Roll No. | | | | | | | | | | |

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

MANUFACTURING ENGINEERING BRANCH

(5)

VIII Semester

MF *9035 ELECTRONICS MANUFACTURING TECHNOLOGY*

(REGULATIONS 2008)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1.Define PCB.

2. What is meant by one ounce of copper of a PCB?

3.What are the advantages and limitations of SMT assembly process?

4. Distinguish between active and passive SMT components.

5.Differntiate between simultaneous and sequential soldering of THT components.

6. Define reflow profile.

7. State true or false. Hidden structural defects in PCA can be detected by AOI technique.

8. Distinguish between in-circuit analysis and in-circuit testing.

9. What is meant by adhesive dispensing?

10. State any four guidelines to be followed while design for manufacturing in electronics industry.

PART B – (5X16=80 Marks)

11 i) Enumerate with neat sketches various steps in wafer preparation. (12)

ii) Sketch the structure of a multilayer board. Mention its important elements. (4)

12 a) Enumerate with neat block diagrams various steps in Through Hole Technology(THT) and Surface Mount Technology(SMT) assembly process.

(or)

12 b) Write short notes on

i) surface mount components (6)

ii) chip to lead interconnection (5)

iii) multichip module (5)

13a i) Describe with neat sketches various elements of stencil printing process. (8)

ii) Discuss various precautions to be followed in solder paste storage and handling. (8)

(or)

13b i) What are the factors to be considered while selecting component placement machine? Describe with neat sketches any two types of chip shooter indicating its linear/rotary motions. (8)

ii) Enumerate with schematic diagram forced convection reflow soldering. (8)

14a i) List out various inspection techniques for PCBA. Explain any two. (8)

ii) What are the reasons for testing of PCB assemblies? Describe any two. (8)

(or)

14 b)Enumerate the following defects in SMT assembly process.

i) smeared prints

ii) misaligned print

iii) solder balling

iv) tombstoning (4X4=16)

15a i) what are the various methods of packaging of surface mount components for automated assembly? Discuss any two of them. (8)

ii) What are the various methods of stencil manufacturing? Compare the salient features of them. (8)

(or)

15b) Explain the following repair and rework methods:

i) Delamination/Blister Repair - Injection Method

ii) Hole repair – Epoxy method

iii) Key and slot repair – Transplant method

iv) Base material repair – Area Transplant Method method (4X4=16)