Please check that this question paper contains___9___ questions and __2____ printed pages within first ten

[Total No. of Questions: 09] [Total No. of Pages: 02]

Uni. Roll No. .....

Program: B.Tech. (Batch 2018 onward)
Semester: 3rd
Name of Subject: Digital Electronics
Subject Code: PCEC-104
Paper ID: 16034

Time Allowed: 03 Hours **Max. Marks: 60**

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A **[Marks: 02 each]**

1.

a. List the advantages of hexadecimal number system.
b. How race around condition is eliminated in master slave J-K flip flop?
c. Define ASCII code.
d. Explain the operation of CMOS.
e. Draw the truth table of all logic gates.
f. List the differences between combinational and sequential circuits.

Part – B **[Marks: 04 each]**

2. Explain the working of BCD to 7- segment display decoder.
3. Discuss the working of J-K flip flop with the help of its IC diagram. Also list its advantages.
4. Draw the truth table of full adder and drive its circuit in terms of two full adders.
5. Draw the circuit diagram of 4- bit universal register.
6. Find 2's compliment of the numbers (i) 10001000 (ii) 10000 (iii) 11111111

7. Convert following hexadecimal numbers into decimal numbers using binary number system.

   I. 579

   II. B5.5B

   III. AC.53

Part – C **[Marks: 12 each]**

8. Construct 16:1 multiplexer using 4:1 multiplexers.

   OR

   Implement OR, AND, NOT, NOR and EX-OR using NAND gates.

9. Differentiate between Analog to digital (A/D) and digital to analog (D/A) converters with the help of suitable diagrams.

   OR

   Discuss the comparison of the important characteristics of various IC logic families.

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