DME-401 ENTREPRENEURSHIP AND MARKETING MANAGEMENT

UNIT-I

ENTREPRENEURSHIP: Entrepreneur Definition and concept, Characteristics of Entrepreneurship, Comparison between an Entrepreneur and a Manager, Distinction between an Entrepreneur and an Entrepreneur, Entrepreneur Traits, Entrepreneurial Development Programme (EDP).

UNIT-II

SYSTEM CONCEPT : System concepts, Objectives of a system, Characteristics of a system, System and Sub-System Relationships, Life cycle of a system, Control and feedback of a systems, Closed and Open systems.

UNIT-III

MARKETING: Introduction, What is marketing, Marketing Concept, Marketing management, Marketing mix, New product life cycle, Product life cycle concept and meaning, Costumer relationship management (CRM), Need of CRM, Phases of CRM, Net present value(NPV) Method, Break even analysis, Profit and loss Account, Balance sheet, Forms of Business ownership, Techniques of managing stress.

UNIT-IV

MANAGEMENT: Introduction, Definitions of management, E-Business, Planning, Boston Consulting Group (BCG)Matrix, Swot Analysis, Departmentation, Authority, Responsibility, Attitudes, Learning, Leadership, Motivation.

UNIT-V

PRODUCTIVITY AND OPERATIONS: What is productivity, Standard of living and happiness, Operation Management, Project life cycle, Tool and techniques of project management, Method Study, Work measurement, Total quality management (TQM), Just in time (JIT).

REFERENCES:

1. ENTREPRENEURSHIP AND MANAGEMENT CONCEPTS BY SURESH KU. SONI
2. Entreprenerial Development Vol. I,II,III By Vasant desai Himalaya Publicaton
3. Udyamita Vikas By Anand Prakashan

DME-402 INDUSTRIAL MANAGEMENT

UNIT: I

INTRODUCTION AND SYSTEM:

THINKING: Definition and functions of management. Management theories - Decision, Quant itative, Mathematical and Behavioral Science,

Different production and non¬production systems, system design

UNIT: II

PRODUCTION PLANNING AND CONTROL : Production systems, characterstics of each type, PPC functions, Gantt chart, advantages and preparation of Gantt chart (simple cases only), Critical ratio

VALUE ANALYSIS :Concept of cost and value, types of value, objectives and procedure of value analysis

UNIT:III

PROJECT PLANNING BY NETWORK :

Network definition, objectives. CPM and PERT, activity, event, network formation, Fulkerso n's rule, dependency of activities, dummy activity, duration, EST, EFT, LST, LFT, EPO, LPO, Total float and Free float. Network analysis in tabular form.

UNIT:IV

INDUSTRIAL SUPERVISION AND LEADERSHIP :

Meaning and role of Supervisor in an industry. Older workers and their supervision. Concept of Leadership, qualities of good leader, leadership styles, job analysis and job description, difference between recruitment and selection

UNIT: V

ORGANISATIONAL AND TRENDS MANAGEMENT

Characteristics and principles of Organization, Modern organisational approach, types of organisation, meaning and significance of various types of organisation,

Total Quality Management (TQM) - Introduction, stages of development - Inspection, Quality Control. Introduction to ISO-9000.

REFERENCE BOOKS:

. 1 Indutrial Engg. and Management By O.P.Khanna. Khanna Publisher.

.2 Production Operation Management By Goel B.S., Pragati Prakashan

3 Learning Package on Industrial Management Publisher : TTTI, Bhopal.

4 CPM and PERT - Principles and Applications By L.S.Shrinath.

5 Industrial Organisation and Management By K.K.Ahuja.

6 Modern Production Operation Management By Buffa, Willey Eastern Ltd. (latest edition).

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DME-403 MATERIALS TECHNOLOGY

UNIT: I

Introduction to engineering materials: classification of engineering materials, destructive including Tensile test, com pression test, hardness test, impact test fatigue test, endurance non- destructive testing methods.

UNIT: II

Structure of Solid materials:

unit cells and crystal structure (B.C.C., F.C.C. and H.C.P) allotropy. Crystal imperfection and their effects on properties Process of nucleation and grain growth, grain and grain boundaries.

UNIT: III

. Equilibrium Phase Diagrams

Plotting of equilibrium diagrams, interpretation, phase rule and lever rule and its application Phase transformations - Eutectic Eutectoid, Peritectic and Peritectoid. The complete iron carbon diagram and its interpretation

UNIT: IV

Heat Treatment of Steals:

Objective of heat treatment, thermal processes- annealing, normalizing, hardening and tempering. Hardening process Surface hardening, flame hardening, case hardening methods, their scope, limitations and advantages, T.T.T. curves in terpretation

UNIT: V

Practical Metallography :

Preparation of specimen, selecting the specimen, mounting the specimen, grinding , polishing, etching and etching rea gents. The metallurgical microscope. Use and care of microscope.

LIST OF EXPERIMENTS:

1 Preparation of micro specimen.
2 To study micro structural characteristics of gray cast iron white cast iron and malleable cast iron.
3 To study effect of normalising, annealing on the hardness and microstructure of high carbon steel.
4 To study the effect of carbon and temperature on hardening of steel.
5 To study the effect of temperature on the properties during tempering of steel.
6 To study the effect of quenching media on hardness of steel.

