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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024**

COURSE NAME : AVIATION MANAGEMENT SYSTEM

COURSE CODE : BDX 30803

PROGRAMME CODE : BDX

EXAMINATION DATE : JULY 2024

DURATION : 3 HOURS

INSTRUCTION :

1. ANSWER **FIVE (5)** QUESTIONS FROM SIX (6) QUESTIONS ONLY.
2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 - Open book
 - Closed book
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1** (a) Effective strategic planning outlines where an organization is intended to go, the actions needed to make progress towards the desired destination, and how it will know if it is successful. It can be accomplished by making a proper statement of vision and mission. State **THREE (3)** examples of vision and mission statement by providing the samples for each statement. (6 marks)
- (b) The Hub and Spoke model and the Point-to-Point model are two common strategies used in the airline industry for organizing flight routes and managing passenger traffic. Each model has its own characteristics and advantages, suited to different airline business models and market conditions. Differentiate between Hub and Spoke model and Point to Point model with proper example calculation of the route between these models. (10 marks)
- (c) Surveillance radar is a type of radar system used for detecting and tracking objects, such as aircraft, ships, vehicles, and weather phenomena, over a wide area. It plays a critical role in air traffic control, military operations, maritime navigation, weather monitoring, and security surveillance. Compare between Primary Surveillance Radar and Secondary Surveillance Radar by explaining how they work, the receiving signals, the coverage and information that they provide. (4 marks)
- Q2** (a) Airline regulations are a set of rules created and maintained by aviation authorities and associations such as International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA). Analyze the differences between ICAO and IATA. (12 marks)
- (b) The AS9100 standard is a set of guidelines for implementing a Quality Management System for use by aviation, space, and defense organizations (often referred to as the aerospace industry). It was released by the International Aerospace Quality Group (IAQG) based on the internationally recognized standard ISO 9001. Describe **FOUR (4)** benefits of applying this quality management system. (8 marks)

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- Q3** (a) A Design Organization Approval (DOA) is the recognition that a design organization complies with the requirements of Part 21 Subpart J. List down TWO (2) possible privileges that a DOA holder could obtain. (4 marks)
- (b) Summarize FOUR (4) key requirements involved in obtaining a Production Organization Approval (POA) under EASA Part 21 Subpart G and explain its significance in the aerospace industry. (8 marks)
- (c) Apply FOUR (4) key steps how you would use the guidelines provided in Airworthiness Notice 96 to update and improve aircraft maintenance procedures within your organization's regulatory framework? (8 marks)
- Q4** (a) In aircraft manufacturing, Hazard Identification, Risk Assessment and Risk Control (HIRARC) is crucial for identifying and mitigating risks associated with various processes, including machining, welding, assembly, testing, and quality control. By systematically assessing and controlling hazards, aircraft manufacturers can minimize the likelihood of accidents, injuries, and product defects, leading to improved safety, quality, and efficiency in the manufacturing process. Based on your knowledge in potential work hazard severity and likelihood, prepare a HIRARC table that shows THREE (3) examples of criteria and the levels of risk for each item related to an operation of an aircraft manufacturing. (14 marks)
- (b) Configuration Management in aircraft manufacturing industries involves the systematic management of product configurations throughout the entire lifecycle of an aircraft, from design and development through production, operation, and maintenance. Describe THREE (3) objectives of Configuration Management in aircraft manufacturing industries. (6 marks)
- Q5** (a) "Outsourcing has become a common practice in the aircraft manufacturing industry due to its potential benefits and challenges." Justify whether outsourcing in aircraft manufacturing contributes to cost reduction or escalation, and the necessity of outsourcing in meeting production deadlines and delivery schedules for aircraft manufacturers. (10 marks)
- (b) The COVID-19 pandemic has had a significant impact on the aerospace industry, including its supply chain. What challenges do aerospace companies face in managing their supply chain upon post COVID-19 pandemic? Please provide FIVE (5) challenges. (10 marks)

- Q6** (a) Apply FIVE (5) principles of Safety Management Systems (SMS) to a hypothetical scenario where an airline identifies an increase in maintenance-related incidents over the past few months. (10 marks)
- (b) Illustrate the role of configuration management in ensuring quality and safety throughout the lifecycle of an aircraft in the manufacturing industry. (10 marks)

-END OF QUESTION -

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