

III B.Tech. I Semester Supplementary Examinations, May -2005
AIRCRAFT PRODUCTION TECHNOLOGY
(Aeronautical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain “Dendritic” Solidification in sand castings.
(b) Describe the need of investment casting process in Aircraft industry. Explain the investment casting process
2. (a) What is weld ability? Explain in detail on ELECTRO-SLAG WELDING processes.
(b) Explain briefly about the different ways of metal transfer in arc welding?
3. With reference to relative motion between cutting tool and work piece, classify the different machining operations?
4. (a) Enumerate different operations that can be done on a drilling machine
(b) List various work holding and tool holding devices used in drilling machines
5. (a) Briefly explain the basic components of CNC systems? Bring out the general relationship among these basic components with a neat figure?
(b) Explain the applications and economics of usage of CNC machines?
(c) Bring out the advantages and disadvantages of CNC?
6. (a) Explain the effect of various cutting parameters in USM with appropriate figures?
(b) What are the recent developments in USM?
(c) Write short notes on the following:
 - i. Application of USM?
 - ii. Limitations of USM process.
7. (a) Compare the process characteristics of ECM and EDM
(b) Give the applications of EDM?
8. (a) Explain the mechanism involved in sintering?
(b) What are the advantages and limitations of powder metallurgy? Explain in detail?

**III B.Tech. I Semester Supplementary Examinations, May -2005
AIRCRAFT PRODUCTION TECHNOLOGY
(Aeronautical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. What are the common materials used for pattern making? Discuss their relative merits and demerits?
2. (a) What is weld ability? Explain in detail on ELECTRO-SLAG WELDING processes.
(b) Explain briefly about the different ways of metal transfer in arc welding?
3. Define taper? How is the amount of taper expressed? Name different methods of taper turning done on a center lathe giving a neat sketch? How is taper angles measured?
4. (a) Enumerate different operations that can be done on a drilling machine
(b) List various work holding and tool holding devices used in drilling machines
5. (a) What are the advantages and disadvantages of CNC machine over conventional machines?
(b) Explain the distinct features of CNC machines?
6. (a) Explain the effect of various cutting parameters in USM with appropriate figures?
(b) What are the recent developments in USM?
(c) Write short notes on the following:
 - i. Application of USM?
 - ii. Limitations of USM process.
7. Briefly describe the principle of EDM process? What are the advantages and disadvantages of the process?
8. (a) Define powder metallurgy? List out various methods employed for production of metal powders?
(b) Distinguish between shooting and atomizing in case of powder metallurgy?

**III B.Tech. I Semester Supplementary Examinations, May -2005
AIRCRAFT PRODUCTION TECHNOLOGY
(Aeronautical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) Explain “Dendritic” Solidification in sand castings.
(b) Describe the need of investment casting process in Aircraft industry. Explain the investment casting process
2. (a) How are neutral, oxidizing and reducing flames obtained in a welding torch? Explain?
(b) What is the principal of operation of electric arc welding? What are the equipments used in this?
3. Explain different types of chip forming and chipless forming processes Used in manufacturing
4. (a) Enumerate different operations that can be done on a drilling machine
(b) List various work holding and tool holding devices used in drilling machines
5. (a) Briefly explain the basic components of CNC systems? Bring out the general relationship among these basic components with a neat figure?
(b) Explain the applications and economics of usage of CNC machines?
(c) Bring out the advantages and disadvantages of CNC?
6. (a) Discuss abrasive jet machining (AJM) with a neat sketch.
(b) What are the advantages, and disadvantages of AJM.
(c) What are the applications and limitations of AJM Process.
7. (a) Explain how EBM process is carried out?
(b) How do you assess the accuracy of EBM process? Explain
8. (a) Explain the mechanism involved in sintering?
(b) What are the advantages and limitations of powder metallurgy? Explain in detail?

III B.Tech. I Semester Supplementary Examinations, May -2005
AIRCRAFT PRODUCTION TECHNOLOGY
(Aeronautical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define manufacturing? Classify various types of manufacturing process and cite examples?
(b) What are the criteria for selection of a process for manufacturing a product? Explain
2. (a) What do you understand by gas welding? Describe in brief the equipment required for oxy-acetylene welding?
(b) Differentiate between plastic welding and fusion welding giving proper examples. For each of the process.
3. Explain different types of chip forming and chipless forming processes Used in manufacturing
4. Explain counter-boring and counter-sinking reaming and tapping operations with a neat sketch?
5. (a) Briefly explain the basic components of CNC systems? Bring out the general relationship among these basic components with a neat figure?
(b) Explain the applications and economics of usage of CNC machines?
(c) Bring out the advantages and disadvantages of CNC?
6. (a) Discuss abrasive jet machining (AJM) with a neat sketch.
(b) What are the advantages, and disadvantages of AJM.
(c) What are the applications and limitations of AJM Process.
7. (a) Write a short note on the accuracy of LBM process?
(b) What are the advantages and disadvantages of LBM process? Give its applications?
8. Give the classification of forming process? What are the general characteristics of forming? Explain them.
