K19P 1382

Reg. No. : .....

Name : .....

I Semester Master of Computer Application (M.C.A.) Degree (Reg./Supple./Imp.) Examination, November - 2019

(2014 Admission Onwards)

MCA1C02 : DIGITAL SYSTEMS AND INTRODUCATION TO MICRO PROCESSORS

Time : 3 Hours **Max. Marks : 80**

SECTION - A

Answer any **ten** questions. Each question carries **three** marks.**(10×3=30)**

1. What are the advantages of using different number systems?
2. Compare and contrast between errors detected and corrected codes.
3. How and when the multiplexer are used for design of a combinational circuit?
4. Compare and contrast between combinational and sequential circuits.
5. Define encoder with example.
6. Differentiate between DC noise margin and AC noise margin.
7. Distinguish between PMOS and CMOS.
8. What is the purpose of program invisible register?
9. Mention the uses of register and counter.
10. List out the properties of logic families.
11. What are the features of microprocessor?
12. What is instruction set? Give example.

P.T.O.

SECTION - B

Answer **all** questions. Each question carries **ten** marks. **(5×10=50)**

13. a) Define Boolean algebra. Explain the Huntington's postulates with suitable example. **(10)**

(OR)

b) Simplify the following Boolean function F, using Quine Mccluskey and verify the result using K- map. F(A,B,C,D)= Σ(0,2,3,5,7,9, 11,13,14). **(10)**

14. a) Explain the concept of carry look ahead adder with neat logic diagram. **(10)**

(OR)

b) Explain the organization of ROM with relevant diagrams. **(10)**

15. a) Draw and explain the 4-bits SISO, SIPO, PISO and PIPO shift register with its wave forms. **(10)**

(OR)

b) Realize D - flip-flop using SR flip-flop. **(10)**

16. a) Discuss in detail on CMOS-TO-TTL interface. **(10)**

(OR)

b) Design and describe an 8 bit carry look ahead adder using NMOS and ECL logics. **(10)**

17. a) Explain the architecture of 8085 microprocessor with suitable figure. **(10)**

(OR)

b) Explain the concept of interrupts in microprocessor with suitable example. **(10)**
