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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(TAKE HOME)
SEMESTER II
SESSION 2020/2021**

COURSE NAME	:	MEDICAL INSTRUMENTATION
COURSE CODE	:	BEU40503
PROGRAMME CODE	:	BEJ
EXAMINATION DATE	:	JULY 2021
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWERS ALL QUESTIONS OPEN BOOK EXAMINATION

THIS QUESTION PAPER CONSISTS OF **TWO (2)** PAGES

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- Q1** (a) Identify any **FIVE (5)** medical instruments. (5 marks)
- (b) Discuss **FIVE (5)** application of medical instruments. (10 marks)
- (c) Describe cellular engineering within **FIVE (5)** points. (10 marks)
- Q2** (a) Explain the principle of transducer. (2 marks)
- (b) List down types of transducer and discuss. (13 marks)
- (c) Infer the venous air embolism possible areas in hemodialysis circuit by pointing using its schematic diagram. (10 marks)
- Q3** Categorize the invasive and non-invasive measurement of blood pressure. (15 marks)
- Q4** Summarize the pulse oximeter implementation in designing using blood circulatory diagram. (15 marks)
- Q5** Explain the procedure to measure the pulse rate. (9 marks)
- Q6** (a) List various blood flow and blood volume measurement techniques. (5 marks)
- (b) Categorize the parameters involved in the rate of respiration calculation in a static system and dynamic system. (6 marks)

-END OF QUESTIONS -