Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Aircraft System & Instrument **Semester: V**
Program: B.Tech ASE **Time : 03 hrs.**
Course Code: ASEG3024 **Max. Marks: 100**

Instructions: All questions are compulsory
Use figures to explain the concept.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	What are the advantages of digital fly by wire system?	**4**	**CO1**
Q 2	List down the uses of the communication system in a modern airliner.	**4**	**CO5**
Q 3	What are the basic air cycle systems?	**4**	**CO4**
Q 4	In what way the instrument landing system differ from ground-controlled approach?	**4**	**CO2**
Q 5	Differentiate between the check valve and non-return valve.	**4**	**CO2**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Analyze the fuel system of piston and jet engine aircraft based on their design requirements.	**10**	**CO3**
Q 7	How do you classify the airbrakes for an aircraft?	**10**	**CO2**
Q 8	Explain the working principles of gyroscopic instruments. **OR** Explain with neat sketch, construction and working of an Altimeter.	**10**	**CO5**
Q 9	What are the requirements of fire protection system? Explain briefly about the thermo couple and tubular heat detectors.	**10**	**CO4**
	SECTION-C **(2Qx20M=40 Marks)**		

Q 10	a). Describe how fully powered flight control systems works.	**10**	**CO1**
	b). Discuss briefly about Pitot Static systems with necessary diagrams.	**10**	**CO2**
Q 11	How does pilot Navigate? How is the navigation system useful for an aircraft? Which navigation system is the most used in aviation? How did aircraft navigate before GPS? **OR** Compare advantages and disadvantages of different types of aircraft landing gears. Comment on landing gear system of trainer Aircraft (You can use any aircraft model for explanation).	**20**	**CO5/ CO2**