



PHYSICS

BOOKS - OSWAAL PUBLICATION PHYSICS (KANNADA ENGLISH)

Sample Paper 3



1. What is an electric dipole ?

2. State Ampere's circuital law and represent it

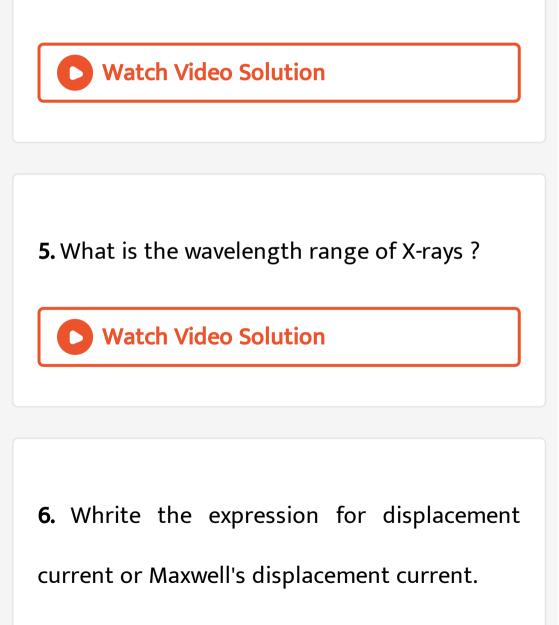
mathematically.

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3. Give any one use of electromagnet

4. Name the rule which gives the direction of

induced current in a conductor .





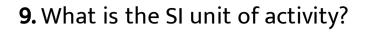
7. How is the power of lens related to its focal

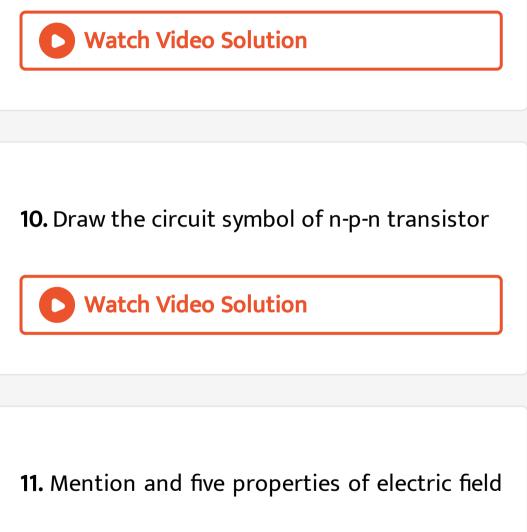
length?

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8. Who proposed the wave nature of light?







lines.

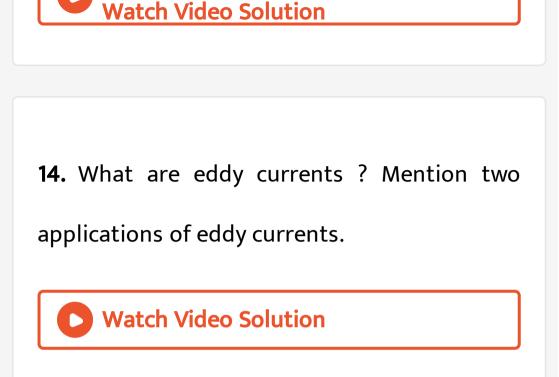


12. Give an expression for force acting on a charge moving in magnetic field and explain the symbols, when does the force become maximum.

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13. What is hysterisis? Define the terms 'coercivity' and 'retentivity' of a ferromagnetic material.





15. What is a thin prism? Write its deviation

expression.

16. How do you represent plane polarized and

unpolarised light ?



17. Define half life of a radioactive element and

deduce the expression for the same .

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18. Give three differences between intrinsic and extrinsic semiconductors



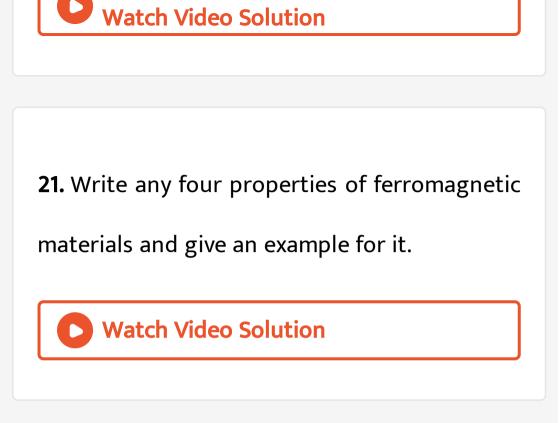
19. Derive an expression for the electric potential energy of a system of two point charges in the absence of an external electric field.

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20. State and explain Ohm.s law and hence

defien ohm.





22. Derive the expression for emf induced in a

straight conductor moving perpendicular to a

uniform magnetic field.

23. State any three feautures of nuclear force



24. Distinguish between conductors, insulators

and semiconductors on the basis of band theory.



25. Draw a neat labelled block diagram of an

AM transmitter.

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26. Derive an expression for the electric field at

a point due to an infinitely long thin charged

straight wire using Gauss Law.

27. Obtain an expression for equivalent resistance of two resistors connected in parallel.



28. Derive the expression for magnetic field at

a point on the axis of a circular current loop.



29. Derive the expression for refractive index

of the material of the prism in terms of angle

of the prism and angle of minimum deviation.



30. Explain three facts of photoelectric effect

using Einstein's photoelectric equation.



31. With a circuit diagram, explain the action of

n-p-n transistor as an amplifier in CE mode.

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32. A 400 pF capacitor charged by a 100 V dc supply is disconnected from the supply and connected to another uncharged 400 pF capacitor calculate the loss of energy



33. (a) Three resistor 1Ω , 2Ω , and 3Ω are combined in series. What is the total resistance of the ombination ? (b) If the combination is connected to a battery of emf 12 V and negligible internal resistance, obtain the potential drop across

each resistor.

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34. A series LCR circuit with our 20Ω , = 1.5 H and $C=35\mu F$ is connected to a variable

frequency of 200 V a.c. supply when the frequency of the supply is equal to the natural frequency of the circuit what is the average power transferred to the circuit in one complete cycle.

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35. Monochromatic light of wavelength $5000\ddot{A}$ from a narrow slit is incident on the double slit. If the separation of 10 fringes on the

screen 1 m away is 2 cms. Find the slit

separation.



36. Calculate the shortes and longest wavelength of Balamer series of hydrogen atom. Given $R=1.097 imes10^7/m$