



**UNIVERSITI TEKNOLOGI MARA**  
**QUIZ 1**

1. Answer ALL questions.

**COURSE MANUFACTURING PROCESSES AND TECHNOLOGY**

**COURSE CODE** :MEM360  
**TIME** :1½ HOURS

2. Do not bring any material into the examination room unless permission is given by the invigilator.

Question	CO1:PO1	CO2:PO2	CO3:PO4	Total
1a	/2			/10
1b	/3			
1c	/5			
2a		/5		/5
3a			/5	/5
Total	/10	/5	/5	<b>/20</b>

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NAME

### QUESTION 1

a) Explain the function of Boring and reaming process.

(CO1: PO1)

(2 marks)

1. Boring process is use to enlarging the diameter hole
2. Reaming process is use to smooth and to improve tolerance hole

b) A slab milling operations carried out on 0.45m long, 0.12m wide annealed mild steel at a feed = 0.35mm/tooth and depth of cut ,d= 3.55mm. The cutter is D=65mm diameter and has 20 straight teeth, rotates at N=200rpm. Calculate the material removal rate (MRR) of this operation.

(CO1:PO1)

(3 marks)

$$V = fNn$$

$$= (0.35)(200)(20)$$

$$= 1400 \text{ mm/min}$$

$$\text{MRR} = w d v$$

$$= (120)(3.55)(1400)$$

$$= 596400 \text{ mm}^3/\text{min}$$

- c) Defined what is expendable mold casting and permanent mold casting. Then give one (1) example of each casting process and one (1) advantage of permanent mold casting compared to sand casting.

(CO1, PO1)

(5 marks)

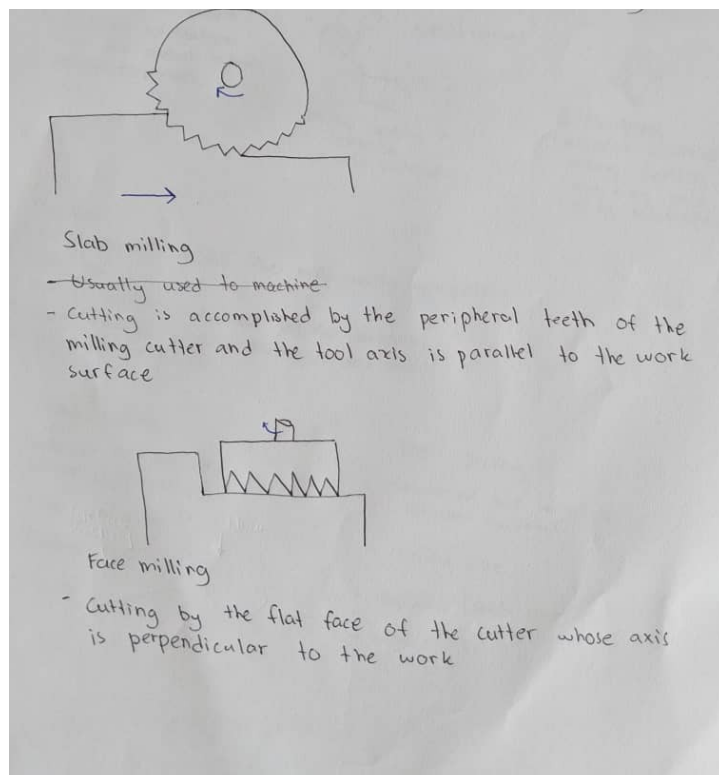
1. Expendable mold casting mean the mold can be use just in temporary time Example sand casting
2. Permanent mold casting mean the mold can be use many time Example is material that using metal
3. Permanent mold casting produces smoother surfaces compared to sand casting

## QUESTION 2

- a) Machining is the removal of material and modification of the surface of workpiece. With an aid of diagram, explain in details the process of slab milling and face milling.

(CO2; PO2)

(5 marks)



## QUESTION 3

- a) There are few causes for gas defect during the casting process. State two (2) reason for

gas defect to happen and with an aid of diagram give one (1) example of defect that fall under this category. Then suggest one (1) solution to rectify it.

(CO3; PO4)

(5 marks)

Reason for gas defect:

1. Lower permeability
2. Improper design

Example:

Blow holes

The reason is moisture trap in the mold or core

Solution

1. Higher the venting and permeability

