2.13 30268 MANUFACTURING TECHNOLOGY

UNIT-1 FOUNDARY

1.1 Casting process
1.2 Basic steps in casting
1.3 Pattern and Allowances
(a) Pattern
(b) Pattern Materials
1.4 Design considerations in pattern making
1.5 Pattern construction
1.6 Pattern colures/Type Colouring codes for patterns
1.7 Core prints / Types of core prints
1.8 Pattern Allowances
1.9 Providing fillets on patterns
1.10 Types
1.11 Moulding sands and its desirable properties
1.12 Functions of a patterns
1.13 Moulding sand
1.14 Classification of sand
1.15 Types of moulding sand
1.16 Properties of moulding sad
1.17 Mould making
1.18 Foundry tools
1.19 Disadvantages of Casting
1.20 Elements of a gating system
1.21 Die casting
1.22 Advantages and disadvantages of die-casting
1.23 Hot chamber Die-casting machine
1.24 Cold chamber Die-casting machine
1.25 Cupola furnace
1.26 Charging of cupola
1.27 Cupola operation
1.28 Zones in Cupola
1.29 Capacity of cupola

UNIT-2 FORGING AND WELDING

2.1 Forging
2.2 Drop engine
2.3 Pneumatic power hammer
2.4 Forging press
2.5 Power press-Mechanical press
2.6 Advantages of forging process
2.7 Disadvantages of forging process

2.8 Introduction
2.9 Weldability
2.10 Concept of welding (Types of welding)
2.11 Classification of welding process
2.12 Forage or smithy welding
2.13 R Resistance welding
2.14 F Fusion
2.15 Thermit welding
2.16 Electric Arc welding
(a) ARC welding equipment's
(b) ARC column theory
(c) Difference between A.C and D.C Arc welding
2.17 Electrodes
(a) Functions of flux coated on electrodes
(b) Welding current
(c) Selection of electrodes
(d) Electrode size
(e) Electrode coverings
(f) Polarity
(g) Precautions during electric ARC welding
2.18 Types of welding joints
(a) Welding positions
(b) Edge preparation
2.19 Welding defects
2.20 Advantages and Disadvantages of welded joints
2.21 Gas welding (Working pressure)
2.22 A assembly and care in use of equipment's 68
(a) Fluxes
(b) Welding rods
(c) Types of flame
(d) Welding methods (Techniques)
2.23 Soldering
2.24 Brazing
2.25 Welding of copper

UNIT-3 POWER METALLURGY AND HEAT TREAMENT

3.1 Powder metallurgy
3.2 The powder metallurgy
3.3 Production of metal powders
3.4 Main characteristics of metal powders
3.5 Advantages and disadvantages of powder metallurgy
3.6 Disadvantages and limitations
3.7 Heat Treatment

3.8 Purpose of heat treatment
3.9 Principle of heat treatment (Stages of heat treatment process)
3.10 Heat treatment processes
3.11 Annealing
3.12 Normalizing
3.13 Hardening
(a) Hardenability
(b) Factors affecting hardenability
(c) Determination of hardenability
(d) Hardening methods
3.14 Defects in the heat treatment of steel

UNIT-4 LATH
4.1 Lathe dfd
4.2 Lath operations

UNIT-5 METROLOGY
5.1 Definitions
5.2 Classification of measuring instruments
5.3 Technical specification of measuring instruments
5.4 Micrometers
5.5 The comparator
5.6 Uses of comparators
5.7 Types of comparators
5.8 Mechanical comparators
5.9 Gauges

Reference Books:
1. Manufacturing Technology I by Dr. K.S. Yadav