

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: AO403**Course Name: AIRCRAFT SYSTEMS AND INSTRUMENTS**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any three full questions, each carries 10 marks.*

Marks

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| 1 | a) Draw and explain the working of a typical pneumatic system. | (7) |
| | b) Why would Some industries select Pneumatics over Hydraulic? | (3) |
| 2 | Explain the working of a large aircraft landing gear retraction system. | (10) |
| 3 | a) Explain the difference between push-pull rod and cable pulley systems. | (7) |
| | b) Name three engine control systems. | (3) |
| 4 | What do you meant by fully powered flight control system? Explain with neat sketch. | (10) |

PART B*Answer any three full questions, each carries 10 marks.*

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|---|---|------|
| 5 | Explain the longitudinal and lateral controls in autopilot system with neat sketches. | (10) |
| 6 | a) What is auto pilot failure? | (4) |
| | b) What are the advantages and disadvantages of auto pilot system? | (6) |
| 7 | a) Explain dry sump lubrication system. | (5) |
| | b) Explain wet sump lubrication system. | (5) |
| 8 | a) Explain the working principles of | |
| | a) Battery ignition system | (5) |
| | b) Magneto ignition system | (5) |

PART C*Answer any four full questions, each carries 10 marks.*

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| 9 | List out various gyroscopic instruments used in the aircraft and explain any one in detail. | (10) |
| 10 | a) Discuss the two fundamental properties of Gyroscope. | (5) |
| | b) Distinguish between airspeed indicator and altimeter. | (5) |

- 11 Explain with neat sketches, construction and working of Turn and Bank Indicator & Gyro Horizon Indicator. (10)
- 12 What are the various engine instruments? Explain any one. (10)
- 13 What are the pressure measuring instruments? Explain any one. (10)
- 14 What are the different types of sensing elements used in pressure gauges? Explain the construction and working of one of them. (10)
