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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **15AE3007** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ADVANCED 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 various system loads to be considered while designing a hydraulic control circuit. | CO1 | 10 |
| b. | Draw the components of a basic hydraulic system and explain its working. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Write a note on the contamination checks normally done to determine the purity of hydraulic fluids. | CO1 | 5 |
| b. | Explain the construction and working of a gear type rotary pump with a neat sketch. | CO1 | 10 |
| c. | Write a short note on the functions of check valves and restrictors used in Pneumatic circuits. | CO1 | 5 |
| 3. | a. | Detail the working of a nose wheel steering system with a diagram. | CO1 | 10 |
|  | b. | Enumerate and detail the requirements and characteristics of an acceptable reciprocating engine lubricating oil. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the different types of hydraulic fluids used in aircrafts and the desired qualities of the fluids. | CO1 | 10 |
|  | b. | Briefly explain the primary, secondary and utility systems controlled by hydraulic systems in an aircraft. | CO1 | 10 |
| 5. |  | Detail the characteristics of a good aviation fuel for efficient engine performance. | CO1 | 20 |
| (OR) | | | | |
| 6. |  | Explain the principle and operation of a power boost braking system used in aircrafts with a line diagram. | CO1 | 20 |
| 7. | a. | Explain the principle and operation of a Battery ignition system used in reciprocating engines with a line diagram. | CO2 | 10 |
|  | b. | With a neat sketch, outline the functions of a Primary Flight Display. | CO2 | 10 |
| (OR) | | | | |
| 8. | a. | With a neat sketch, outline the functions of a collision avoidance system. | CO2 | 10 |
|  | b. | Write a note on the different warning systems in a cockpit ensuring a safe flight. | CO1 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the construction and working of Bourdon gauge used for pressure sensing in aircrafts. | CO1 | 10 |
|  | b. | Detail the working of the Ground Proximity Warning system and its related modes of aural annunciations. | CO2 | 10 |

ALL THE BEST