

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

Term-End Examination

June, 2017

00984

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 Avalanche Breakdown and also show these breakdowns on I – V characteristics. 7
- (b) Draw and explain the functional blocks of regulated DC power supply. 7
2. What are the various methods for over voltage protection in an electronics circuit ? Explain any one of them with neat diagram in detail. 14

3. (a) Explain Moore and Mealy Machines with suitable examples. 7
- (b) Discuss the difference between PLDs and ROM. 7
4. (a) Design a sequence generator with the help of FSM. 7
- (b) Draw and explain the working of a lift controller with the help of ASM design scheme. 7
5. (a) Implement the following function using PAL : 7
- $$f = \Sigma (2, 4, 6, 7)$$
- (b) Compare the performance of a centre tapped and bridge rectifier in power supply. 7
6. What are the basic differences between Sallen-key and KRC filters ? Derive the transfer function of a unity gain Sallen-key HP filter with a neat circuit diagram. 14
7. (a) Discuss the important criteria to select a suitable digital-to-analog converter with PWM scheme for a microcontroller based Data Acquisition System. 7
- (b) List out the advantages of cascading of filters in higher order filter design. 7

8. Write short notes on any *two* of the following : *2×7=14*

- (a) Thermal Considerations in Power Supply
 - (b) EMI Filter
 - (c) Sensitivity Analysis of Filters
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