

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 2110 GC-3 Your Roll No.....

Unique Paper Code : 32513901

Name of the Paper : Design and Fabrication of Printed Circuit Boards

**Name of the Course : B.Sc. (H) Electronics, 3rd Semester under CBCS
Skill Enhancement Course**

Semester : III

Duration : 1 Hours

Maximum Marks : 25

Instructions for Candidates

1. Write your Roll No. on the top immediately on the receipt of this question paper.
2. Attempt a total of **five** questions from **Section A** and **ten** questions from **Section B**.

SECTION A

1. Which of the following is true in relation to “mil”, the common unit used in PCB fabrication industry ?
 - (a) 1 mil = 0.254 inch
 - (b) 1 mil = 0.001 inch
 - (c) 1 mil = 0.025 inch
 - (d) 1 mil = 0.002 inch
2. What is a Gerber file ? How is it used while making a PCB ?
3. What factors dictate the size of pads in a PCB ?
4. What is “solder mask” ? Give two reasons for its use.

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5. What are vias in double sided PCB ?
6. What do you understand by the term track-isolation ?
7. When and how are photo-resist used in PCB fabrication. (5×1)

SECTION B

8. Discuss the advantages of assembling a circuit using PCBs.
9. What is photo-resist etching ? State with justifications whether you would increase or decrease the illuminating source's wavelength for higher packing density ?
10. How is Ferric Chloride used in the etching process ? Give the required equations to describe the chemical reaction.
11. Describe methods by which the rate of wet etching can be enhanced ?
12. What are the disadvantages of wet etching ?
13. Draw optimum arrangement of bridge rectifier diodes in a PCB design.
14. State the use of MACH3 software in PCB fabrication ?
15. The distance between two IC pins is 8 mils. What is this distance in inches ?
16. Justify and explain the statement, "A good track width for low current digital and analog signals is 0.012 inches. Tracks that carry significant current should be wider than signal traces".
17. Explain the term "routing" in PCB fabrication.
18. Is the "Top View" of the board directly transferred to the Cu surface of a one-sided board ? Explain your answer.
19. How does the nature of the laminate board play an important role in case of a double-sided PCB ?
20. Why are professional PCB's shipped with "Tin-plating" ? (10×2)