BCA

(Pages : 3) **D – 5195**

Reg. No. : .....

Name : .....

First Semester B.C.A. Degree Examination, February 2018
Career Related FDP under CBCSS
Group 2(b) : Computer Applications
CP 1132 : DIGITAL ELECTRONICS
(2013 Admission)

Time : 3 Hours Total Marks : 80

PART – A

Answer **all** questions. **Each** question carries 1 mark. **(10×1=10 Marks)**

1. What is the cut in voltage of a Germanium diode ?
2. Write down any three specifications of a resistor.
3. List any two important applications of a transistor.
4. Convert $(1101)_2$ to Decimal number.
5. Draw the truth table for a NOR gate.
6. Draw the symbol of an EX-NOR gate.
7. Write down the Demorgan's laws.
8. Draw the block diagram of a 4:1 Multiplexer.
9. Define propagation delay of a digital IC.
10. What is a Carbon nanotube ?

PART – B

Answer **any 8** questions. **Each** question carries **2** marks. **(8×2=16 Marks)**

11. Write a note on color coding of resistors.
12. Write down the features of an electrolytic capacitor.

13. What are the advantages of LED ?

14. Compare half wave, full wave and bridge rectifiers.

15. Write the applications of 555 timer ICs.

16. Find the sum of binary numbers 10110111 and 1110101.

17. Draw an EXOR gate using NAND gates only.

18. What is the main difference between a latch and flip flop ?

19. Differentiate between min terms and max terms.

20. Differentiate between SSI, MSI, LSI and VLSI.

21. What are the IC's required to display numbers from 0 to 9 in a seven segment display ?

22. What are the applications of nanotechnology ?

PART – C

Answer **any 6** questions. **Each** question carries **4** marks. **(6×4=24 Marks)**

23. Describe the working of a simple inductor, with the help of figures.

24. Differentiate between Zener and Avalanche break down.

25. Explain the working of a bi stable multivibrator using 555 IC.

26. Explain floating point representation of numbers with the help of examples.

27. Compare different transistor configurations.

28. Convert the SOP expression $F = A'B'C' + A'BC' + A'BC + AB'C + ABC$ to equivalent POS expression.

29. State and prove Consensus theorem and Second distributive law of Boolean algebra.

30. Realize a half adder circuit using nand gate only.

31. Draw and explain 1 bit digital comparator circuit.

PART – D

Answer **any 2** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. Draw the block diagram of 555 timer. Explain how the 555 timer IC is connected as a monostable multivibrator. Show all waveforms.

33. Realize AND, OR, NOT and XOR gate using NAND gate only. Draw the truth table for each gate also.

34. Draw the SR flip flop. What is its limitation ? How it is over come in JK flip flop ? What is the advantage of Master Slave JK flip flop ?

35. With the help of diagrams explain the working of a BCD to seven segment decoder, which will display number 0 to 9 ?