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AO—355—2018

FACULTY OF SCIENCE

B.Sc. (Third Semester) EXAMINATION

MARCH/APRIL, 2018

COMPUTER SCIENCE

Paper VI

(Digital Electronics and 8085 Microprocessor)

(MCQ+Theory)

(Saturday, 28-4-2018) **Time : 2.00 p.m. to 4.00 p.m.**

Time—2 *Hours* *Maximum Marks*—40

(MCQ)

1. (*i*) The output of an OR gate of LOW when .....

(A) any input is LOW (B) any input is HIGH

(C) all inputs are LOW (D) all inputs are HIGH

(*ii*) The Boolean expression for a 3-input AND gate is .....

(A) X = AB (B) X = ABC

(C) X = A + B + C (D) X = AB + C

(*iii*) How many cells are required in K-map for 3 variables ?

(A) 1 (B) 2

(C) 4 (D) 8

(*iv*) The simplest equation which implements the K-map shown below is :

	$\overline{C}$	C
$\overline{A}\overline{B}$	0	0
$\overline{A}B$	1	1
AB	1	1
$A\overline{B}$	0	1

(A) $X = AC + B$ (B) $X = A\overline{B}$

(C) $AB\overline{C} + ABC + A\overline{B}C$ (D) $AB + \overline{A}B$

P.T.O.

(*v*) A J-K flip-flop is in a 'no-change' condition when .....

(A) J = 1, K = 1 (B) J = 1, K = 0

(C) J = 0, K = 1 (D) J = 0, K = 0

(*vi*) Popular application flip-flop are ?

(A) Counters

(B) Shift registers

(C) Transfer registers

(D) All of the above

(*vii*) Register is a :

(A) Set of capacitor used to register input instructions in a digital computer

(B) Set of paper tapes and cards put in a file

(C) Temporary storage unit within the CPU having dedicated or general purpose use

(D) Part of the auxiliary memory

(*viii*) A simple flip-flop :

(A) is a 2 bit memory

(B) is a 1 bit memory

(C) is a four state device

(D) has nothing to do with memory

(*ix*) The communication line between the CPU, memory and peripherals is called a .....

(A) Bus (B) Line

(C) Media (D) None of these

(*x*) The 8085 microprocessor uses ..... power supply.

(A) + 5 V (B) – 5 V

(C) + 12 V (D) – 12 V

(Theory)

2. Explain the universal properties of NAND and NOR operation with truth table and circuit diagram. 10

Or

(*a*) Explain the two variable Karnaugh map method with example. 5

(*b*) Explain don't care condition. 5

3. Draw the circuit diagram of the Ripple counter and explain its operation. Give its timing diagram. 10

Or

(*a*) Explain the concept of RS flip-flop. 5

(*b*) Explain the concept of 1-bit memory cell. 5

4. Explain the architecture of 8085 microprocessor. 10

Or

(*a*) What is microprocessor ? Explain in detail. 5

(*b*) Explain microprocessor operation. 5