



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY

THIRD SEMESTER – NOVEMBER 2016

PH 3202 - PHYSICS FOR CHEMISTRY - II

Date: 10-11-2016
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART A

Answer ALL questions:

(10x2=20) Marks

1. Draw the logic circuit of NAND gate and give its truth table.
2. What is an Asynchronous counter?
3. State Pauli's exclusion principle.
4. Mention any two properties of X-Rays.
5. Draw a graph of B.E/A versus A for nuclei.
6. What are hadrons?
7. Write a short note on effect of pressure on the velocity of sound through air.
8. Define absorption co-efficient.
9. What is the de-Broglie wavelength of an electron which is accelerated from rest through a potential difference of 100 V?
10. State Heisenberg's uncertainty principle.

PART B

Answer any four questions:

(4x7.5=30) Marks

11. With a neat circuit diagram explain the working of full-adder.
12. Explain the working of photo-emissive cell and photo-voltaic cell.
13. Discuss the liquid drop model of a nucleus.
14. Derive an expression to determine the velocity of transverse wave in a stretched string.
15. Describe Davisson and Germer experiment to prove the dual nature of electron.

PART C

Answer any four questions:

(4x12.5=50) Marks

16. With a neat circuit diagram explain the construction and working of J-K flip flop.
17. State the postulates of Bohr atom model. Obtain expression for the radius and energy of an electron in the n^{th} orbit.
18. Write the Semi-empirical mass formula for the binding energy of the nucleus. Give a brief note on each term in the formula.
19. Define reverberation time. Derive Sabine's formula to determine it.
20. Derive Einstein's photo-electric equation. Describe Millikan's experiment to verify the same.
