LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.SC., B.C.A. DEGREE EXAMINATION – **MATHS, CHEMI., COMPUTER SCI. & APPLI,**

FOURTH SEMESTER – **APRIL 2016**

PH 4208 - APPLIED PHYSICS

Date: 27-04-2016   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

PART A

Answer **ALL** questions: (**10 x 2 = 20 marks**)

1. Enumerate the properties of semiconductors.
2. What do you mean depletion layer in a PN junction diode?
3. State the principle of operation of light dependent resistance (LDR).
4. Give any two characteristics of photodiode.
5. Define Common Mode Rejection Ratio (CMRR).
6. List any four characteristics of ideal op-amp.
7. What is known as accuracy of a D/A converter?
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 2 and 6 in IC 555 Timer?
10. Define Duty cycle of a multivibrator.

PART B

Answer **ANY FOUR** questions: (**4 x 7.5 = 30 marks**)

11. Explain the conduction mechanism in intrinsic semiconductor.
12. Explain the operation of photo emissive sensors.
13. Explain the operation of operational amplifier as integrator.
14. Draw a suitable diagram for 4-bit R-2R ladder D/A convertor and explain its operation.
15. Explain the pin configuration of 555 timer.
16. Describe the structure of transistor and mechanism of amplification.

PART C

Answer **ANY FOUR** questions: (**4 x 12.5 = 50 marks**)

17. What is semiconductor? Describe the classification of semiconductor.
18. Explain the principle of operation and characteristics of photovoltaic cell and solar cell.
19. Explain the summing and difference amplifier of operational amplifier.
20. Describe the operation of successive approximation A/D convertor with neat diagram.
21. Design a Schmitt Trigger, explain its operation and give its input and output waveform.
22. With circuit diagram explain the working of inverting and non-inverting amplifier.

****