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**DIPLOMA - VIEP - ELECTRONICS &
COMMUNICATION ENGINEERING - III SEM**

Term-End Examination

December, 2010

BIEL-026 : Dip - ECE PCB Design & Testing

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. Each question carries 10 marks. Assume any missing data if any.

1. (a) Explain the function of resistor, capacitor and inductor. Draw their circuit symbols. 5
- (b) Explain how a dual trace oscilloscope can be used to measure amplitude and frequency of a signal. 5
2. (a) Explain the testing procedure of a capacitor and inductor using analog multimeter. 5
- (b) Explain the testing procedure of a diode using analog multimeter. 5
3. (a) Explain briefly about single sided and double sided printed circuit Boards. 5
- (b) Explain about component lead preparation. 5

4. (a) Explain briefly about the Pads and tapes used in the artwork preparation. 5
- (b) Explain conductor orientation and conductor routing practice in artwork preparation. 5
5. (a) Draw the block diagrams for manual layout process and automated artwork process. 5
- (b) Draw the block diagram of computer aided layout design with automated artwork generation. 5
6. (a) What is etching and explain Tank etching and spray etching. 5
- (b) Explain the chemistry, advantages and disadvantages of Ferric chloride as an etchant. 5
7. What is soldering and explain the principles of solder connections. 10
8. (a) Explain the metallurgical equilibrium diagram for tin - lead system. 5
- (b) Explain the influence of impurities on Tin - lead solder. 5

9. (a) What are the various types of analysis that can be performed using Pspice. 6
- (b) What are the limitations of Pspice. 4
10. Write short notes on *any two* of the following :
- (a) Digital multimeter 2x5=10
- (b) Multilayer PCBs.
- (c) MATLAB.
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