CLASS : XII

SESSION: 2023-24

PRACTICE QUESTION PAPER-5

SUBJECT: PHYSICS (THEORY)

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S.No.	Unit	MCQ (1mark)	A&R (1mark)	SA I (2Marks)	SA II (3Marks)	CSB (4Marks)	LA (5marks)	Total	Marks
1	Electrostatics	2(2)	1(1)		3(1)		5(1)	11(5)	16(7)
2	Current electricity			2(1)	3(1)			5(2)	
3	Magnetic effects of current and Magnetism	4(4)			3(1)			7(5)	17(9)
4	Electromagnetic induction and Alternating current	2(2)			3(1)		5(1)	10(4)	
5	Electromagnetic Waves	1(1)			3(1)			4(2)	18(7)
6	Optics		1(1)	4(2)		4(1)	5(1)	14(5)	
7	Dual Nature of Radiation and Matter	1(1)	1(1)	2(1)				4(3)	12(7)
8	Atoms & Nuclei	2(2)			6(2)			8(4)	
9	Electronic devices		1(1)	2(1)		4(1)		7(3)	7(3)
		12(12)	4(4)	10(5)	21(7)	8(2)	15(3)	70(33)	70(33)

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PRACTICE QUESTION PAPER-5

SUBJECT: PHYSICS (THEORY)

Maximum Marks: 70 **Time Allowed: 3 hours.**

General Instructions:

(1) There are 33 questions in all. All questions are compulsory.

(2) This question paper has five sections: Section A, Section B, Section C, Section D and Section E.

(3) All the sections are compulsory.

(4) Section A contains sixteen questions, twelve MCQ and four Assertion Reasoning based of 1 mark each, Section B contains five questions of two marks each, Section C contains seven questions of three marks each, Section D contains two case study-based questions of four marks each and Section E contains three long answer questions of five marks each.

(5) There is no overall choice. However, an internal choice has been provided in one question in Section B, one question in Section C, one question in each CBQ in Section D and all three questions in Section E. You have to attempt only one of the choices in such questions.

(6) Use of calculators is not allowed.

(7) You may use the following values of physical constants where ever necessary

i. $c = 3 \times 10^8$ m/s

ii. $m_e = 9.1 \times 10^{-31}$ kg

iii. $e = 1.6 \times 10^{-19}$ C

iv. $\mu_0 = 4\pi \times 10^{-7}$ TmA^{-1}

v. $h = 6.63 \times 10^{-34}$ Js

vi. $\varepsilon_0 = 8.854 \times 10^{-12}$ $C^2N^{-1}m^{-2}$

vii. Avogadro's number = 6.023×10^{23} per gram mole

SECTION-A

1. Charge Q is kept in a sphere of 5 cm first than it is kept in a cube of side 5 cm. the outgoing flux will be
   (a) More in case of sphere (b) More in case of cube
   (c) Same in both case (d) Information Incomplete

2. Three capacitors of capacitances 1μf, 2μF & 3μF are connected in series and a potential difference of 11V is applied across the combination then the potential difference across the plates of 1μf capacitor is
   (a) 2V (b) 4V (c)1V (d) 6V

3. A wire in the form of a circular loop, of one turn carrying a current, produces magnetic induction B at the center. If the same wire is looped into a coil of two turns and carries the same current, the new value of magnetic induction at the center is
   (a) B (b) 2B (c) 4B (d)8B

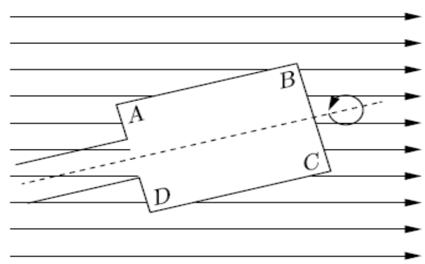
4. Current sensitivity of a galvanometer can be increased by decreasing:
   (a) Magnetic field B (b) number of turns N (c) Torsional constant K (d) Area A

5. The relative permeability of a substance X is slightly less than unity and that of substance Y is slightly more than unity, then
   (a) X is paramagnetic and Y is ferromagnetic (b) X is diamagnetic and Y is ferromagnetic
   (c) X and Y both are paramagnetic (d) X is diamagnetic and Y is paramagnetic

6. A wire of magnetic dipole moment M and L is bent into shape of a semicircle of radius r. What will be its new dipole moments?

