



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – COMP.SCI., COMP.APP., CHEM., & MATH.

FOURTH SEMESTER – APRIL 2018

PH 4208- APPLIED PHYSICS

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

Dept. No.

Max. : 100 Marks

PART A

Answer **ALL** Questions

(10 x 2 = 20)

1. What is Fermi level?
2. Define potential barrier in PN junction diode.
3. Give any two characteristics of photodiode.
4. Give the principle of operation of LED.
5. Draw the circuit diagram of unity follower.
6. List any four characteristics of ideal op-amp.
7. What is known as resolution of D/A convertor?
8. For a 4-bit binary weighted resistor D/A convertor, determine the output voltage for a digital input 1010.
9. What are the functions of pin 7 and 4 in IC 555 Timer?
10. Define Duty cycle of a multivibrator.

PART B

Answer any **FOUR** Questions

(4 x 7.5 = 30)

11. Describe the formation of Depletion layer in a PN junction diode.
12. Explain the operation of photo emissive sensors.
13. Describe the operation of operational amplifier as differentiators.
14. With neat diagram explain the operation of Binary weight resistor D/A convertor.
15. Explain the pin configuration of 555 timer.
16. Describe the structure of a transistor.

PART C

Answer any **FOUR** Questions

(4x12.5=50)

17. What is a semiconductor? Describe the classification of semiconductor.
18. Describe the principle of operation and characteristics of photo transistor.
19. Explain the summing and difference amplifier of an operational amplifier.

20. Discuss the operation of Dual slope A/D convertor with neat diagram.
21. Describe the operation of Astable multivibrator with necessary theory and give its input and output waveform.
22. Design a Schmitt Trigger, explain its operation and give its input and output waveform.

\$\$\$\$\$\$\$\$