

12  
JAYA GROUP OF INSTITUTIONS-THIRUNINRAVUR  
4<sup>th</sup> SEM – B.E. / B.Tech  
INTERNAL-ASSESSMENT-1(MODEL EXAM-1)

Sub. Name: Aircraft Systems and Instrumentation  
Sub. Code: AE 6402  
Duration: 180 minutes

Date: 29-01-2015  
Branch: Aeronautical  
Max. Marks: 100

**PART-A (10 x 2 = 20)**

1. Give four names of hydraulic pumps used in a typical hydraulic system
2. What is the purpose of an accumulator in a hydraulic system?
3. Briefly explain a push-pull rod system
4. Distinguish between hydraulic and pneumatic systems
5. Classify the aircraft landing gear system.
6. What do you understand by fly by wire system?
7. What are the advantages of pneumatic system over hydraulic system?
8. What are the advantages of fly by wire systems?
9. Define autopilot
10. What are the flight control surfaces?

**PART-B (5x16=80)**

- 11.(a) Explain with neat sketch and working principle of hydraulic landing gear retraction system.  
Or
- 11.(b) What are the various components of hydraulic system? Explain with neat sketches any one of them.
12. (a) Briefly explain different types of brake system  
Or
- 12 (b) What are the various components of pneumatic system? Explain with neat sketches any one of them.
13. (a) Briefly explain the different types of accumulator used in hydraulic system  
Or
- 13 (b) Explain the different types of pumps used in pneumatic system
- 14.(a) Explain in detail about auto pilot system with a block diagram.  
Or
- 14 (b) Explain the working principles of power assisted and power actuated systems.
- 15.(a) Explain the working principles of power operated actuated systems  
Or
- 15(b) Briefly explain fly-by-wire and Digital fly-by-wire system