(a) M (b) $\frac{M}{2\pi}$ (c) $\frac{M}{\pi}$ (d) $\frac{2M}{\pi}$

7. A rectangular coil $ABCD$ is rotated anticlockwise with a uniform angular velocity about the axis shown in the figure. Initially, the axis of rotation of the coil as well as the magnetic field B were horizontal. The induced E.M.F. in the coil would be maximum when plane of the coil



(a) is horizontal.
(b) is at right angle to the magnetic field.
(c) makes an angle of 30^0 with the horizontal.
(d) makes an angle of 45^0 with the direction of magnetic field.

8. The magnetic flux through a circuit of resistance R changes by an amount $\Delta\phi$ in a time Δt. The total electric charge Q that passes any point in the circuit during the time Δt is represented by

(a) $Q = \frac{\Delta\phi}{\Delta t}$ (b) $Q = \frac{\Delta\phi}{R}$ (c) $Q = R \times \frac{\Delta\phi}{\Delta t}$ (d) $Q = \frac{1}{R} \times \frac{\Delta\phi}{\Delta t}$

9. One requires 11eV of energy to dissociate a carbon monoxide molecule into carbon and oxygen atoms. The minimum frequency of the appropriate electromagnetic radiation to achieve the dissociation lies in

(a) visible region (b) infrared region (c) ultraviolet region (d) microwave region

10. Which of the following has maximum stopping potential when metal is illuminated by visible light?

(a)Blue (b)Yellow (c)Violet (d)Red

11. The energy E of a hydrogen atom with principal quantum no. n is given by $E = -\frac{13.6}{n^2} eV$. The energy ejected when the electron jumps from $n = 3$ state to $n = 2$ state of hydrogen is approximately

(a) 0.85 eV (b) 1.5 eV (c) 1.9 eV (d) 3.4 eV

12. The radius of a nucleus with nucleon number 16 is 3×10^{-15} m. Then, the radius of a nucleus with nucleon number 128 will be: -

(a) 3×10^{-15} m (b) 6×10^{-15} m (c) 9×10^{-15} m (d) 24×10^{-15} m

13. **Assertion:-** The electric field at every point is normal to the equipotential surface passing through that point.

Reason:- No work is required to move a test charge on an equipotential surface.

(a) Both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(b) Both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(c) The Assertion is correct but Reason is incorrect.
(d) Both the Assertion and Reason are incorrect.

14. **Assertion :-** When tiny circular obstacle is placed in the path of light from some distance, a bright spot is seen at the centre of the shadow of the obstacle.

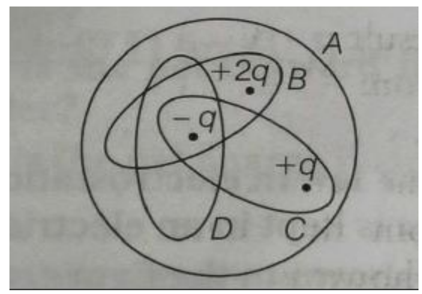
Reason :- Destructive interference occurs at the centre of the shadow.

(a) Both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(b) Both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(c) The Assertion is correct but Reason is incorrect.
(d) Both the Assertion and Reason are incorrect.

15. **Assertion :-** Kinetic energy of photo electrons emitted by a photosensitive surface depends upon the intensity of incident photon.
Reason :- The ejection of electrons from metallic surface is possible with frequency of incident photon below the threshold frequency.
(a) Both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(b) Both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(c) The Assertion is correct but Reason is incorrect.
(d) Both the Assertion and Reason are incorrect.

