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Question Paper Code : 40052

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Fourth Semester

Aeronautical Engineering

AE 8402 – AIRCRAFT SYSTEMS AND INSTRUMENTS

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain the components of a brake system.
2. What is a shock absorber?
3. Describe auto pilot system.
4. Write a short note on power actuated system.
5. State the various requirements of fuel system.
6. Indicate the requirements of lubricant system.
7. What is meant by pressurizing system of an airplane?
8. What are the basic air cycle system?
9. Name the various types of engine instruments.
10. Explain the purpose of tachometer in an airplane.

PART B — (5 × 13 = 65 marks)

11. (a) Classify and explain landing gear system of an aircraft with neat sketches. (13)
- Or
- (b) Explain the working principle and operation of hydraulic and pneumatic system. (13)

12. (a) Describe in detail about modern control systems and digital fly by wire systems. (13)

Or

- (b) Elaborate push and pull rod systems with neat sketches. (13)

13. (a) Explain the multiengine fuel system. (13)

Or

- (b) Differentiate between the piston engines and jet engines. (13)

14. (a) Explain the principles of evaporative vapour cycle system. (13)

Or

- (b) Illustrate with neat sketches about air cycle and vapour cycle machines. (13)

15. (a) Explain EGT operation. Explain its sensor with principle and types with neat sketches. (13)

Or

- (b) Explain the operation principles of gyroscopic instruments. (13)

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PART C — (1 × 15 = 15 marks)

16. (a) Analyze the performance of various aircraft engine systems. (15)

Or

- (b) Describe working principles of different aircraft systems. (15)
