



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – MATHEMATICS

FOURTH SEMESTER – APRIL 2018

PH 4206- PHYSICS FOR MATHEMATICS - II

Date: 02-05-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

PART A

Answer **ALL** questions:

(10 x 2 = 20)

1. Draw the circuit diagram of OR gate using NAND gate.
2. Convert the decimal number 48 into binary number.
3. Define Photo electric effect.
4. State Pauli's exclusion principle.
5. Define nuclear fission reaction.
6. What is half-life period?
7. What is the difference between transverse and longitudinal waves?
8. Define Piezo electric effect.
9. State Heisenberg's uncertainty principle.
10. Write the conditions for normalizing a wave function.

PART B

Answer any **FOUR** questions:

(4x7.5 = 30)

11. With a neat diagram, explain the working of a RS flip flop.
12. Discuss the different types of photoelectric cells and explain their action.
13. Outline the classification of elementary particles.
14. List the conditions for a good acoustical design of rooms.
15. Describe the Davisson and Germer experiment to study the electron diffraction.
16. Derive Einstein's photoelectric equation.

PART C

Answer any **FOUR** questions:

(4 x 12.5 = 50)

17. Explain Half adder and Full adder with neat circuit diagrams.
18. Derive an expression for radius of the nth orbit of an atom using Bohr's atom model.
19. Derive semi empirical mass formula for the binding energy of the nucleus.
20. Define Reverberation time and derive the Sabine's Formula for reverberation time.
21. Derive the time independent Schrodinger's equation.
22. Explain the liquid drop model of the nucleus with necessary theory.

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