LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **PHYSICS**

THIRD & FIFTH SEMESTER – **NOVEMBER 2017**

PH 3504 / PH 5501– ELECTRONICS - I

Date: 08-11-2017 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART –A

Answer ALL questions: **(10x2 =20)**

1. State superposition theorem.
2. What is maximum power transfer theorem?
3. What is single stage transistor amplifier?
4. Give an account of class A power amplifier.
5. Define common mode rejection ratio.
6. Distinguish between FET and UJT.
7. Write a short note on K-map.
8. What is master slave flip flop?
9. What do you mean by counter?
10. Distinguish the terms RAM and ROM

PART –B

Answer any FOUR questions: **(4x7.5 =30)**

11. State and explain Norton's network theorem. Show that the Norton's equivalent circuit can be found from the Thevenin's equivalent circuit.
12. With neat circuit diagram, explain the working of Wein bridge oscillator. Mention its advantages. **(5.5+2)**
13. Discuss the function of inverting and non-inverting operational amplifier?
14. Construct the circuit diagram and explain the working of BCD to 7 segment decoder.
15. Draw the logic diagram and explain the operation of a binary ripple counter with necessary truth table.

PART –C

Answer any FOUR questions: **(4x12.5 =50)**

16. a) Give an account of hybrid equivalent circuit.

    b) Describe how the h – parameters of a transistor can be found from its CE configuration.

(2.5+10)

17. Explain transistor RC coupled amplifier with special reference to frequency response, advantages and disadvantages.

18. a) Draw the equivalent circuit of an SCR and explain its working.

    b) With neat sketch, explain a half wave rectifier using an SCR.

(5.5+7)

19. Discuss the operation of RS, clocked RS and D flip flops with necessary circuits and truth tables.

20. a) What is a shift register? Explain with neat logic diagram of serial in – serial out shift register.

    b) Explain the classification of Read Only Memory. **(7.5+5)**

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