Date: 07-05-2018   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

PART- A

Answer All Questions   **(10×2=20 marks)**

1. Define constant current source.
2. State the superposition theorem.
3. What is a DC load line?
4. What is a multivibrator?
5. Mention any four characteristics of an ideal op-amp?
6. Explain the action of an op-amp as a non-inverting amplifier.
7. Draw the logic symbol and truth table of D-flip-flop.
8. What is a shift register?
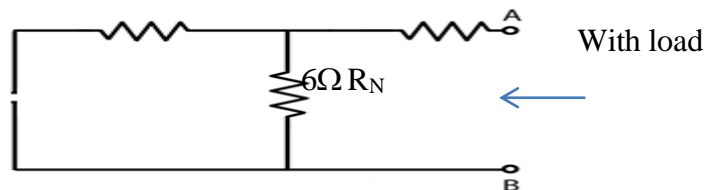9. Mention any two advantages of integrated circuits.
10. What is VLSI?

PART –B

Answer Any FOUR Questions: **(4×7.5=30 marks)**

11. State Norton's theorem, find the current through the 8 Ω resistor in the given network by using Norton's theorem.

4Ω 5Ω

With load

$6\Omega R_N$

12. With a neat circuit diagram, discuss the action of a RC coupled amplifier. Discuss the frequency response curve.
13. Explain how an op-amp can be used as a difference amplifier and, obtain an expression for the output.
14. Describe the working of a RS-Flip Flop.
15. How will you make a monolithic IC?
16. Explain the working of a Colpitt's oscillator with a neat circuit diagram.

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PART –C

Answer Any FOUR Questions   **(4×12.5=50 marks)**

17. State and explain thevenin theorem.

18. Describe the construction and working of an astablemultivibrator with its wave form.

19. Describe the construction and working of JFET.

20. Explain the function of 4-bit ripple counter with necessary diagram, truth table and wave form.

21. Explain how (i) a diode (ii) a transistor (iii) a resistor and (iv) a capacitor can be fabricated on a monolithic.

22. With a neat circuit diagram and truth table describe the operation of a J-K Master Slave flip flop.

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