



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PHYSICS

THIRD SEMESTER – APRIL 2019

16/17UPH3MC02– ELECTRONICS - I

Date: 25-04-2019
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART-A

Answer ALL the questions

(10x2=20 Marks)

1. Write Thevenin's Theorem.
2. What is a constant current source?
3. What is transistor biasing?
4. Draw the circuit diagram of an astablemultivibrator?
5. Explain virtual ground.
6. Give the parameters of FET
7. Simplify $Y = (A + B + C) \cdot (A + B)$
8. Draw the logic diagram and write the truth table of a T - flip-flop.
9. Explain scale of integration.
10. What is monolithic I.C.?

PART-B

Answer Any Four questions

(4x7.5=30 Marks)

11. State and explain Norton's theorem.
12. Explain the construction and working of a monostablemultivibrator.
13. Explain the operation of OP-AMP as inverting amplifier and also obtain its voltage gain.
14. Describe the function of RS Flip-flop.
15. Explain the various types of integrated circuit.
16. With a neat circuit diagram explain the construction and working of Colpitt's oscillator.

PART-C

Answer Any Four questions

(4x12.5=50 Marks)

17. (a) State the maximum power theorem and derive the condition for transfer of maximum power from source to a load.
(b) A generator develops 200 V and has an internal resistance of 100 . Find the power delivered to a load of 100 . (7.5+5)
18. Describe in detail about the working of an RC coupled amplifier and also explain its frequency response curve.
19. Describe the construction and working of a FET with its characteristics.
20. Explain in detail the working of a JK Master Slave flip-flop.
21. (a) Describe in detail about the steps used in the fabrication of Integrated Circuits.
(b) Explain how (i) a diode (ii) a transistor can be constructed in a monolithic IC? (7.5+5)
22. Explain the silent features of an OP AMP and discuss the function of an OPAMP as summing and difference amplifier with neat circuit diagram. (4.5+8)
