



PHYSICS

BOOKS - MBD -HARYANA BOARD

BOARD QUESTION PAPER (SOLVED) - 2019

Objective Type Questions

1. SHARING OF CHARGE



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2. The unit of permittivity of free space ϵ_0 is:

A. $C^{-2}N^1m^{-2}$

B. $C^2N^{-1}m^{-2}$

C. $N^1C^2m^{-2}$

D. $N^{-1}C^2m^1$

Answer:



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3. Write the expression for energy density of electric field 'E' in free space.



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4. On increasing temperature the specific resistance of a semiconductor -

A. Decreases

B. Increases

C. May increase or decrease

D. Does not change

Answer:



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5. How much current flows through a $2\text{ k}\Omega$ resistor when a potential difference of 4 V is applied across its ends ?



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6. In a purely capacitive circuit, the current

A. 1

B. $\sqrt{2}$

C. $\frac{1}{\sqrt{2}}$

D. Zero

Answer:



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7. Who discovered the nucleus ?

A. Thomson

B. Bohr

C. Rutherford

D. de Broglie

Answer:



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8. Which one of following is the unit of activity of a radioactive source ?



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9. The rainbow is formed due to

A. Reflection

B. Refraction

C. Dispersion

D. All of these

Answer:



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10. For light diverging from a point source



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Very Short Answer Type Questions

1. Three capacitors of capacitances $2\mu F$, $3\mu F$ and $4\mu F$ are connected in parallel. Determine the charge on each capacitor, if the combination is connected to a 100 V supply ?



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2. What is Kirchoff's loop rule ?



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3. What are eddy currents ? Discuss briefly any two applications of eddy currents.



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4. What is electromagnetic induction? State Faraday's laws of electromagnetic induction.



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5. A radio can tune into any station in the 7.5MHz to 12MHz band. What is the corresponding wavelength of band?



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6. What is de Broglie wavelength of a bullet of mass 0.040 kg travelling at a speed of 1.0 km/sec ?



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7. What is the basic nuclear process underlying β^- decay ? Write nuclear reaction of this decay for ${}_{83}^{210}\text{Bi}$.



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Short Answer Type Questions

1. What are the postulates of Bohr's model of an atom?



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2. In photoelectric effect



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3. A series L-C-R circuit with $R = 44\Omega$, $C = 8\mu F$ and $L = 50H$ is connected to a variable frequency 220 V ac supply. Calculate angular frequency, impedance and current at resonance condition.



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4. Magnetic field at a distance r from an infinitely long straight conductor carrying steady varies as





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5. Explain the principle of Potentiometer. Draw the labelled circuit diagram for comparing of emf of two cells ?



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6. Find expression for electric field intensity due to a uniformly charged thin spherical shell at a point outside the shell.



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Long Answer Type Questions

1. What is meant by hysteresis loss? Where is the study of hysteresis used?



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2. State the principle of moving coil galvanometer.



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3. Draw a labelled ray diagram of an astronomical telescope in the near point position. Write the expression for its magnifying power.



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4. Find out the expression for Fringe width in Young's double slit experiment.



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