship between charges, Circuits and electric and magnetic field was given by.....	<input type="radio"/> Faraday	<input type="radio"/> Einstein	<input type="radio"/> Ampere	<input checked="" type="radio"/> Maxwell
The phase difference between the current and voltage at resonance is.....	<input type="radio"/> $\frac{\pi}{2}$	<input type="radio"/> $-\pi$	<input type="radio"/> $\pi$	<input checked="" type="radio"/> 0
What will be the strain if a wire is stretched to double of its length?	<input type="radio"/> 0.5	<input type="radio"/> 0	<input checked="" type="radio"/> 1	<input checked="" type="radio"/> 2
The Material in which the valance band is completely filled is known.....	<input type="radio"/> Semi conductor	<input type="radio"/> Conductor	<input checked="" type="radio"/> Insulator	<input type="radio"/> Super conductor
An addition of impurity into intrinsic..... is called doping.	<input type="radio"/> Conductor	<input type="radio"/> Super conductor	<input checked="" type="radio"/> Semi conductor	<input type="radio"/> All of these
Pair production occurs only when energy of photon is at least equal to.....	<input type="radio"/> 1.02 GeV	<input checked="" type="radio"/> 1.02 MeV	<input type="radio"/> 1.02 eV	<input type="radio"/> 1.02 KeV
Which one of the given is Balmer formula?	<input checked="" type="radio"/> $\frac{1}{\lambda} = R \left( \frac{1}{2^2} - \frac{1}{n^2} \right)$	<input type="radio"/> $\frac{1}{\lambda} = R \left( 1 - \frac{1}{n^2} \right)$	<input type="radio"/> $\frac{1}{\lambda} = R \left( \frac{1}{3^2} - \frac{1}{n^2} \right)$	<input type="radio"/> None of these
A radioactive substance has a half life of four months. $\frac{3}{4}$ th of the substance will decay in.....	<input type="radio"/> 16 months	<input type="radio"/> 12 months	<input checked="" type="radio"/> 8 months	<input type="radio"/> 6 months
A binding energy for nucleus A is 7.7 MeV and for nucleus B is 7.8 MeV. Which nucleus has the larger mass?	<input checked="" type="radio"/> Nucleus B	<input type="radio"/> Nucleus A	<input type="radio"/> Both have same Mass	<input type="radio"/> None of these

**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. Water has a large dielectric constant, but is rarely used in capacitors. Why? ✓
2. A heavy duty battery of a truck maintains a current of 3A for 24 hours. How much charge flows from the battery during this time? ✓
3. Why rise in Temperature of a conductor is accompanied by rise in resistance? ✓
4. What is the nature of force between two parallel current carrying wires in the same direction? ✓
5. How does electromagnetic brake work? ✓
6. How does doubling the frequency affect the reactance of (i) an inductor (ii) a capacitor. ✓
7. Write a note on the superconductivity of a conductor with the help of a curve. ✓
8. Explain why the base current is weak as compared to collector current? ✓
9. What is photodiode? Explain. ✓
10. Why don't we observe Compton's effect with visible light? ✓
11. X – rays can emit electrons from metal surface and X – rays can be diffracted, comment. ✓
12. What is optical pumping? ✓
13. Write down the similarities and difference between Fission and Fusion. ✓

**Section – C****Marks: 27****Note :** Attempt any THREE questions. All questions carry equal marks.

**Q-III** (a) What is electric flux? Explain. Using mathematical expression of electric flux show that how electric flux is maximum and minimum. ✓

(b) A heating coil has a resistance of  $20 \Omega$ . It is designed to operate on 220 V. What electric energy in Joules is supplied to the Heater in 20 seconds?

**Q-IV** (a) What is Transformer? Explain its principle, construction and its mathematical relationship. ✓

(b) How a 5 mA, 100 ohms Galvanometer is converted into 20 V voltmeter? ( $R = 3900 \Omega$ ) ✓

**Q-V** (a) Describe Davisson and Germer experiment to show that particles have wave characteristics. ✓

(b) The rest mass of a proton is  $1.673 \times 10^{-27}$  Kg. At what speed would the mass of proton be tripled.

**Q-VI** Write short note on any two of the following.

(i) Torque on a current carrying loop/coil. ✓

(ii) Mechanical properties of solids. ✓

(iii) Mass spectrometer. ✓