Roll No……..….. **Total No. of Printed Pages: 1**

Total No. of Questions: [09]

B. Tech. (Aeronautical Engg.) (Semester – 4th)
AIRCRAFT SYSTEMS AND INSTRUMENTATION
Subject Code: BANES1-404
Paper ID: [18110218]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a. What is Push Pull rod control system?
b. What is fly by wire system?
c. What is the use of hydraulic system?
d. What are the main components of a pneumatic system?
e. What is the role of fluid in Landing gear?
f. What are the main parts of oxygen system?
g. Draw thermodynamic cycle for gas turbine engine?
h. What are the various control system parameters of engine?
i. What is a rate gyro?
j. How do we measure EGT?

Section – B **(5 marks each)**

Q2. How does a gyroscope work? What are the various instruments that use gyro system?
Q3. How does an Autopilot system? Explain with the help of a diagram.
Q4. Describe deicing and ant icing system?
Q5. Explain navigation of an aircraft?
Q6. Describe briefly the engine starting systems.

Section – C **(10 marks each)**

Q7. Describe basic air cycle and pressurization system.
Q8. Explain the what way the instrument landing system differ from ground-controlled approach.
Q9. What is the gyroscopic principle? Describe different gyro based instruments. How does a turn and bank indicator work?