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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : MANUFACTURING
TECHNOLOGY
COURSE CODE : BPB 23303
PROGRAMME : 2 BPA
EXAMINATION DATE : JUNE 2014
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWER ALL QUESTIONS

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

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- Q1**
- (a) Draw a diagram to classify metal forming operations. (7 marks)
 - (b) Differentiate between direct and indirect extrusion with Illustration. (6 marks)
 - (c) Describe the process of making aluminium can. (12 marks)
- Q2**
- (a) Explain the pattern in sand casting process. (6 marks)
 - (b) Compare advantages and limitations of sand casting, investment casting, and die casting processes. (12 marks)
 - (c) Aluminium casting company is considering using either permanent mold casting or sand mold casting to manufacture 1000 simple, small parts that are to be cast in aluminum. There is no time limit.

Determine the less expensive method. (5 marks)
- Q3**
- (a) Describe **FOUR (4)** importance of commercial and technological machining. (8 marks)
 - (b) Distinguish between rotational parts and prismatic parts in machining. (6 marks)
 - (c) Explain **THREE (3)** manufacturing processes of making a connecting rod. (12 marks)

- Q4**
- (a) Sketch **FIVE (5)** basic types of joints in welding. (10 marks)
 - (b) Describe Gas Metal Arc Welding (GMAW). (5 marks)
 - (c) Compare fusion-welding and solid-state welding. (6 marks)
 - (d) Explain a welding technique to weld thick and large sections of steel together to form a hull in building large ships. (5 marks)

- END OF QUESTION -

