



PROGRAM : NATIONAL DIPLOMA
ENGINEERING : MECHANICAL & INDUSTRIAL

SUBJECT : MECHANICAL MANUFACTURING ENGINEERING II

CODE : IMV2211
Supplementary Examination

DATE : 08-01-2020

TIME : 11:30 AM – 2:30 PM

DURATION : 3 hrs

TOTAL MARKS : 100

ASSESSOR : Prof. Kapil Gupta

MODERATOR : Mr. Dombo Tshiembe

NUMBER OF PAGES : 3 PAGES

INSTRUCTIONS:

A Calculator of any make or model is permitted

REQUIREMENTS:

NIL

INSTRUCTIONS TO STUDENTS

1. Read the questions carefully.
 2. All questions are compulsory.
 3. Show all calculations.
 4. Number your answers strictly according to the questions.
 5. Make use of sketches wherever required.
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QUESTION 1

[20]

1a. Define the term ‘manufacturing’ and with the help of sketch shed light on its technological and economical perspectives. [8]

1b. Write a detailed classification of manufacturing processes with examples. [8]

1c. Write a short note on global trends in manufacturing. [4]

QUESTION 2

[20]

2a. Define the following terms: [10]

- (i) Hardness
- (ii) Toughness
- (iii) Stress and strain
- (iv) Necking
- (v) Elastic deformation

2b. With the help of a neat sketch discuss various points of an ideal stress-strain curve obtained during tensile testing of ductile materials. [10]

QUESTION 3

[20]

3a. Write a short note on the following operations: [12]

- (i) Rolling
- (ii) Spinning
- (iii) Edge bending
- (iv) Centrifugal casting

3b. What is extrusion? Explain direct and indirect extrusion with the help of sketches. [8]

QUESTION 4

[20]

4a. The defects produced in casting significantly affect its quality. Sketch and define various general defects in casting. [8]

4b. Describe various steps of lost wax casting (also known as investment casting) with the help of sketches. Also write its applications. [12]

QUESTION 5

[20]

5a. What is Powder Metallurgy (PM)? Give examples of the parts made by PM. [4]

5b. How cup-shaped products are made by sheet metal operations? Explain. [6]

5c. Differentiate between welding and weldability. Explain the working principle of oxy-acetylene welding. And also enlist the name of some welding equipment. [10]

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