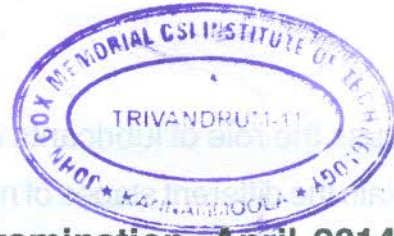




Reg. No. : .....

Name : .....



**Sixth Semester B.Tech. Degree Examination, April 2014  
(2008 Scheme)**

**08.606 : Elective – II : ADVANCED MANUFACTURING PROCESSES**

Time : 3 Hours

Max. Marks : 100

**Instructions :** 1) Answer **all** questions from Part A.  
2) Answer **one full** question from **each** Module in Part B.

**PART – A**

1. Explain the process of vacuum casting and its applications.
2. Define the term 'Powder Metallurgy' and list any four advantages of it.
3. Explain the methods of heat treatment of powder metallurgy parts.
4. What are the major differences between the mechanical properties of plastics and metals ?
5. Write short note on foam moulding of plastics.
6. Differentiate between direct and indirect rapid tooling.
7. Explain the concept of support structure and material in rapid prototyping.
8. Differentiate between dry etching and wet etching.
9. Write short note on single crystal silicon reactive etching.
10. Explain the steps involved in shaping of silicon into wafers. **(10×4=40 Marks)**

**PART – B**

Answer **one full** question from **each** Module.

**Module – I**

11. a) Explain with the help of neat sketches the process of plaster mold casting. **15**
- b) What are the advantages and limitations of slush casting ? **5**



12. a) Discuss the role of lubricants in powder compaction. 5  
b) Explain the different stages of manufacturing of powder metallurgy components. 15

### Module – II

13. a) Describe briefly the process of injection molding as used for producing plastic components. 10  
b) Explain any one method for the mass production of hollow parts out of plastic. 10
14. a) Comment on the latest trends in rapid prototyping materials and process development. 10  
b) Explain the working principle of a Fused Deposition moulding machine. 10

### Module – III

15. a) Explain any two methods for doping silicon in the process of IC fabrication. 10  
b) Explain any two methods for film deposition on wafer surface. 10
16. Explain the application of MEMS technology in PCB fabrication. 20