

USN

--	--	--	--	--	--	--	--	--	--

**Eighth Semester B.E. Degree Examination, July/August 2021**  
**Aircraft Systems and Instrumentation**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. Describe about the primary and secondary flight controls with relevant diagrams. (10 Marks)  
b. With clear illustration, explain about the power assisted and fully powered flight control system. (10 Marks)
- 2 a. What are the properties of a good hydraulic fluid used in airplane and name the common fluids? (10 Marks)  
b. Explain with a sketch an emergency lowering of landing gear circuit and explain how it works in a modern passenger aircraft. (10 Marks)
- 3 a. Explain the generalized fuel system of large transport aircraft and also list the characteristics of aircraft fuel system. (12 Marks)  
b. Explain the Engine Oil system. (08 Marks)
- 4 Describe about the aircraft anti-icing system and deicing system with suitable diagram. (20 Marks)
- 5 a. Explain why instrument grouping is required. (10 Marks)  
b. What are the parameters and warning indication provided for hydraulic system in the main instrument panel? (10 Marks)
- 6 a. With a neat sketch, describe mach meter and vertical speed indicator. (14 Marks)  
b. Describe Altitude – Alerting system, with a neat sketch. (06 Marks)
- 7 a. List out the properties of gyroscope. (02 Marks)  
b. Write down the limitations of directional gyros. (04 Marks)  
c. Discuss the functioning of a turn and bank indicator. (14 Marks)
- 8 a. What are the parameters displayed on the engine panel to the pilot in a modern airplane? (10 Marks)  
b. How fuel flow rate is measured and where is it indicated to the pilot in a modern aircraft? (10 Marks)

\*\*\*\*\*

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.