16. **Assertion:-** Silicon is preferred over germanium for making semiconductor devices.
Reason:- The energy gap for germanium is more than the energy gap of silicon
(a) Both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(b) Both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(c) The Assertion is correct but Reason is incorrect.
(d) Both the Assertion and Reason are incorrect.

Section – B



17. Rank the Gaussian surfaces as shown in the figure. In order of increasing electric flux, starting with the most negative.

18. The refractive index of diamond is much higher than that of glass. How does a diamond cutter make use of this fact?

19. Find the radius of curvature of the convex surface of a plano-convex lens, whose focal length is 0.3 m and the refractive index of the material of the lens is 1.5

(OR)

A telescope consists of two lenses of focal lengths 20 cm and 5 cm. Obtain its magnifying power when the final image is (i)at infinity (ii)at 25 cm from the lenses of eye.

20. If light of wavelength 412.5nm is incident on each of the metals given below, which ones will show photoelectric emission and why

Metal	Work Function (eV)
Na	1.92
K	2.15
Ca	3.20
Mo	4.17

21. Draw the energy band diagram when intrinsic semiconductor (Ge) is doped with impurity atoms of Antimony (Sb). Name the extrinsic semiconductor so obtained and majority charge carriers in it.

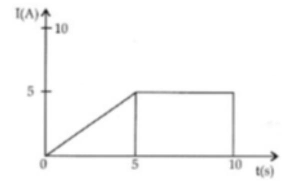
(OR)

Draw energy band diagram of p and n type semiconductors. Also, write two differences between p-type and n-type semiconductors.

Section – C

22. A uniformly charged conducting sphere of 2.4 m diameter has a surface charge density of 80 μC/m^2.
(a) Find the charge on the sphere.
(b) What is the total electric flux leaving the surface of the sphere?

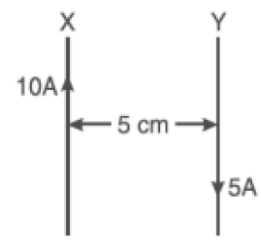
23. Deduce the relationship between current I flowing through a conductor and drift velocity of the electrons. Following figure shows a plot of current I flowing through the cross section of a wire versus the time T. Use the plot to find the charge flowing in 10 seconds through the wire.



24. (a) What is the principle of a moving coil galvanometer?
(b) Give two reasons to explain why a galvanometer cannot as such be used to measure the value of the current in a given circuit.
(c)Define the terms: (i) voltage sensitivity and (ii) current sensitivity of a galvanometer.

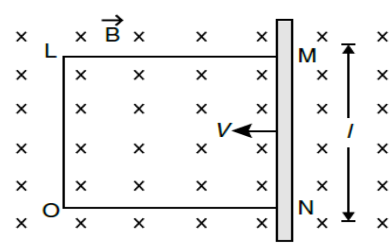
(OR)

Two parallel straight wires X and Y separated by a distance 5 cm in air carry current of 10 A and 5 A respectively in opposite direction as shown in diagram. Calculate the magnitude and direction of the force on a 20 cm length of the wire Y.



25. A rectangular conductor LMNO is placed in a uniform magnetic field of 0.5 T. The field is directed perpendicular to the plane of the conductor.

When the arm MN of length of 20 cm is moved towards left with a velocity of 10 ms^{-1}, calculate the emf induced in the arm. Given the resistance of the arm to be 5 ohm (assuming that other arms are of negligible resistance), find the value of the current in the arm.



26. Name the parts of the electromagnetic spectrum which is
(i) suitable for RADAR systems in aircraft navigations.
(ii) used to treat muscular strain.
(iii) used as a diagnostic tool in medicine. Write in brief, how these waves can be produced?

(OR)

(i) Name the EM waves which are used for the treatment of certain forms of cancer. Write their frequency range.
(ii) Thin ozone layer on top of stratosphere is crucial for human survival. Why?
(iii) Why is the amount of the momentum transferred by the EM waves incident on the surface so small?

