Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

G:\logo and QP Template\logo 3 Feb 2018 final.tif

**End Semester Examination – Nov/Dec – 2018**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **14AE2003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MATERIALS IN AEROSPACE APPLICATION** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the electronic structure of an atom. | CO1 | 5 |
| b. | Explain the difference between atomic weight and atomic number and their importance in the periodic table. | CO1 | 15 |
| (OR) | | | | |
| 2. | a. | What are the types of crystal systems? | CO1 | 6 |
| b. | State the difference between face centred and body centred cubic structures. | CO1 | 14 |
|  |  |  |  |  |
| 3. |  | Describe the various visual inspection methods and tools used for non destructive testing. | CO1 | 20 |
| (OR) | | | | |
| 4. |  | Describe the effect of the following on the mechanical properties of materials.   1. Grain size. 2. Temperature. 3. Carbon. | CO1 | 7  7  6 |
|  |  |  |  |  |
| 5. |  | State the various applications of Aluminum alloy in Aerospace industry. | CO2 | 20 |
| (OR) | | | | |  |  | CO |
| 6. | a. | Explain the main constituents of wood? | CO2 | 8 |
| b. | Draw a neat sketch showing its micro-constituents. | CO2 | 6 |
| c. | State the various applications of wood in aerospace industries. | CO2 | 6 |
|  |  |  |  |  |
| 7. |  | Write short note on the following categories of rubber.   1. Natural rubber. 2. Synthetic rubber. 3. Rubber like plastics. | CO2 | 7  7  6 |
| (OR) | | | | |
| 8. | a. | Classify the different types of adhesives. | CO2 | 10 |
| b. | State the advantages of adhesive in joining process . | CO2 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | State the various classification of composite materials. | CO2 | 6 |
| b. | Describe the Metal Matrix Composites (MMC) and its applications. | CO2 | 14 |