19103125

Reg No   :   ....

Name   :   ....

B.Sc.DEGREE (CBCS) EXAMINATION, NOVEMBER 2019

First Semester

Core Course - EL1CRT01 - BASIC ELECTRONICS

(Common to B.Sc Electronics and Computer Maintenance Model III, B.Sc Electronics Model III)

2017 Admission Onwards

11A98AE8

Time: 3 Hours   Maximum Marks :80

Part A

Answer any ten questions.

Each question carries 2 marks.

1. What is electric field and its unit?

2. What is back emf?

3. Compare node analysis and mesh analysis.

4. What is AC resistance?

5. Give the relation between impedance, resistance and reactance.

6. Define Q factor.

7. Give the relation between bandwidth and Q-factor.

8. How is the electric field across the pn junction created? What is the typical value of the barrier potential for a silicion diode?

9. Write any two applications of a transistor.

10. State the difference between bipolar and unipolar devices.

11. What is the basic difference between UJT and BJT?

12. Draw two transistor model of SCR.

(10×2=20)

Part B

Answer any six questions.

Each question carries 5 marks.

13. Define capacitance. What are the factors affecting capacitance?

14. What is the area of the plates of a 2F parallel plate capacitor if the seperation between the plates are 0.5m?

15. What is the significance of Q factor and bandwidth?

16. Explain about transformers.

17. List the advantages of Light Emitting Diode(LED).

18. Explain the two breakdown mechanisms of a reverse biased pn junction diode.

19. Explain the working of N channel JFET.

20. Find the intersnic standoff ratio if RA= 1K, RB= 2K.

21. Explain the commutation process in SCR.

(6×5=30)

Part C

Answer any two questions.

Each question carries 15 marks.

22. State and explain Ohm's law. Derive an expression for the total resistance when they connected in series and parallel.

23. With the help of necessary diagrams explain the characteristics of zener diode. Discuss the applications of zener diode?

24. Explain the working of a NPN and PNP transistor with a neat diagram.

25. Explain the different modes of operation of SCR with diagrams.

(2×15=30)