27. The ground state energy of hydrogen atom is – 13.6 eV. If an electron makes a transition from an energy level – 1.51 eV to – 3.4 eV, calculate the wavelength of the spectral line emitted and name the series of hydrogen spectrum to which it belongs.

28. Calculate the energy released in MeV in the following nuclear reaction:

$$_{238}^{92}U \rightarrow {}_{234}^{90}Th + {}_{4}^{2}H + Q$$

Mass of $_{238}^{92}U$ = 238.05079 amu
Mass of $_{235}^{90}Th$ = 234.043630 amu

Mass of ${}^{2}_{4}He$ = 4.002600 amu
1 u = 931.5 MeV/c2

Section – D

29. Case Study: Read the following paragraph and answer the questions.
Two sources of light which continuously emit light waves of same frequency (or wavelength) with a zero or constant phase difference between them, are called coherent sources. Two independent sources of light cannot act as coherent sources, they have to be derived from the same parent source. In Young's double slit experiment, two identical narrow slits S1 and S2 are placed symmetrically with respect to narrow slit S illuminated with monochromatic light. The interference pattern is obtained on an observation screen placed at large distance D from S1 and S2.
a) Mention any 2 conditions for sustained interference.
b) In the Young's double slit experiment using a monochromatic light of wavelength λ, what is the path difference (in terms of an integer n) corresponding to any point having half the peak intensity?
c)Calculate the ratio of the fringe width for bright and dark fringes in YDS experiment.

(OR)

c)In Young's double slit experiment, while using a source of light of wavelength 4500 Å, the fringe width obtained is 0.4 cm. If the distance between the slits and the screen is reduced to half, calculate the new fringe width.

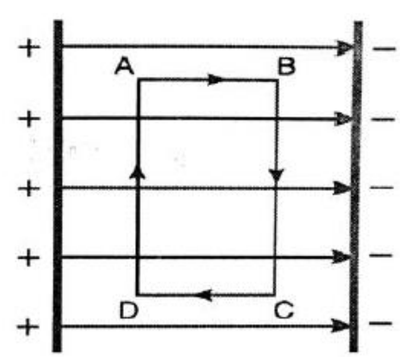
30. Case Study: Read the following paragraph and answer the questions.
A p-n junction is a single crystal of Ge or Si doped in such a manner that one-half portion of it acts as p-type semiconductor and other half functions as n-type semiconductor. As soon as junction is formed, the holes from the p-region diffuse into the n-region and electrons from n-region diffuse into p-region. This results in the development of potential barrier VB across the junction which opposes the further diffusion of electrons and holes through the junction. The small region in the vicinity of the junction which is depleted of free charge carriers and has only immobile ions been called the depletion region.
a) Why is germanium preferred over silicon for making semiconductor devices?
b) Which type of biasing results in a very high resistance of a p n junction diode. Draw a diagram showing this bias.
c)How does the width of the depletion region of a pn junction vary, if the reverse bias applied to it decreases.

(OR)

(c)Name the 2 important processes involved in the formation of a p n junction.

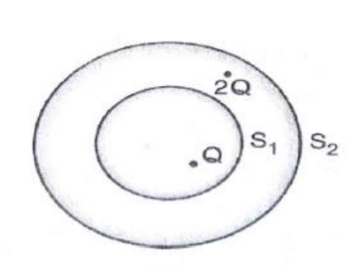
Section – E

31. a) What work must be done in carrying an alpha particle across a potential difference of 1volt?
(b) A uniform field E exists between two charged plates as shown in fig. What would be the work done in moving a charge q along the closed rectangular path ABCDA?
(c) A parallel plate capacitor is charged to a potential difference V by a d.c source. The battery remains connected and a dielectric slab of thickness d and dielectric constant K is introduced between the plates of the capacitor. How the following will change: (i) Electric field between the plates (ii) capacitance and(iii) charge on the plates of the capacitor



(OR)

(a) S1 and S2 are two parallel concentric spheres enclosing charges Q and 2Q as shown in fig.



