PHYSICS

BOOKS - JEEVITH PUBLICATIONS PHYSICS (KANNADA ENGLISH)

SUPPLEMENTARY EXAMINATION QUESTION PAPER JULY 2017

Question

1. How does the electrostatic force between two point charges change, when a dielectric medium is introduced between them ?

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2. State Kirchoff's junction rule.

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3. What is lorentz force ?

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4. Write the relation connecting rms value and Peak value of alternating current.

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5. What is motional electromotive force ?

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6. Mention the value of power factor of a pure capacitor.

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7. Define half life of a radiocative sample.

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8. Give the circuit symbol of AND-gate.

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9. Write any one advantage of light emiting diode.

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10. What is attenuation in communication system ?

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11. State and explain Gauss's theorem in Electrostatics.

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12. Define mobility. Mention its S.I. Unit

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13. What is ohmic device? Give one example.

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14. Write any two differences between diamagnetic and paramaganetic substances.

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15. The magnetic flux linked with a coil varies as $\phi = 3t^2 + 4t + 9$. Find the magnitude of the emf induced at t = 2S.

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16. Write Maxwell's equation for the speed of electromagnetic waves and explain the terms.

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17. What are de-Brogli Waves ? How does the de-Broglie wavelength vary with momentum of moving particle ?

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18. Draw the block diagram of generalised communication system.

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19. Obtain the relation between electric field and electric potential due to a point charge.

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20. Derive the relation $\vec{j} = \sigma \vec{E}$ with terms which has usual meaning.

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21. How can a moving coil galvanometer be converted into a voltmeter? Explain with a diagram.

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22. Mention any three application of eddy currents.

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23. Define critical angle. Write two conditions for total internal reflection.

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24. Write any three difference between interference and diffraction.

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25. Define the terms :

Threshold frequency

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26. Define the terms :

Work function.

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27. Define the terms :

Stopping potential.

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28. Explain the use Zener diode as a voltage regulator.

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29. Derive an expression for electric field due to an electric dipole at a point on the axial line.

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30. Obtain an expression for the force between two straight parallel conductor carrying current. Hence define ampere.

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31. Show that a current carrying solenoid is equivalent to a bar magnet.

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32. Derive th lens maker's formula.

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33. Derive an experession for the total energy of an electron in stationary state of hydrogen atom. Assuming the expression for the radius.

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34. What is amplification? With a circuit diagram, explain the working of npn transistor as an amplifier in CE configuration.

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35. In a parallel plate capacitor with air between the plates, each has an area $8 \times 10^{-3} m^2$ and distance between the plates is 2 mm. Calculate the capacitance of the capacitor. If this capacitor is connected to a 50

V supply, what is the charge on each plate of the capacitor? (Absolute permittivity of free space $= 8.85 \times 10^{-12} Fm^{-1}$)

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