

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Sem/ Supplementary Examination, July 2020**

**Course: Aircraft Systems and Instruments**

**Semester: VI**

**Program: B.Tech ASE+AVE**

**Time 03 hrs.**

**Course Code: ASEG 3009**

**Max. Marks: 100**

**Instructions:**

1. Read the Instruction carefully before attempting
2. For Theory based : Type the Answers in word file
3. For Figures if any : Draw a free hand sketch and insert the same word file
4. For Numerical : Solve it in a paper and insert in the same word file
5. Upload as a single word file for all the Question in Blackboard.

**Note : Please upload the word document only, Do not upload PDF and or other format. The answer scripts will be considered for evaluation only through Blackboard. No other mode of submission is acceptable.**

**SECTION A [Case Based Study] 60 Marks**

| S. No. |   | Marks | CO  |
|--------|---|-------|-----|
| Q 1    | Compare advantages and disadvantages of using Mechanical flight control system over Fly-By-Wire system in aircraft. Explain functional details of a mechanical flight control system. Comment on flight control system used in MiG-23 Aircraft. | 25    | CO1 |
| Q 2    | Classify different Landing Gear systems used in aircraft. Compare their advantages and disadvantages. Comment on landing gear system of MiG 23 Aircraft.  | 20    | CO2 |
| Q 3    | What are different Navigation Instruments used in aircraft. Explain their working principle with neat sketches.   | 15    | CO5 |

**SECTION B [Numerical and Short Answers] 40 Marks**

|      |   |    |     |
|------|---|----|-----|
| Q 4  | Explain different applications of pneumatic system in aircraft. (provide neat sketches)   | 10 | CO2 |
| Q5   | Compare Lubricating systems for piston and jet engines.                                   | 5  | CO3 |
| Q 6  | What is the application of Evaporative air cycle systems in aircraft?                     | 5  | CO3 |
| Q 7  | Explain different Fuel supply systems for Piston engines aircraft with schematic diagram. | 5  | CO4 |
| Q 8  | Differentiate between Deicing and Anti-icing systems used in aircraft.                    | 5  | CO4 |
| Q 9  | Which type engine starting systems are used in Jet engine aircraft?                       | 5  | CO4 |
| Q 10 | Explain working principle of Air speed Indicators.  | 5  | CO5 |

**NOTE :** The submission time of the Question Paper Answer Sheet is 24 Hrs from the scheduled time (exceptional provision due to extraordinary circumstance due to COVID-19 and due to internet connectivity issues in the far-flung areas).

No Submission will be entertained after 24 Hrs

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