(i) What is the ratio of the electric flux through S1 and S2?
(ii) How will the electric flux through the sphere S1 change, if a medium of dielectric constant 5 is introduced in the space inside S1 in place of air?
(b) Obtain the expression for the electric field intensity due to a uniformly charged infinite plane sheet

32. (i) A power transmission line feeds input power at 2200 V to a step-down transformer with its primary windings having 3000 turns. Find the number of turns in the secondary to get the power output at 220 V.
(ii) A step-up transformer converts a low voltage into high voltage. Does it not violate the principle of conservation of energy? Explain.
(iii) Write any two sources of energy loss in a transformer.

(OR)

(i)A coil of number of turns N, area A is rotated at a constant angular speed ω in a uniform magnetic field **B** and connected to a resistor R. Deduce an expression for maximum emf induced in the coil.
(ii) A circular coil of cross-sectional area 200 cm^2 and 20 turns is rotated about the vertical diameter with angular speed of 50 rad/s in a uniform magnetic field of magnitude 3x 10^{-2} T. Calculate the maximum value of emf in the coil.

33. State Huygens principle.
(b) Define the term wavefront.
(c) Draw a ray diagram to show the working of a compound microscope. Derive an expression for its magnifying power.

(**OR)**

(a) Write two points of difference between interference pattern and diffraction pattern.
(b) Draw the ray diagram to show the working of a refracting telescope. Derive an expression for its magnifying power (normal adjustment).

CLASS : XII
SESSION: 2023-24
SAMPLE QUESTION PAPER-5 (MARKING SCHEME AND KEY)
SUBJECT: PHYSICS (THEORY)

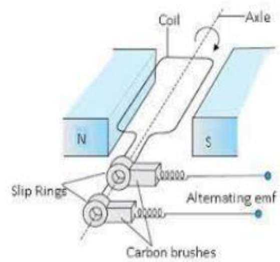
Q.No.	Option/Ans/Key point	weightage	Marks
SECTION: A			
1.	C	1	1
2.	D	1	1
3.	C	1	1
4.	C	1	1
5.	D	1	1
6.	D	1	1
7.	A	1	1
8.	B	1	1
9.	C	1	1
10.	C	1	1
11.	C	1	1
12.	B	1	1
13.	A	1	1
14.	C	1	1
15.	D	1	1
16.	C	1	1

Q.No.	Option/Ans/Key point	weightage	Marks
	SECTION: A		
	SECTION: B		
17.	$\emptyset_{net} = \frac{q_{net\ enclosed}}{\epsilon_0}$ $q_{A\ enclosed} = 2q \quad \emptyset_A = \frac{2q}{\epsilon_0}$ $q_{B\ enclosed} = q \quad \emptyset_B = \frac{q}{\epsilon_0}$ $q_{C\ enclosed} = 0 \quad \emptyset_C = 0$ $q_{D\ enclosed} = -q \quad \emptyset_D = \frac{-q}{\epsilon_0}$ D < C < B < A.	½ ½ ½ ½	2
18.	A diamond cutter uses a large angle of incidence to ensure that the light entering the diamond is totally reflected from its face.	1+1	2
19.	$\frac{1}{f} = \frac{(\mu-1)}{R}$ $\frac{1}{0.3} = \frac{(1.5-1)}{R}$ $\frac{1}{0.3} = \frac{0.5}{R}$ ➔ R = 0.15 m (OR) Magnification when image formed at infinity $m_{\propto} = \frac{f_o}{f_e}$ $= \frac{20}{5} = 4$ $m_D = \frac{f_o}{f_e}\left[1 + \frac{D}{f_e}\right]$ $= \frac{20}{5}\left[1 + \frac{25}{5}\right]$ $= 24$	½ ½ ½+½ ½ ½ ½ ½	2 2
20.	Energy of photon $E_{ph} = \frac{hc}{\lambda e} eV.$ $E_{ph} = \frac{(6.624\times10^{-34})(3\times10^{8})}{(412.5\times10^{-9})(1.6\times10^{-19})}$ $E_{ph} = 3.00eV$ As sodium and Potassium are having work function less than energy of photon. These two metals exhibit photoelectric effect.	½ ½ ½ ½	2
21.	Differences two points Diagrams	½ + ½ ½+½	2

