

Lukhdhirji Engineering College, Morbi

Mechanical Engineering Department

Sem.: 5th Subject: Mfg. Technology Subject Code: 3151912

Assignment 1: Introduction to Manufacturing Process (CO1)

1. Define manufacturing process and list various manufacturing processes.
2. Explain the following processes in brief.
 - a. Casting process
 - b. Forming process
 - c. Fabrication process
 - d. Material removal process
3. Discuss significance of break even analysis.
4. What is a role of break –even analysis in manufacturing industries?
5. Define the following terms:
 - a. Fixed cost
 - b. Variable cost
6. The fixed costs for the financial year 2007-08 are Rs.50000. The sales for this period are of Rs.200000. The variable cost per unit is Rs.3.5, selling price of each product is Rs.13 and the number of units involved coincides with the expected volume of output. Construct the break even chart and determine:
 - (a) Break even point
 - (b) How many minimum products should be sold to earn profit?
 - (c) Profit earned at a turnover of Rs.90000
 - (d) Margin of safety
 - (e) Angle of incidence.

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Vision of the Department:

To deliver quality engineering education for Mechanical Engineers with Professional competency, Human values and Acceptability in the society.

Mission of the Department:

- To nurture engineers with basic and advance mechanical engineering concepts
- To impart Techno-Managerial skill in students to meet global engineering challenges
- To create ethical engineers who can contribute for sustainable development of society

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Assignment 2: Foundry Technology (CO1)

1. What is pattern? Explain various types of pattern with neat sketch.
2. Explain various pattern allowances with neat sketch.
3. Enlist various molding sands and explain in detail.
4. List the essential properties of moldingsand. Sate the effect of each properties on casting.
5. Classify different tools and equipment used in foundries.
6. Explain precision investment casting stating its advantages, limitations, and applications.
7. Explain the method used for determining the permeability of any molding sand.
8. List casting defects and give their causes and remedies.
9. What is gating system? What are its functions? Explain with neat sketch types of gating system used in casting.
10. Make a neat sketch of cupola, indicating its various zone. Describe its construction and working.

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Assignment 3: Forming and Shaping processes (CO2)

1. List the material properties which are important in metal forming.
2. Define the following terms: ingot, slab, bloom and billet.
3. Discuss defects, causes and remedies of forging defects.
4. Illustrate the piercing and blanking processes.
5. Explain forward and backward extrusion process with suitable sketch.
6. Explain the significance of recrystallisation temperature in metal working.
7. What are the advantages of hot working over cold working of metals?
8. Explain the upsetting and drawing down operation with neat sketch.
9. How the tube is manufacturing?
10. Explain strain hardening in forming process.

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Assignment 4: Metal Joining Processes (CO3)

1. What do you mean by basic symbols and supplementary symbols with reference to welding symbol representation.
2. Explain in brief: Types of gas welding flame and atmospheric chemical reaction with neat sketch.
3. Illustrate with neat sketch TIG welding process. Also state its advantages, disadvantages and applications.
4. Explain in brief: electrode codification of E-7018 (as per AWS)
5. List types of flux coating. Explain in brief any one.
6. Describe different welding positions with sketch as per AWS.
7. List the types of weld defects, its causes and prevention in details.

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Assignment 5: Plastic Technology (CO4)

1. Classify plastic materials & its applications. Also state its general properties.
2. Illustrate with neat sketch injection moulding process. What are the limitations of this process.?
3. Describe blow moulding process stating its advantages, limitations and applications.
4. Explain in brief calendaring process.
5. Explain natural fiber reinforced polymer composites.

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Assignment 6: Advance Super finishing Technology (CO5)

1. List various super finishing processes. How size of abrasive grain chosen?
2. Distinguish between lapping and honing process.
3. How buffing process is carried out? Describe with neat sketch.
4. Explain barrel tumbling process in brief.
5. Explain powder coating process with neat sketch.
6. Explain mechanisms of polishing with neat sketch. Also state its application.

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