



PHYSICS

BOOKS - JEEVITH PUBLICATIONS

PHYSICS (KANNADA ENGLISH)

SUPER MODEL QUESTION PAPER -2

Part A

1. State the principle of conservation of charge

.



[Watch Video Solution](#)

2. Define 'drift velocity' of free electrons .



[Watch Video Solution](#)

3. A coil is carrying current in a clockwise direction . It is equivalent to which magnetic pole ?



[Watch Video Solution](#)

4. State Curie's law for a paramagnetic substance.



Watch Video Solution

5. Write an expression for motional emf.



Watch Video Solution

6. What are coherent sources of light?



Watch Video Solution

7. Who discovered radioactivity ?



[Watch Video Solution](#)

8. Write the symbol and truth table for a logic NOT gate



[Watch Video Solution](#)

9. What do you mean by forward bias ?





[Watch Video Solution](#)

10. What is a noise ?



[Watch Video Solution](#)

Part B

1. Mention and five properties of electric field lines.



[Watch Video Solution](#)

2. What happens to the effective resistance when two resistors are connected in series?



[Watch Video Solution](#)

3. Mention energy losses in a transformer .



[Watch Video Solution](#)

4. State Ampere - Maxwell's law.



 [Watch Video Solution](#)

5. Explain Hugen's principle .

 [Watch Video Solution](#)

6. Mention any three demerits of Bohr's atom model.

 [Watch Video Solution](#)

7. Define half - life of a radioactive substance .

Write the relation between half - life and decay constant .



[Watch Video Solution](#)

8. Why there is a need for modulation ?



[Watch Video Solution](#)

1. Derive the expression for energy stored in a charged capacitor.



[Watch Video Solution](#)

2. What are

i. Magnetic declination

ii. Magnetic dip

iii. Horizontal component of earth's magnetic field at a place?



[Watch Video Solution](#)

3. Write three properties of diamagnetic and ferromagnetic materials



Watch Video Solution

4. Obtain the relation between critical angle and refractive index .



Watch Video Solution

5. Write the three postulates of Bohr's atomic model.



Watch Video Solution

6. What is binding energy ?



Watch Video Solution

7. What is mass defect ?



Watch Video Solution

Part D

1. Obtain an expression for the electric field intensity at a point on the equatorial line of an electric dipole.



[Watch Video Solution](#)

2. Deduce the condition for balance of a wheatstone's bridge using Kirchoffs rules .



[Watch Video Solution](#)

3. Define relaxation time . Derive the expression for electrical conductivity of material in terms of relaxation time .



[Watch Video Solution](#)

4. Define co-efficient of self - induction . Derive and expression for the energy stored in an inductor.



[Watch Video Solution](#)

5. Obtain the expression for fringe width in the case of interference of light waves.



Watch Video Solution

6. Explain briefly, the action of a transistor as a switch.



Watch Video Solution

7. A 600pF capacitor is charged by a 200V supply. It is then disconnected from the supply and is connected to another uncharged 600 pF capacitor. How much electrostatic energy is lost in the process?



[Watch Video Solution](#)

8. A straight wire of length $\pi / 2$ m is bent into a circular shape. O is the center of the circle so formed and P is a point on its axis which is at a

distance 3 times the from O .A current of 1A is passed through it Calculate the magnitude of the magnetic field at the points O and P .



[Watch Video Solution](#)

9. A light bulb is rated at 100W for a 220 V supply. Find (a) the resistance of the bulb, (b) the peak voltage of the source, and (c) the rms current through the bulb.



[Watch Video Solution](#)

10. A 4.5 cm needle is placed 12 cm away from a convex mirror of focal length 15 cm. Give the location of the image and the magnification. Describe what happens as the needle is moved farther from the mirror.



Watch Video Solution

11. The work function of caesium metal is 2.14 eV. When light of frequency $6 \times 10^{14} \text{ Hz}$ is incident on the metal surface, photoemission of electrons occurs. What is the

(a) maximum kinetic energy of the emitted electrons,

(b) Stopping potential, and

(c) maximum speed of the emitted photoelectrons?



Watch Video Solution