



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER 1
SESSION 2021/2022**

COURSE NAME : MODERN MANUFACTURING
PROCESS
COURSE CODE : MMV12003
PROGRAMME CODE : MBM
EXAMINATION DATE : JANUARY / FEBRUARY 2022
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : 1. ANSWER ALL QUESTIONS
2. THIS FINAL EXAMINATION IS A
ONLINE ASSESSMENT AND
CONDUCTED VIA **CLOSED
BOOK.**

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

- Q1** (a) Determine **THREE (3)** factors that affects machining process output. (3 marks)
- (b) Describe the benefits and drawback of machining process. (8 marks)
- (c) Distinguish the traditional machining process and modern machining process. (14 marks)
- Q2** (a) Discuss the working principle and work flow of Abrasive Water Jet Machining (AWJM) process. (12 marks)
- (b) Determine the crucial component of electrochemical machining. (13 marks)
- Q3** (a) Conclude the Electron Beam Machining (EBM) and Laser Beam Machining (LBM). (2 marks)
- (b) Discuss **THREE (3)** major functions of electrolyte used in Electrochemical Machining (ECM) process. (3 marks)
- (c) Drilling, slotting and slitting are some of the operation can be made using Ultrasonic Machining (USM) process. Describe the application of USM in industrial. (5 marks)
- (d) In one production line, there is ultrasonic machines (USM) and electro-discharge machines (EDM). You need to cut one material in form of thick plate. The material of the thick plate is aluminum. Choose the best machine that can be used to operate the plate. justify your answer by considering material removal rate, process duration, the material of the workpiece and the waste from the operation. (8 marks)
- (e) Discuss the major challenges in implementing computer integrated manufacturing (CIM) to the factory. (7 marks)
- Q4** (a) Distinguish between mass production and flexible production with example. (4 marks)
- (b) Investigate what is the quality control consideration of gear manufacturing (4 marks)

- (c) Quality assurance and quality control are two aspects of quality management. While some quality assurance and quality control activities are interrelated, the two are defined differently. Compare between quality assurance and quality control with an example. (8 marks)
- (d) Process layout is crucial to ensure that factory or operation line of one company run smoothly. There are several type of process layout implemented in every operation. Describe the process layout mostly used in factory. Elaborate which process layout suitable for ship manufacturing. (9 marks)

- END OF QUESTIONS -