CODE NO: R09222102 | R09 | SET No - 1

II B.TECH - II SEMESTER EXAMINATIONS, APRIL/MAY, 2011
AIRCRAFT PRODUCTION TECHNOLOGY
(AERONAUTICAL ENGINEERING)

Time: 3hours **Max. Marks: 75**

Answer any FIVE questions
All Questions Carry Equal Marks
- - -

1.a) What are the parts that are mainly cast in an aircraft? Justify your answer with suitable examples?
b) Explain the different types of risers? [10+5]

2.a) Discuss the characteristics of welding flame, torch position and angle?
b) Explain the arc structure in detail? [8+7]

3.a) State and explain the mechanical drive for the ram of a horizontal shaper?
b) What factors affect the cutting speed for a drilling? [10+5]

4. A sheet metal which has already been bent in a cold state, offers great resistance to further bending. Explain the reason? Give a suitable example? [15]

5.a) Explain the working principles of Abrasive Jet machining with the help of neat diagrams.
b) What are the advantages and drawbacks of AJM? Give its applications? [8+7]

6. Explain the heat treatment process of titanium alloys in detail? Which parts of aircraft are made of titanium alloys? [15]

7. Explain the various types of rivets that are applicable for an aircraft industry. Justify your answer with respect to the loads and atmospheric affects over an aircraft. [15]

8. Explain in brief about the acoustic holography with a suitable example? Give the advantages and limitations of the same if any? [15]

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CODE NO: R09222102 | R09 | SET No - 2

II B.TECH - II SEMESTER EXAMINATIONS, APRIL/MAY, 2011
AIRCRAFT PRODUCTION TECHNOLOGY
(AERONAUTICAL ENGINEERING)

Time: 3hours **Max. Marks: 75**

Answer any FIVE questions
All Questions Carry Equal Marks
- - -

1.a) Explain the different types of shell moulding with a neat diagram?
b) What are the factors involved in the gating system? [9+6]

2.a) Explain the mechanism of arc blow? What are the factors affecting arc blow?
b) Discuss the diffusion welding parameters? [8+7]

3.a) What is the difference between a gang type and a multiple type drilling machine?
b) How the size or capacity of radial drilling machine is specified? [10+5]

4. How does the grain direction in sheet metal affect the design of:
a) Bending dies
b) Blanking dies [15]

5. Describe the material removal process by Ultrasonic machining and explain in brief with its working principle? Write the advantages and disadvantages of Ultrasonic machining? [15]

6. Explain the heat treatment process of Aluminium alloys in detail? Which parts of an aircraft are made of alluminium alloys? [15]

7. Explain how assembly jigs are usually grouted to the ground using foundation bolts for a typical wing assembly jigs? [15]

8. Discuss in brief about control charts and its importance in the field of aircraft industry? [15]

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CODE NO: R09222102 | R09 | SET No - 3

II B.TECH - II SEMESTER EXAMINATIONS, APRIL/MAY, 2011
AIRCRAFT PRODUCTION TECHNOLOGY
(AERONAUTICAL ENGINEERING)

Time: 3hours **Max. Marks: 75**

Answer any FIVE questions
All Questions Carry Equal Marks
- - -

1.a) Explain the methods of elimination of slag and dress in gating system?
b) Classify and describe different tools and equipments used in foundry? [8+7]

2. Describe in brief the various methods used for welding
a) Mild steel
b) Medium Carbon steel
c) Copper and its alloys. [5+5+5]

3.a) When cutting odd number of threads per cm, when is the split nut or half nut is closed? Explain?
b) How the size of an engine lathe is specified? [7+8]

4. Generally, the die opening is straight up to a certain length and tapered thereafter. Explain the reason of the above statement with supporting reasons? [15]

5. Define the term "Unconventional machining". Comment on the material removal process by Plasma arc machining? Give the advantages and limitations of it? [15]

6. Explain the initial stresses and the stress alleviation procedures in detail? How these procedures are useful in aircraft industry? Explain? [15]

7. Explain the various types of bolts that are applicable for an aircraft industry. Justify your answer with respect to the loads and atmospheric affects over an aircraft. [15]

8. Explain the different statistical quality control techniques that play a significant role in the field of air craft industry? [15]

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CODE NO: R09222102 | R09 | SET No - 4

II B.TECH - II SEMESTER EXAMINATIONS, APRIL/MAY, 2011
AIRCRAFT PRODUCTION TECHNOLOGY
(AERONAUTICAL ENGINEERING)

Time: 3hours **Max. Marks: 75**

Answer any FIVE questions
All Questions Carry Equal Marks
- - -

1.a) What are the main advantages and disadvantages of die casting? Write the steps for making a casting by die casting process?
b) How does cold chamber die casting machine differ from a hot chamber machine? [10+5]

2. List the principle advantages of:
a) Arc welding over gas welding
b) Gas welding over arc welding
c) D.C welding over A.C. welding. [5+5+5]

3.a) Sketch and explain the working of a plain column and knee type milling machine?
b) How the size of a plain column and knee type milling machine is specified? [8+7]

4. Explain the influence of the following parameters on the component produced.
a) Drawing speed
b) Draw die radius. [8+7]

5.a) What is Electron Discharge machining? When will you use reverse polarity in EDM?
b) Explain briefly the advantages and disadvantages of EDM? [8+7]

6. Explain the technology of surface finish in detail adopted in the aircraft production industry? [15]

7. Write about various types of Riveted joints with the help of Neat sketches that are used in the Aircraft assembly? [15]

8. Explain the international standards of quality control and assurance that are in practice pertaining to the field of aircraft industry? [15]

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