eg. No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the Evolution of UAVs. | CO1 | 16 |
| b. | Explain the classification of Unmanned aircraft systems. | 04 |
| **(OR)** | | | | |
| 2. | a. | Illustrate with suitable examples, the different roles of Unmanned aircraft vehicles. | CO1 | 14 |
| b. | Explain in detail the development of Unmanned aircraft vehicles in modern era. | 06 |
|  |  |  |  |  |
| 3. | a. | Explain in detail the different types of engine used in UAV and its application. | CO1 | 16 |
| b. | Briefly explain the role of composite material in UAV. | 04 |
| **(OR)** | | | | |
| 4. | a. | Discuss the selection criteria of different engines used in UAV. | CO2 | 12 |
| b. | Explain in detail the design process of high altitude and long endurance UAV. | CO2 | 08 |
|  |  |  |  |  |
| 5. |  | Explain the following airframe configuration types with neat sketch.   1. HTOL 2. VTOL 3. Hybrid | CO2 | 20 |
| **(OR)** | | | | |
| 6. |  | Explain in detail the individual components of electro-optic system integration and its process. | CO1 | 20 |
|  |  |  |  |  |
| 7. |  | Discuss the different types of launching and recovery systems used in HTOL Unmanned aerial vehicles. Explain them with examples. | CO2 | 10+10 |
| **(OR)** | | | | |
| 8. | a. | Illustrate with neat sketch of radio communication types and its operation. | CO1 | 16 |
| b. | Explain the process of mid-air collision avoidance system. | 04 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Illustarate the contribution of UAV in Naval with suitable examples. | CO2 | 10 |
| b | Explain in detail the different types of airforce operations performed by UAV. | 10 |