


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
<b>Course: Aircraft Systems &amp; Instruments</b> <b>Program: B.Tech ASE+AVE</b> <b>Course Code: ASEG3009P</b>		<b>Semester: V</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions: All questions are compulsory</b> <b>Use figures to explain the concept.</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
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
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q 6	Analyze the fuel system of piston and jet engine aircraft based on their design requirements.	10	CO3
Q 7	What do you understand by antiicing and deicing problems in aircraft? Explain the system to control them.	10	CO4
Q 8	Explain the working principles of gyroscopic instruments. <b>OR</b> 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.	<b>10</b>	<b>CO1</b>
	b). Discuss briefly about Pitot Static systems with necessary diagrams.	<b>10</b>	<b>CO2</b>
Q 11	<p>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?</p> <p style="text-align: center;"><b>OR</b></p> <p>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).</p>	<b>20</b>	<b>CO5/ CO2</b>