

**DIPLOMA – VIEP – ELECTRONICS AND
COMMUNICATION ENGINEERING
(DECVI)**

00569

Term-End Examination

December, 2017

BIELE-006 : ELECTRONIC PRODUCT DESIGN

Time : 2 hours

Maximum Marks : 70

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) Explain the difference between zener and general purpose p-n junction diodes. 7
- (b) Explain various applications of PSpice software. 7
2. What are the various methods for overcurrent protection in an electronics circuit ? Explain any one of them with a neat diagram in detail. 14
3. (a) Explain the need and advantages of ASM based scheme to design any digital circuit. 7
- (b) Draw and explain the working of a vending machine with the help of ASM design. 7

4. (a) Discuss the importance of PLD in digital design. 7
- (b) Explain the steps involved in designing a digital electronics circuit using PAL. 7
5. (a) Explain one of the realization techniques of KRC filter with a suitable example. 7
- (b) Design a second order Butterworth high pass active filter for lower cut-off frequency of 1 kHz. 7
6. (a) What is the need of a data acquisition system in electronics engineering application ? 7
- (b) Draw and explain the working of an analog signal conditioning circuit with a block diagram. 7
7. What is a Microcontroller ? Discuss the important criteria to select a suitable microcontroller for a data acquisition system with an example. 14
8. Write short notes on any **two** of the following : $2 \times 7 = 14$
- (a) Implementation of ROM
- (b) Moore and Mealy Machines
- (c) Sequence Detector