ELIZADE UNIVERSITY, ILARA-MOKIN,
ONDO STATE, NIGERIA

DEPARTMENT OF MECHANICAL ENGINEERING

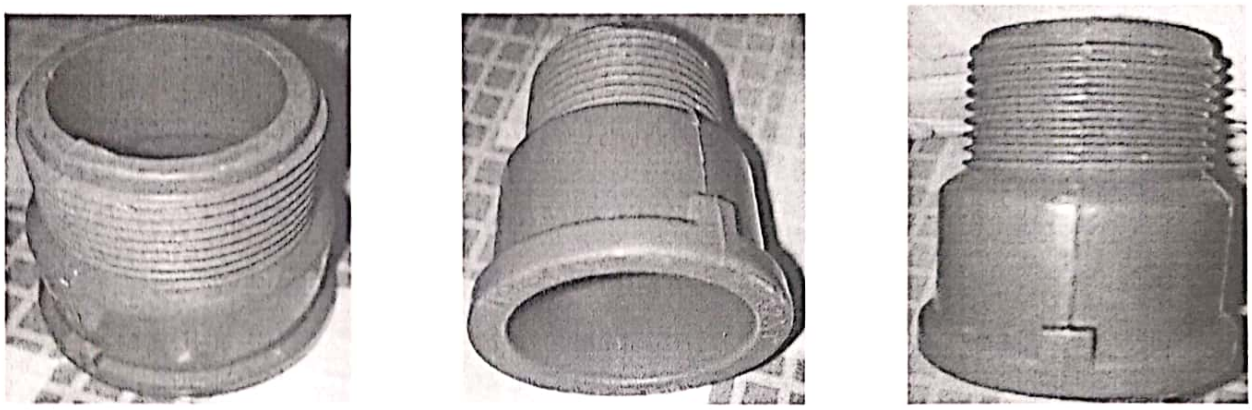
FIRST SEMESTER EXAMINATION

2020/2021 ACADEMIC SESSION

COURSE:	MEE 301 – Manufacturing Technology (3 Units)
CLASS:	300 Level Mechanical Engineering
TIME ALLOWED:	3 Hours
INSTRUCTIONS:	**Answer QUESTION 1 and any other four questions**

HOD'S SIGNATURE

Date: March, 2021



Picture 1: Water Pipe Bushing Produced out of Nylon Plastic Materials

QUESTION 1

a. List out five major fabrication methods that can be used for production of the product in *Picture 1* above. **(5 Marks)**
b. Briefly explain three (3) of the fabrication methods you mentioned above. **(5 Marks)**
c. List out five (5) basic manufacturing process requirements for the product in *Picture 1* above. **(5 Marks)**
d. In a tabular form, differentiate the works of a fabricator from that of a manufacturing Engineer in the production of the product in *Picture 1* above. **(5 Marks)**

Question 2

a. Define the term Manufacturing Technology. **(1 Mark)**
b. As a Mechanical Engineer-in-training, give six (6) major reasons why the study of Manufacturing Technology is important to your career. **(3 Marks)**
c. Define Fabrication Method. **(1 Mark)**
d. What do you understand by 'Direct or Forward Hot Extrusion' in simple terms? **(5 Marks)**

Question 3

a. As an Engineer in forging industry, identify five (5) common forging defects to avoid. **(5 Marks)**
b. List out five (5) non-manufacturing processes common to an engineering industry. **(3 Marks)**
c. Define Manufacturing Process using forging as a point of reference. **(2 Marks)**

Question 4

a. As a consultant Engineer, what will you recommend as five (5) essential industrial safety rules for an upcoming manufacturing industry? **(5 Marks)**

b. In a tabular form, list out five (5) differences between ferrous metal Extrusion and Forging **(5 Marks)**

Question 5

a. List out four basic requirements of manufacturing process you know. **(2 Marks)**
b. Briefly classify extrusion processes into three (3). **(3 Marks)**
c. Define Extrusion as a fabrication method. **(1 Mark)**
d. List out four (4) Extrusion equipment. **(4 Marks)**

Question 6

Copy and complete the table below:

SN	PROCESS	EQUIPMENT	SPECIAL TOOLING (Function)
1	Forging		Die (squeeze work to shape)
2	Extrusion		Extrusion die (reduce cross-section)
3	Casting	Foundry Equipment	
4	Molding	Molding machine	Mold (cavity for hot polymer)
5	Rolling	Rolling mill	Roll (reduce work thickness)
6	Stamping		Die (shearing, forming sheet metal)
7	Machining		Cutting tool (material removal) Fixture (hold work-piece) Jig (hold part and guide tool)
8	Grinding	Grinding machine	
9	Welding	Welding machine	

(10 Marks)

Question 7

a. List out four extrusion products of note. **(2 Marks)**
b. Itemize three (3) defects that are common in extrusion. **(3 Marks)**
c. As a Manufacturing Engineer, briefly explain the extrusion defects you itemized above. **(5 Marks)**