

**II B.Tech II Semester Supplementary Examinations, April/May 2005**  
**AEROSPACE MATERIALS**  
**(Aeronautical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

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

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1. What are the various types of hardness testing? Explain Rockwell hardness testing machine and the procedure for testing of hardness. Which materials are tested by this method?
2. Describe the requirements for the tensile test machine on which a specimen of aircraft material is to be tested for tensile strength. Also describe how the specimen is to be prepared.
3. (a) What is alclading; where it is used; discuss the process of alclading.  
(b) Describe the working processes on aluminium alloys with examples.
4. (a) Discuss the problems in the fabrication of magnesium alloy parts.  
(b) What are the characteristics of Titanium alloys? Discuss their applications.
5. (a) What are the structural application of steels in aerospace field.  
(b) Describe the properties of various steels used in aircraft industry.
6. (a) Discuss the various types of glues used in the fabrication of light weight air-planes.  
(b) What are the uses of glass rubber and plastic in the aircraft?
7. (a) What is a honey comb, describe the method of making honey comb structures.  
(b) How the fabric, used as the wing skin, is treated.
8. (a) Describe the testing techniques of testing fiber composites.  
(b) What are the properties of carbon composites, what are their applications in aircrafts?

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