R—360—2017

FACULTY OF SCIENCE

B.Sc. (Second Year) (Third Semester) EXAMINATION

APRIL/MAY, 2017

COMPUTER SCIENCE

Paper VI

(Digital Electronics and 8085 Microprocessor)

(MCQ & Theory)

(Saturday, 6-5-2017)	Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours   *Maximum Marks—40*

N.B. :—   (i)   All questions are compulsory.

        (ii)   Figures to the right indicate full marks.

MCQ

1.   Multiple Choice Questions :   10

    (i)   .... logic gates are called basic gates.

       (a)   NAND, NOR   (b)   AND, OR, NOT

       (c)   Ex-OR, Ex-NOR   (d)   All of these

    (ii) $Y = A \oplus B$ is a logic equation of .... gate.

       (a)   OR   (b)   AND

       (c)   Ex-OR   (d)   All of these

    (iii)   Maximum possible cells in four variable K-map are ....

       (a)   Two   (b)   Four

       (c)   Eight   (d)   Sixteen

P.T.O.

(iv) $\overline{A \cdot B}$ = ... in boolean Algebra.

    (a) $\overline{A} + \overline{B}$ (b) $\overline{A} - \overline{B}$

    (c)   AB   (d)   All of these

(v)   T-FF is called .... flip-flop.

    (a)   Temporary flip-flop   (b)   Toggle flip-flop

    (c)   Time flip-flop   (d)   All of these

(vi)   A + 1 = ... in boolean Algebra.

    (a)   0   (b)   1

    (c)   A   (d)   All of these

(vii)   Word size of 8085 microprocessor is .... bit.

    (a)   Eight   (b)   Sixteen

    (c)   Four   (d)   None of these

(viii)   LDA address instruction is .... byte.

    (a)   One   (b)   Two

    (c)   Three   (d)   All of these

(ix)   8085 microprocessor is .... pin IC.

    (a)   Eight   (b)   Sixteen

    (c)   Forty   (d)   None of these

(x)   Program counter is a .... bit register.

    (a)   Eight   (b)   Sixteen

    (c)   Twenty   (d)   None of these

Theory

2.   (a)   What is logic gate ? Explain AND, OR, NOT logic gates in detail.   10

Or

(b) Reduce the following equation using K-map : 5

$Y = \overline{A}\overline{B}\overline{C}\overline{D} + \overline{A}B\overline{C}\overline{D} + AB\overline{C}\overline{D} + A\overline{B}\overline{C}\overline{D} + \overline{A}BCD + ABCD$.

(c) Explain addition, subtraction, multiplication laws in Boolean Algebra. 5

3. (a) Explain two variable, three variable and four variable K-map with example. 10

Or

(b) Explain SRFF in detail. 5

(c) Write a program for addition of two 8-bit numbers in 8085 microprocessor. 5

4. (a) Explain pin diagram of 8085 microprocessor. 10

Or

(b) Explain any *four* logical instructions of 8085 microprocessor. 5

(c) Explain flag registers of 8085 microprocessor. 5