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BIELE-006

DIPLOMA – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (DECVI)

Term-End Examination

December, 2016

00473

BIELE-006 : ELECTRONIC PRODUCT DESIGN

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. Each question carries equal marks. Use of scientific calculator is permitted.*

1. (a) Explain thermal considerations in linear regulated power supply. Write down the various applications and advantages of linear regulated power supply. 7

(b) Describe the functions of various protection circuits like EMI filter, fuses and MCB in power supply. 7

2. (a) Define power dissipation and efficiency for the linear regulated power supply. 7

(b) Design an FSM to detect a sequence 10110. 7

3. (a) Draw the circuit diagram of a unity gain Sallen-Key High Pass (HP) filter with its transfer function. 7

(b) Compare Butterworth and Chebyshev filters with their transfer functions and frequency response. 7

4. (a) With the help of an example, differentiate Mealy and Moore machines. 7

(b) Explain DAC with pulse width modulation for analog output. 7

5. (a) Explain the working of a vending machine with the help of ASM technique. 7

(b) Design a second order Butterworth Band Pass (BP) active filter for a lower cut-off frequency of 1 kHz and a higher cut-off frequency of 2 kHz. 7

6. (a) Explain KRC filter realization techniques. 7

(b) Draw and explain the output interfacing of Relay with microcontroller based Data Acquisition System. 7

7. (a) Explain how transducers are selected in Data Acquisition System. 7

(b) Describe the working of front-end analog signal conditioning circuit for microcontroller. 7

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

(a) Fuse Map Generation

(b) Indicators for Over Voltage and Over Current

(c) P-Spice