No. of Printed Pages : 3 **BIELE-006**

DIPLOMA IN ENGINEERING

Term-End Examination

01965

June, 2012

BIELE-006 : ELECTRONIC PRODUCT DESIGN

Time : 2 hours *Maximum Marks : 70*

Note : *1. Attempt **any five** questions.*
*2. Question No. **1** is **compulsory**.*

1. (a) What do you mean by regulated Power supply ? **2x7=14**

(b) How to detect over current in a circuit/ system ?

(c) Explain the working of MCB.

(d) Name any two simulation software for design of circuits.

(e) What is Bandstop filter ? How it can be obtained ?

(f) State the working principle of A-D converter.

(g) What is Relay and state its use ?

2. Design a FSM for sequence detector that produces 1 if it detects 1001 or 010 in the incoming data bit sequence. Draw the circuit using D flip-flops. **14**

3. What is ASM technique ? Describe various steps involved in traffic light controller design. **14**

4. For the circuit of Fig 1 show that : **14**

$$\frac{V_2}{V_1} = \frac{-(G_1/C_1)s}{s^2+s(G_1+G_2)/C_2+G_1G_2/C_1C_2}$$

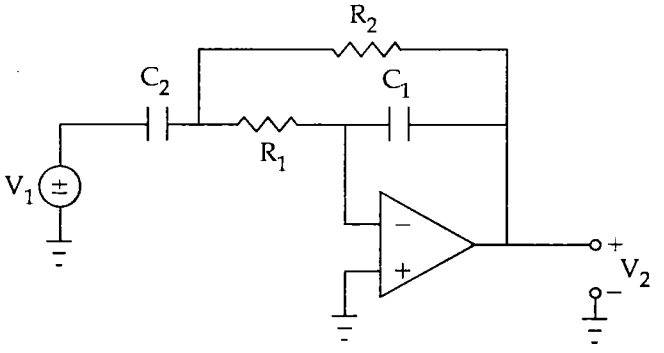

Fig. 1

5. What is KRC filter ? Give KRC realization for low pan filter and obtain expressions for filter parameters. Find component values for following specifications. **14**

fo = 4.8 KHz, Q = 5 and gain = 2.8

6. Discuss the basic characteristics and conditioning requirements of some common transducers. Discuss briefly any two transducers. **14**

7. Explain interfacing of relay with microcontroller. Give complete schematic and instructions. **14**

8. Write short note on *any four* of the following : **3½x4=14**

(a) Mealy and Moore machines

(b) Logic implementation with PAL

(c) Higher order filter design

(d) DAC interfacing

(e) Thermal considerations

(f) Indicators for over voltage