Roll No. ..... **Exam Code : J-19**

Subject Code—0379

M.C.A. (Second Year) EXAMINATION

(5 Years Integrated Course)

(Main & Re-appear for Batch 2009 Onwards)

DIGITAL ELECTRONICS

MCA-203

Time : 3 *Hours* *Maximum Marks :* 70

Section A

Note : Attempt any *Seven* questions. **7×5=35**

1. List the steps to convert a decimal number to an octal number.

2. What are Parity ? How can it be detected and corrected ?

3. Draw and explain 8 : 1 multiplexer.

4. Differentiate between minterms and maxterms. What are their uses ?

5. Draw excitation table for a JK flip-flop and explain its behaviour.

6. Draw and explain serial in serial out shift register.

7. Design a mod-7 ripple counter.

8. Draw circuit for a Tri-state logic. How does it work ?

9. Draw a TTL NAND gate. How does it work ?

10. Draw a full adder circuit. How does it work ?

Section B

Note : Attempt all the questions.

11. What are universal gates ? How we can design other gates with NOR gates ? 12

Or

Explain the various logic families and compare their features.

12. Design :

$f(A, B, C, D) = \pi(0, 2, 4, 6, 9, 10) + \phi(11, 13)$

with NOR gates only. **12**

Or

Design a decade counter by using JK flip-flops.

13. What are universal shift register ? Draw circuit and explain its behaviour. **11**

Or

What are ASCII codes ? What are their applications ?