

**DIPLOMA – VIEP – ELECTRONICS AND  
COMMUNICATION ENGINEERING (DECVI) /  
ADVANCED LEVEL CERTIFICATE COURSE IN  
ELECTRONICS AND COMMUNICATION  
ENGINEERING (ACECVI)**

**Term-End Examination**

**00366**

**June, 2015**

**BIEL-026 : PCB DESIGN AND TESTING**

*Time : 2 hours*

*Maximum Marks : 70*

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**Note : Attempt five questions in all. Question no. 1 is compulsory.**

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1. (a) Provide rough approximation for the capacitance offered by active devices.
- (b) List various precautions during measurement.
- (c) What is lift off process ?
- (d) Mention various layout considerations.
- (e) Define the term preprocessing. Where is it used ?
- (f) What do you mean by SMD ?
- (g) Explain the role of simulation softwares in PCB designing.  $7 \times 2 = 14$

2. (a) Discuss various specifications, precautions and limitations for measurement. 7
- (b) Specify the use of dual trace oscilloscope for measurement of waveform parameters. 7
3. (a) What is artwork ? List the requirements which should be considered before starting artwork. 7
- (b) Discuss the different parameters for layout design. 7
4. Explain with the help of a flow chart, manufacturing of single-sided board, double-sided board and multilayer board. 14
5. (a) Explain photolithography and board finishing. 7
- (b) Explain the different types of etchant solutions and different types of etching profiles. 7
6. (a) What are the different soldering techniques used for manufacturing of SMD boards ? 7
- (b) Explain laser soldering and reflow soldering in brief. 7
7. Explain Simulink and NATLAB simulation tools. How are these helpful to simulate the circuit of PCB ? 14

8. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Digital Multimeter
  - (b) SCR
  - (c) Flexible PCB
  - (d) Computer Aided Artwork
  - (e) Hot Plate Soldering
  - (f) Component Onsertion
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