BIELE-006

DIPLOMA – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (DECVI)

00405   **Term-End Examination**

June, 2014

BIELE-006 : ELECTRONIC PRODUCT DESIGN

Time : 2 hours   *Maximum Marks : 70*

Note : *Attempt any* **five** *questions. Each question carries equal marks.*

1. (a) Explain input Power consideration and Protection circuit for MCB.   7

   (b) What do you mean by over-voltage ? Explain the indicators for the over-voltage.   7

2. Describe design steps for Vending Machine using ASM technique. Explain the implementation of the design.   14

3. (a) What do you mean by sequence generator ? Also explain its working.   7

   (b) Implement 2 : 4 decoder using NOR gates only.   7

4. Explain the steps in desiging using PAL. Also draw the PAL equivalent for the following Boolean equation :   *14*

$$X = a'b + a'bc$$
$$Y = c' + ab$$

5. (a)   Find out the transfer function of a second order band pass filter.   *7*

    (b)   Describe the KRC filter and derive its transfer function.   *7*

6. (a)   What do you mean by cascading of a filter ?   *7*

    (b)   How is ROM classified ? Explain each of the classifications.   *7*

7. How a LED is interface with a micro-controller ? Give your answer with suitable programming steps.   *14*

8. (a)   Draw the interfacing diagram of an analog to digital convertor using micro-controller.   *7*

    (b)   Differentiate between combinational and sequential logic circuits.   *7*