No. of Printed Pages : 3 **BIEL-026**

00131

DIPLOMA - VIEP - ELECTRONICS & COMMUNICATION ENGINEERING - III SEM (DECVI) / ADVANCED LEVEL CERTIFICATE COURSE IN ELECTRONICS & COMMUNICATION ENGINEERING (ACECVI)

Term-End Examination

December, 2013

BIEL-026 : PCB Testing & Designing

Time : 2 hours *Maximum Marks : 70*

*Note : (i) Attempt **any five** questions in all.*

*(ii) Question No. **1** is compulsory.*

1. Choose correct answer. **7x2=14**

(a) Three etching fluids in general use for P.C.B's are ferrite chloride, ammonium persulphate and _____ .

(i) ammonium sulphate

(ii) chromic acid

(iii) chlorine

(iv) Nitrate persulphate

(b) The most commonly used base materials for P.C.B's are a phenolic resin reinforced with paper or an _____ .

(i) epoxide resin reinforced with woven glass cloth.

(ii) edge resin

(iii) epidemy resin reinforced with woven glass cloth.

(iv) None of the above.

(c) Hand-soldering should be done with a _____ soldering.

(i) Light controlled

(ii) temperature controlled

(iii) Weight controlled

(iv) None of the above

(d) Matlab stands for :

(i) Matrix Laboratory

(ii) Math Laboratory

(iii) Mining Laboratory

(iv) None of the above

(e) Boards for mounting integerated circuits would normally made from :

(i) FR_4 or G_{10} material

(ii) FR_5 or G_{11} material

(iii) both (i) and (ii)

(iv) None of the above

(f) The final stage of board manufacture is the _____ of the edges.

(i) culting

(ii) trimming

(iii) splitting

(iv) sharpening

(g) Write true or false.

DIP's can be soldered to plain boards without the ends of the leads being bent.

2. Mention different types of P.C.B's and explain any one in detail. **14**

3. Discuss briefly "Mannual artwork" used in P.C.B design. **14**

4. Write down the steps involved in PCB fabrication. **14**

5. (a) What are the precautions that should be taken while soldering P.C.B circuits ? **7**

   (b) Define soldering. Mention different types of soldering. **7**

6. (a) Explain how MATLAB can be used for simulating the P.C.B circuit. **7**

   (b) Discuss simulation steps of a circuit by using P-spice. **7**

7. Write short notes on **any four** of the following : **4x3.5=14**

   (a) Flexible P.C.B material

   (b) ART work

   (c) Common defects on wave soldering

   (d) CAD

   (e) Solderability

   (f) Bridging