



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : AVIATION SAFETY MANAGEMENT

COURSE CODE : BDL 30602

PROGRAMME CODE : BDC

EXAMINATION DATE : JULY 2024

DURATION : 2 HOURS

INSTRUCTIONS :

- PART A: ANSWER ALL QUESTIONS.
PART B: ANSWER **ONE (1)** FROM TWO (2) QUESTIONS ONLY.
- THIS FINAL EXAMINATION IS CONDUCTED VIA
 Open book
 Closed book
- STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

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PART A

- Q1** The ABC Airlines operates a major aircraft maintenance facility at Kuala Lumpur International Airport. A team of aircraft mechanics was assigned to perform engine maintenance on a Boeing 777. The task involved removing and replacing a faulty engine component. The team had followed standard procedures, but during the removal process, an accident occurred. The engine hoist malfunctioned, causing the heavy engine part to fall on a worker unexpectedly.
- (a) The Air Accident Investigation Bureau (AAIB) is an independent organization in Malaysia may involve in this incident. Describe the mission, and role of the AAIB establishment.
(9 marks)
- (b) Mandatory Occurrence Report (MOR) must be lodged with regards to the incident. Justify the report obligation in terms of objective and scope in MOR airworthiness aspect.
(12 marks)
- (c) Differentiate between mandatory and voluntary reporting.
(4 marks)
- Q2** The Boeing 737 MAX tragedy in Indonesia refers to the Lion Air Flight 610 incident that occurred on October 29, 2018. The Boeing 737 MAX operating the route crashed into the Java Sea just 13 minutes after take-off.
- (a) Edwards (1972) presented the SHELL model dealing with man and machine interface. SHELL is a visual conceptual tool in aviation accident theory. Correlate the SHELL model to the tragedy.
(15 marks)
- (b) Errors are actions which lead to deviations in performance/safety. Based on the tragedy and Reason model in explaining type of human error, differentiate error due to slip and mistakes.
(6 marks)
- (c) Sketch the Air Traffic Control process before the tragedy happen.
(4 marks)
- Q3** The main purpose of aircraft safety systems is it is designed to help pilots avoid potential hazards and response to emergency quickly to prevent accidents and protect passengers.
- (a) State the atmospheric conditions factors that could lead to safety issue during flight.
(4 marks)

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- (b) Based on your answer in Q3(a), determine the improvement for safety purposes due to incident/accident that occurs due to atmospheric conditions. (8 marks)
- (c) As a manager in airport operator company, develop safety procedures or tips to avoid aircraft incursion. (9 marks)
- (d) In order to ensure the safety and security of the airport is up to date, propose future aviation security procedures in Kuala Lumpur International Airport. (4 marks)

PART B

Q4 Aviation safety has significantly improved over the years. Despite these improvements, safety remains a top priority, aiming for every flight to take off and land safely regardless of region or aircraft type through Safety Management System (SMS).

- (a) Describe the **four (4)** pillars of SMS. (8 marks)
- (b) Sketch the risk management documentation in SMS. (8 marks)
- (c) Distinguish the relationship between state safety program and SMS (9 marks)

Q5 The aviation international regulation and standardization help the improvement in safety. Nowadays, everyone expects that every flight is safe.

- (a) Sketch the evolution of aviation safety thinking. (8 marks)
- (b) Justify the need of any aviation organization to enhance the safety improvements work. (8 marks)
- (c) Your company create a new manager post on safety and quality. Develop the job description of this new post. (9 marks)

- END OF QUESTIONS -

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