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

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **16AE2006** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INTRODUCTION TO UNMANNED AIRCRAFT SYSTEMS** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Classify the unmanned aircraft with respect to range, size and purpose with Example. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | Shortly explain the conceptual phase and preliminary design of unmanned aircraft. | CO2 | 20 |
|  |  |  |  |  |
| 3. |  | Briefly explain the various applications for unmanned aircraft. | CO1 | 20 |
| (OR) | | | | |
| 4. |  | Briefly explain the unmanned aerial vehicle essential hardware components of Avionics, Navigation sensors and IMU. | CO1 | 20 |
|  |  |  |  |  |
| 5. | a. | Discuss the aspects of airframe design of unmanned airplane. | CO2 | 10 |
| b. | Fine the wing area , aspect ratio, incident angle for following UAV wing shown in fig.1. (Assume weight of the aircraft 200 grams, and velocity 10 m/s).    Fig.1 | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Explain communication unit in unmanned aerial vehicle. | CO2 | 10 |
| b. | Discuss the future prospects and challenges of unmanned aerial vehicle. | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | Briefly explain the following   1. LIDAR 2. Vision sensor 3. Sound based sensor 4. Infrared sensor | CO1 | 20 |
| (OR) | | | | |
| 8. | a. | Discuss the different types of power sources for unmanned aircraft applications. | CO1 | 10 |
| b. | Discuss the different types of power sources for unmanned aircraft applications. | CO1 | 10 |
|  | | **Compulsory**: |  |  |
| 9. |  | Briefly explain the roles of unmanned aerial vehicle in Naval and Army. | CO1 | 20 |