



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

FOURTH SEMESTER – APRIL 2019

17/16UPH4AL01– PHYSICS FOR CHEMISTRY - II

Date: 05-04-2019
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART - A

Answer ALL questions

(10×2=20)

1. Draw the circuit of a non-inverting operational amplifier.
2. What is a Solar cell?
3. State the laws of photo electric emission.
4. Write down the spectral series of the hydrogen spectrum.
5. What are elementary particles?
6. Define nuclear density.
7. What are amorphous solids?
8. Distinguish between thermosetting and thermoplastic polymers.
9. What are photons?
10. An electron moves with a velocity of 5.9×10^6 m/s, calculate its de Broglie wavelength.

PART - B

Answer any FOUR questions

(4×7.5=30)

11. Write a note on intrinsic and extrinsic semiconductor.
12. What is a photoelectric cell? Explain any one type of photoelectric cell.
13. Explain branching and cross linking of polymers.
14. Explain the liquid drop model of the nucleus.
15. Describe Davisson and Germer experiments for the study of electron diffraction.
16. What is a p-n junction? Draw and explain the V-I characteristics of a p-n junction.

PART - C

Answer any FOUR questions

(4×12.5=50)

17. What is a transistor? Explain the working of a transistor in CE mode connection, using its characteristics.
18. What is photoelectric effect? Derive the Einstein's photoelectric equation. Explain the verification of Einstein's photoelectric equation by Millikan.
19. (a) Define binding energy. Explain the BE/A curve. (9.5 marks)
(b) Binding energy of an element is 64 MeV. Binding energy per nucleon is 6.39 MeV. What is the total number of neutrons and protons in the nucleus?(3 marks)
20. Explain any one of the crystal imperfections.
21. Obtain the time-dependent Schrodinger equation for a particle.
22. Explain in detail, the working of an op amp as an inverting and non-inverting amplifier.
