DIPLOMA – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (DECVI)/ADVANCED LEVEL CERTIFICATE COURSE IN ELECTRONICS AND COMMUNICATION ENGINEERING (ACECVI)

Term-End Examination

June, 2014

⊓⊓725

BIEL-031 : MICRO-CONTROLLER

Time : 2 hours   *Maximum Marks : 70*

Note : Attempt total no. of 5 Questions. Question no. 1 is ***compulsory****. Attempt remaining **four** questions out of Q. 2 to Q. 8.*

1. (a) How many 16-bit counters are there in
        8051 ?   *7×2=14*
        (i)   One
        (ii) Two
        (iii) Three
        (iv) Four

    (b) Following program code will be executed
        continuously :

        STAT : MOVA, # 01H

                JNZ STAT

        (i)   True

        (ii) False

(c) The pins XTAL1 and XTAL2 for 8051 are used for connections to an external oscillator or crystal.

(i) True

(ii) False

(d) RISC stands for

(i) Reduced Interfacing System Computer

(ii) Reduced Instruction System Computer

(iii) Reduced Instruction Set Computer

(iv) Real Instruction Set Computer

(e) The I/O port that does not have a dual purpose role is

(i) port 0

(ii) port 1

(iii) port 2

(iv) port 3

(f) How many 8-bit general purpose registers are there in 8085 ?

(i) 4

(ii) 6

(iii) 9

(iv) 12

(g)   The contents of accumulator after this operation :

MOV A, # 2BH

ORL A, 00H

will be

(i)   1BH

(ii)   00H

(iii) 2BH

(iv)   4BH

2.   Compare between micro-processor and micro-controller based on number of instructions used, registers, memory and applications.   *14*

3.   (a)   Mention various data transfer techniques used in micro-processor and explain each of them.   *7*

     (b)   Explain the concept of Polling and DMA.   *7*

4.   (a)   Provide the comparison of RISC and CISC. Which one is used in 8051 ?   *7*

     (b)   Draw pin diagram and internal architecture of 8051 and explain only its memory management.   *7*

5.   Describe TCON and SCON register of 8051 with their formats and explain each bit.   *14*

6.   Define addressing mode and explain various addressing modes of 8051 micro-controller with suitable examples.   *14*

7. Mention and explain the tools required for testing and development of micro-controller boards. *14*

8. Write short notes on any *four* of the following :

$$4 \times 3\frac{1}{2} = 14$$

   (i)   Harvard vs. Von-Neumann Architecture

   (ii) Assembler and Linker

   (iii) IC 8155 features

   (iv) External memory interfacing with 8051

   (v)   Software simulators of 8051

   (vi) Power saving in 8051

————