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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2012/2013**

COURSE NAME : AIRCRAFT SYSTEMS
COURSE CODE : BDU 20403
PROGRAMME : 3 BDC
EXAMINATION DATE : JUNE 2013
DURATION : 3 HOURS
INSTRUCTION : ANSWER **FOUR (4)** QUESTIONS ONLY

THIS PAPER CONSISTS OF THREE (3) PRINTED PAGES

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- Q1** (a) What is the aircraft cooling system, and why is it important? (12 marks)
- (b) List down the advantages and disadvantages of air cooled engine. (13 marks)
- Q2** (a) Discuss the differences between hydraulic and pneumatic systems. Give three examples of each system found in aircraft. (8 marks)
- (b) Explain the working principle of a complete hydraulic system. Discuss the function of each component in the system. Provide necessary sketch to support your explanation. (17 marks)
- Q3** (a) Give the exact composition of the atmosphere. Name four (4) layers in the atmosphere together with the thickness of each layer. (12 marks)
- (b) The pressurisation in aircraft is necessary at high altitude. Give the reasons why an aircraft has to fly at high altitude. Name two types of decompressions due to a malfunction in the pressurisation system. (13 marks)
- Q4** (a) Describe the properties of hydraulic fluid. Briefly discuss the three types of hydraulic fluid. (14 marks)
- (b) Discuss the sources of compressed air for aircraft pneumatic system. When the aircraft is on ground with engines off, state the source from which the compressed air is obtained to support the operation of all pneumatic systems. (11 marks)
- Q5** (a) Explain briefly the working principle of an aircraft pressurisation system. (13 marks)
- (b) Define air conditioning system. When does high pressure (HP) bleed valves automatically close? (12 marks)

Q6 (a) Draw the landing gear configurations used in modern airline aircraft. Explain the factors considered in the selection of the landing gear configuration.

(15 marks)

(b) Explain the function of shock absorber in landing gear assembly. Briefly discuss the difference between landing gear system used in commercial aircraft and light aircraft.

(10 marks)

- END OF QUESTION -