	SECTION - C		
22.	(i) $\sigma = \frac{q}{4\pi R^2}$ $q = \sigma 4\pi R^2$ $q = 80 \times 10^{-6} \times 4 \times (3.14) \times (1.2)^2$ $q = 1.45\ mC$ (ii) $\emptyset = \frac{q}{\epsilon_0}$ $\emptyset = \frac{1.45\times10^{-3}}{8.85\times10^{-12}}$ $\emptyset = 16.38 \times 10^7 \frac{N}{m^2.C}$	½ ½ ½ ½ ½ ½	3
23.	Derivation Charge flowing through the given cross-section is equal to area under the curve of current (I) versus time (t). $q = \left(\frac{1}{2} \times 5 \times 5\right) + (5 \times 5)$ q = 12.5 + 25 = 37.5 C.	2 ½ ½	3
24.	(a) Principle. (b) Two reasons. (c) Definitions of voltage sensitivity and current sensitivity. (OR) $F = \frac{\mu_0 i_1 i_2 l}{2\pi r}$ $F = \frac{2\times10^{-7}\times10\times5\times20\times10^{-2}}{5\times10^{-2}}$ $F = 4 \times 10^{-5} N$	1 ½+½ ½+½ 1 1 1	3 3
25.	Let *ON* be at some point *x*. The emf induced in the loop $e = -\frac{d\emptyset}{dt}$ $e = -\frac{d(Blx)}{dt}$ $e = -Blv$ $e = 0.5 \times 0.2 \times 10 = 1V$ Current in the arm, $I = \frac{e}{R}$ $I = \frac{1}{5} = 0.2$ A	1 1 1	3
26.	(i) Microwaves are suitable for RADAR systems that are used in aircraft navigation. These rays are produced by special vacuum tubes, namely klystrons and magnetrons diodes. (ii) Infrared rays are used to treat muscular strain. These rays are produced by hot bodies and molecules. (iii) X-rays are used as a diagnostic tool in medicine. These rays are produced, when high energy electrons are stopped suddenly on a metal of high atomic number. (OR)	1 1 1 1 1	3

	(i) γ-rays are used for the treatment of certain forms of cancer. Its frequency range is **3 X 10^{19} Hz to 5 X 10^{22} Hz.** (ii) The thin ozone layer on top of stratosphere absorbs most of the harmful ultraviolet rays coming from the sun towards the earth. They include UVA, UVB and UVC radiations, which can destroy the life system on the earth. Hence, this layer is crucial for human survival. (iii) An electromagnetic wave transports linear momentum as it travels through space. If an electromagnetic wave transfers a total energy U to a totally absorbing surface in time t, then total linear momentum delivered to the at surface. This means, the momentum range of EM waves is **10^{-19} to 10^{-41}**. Thus, the amount of momentum transferred by the EM waves incident on the surface is very small	1	3
27.	Energy difference = energy emitted by photon = -1.51 – (-3.4) = 1.89 eV = 1.89 × 1.6 × 10^{-19} J $\lambda = \frac{hc}{E_2 - E_1}$ $= \frac{6.624\times10^{-34}\times3\times10^{8}}{1.89\times1.6\times10^{-19}}$ = 6548A^0. This wavelength belongs to Balmer series of hydrogen spectrum.	1 1 1	3
28.	Using the given data $\Delta m = [m(^{238}_{92}U) - m(^{234}_{90}Th) - m(^{2}_{4}He)]$ Energy released $Q = \Delta mc^2$ $Q = [m(^{238}_{92}U) - m(^{234}_{90}Th) - m(^{2}_{4}He)]c^2$ $Q = [238.05079amu - 234.043630amu - 4.002600amu]c^2$ $Q = [0.00456amu]c^2$ $Q = \left[\!\left[0.00456 \times \frac{931MeV}{c^2}\right]\!\right] c^2$ $Q = 4.25\ MeV$	1 1 1	3
	SECTION - D		
29.	a.Conditions for sustained interference b. I = $I_0 Cos^2\Phi/2$ $Cos^2\Phi/2$ = ½ Cos Φ/2 = 1/√2 Φ/2 = π/4 Φ = π/2 (2n+1) Δx = λ/2π (Φ) = (λ/2π) x (π/2)(2n+1) = λ/4 (2n+1) c. Ratio = 1:1 β = λ D/ d Taking the ratio new fringe width is half the first one = 0.2cm	1 1 2	4

