



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PHYSICS

THIRD SEMESTER – APRIL 2014

PH 3202 - PHYSICS FOR CHEMISTRY - II

Date : 10/04/2014

Dept. No.

Max. : 100 Marks

Time : 09:00-12:00

PART A

Answer **ALL** the questions

(10 × 2 = 20)

1. Prove the Boolean expression $AC+ABC = AC$.
2. Write a short note on shift registers.
3. Give any two applications of photoelectric cells.
4. State the postulates of Bohr for the atom model
5. What are isobars? Give an example.
6. Name the four types of fundamental interactions.
7. What is reverberation time?
8. Give any two properties of Ultrasonic waves.
9. State Heisenberg's uncertainty principle.
10. What are the postulates of wave mechanics?

PART – B

Answer any **FOUR** questions

(4 × 7.5 = 30)

11. Draw and explain with a neat diagram the working of full adder.
12. Give an account of Millikan's experimental verification of Einstein's photoelectric equation.
13. Give the basic properties of neutron and explain its classification in terms of its energy.
14. Describe Piezo-electric method to produce ultra sonic waves.
15. Discuss the wave nature of matter and obtain an expression for de Broglie wavelength for matter waves.

PART – C

Answer any **FOUR** questions

(4 × 12.5 = 50)

16. Explain with a neat diagram the working of JK flip flop.
17. Describe the vector model of the atom and explain the different quantum numbers associated with it.
18. What is nuclear fission? Describe the construction and working of a nuclear reactor.
19. a) Define the absorption coefficient of sound for materials. How is it determined experimentally?

b). Give the conditions for good acoustics in an auditorium.

20. Describe Davisson and Germer experiment for electron diffraction. Mention the results of the experiment?