

Register No: .....

**B.E. DEGREE EXAMINATIONS: APRIL/MAY 2011**

Fourth Semester

**AERONAUTICAL ENGINEERING**

U07AR402: Aircraft System and Instrumentations

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Spoilers are also called as \_\_\_\_\_  
(A) Drag Dampers (B) Lift Dampers  
(C) Thrust Dampers (D) Weight Dampers
2. The failure of Push-Pull rod is due to  
(A) Buckling (B) Bending  
(C) Fatigue (D) Creep
3. Aircraft Brake Systems are used to dissipate \_\_\_\_\_  
(A) Potential Energy (B) Kinetic Energy  
(C) Thermal Energy (D) Elastic Energy
4. In aircraft landing gear air dashpots may be combined with hydraulic damping to reduce \_\_\_\_  
(A) Landing Distance (B) Bounce  
(C) Heat (D) Skid
5. During high altitude operation \_\_\_\_\_ pump is operated to ensure adequate fuel pressure.  
(A) Engine driven (B) Boost pump (c) Buzz pump (D) Bing pump  
pump
6. The Starting Torque of the engine doesn't depend upon \_\_\_\_\_  
(A) Cranking Speed (B) Temperature of the Engine  
(C) Turbine Power (D) Throttle Opening
7. The refrigerant used in vapour cycle is \_\_\_\_  
(A) Freon (B) Carbon- di-oxide  
(C) Neon (D) Argon
8. Lack of Oxygen causes the person to experience the condition called \_\_\_\_\_  
(A) Polycythemia (B) Nausea  
(C) Dehydration (D) Hypoxia

9. Rigidity of a gyro depends upon

- (A) Speed of the rotor (B) Mass of the rotor  
(C) Speed & Mass of the rotor (D) Shape of the rotor

10. Airspeed indicators work by measuring the difference between

- (A) Static Pressure & Total Pressure (B) Static Pressure & Total Temperature  
(C) Total Temperature & Total Pressure (D) Total Temperature & Static Temperature

**PART B (10 x 2 = 20 Marks)**

11. Types of airplane control system  
12. List out the component of instruments landing system  
13. Give different types of ignition source for Jet engine  
14. List out the types of Brakes  
15. What is Positive displacement pump?  
16. List out the types of fuel feed system  
17. Types of De-icing System  
18. What are the types of cabin atmospheric control system?  
19. Classification of flight instruments based on working principle  
20. List out the types of overheat detectors.

**PART C (5 x 14 = 70 Marks)**

21. a) Explain briefly about the auto pilot systems

**(OR)**

b) Describe briefly about the push pull rod system and flexible push full rod system

22. a) Explain (i) hydraulic system (ii) pneumatic system

**(OR)**

b) Explain the landing gears system and its types with neat sketch.

23. a) Explain briefly about the working principle of fuel system in piston engine

**(OR)**

b) Explain briefly about the ignition system in jet engine

24. a) Explain

(i) Deicing system      (ii) Anti – icing system

**(OR)**

b) Explain briefly about the evaporative vapour cycle systems

25. a) Explain   (i) Tachometers      (ii) Mach meters

**(OR)**

b) Explain   (i) Air speed indicators      (ii) Gyroscope

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