PHYSICS

BOOKS - OSWAAL PUBLICATION PHYSICS (KANNADA ENGLISH)

Sample Paper 5

Exercise

1. a resistor is marked with colours red , red, orange and gold . Write the value of its

resistance .

2. How does the mutual inductance of a pair of coils change when: Number of turns in the coils is increased?

3. What are sky waves ?

4. What is the least quantity of the magnitude of the charge that can be given to or removed from a body ?

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5. Who proposed quantum theory of light?

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6. What is a space wave ?

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7. What is the outcome of Davission Germer Experiment?

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8. What is the principle behind the working of a transformer ? Mention any two sources of

energy loss in transformer

9. Name the physical quantity which remains same for microwaves of wavelength 1 mm and UV radiations of 1600 Å in vacuum.

10. Define critical angle for a pair of media.

11. Write Coulomb's law in vector form and explain the terms.

12. Define:

(a) Magnetic declination (b)Magnetic dip. Mention the S.I. unit of magnetisation.

13. Write the expression for the force between two parallel current carrying conductors. What is the nature of the force between two parallel conductors carrying current in the same direction?

14. Give the logic symbol, Boolean expression and truth table of an AND gate.

15. Mention any two importance of speed of light.

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16. State Faraday's law of electromagnetic induction.

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17. Write the functions of the following in communication systems:

(i) Transducer (ii) Repeater

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19. Define farad. Give the expression for energy stored in a capacitor of capacitance C charged to a potential V.

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20. Write the expression for electric potential at a contrasting feature of electric potential of dipole at a point as compared to that due to a point charge.

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21. Define self-inductance and give its SI unit. Derive an expression for self-inductance of a long, air cored solenoid of length l, radius r and having N number of turns.

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22. Write three uses of cyclotron.

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23. (a) Why photoelectric effect can not be explained on the basis of wave nature of light ? Give reasons.

(b) Write the basic features of photon picture of electromagnetic radiation on which Einstein's photoelectric equation is based.

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25. What is linearly polarized light? Descibe briefly using a diagram how sunlight is polarized.

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26. Discuss the intensity of transmitted light when a polaroid sheet is rotated between two crossed polaroids?

27. Obtain the expression for electric current in a conductor in terms of drift velocity of the electron. Defien resistivity of the material of the conductor.

28. Distinguish between nuclear fission and nuclear fusion.

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

30. Draw a labelled ray diagram of a refracting telescope. Define its magnifying power and write the expression for it.

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31. Write two important limitations of a refraction telescope over a reflecting type telescope.

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32. In a parallel plate capacitor with air between the plates, each plate has an area of $6 \times 10^{-3} m^2$ and the distance between the plates is 3 m. Calculate the capacitance of the capacitor. If this capacitor is connected to a 100V supply. What is the charge on the each plate of the capacitor?

33. If electron in the atom is replaced by a particle (muon) having the same charge but

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35. Calculate the wavelength of the first

spectral line in the corresponding Lyman

series of the hydrogen atom.

36. In Young's double slit experiment, fringes of certain width are produced on the screen kept at a certain distance from the slits. When the screen is moved away from the slits by 0.1m, fringe width increases by $6 \times 10^{-5}m$. The separation between the slits is 1 mm. calculate the wavelength of the light used.

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