

**B.Tech. AEROSPACE ENGINEERING  
(BTAE)**

**00551 Term-End Examination**

**June, 2019**

**BAS-019 : AIRCRAFT INSTRUMENTS**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any **seven** questions. All questions carry equal marks.

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1. Describe the construction of a fuel flow indicator and explain the basic principle of operation. 10
  
2. Define any **five** of the following terms : 5×2=10
  - (a) Pressure altitude
  - (b) Mach No.
  - (c) Aircraft horizon
  - (d) VOR
  - (e) TACAN
  - (f) Isogonal lines

3. (a) Describe a method of measurement of engine speed.
- (b) How are the effects of temperature on an alternating current tachometer compensated? 5+5
  
4. (a) Draw the block diagram and describe a typical integrated flight system.
- (b) List out the advantages of Fly-By-Wire control over the conventional Mechanical Flight control system. 5+5
  
5. (a) What type of information is displayed by EICAS? Explain in detail the functioning of a typical Flight Detector System.
- (b) Give the relationship between Celsius, Fahrenheit and Absolute (Kelvin) temperature. Convert  $-40^{\circ}\text{C}$  into Fahrenheit scale and Absolute scale. 5+5
  
6. Describe in detail the cabin pressurization procedure in an aircraft. 10
  
7. Explain the starting system of an aircraft. List out the gas turbine engine starters with a neat sketch. 10
  
8. Explain the working principle of a landing gear with the help of a neat sketch. 10