30.	a. This is because the energy gap for Ge (E=0.7 eV) is smaller than the energy gap for Si (E=1.1 eV). b. Reverse Bias, figure c. if the reverse bias decreases the width of the depletion region decreases OR c.Drift and Diffusion.	1 1 2	4
	SECTION - E		
31.	(a) W=q×dV=2×e×1 =3.2×10−19 J (b) Zero .Work done in moving a charge in a closed path is zero. (c) (i) Since the battery remains connected, the potential difference remains constant, hence E also remain unchanged (ii)Capacitance becomes K times (iii).Charge becomes K times since capacitance becomes K times. (OR) (a) (i) Φ_1= Q/ε_0 and Φ_2= $3Q/\varepsilon_0$ so, Φ_1:Φ_2 =1:3 (ii) $\Phi_1=\int E.dS=Q/\varepsilon_0$. On introducing medium of dielectric constant L inside the sphere S1,the electric field becomes K times Now the new flux $\Phi 1'=Q/K\varepsilon_0$ On solving K=5 . So new flux $\Phi 1'=Q/5\varepsilon_0$ (b) Derivation of electric field intensity	**1** **1** **1** **1** **1** 1 2 2	5 5
32.	(i) E_P= 2200 V, n_P= 3000, n_S= ?, E_S= 220 V $E_S/E_P = n_S/n_P$ So n_S= 3000 ×1/10 = 300 (ii) A step up transformer converts a low voltage into high voltage, it does not violate principle of conservation of energy as the increase in voltage is at the cost of current. When voltage increases the current decreases. (iii) Energy loss in a transformer: (a)Eddy current loss: Alternating magnetic flux induces eddy currents in the iron core, which leads to energy loss in the form of heat. It can be minimized by using laminated core. (b) Hysteresis loss: AC carries the core to the process of magnetization and demagnetization. Work is done in each of these cycles resulting into loss of energy. (OR) (i) Consider a coil consisting of N turns of insulated copper wire rotated in a uniform magnetic field B. Let the angle between magnetic field and area vector at any point of time be θ. The coil is rotated with angular velocity ω. ϕ= NBA cos θ θ= ωt So, ϕ= NBA cos ωt	2 1 1 1 1 1 1	5 5

	$E = -d\phi/dt$ $= -NBA\omega(-\sin\omega t)$ $= ANB\omega \sin\omega t$ $E=0$ when $\omega t=0$ $E=$ max when $\omega t=\pi/2$ $E_{max} = NBA\omega = E_0$ $E_{in} = E_0 \sin\omega t$ (ii) $A= 200\ cm^2 = 200 \times 10^{-4}\ m^2$, $N=20$, $\omega= 50$ rad/s , $B= 3\times10^{-2}$ T $E_0= NBA\omega= 20\times 3\times10^{-2}\times 200 \times10^{-4}\times 50 = 0.6$ V  	2	
33.	Huygens principle Definition Ray diagram derivation (OR) Two points Ray diagram derivation	1 1 1.5 1.5 2 1.5 1.5	