



ELIZADE UNIVERSITY, ILARA-MOKIN,  
ONDO STATE, NIGERIA

DEPARTMENT OF

MECHANICAL, AUTOMOTIVE AND PRODUCTION ENGINEERING

FIRST SEMESTER EXAMINATIONS

2017/2018 ACADEMIC SESSION

COURSE: MEE 301 – Manufacturing Technology (3 Units)

CLASS: 300 Level Mechanical Engineering

TIME ALLOWED: 3 Hours

INSTRUCTIONS: Answer any **FOUR** questions

A handwritten signature in black ink, appearing to read 'A. O. Ojo', written inside a rectangular box.

HOD'S SIGNATURE

Date: March, 2018

**Question 1**

- Explain the Five basic steps in making sand castings (5 Marks)
- Differentiate between the green sand mould and dry sand mould (8 Marks)
- State Four moulding equipment (5 Marks)
- Why is grain size important in moulding sand? (7 Marks)

**Question 2**

- What do you know about metal forming processes (5 Marks)
- Enumerate three merits and three demerits of hot working of metal (6 Marks)
- With a sketch diagram, define hot rolling (4 Marks)
- What is cold working of metals. List its five characteristics (7 Marks)
- Define Spinning (3 Marks)

**Question 3**

- Define Plastic as a non-metallic material (5 Marks)
- Explain briefly the meaning of (i) Catalyst (ii) fillers (iii) Stabilizers (6 Marks)
- Define each and differentiate between Thermocouple and Thermoplastic (9 Marks)
- Mention five examples of Thermoplastic materials (5 Marks)

#### Question 4

- (a) What is the meaning of Ceramics **(5 Marks)**
- (b) Describe with sketch diagrams four types of welding joints **(8 Marks)**
- (c) Explain wood and its uses **(6 Marks)**
- (d) Differentiate between Hard wood and Soft wood **(6 Marks)**

#### Question 5

- (a) Write short notes on three out of the following metallic powder making techniques **(8 Marks)**

1. Atomization
2. Chemical reduction
3. Electrolytic process
4. Crushing
5. Milling
6. Condensation of metal vapours

- (b) Explain the following processes in cold working of metal **(6 Marks)**
  - (i) Blanking
  - (ii) Punching

5c. Describe with sketch diagram five tools use for sheet metal works **(6 Marks)**

5d. What is powder metallurgy? **(5 Marks)**

#### Question 6

- (a) What is Manufacturing Technology and what do you understand by Computer aided Manufacturing? **(8 Marks)**
- (b) Explain the following mechanical properties of metal **(6 Marks)**
  - (i) Ductility
  - (ii) Malleability
  - (iii) Hardness
- (c) Write short notes on the **(6 Marks)**
  - (i) Thermal properties of metal
  - (ii) Electrical properties of metal
- (d) Enumerate five uses of cutting fluid **(5 Marks)**