

Total No. of printed pages = 6

END SEMESTER EXAMINATION – 2019

Semester : 5th (New)

Subject Code : Et-508

PCB TECHNOLOGY

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

1. *All* questions of PART – A are compulsory.
2. Answer any *five* questions from PART – B.

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10
 - (a) A PCB is also called _____.
 - (b) CCL stands for _____.

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- (c) _____ is required for designing multilayer boards.
 - (d) Corona effect can be reduced by _____ between the conductors.
 - (e) When the artwork is ready, the next step in fabrication of a PCB is _____.
 - (f) The negative of the artwork which is used for production of PCB is called _____.
 - (g) A camera of reduction factor _____ is most suitable.
 - (h) Photo printing is _____ than screen printing.
 - (i) If the lead diameter is 1 mm, the hole diameter should be _____.
 - (j) The process of removing unwanted copper is called _____.
2. Write true or false : 1 × 10 = 10
- (a) PCB manufacturing involves the two major jobs.
 - (b) Resin is a bonding material.
 - (c) Hole diameter is not an important issue involved in design of PCB.

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- (d) The camera of reduction factor of 4 is not most suitable.
 - (e) The camera should be free from vibration.
 - (f) Two types of photographic film used in PCB design.
 - (g) Immersion etching technique is a new technique.
 - (h) When the artwork is ready the next step of fabrication of PCB is etching.
 - (i) A plating process which does not need any electrical power is known as electro less plating.
 - (j) Heat sink should be provided with power transistor and some other components for their cooling.
3. Choose the correct answer : 1 × 5 = 5
- (a) The inking technique for generation of artwork of PCB is
 - (i) old, slow and cumbersome
 - (ii) new and fast
 - (iii) not used at all
 - (iv) used always

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(b) Photo printing is an

- (i) extremely accurate process
- (ii) cheap and simple process
- (iii) less reliability
- (iv) not mostly used

(c) Dark room is required for preparing

- (i) positive film of the artwork
- (ii) negative film of the artwork
- (iii) both positive and negative films of the artwork
- (iv) Preparation of master film

(d) The width of ground lines for PCB design should be

- (i) 0.5 mm
- (ii) 1.0mm
- (iii) 2.0mm
- (iv) 3.0mm

(e) In screen printing

- (i) a screen is used
- (ii) a laminator is used
- (iii) a negative of artwork is used
- (iv) All of the above

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PART - B

Marks - 45

4. (a) What is a PCB ?

2

(b) Classify PCB in details. Explain single sided PCB and double sided PCB.

5

(c) Mention few advantages of PCB.

2

5. (a) What is a layout of PCB ?

2

(b) What are the various techniques adopted for preparing layout ?

4

(c) Write a note on corona effect.

3

(a) What do you mean by CCL ?

2

(b) Draw a complete flow-diagram for preparing CCL.

5

(c) What are the important ingredients for manufacturing CCL ?

2

7. (a) What is photo processing ?

3

(b) Explain in brief the construction of film used in photo processing.

2

(c) Describe the role of camera used in photo processing.

4

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8. (a) What is photo printing process ? 4
(b) Differentiate between photo printing and screen printing ? 5
9. (a) What is etching ? Describe the role of etching in the PCB fabrication. 5
(b) Name the ingredients required for etching solution. 4
10. What is an artwork in PCB ? Explain the importance of artwork in PCB manufacturing. 9
11. Why plating is necessary for manufacturing of PCB ? What are the different plating process ? Describe any one of them. 9
12. Describe the role of computer in PCB works. Explain CAD system for PCB design. 9

