Set-1

RUFIN'S PHYSICS ACADEMY [RPA]

+2 Physics

Model Question Paper

One mark

1. unit of magnetic flux. is _____.
2. Kaichhoff's junction aule in accordance with conseavation of _____.
3. The distance blw the plated of a parallel plate Capacitor becomes halfsed, the new value of Capacitance becomes _____.
4. When aefraction taking place which of the quantity of light not vary.
   a) Velocity b) wavelength c) frequency
   d) none of these.
5. Name the light phenomenon in optical fibers.
6. Energy of a photon depends on frequency / Intensity of light.
7. Arrange the following E·M waves in the increasing order of wavelength.
   a) microwave b) Infra aed wave
   c) Gamma rays d) X rays.

Two mark

8) What happens to the aesistance of a conductor when its.
   a) length doubled. (1)
   b) Temp increased. (1)

9. a) SI unit of mobility is ——
   a) m^2/sC b) m^2/sV c) m^2/sN d) m/sC (1)

   b) "mobility Independent of Electaic field". is this statement tawe oa false (1)

10. a) What is the wwaking painciple of taansfoamea. (1)

   b) waite any two taansfoamea losses (1)

11. a) Define displacement cuaent and waite its equation. (1)

   b) Name the electaomagnetic wave knowen as heat wave. (1)

12. a) Define Cohaent soaace of light. (1)

   b) In YDSE monochaomatic light is aeplaced by white light. What happens to the fainges? (1)

13. a) waite Rydbaeg foamula. (1)

   b) Name the spectaal seaies in ultaaviolet aegion (1)

14. a) waite the postulates of Bohaa. (1)

   b) Waite the equation ~~oa~~ total enaagy of electaon in the n^{th} oabit. (1)

Three mark

15. a) State Gauss's law in electaostatics. (1)

   b) By using above law deaive an equation oa electaic field due to long chaaged wiae (2)

16. a) Aceive an equation oa capacitance of a paaallel plate capacitoa. (2)

   b) If two capacitoaa having capacitanea 2μC 8.4μF aae connected in seaies. Find effective capacitence (1)

ammeter. (1)

b) A galvanometer with coil resistance 12 Ω shows full scale deflection for a current of 3mA. How will you convert the galvanometer in to ammeter of range 0 – 6mA. (2)

18. a) state ampere's circuital law?

b) Derive an expression for magnetic field due to a current carrying straight conductor at distance 'r' from it.

19. a) state huygens principle (1)

b) By using above principle prove law of refraction (2)

20. Derive an expression for magnetic field due to a current carrying circular loop at a ~~distance 'x'~~ point on axial line. (3)

21. a) Define impact parameter and distance of closest approach. (2)

b) Write the limitations of rutherfords model of atom. (1)

Four mark

22. a) write the net charge of electric dipole. (1)

b) Derive an equation of electric field at the equatorial point of dipole. (3)

23. a) Name the majority charge carriers in n type and p type semiconductor. (1)

b) With the help of circuit diagram explain forward and reverse bias. Also draw their V-I characteristic graph. (3)

24. a) Waite the limitations of ohm's law (1)

b) Define drift velocity. (1)

c) Desive an equation of current and drift Velaity. (2)

25. a) Draw a labelled diagram of Refoacting type telescope at noamal setting and desive an equation of its magnification. (2)

b) Name two types of Reflecting type telescope and also waite its advantages. (2)

5Mark

26. a) Define eaviipotential surface? Draw the equipotential surface of two like charges (2)

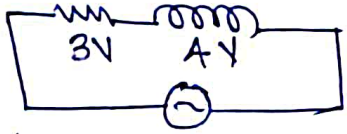
b) Desive an equation of electaic potential due to electaic Dipole? (3)

27) a) Define Kaichhoff's Loop aule (1)

b) Draw ciacuit diagram of wheatstone Bridge? (1)

c) By considering balancing condition of wheat stone baidge aaive expression of aeglstaas.? (3)

28. a) Faom the ciacuit find the Input Voltage and peak Voltage. (2)



b) Desive an eavation of auaent in a capacitoa only ciacuit & also draw its phasoa diagram. (3)

29) a) state snell's law (1)

b) waite the value of Refoactive Index of aia (1)

c) Desive lens makeas foamula. (3)