LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **COMPUTER SCIENCE**

THIRD SEMESTER – **APRIL 2016**

PH 3106 – APPLIED ELECTRONICS

Date: 06-05-2016 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART A

ANSWER ALL QUESTIONS (10×2=20)

1. What is Fermi level?
2. Define CMRR.
3. Write four important characteristics of an ideal operational amplifier.
4. What is a semiconductor? How is it classified?
5. What is a multiplexer?
6. State Demorgan's theorem.
7. What is a Flip flop?
8. Draw the block diagram of a ` T ' Flip Flop using JK Flip Flop and give its truth table.
9. State the different types of computer registers?
10. What is a cache memory?

PART B

ANSWER ANY FOUR QUESTIONS (4×7.5=30)

11. Write short notes on (a) intrinsic semiconductors (b) Zener diode.
12. Explain the working of an OP-AMP non inverting amplifier with a circuit diagram.
13. Explain how NOR is used as universal building block with neat diagrams.
14. With a neat diagram and truth table discuss the working of a Shift counter.
15. Draw the block diagram and the memory hierarchy in a computer system.

PART C

ANSWER ANY FOUR QUESTIONS (4×12.5=50)

16. Describe the operation of a NPN Transistor in common emitter mode.
17. Explain with circuit diagram, the working of an op-amp based 4 bit R-2R ladder D/A converter.
18. (a) Simplify using K – map $Y=F(A,B,C,D)=\Sigma(0,1,4,5,10,11,14,15)$. (8.5marks)
    (b) Explain the working of a 4 input multiplexer. Give its logic circuit and output. (4 marks)
19. Explain the working of JK Flip flop with a neat diagram.
20. (a) Explain various types of ROM. (6 marks)
    (b) Explain the working of a full adder with circuit diagram and truth table. (6.5marks)

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