REFERENCES

1 Engineering physical Matallurgy-By Prof. Y Lakhtin MIR Publishers mascow.

2 A Text Book of Material Science And Metallurgy by O.P. Khanna.

3 Material Science And Process. by S. K. Hazia Choudhry.

4 Introduction to Material Science And Engineeringby K.M. Ralls, T.H. Courtney, John Wuff (Wiley Eastern NewDELHI)

5 Physical Matallurgy Principles by Read Hill (Affiliated East- West Press Pvt. Ltd. New Delhi.).

6 Materials Science by B.S. Narang (Pub. CBS pub. & Distributions New Delhi)

7 Padarth Prodyogiki (Hindi) by P.N. Vijayvergiya (Deepak Prakashan, Gwalior)

DME-404 THEORY OF MACHINE

UNIT: I

Simple Mechanism:

Introduction of theory of machines, definitions- statics, dynamics, kinematics, kinetics, kin ematic pair, kinematic chain, mechanism, number of joints and number of pairs, Four bar chain.

Velocity and Acceleration of Points and Links:

Angular and linear velocity, relative and absolute velocity, velocity in links. Velocity and acceleration diagrams for four bar and other mechanisms. Klein's construction for single slider crank mechanism

UNIT: II.

Brakes and Dynamometers :

Brakes - types, braking force, braking torque. band brakes, block brakes, internally exp anded brakes, dynamometer- meaning, need and types .

Power Transmission:

Drives , Classification, belt, chain, rope and gear drives. Flat and ' V ' belt, ratio of tensions . open and cross belt drive. H.P. transmitted. advantages and disadvantages of V Belt drives.

UNIT:III

Governors:

Functional difference with flywheel. Classification: Watt, porter, proell and hart nell contraction and working. Sensitivity, stability, power and effort, hunting phenomenon and isochronism of governor.

UNIT: IV

Cams and Followers:

Need, Classification. motion of follower Displacement, velocity and acceleration diagrams uniform velocity, uniform acceleration and retardation. Simple harmonic motion. Cam profile for radial. offset knife edged follower.

UNIT: V

Gear and gear train:

Introduction , classification of gears , gear terminology , law of gearing ,velocity of sliding , fo rms of teeth - cycloid profile teeth , involutes profile teeth, path of contact, arc of contact. I nterference in involutes gear , minimum no of teeth in gear and pinion classification of gear tr ain .

LIST OF EXPERIMENTS:

1. Study of inversions of four bar chain mechanism
2.Study of inversions of single slider crank chain mechanism (a) crank slotted lever mechanism
3 Whitworth quick return motion mechanism
4. Study of governor
5. Study of different cam and follower
6. Study of different gear trains
7. Study of power transmission methods
8. Study of different types of break and dynamometer

REFERENCE BOOKS:

1. Theory of Machines by S. S. Ratan.
2. Theory of Machines by J.M. Shah & H.M. Jadhwani.
3. Theory of Machines by Abdulla Shariff
4. Theory of Machines by M.R. Malhotra & H.C. Gupta. (Technical India Pub.)
5. Theory of Machines by Thomas Bevan .
6. Theory of Machines By R.S.Khurmi
7. Theory of Mechanism and Machine By Jagdish Lal.

DME-405 FLUID MECHANICS & HYDRAULIC MACHINE

UNIT I:

Properties of Fluids

Introduction, Physical properties of fluids, Specific Gravity, Viscosity, Thermodynamic Properties, Compressibility and Bulk Modulus, Surface Tension and Capillarity. Pascal's law, Pressure Variation in Fluid at Rest, Measurement of Pressure. Differential Manometers.

UNIT II:

Kinematics of Fluid and Ideal Flow

Kinematics of Fluid: Introduction. Methods of Describing Fluid Motion ,Types of Fluid Flow , Rate of Flow or Discharge, Classification of Flows-Steady & Unsteady, Uniform, Non uniform, Laminar, Turbulent, Rotational, and Irrotational Flows, Equation of Continuity for one Dimensional Flow, Continuity Equation in Three Dimensions, Velocity and Acceleration, Velocity Potential Function and Stream Function , Types of Motion, Vertex Flow ,

UNIT III:

Dynamics of Fluid flow:

Introduction , Equations of Motion, Euler Equation of Motion, Bernoulli's Equation from Euler's equation, Bernoulli's Equation for Real Fluid, practical application of Bernoulli's Equation, The momentum Equation , Moment of Momentum Equation,

UNIT IV:

Hydraulic Machines – Turbines:

Introduction, Turbine, General Layout of a Hydro-Electric Power plant , Definitions of Heads and Efficiencies of a Turbine, Classification of Hydraulic Turbine, Pelton Wheel, Radial Flow Reaction Turbine ,Francis Turbine, Axial Flow Reaction Turbine ,Draft Tube ,Specific Speed

UNIT V:

Centrifugal Pumps:

Introduction, Main parts of a Centrifugal Pump, Work Done by the Centrifugal Pump, Definition of Heads and Efficiencies of a Centrifugal pump, Minimum Speed for Starting a Centrifugal Pump ,Multistage Centrifugal Pumps , Specific Speed of a centrifugal pump ,cavitation ,Maximum Suction Lift,

References: -

1 Dr.R.K.Bansal Fluid Mechanics.
2. Modi & Seth; Fluid Mechanics; Standard Book House, Delhi
3. Som and Biswas; Fluid Mechnics and machinery; TMH
4. Cengal; Fluid Mechanics; TMH
5. White ; Fluid Mechanics ; TMH
6. JNIK DAKE; Essential of Engg Hyd; Afrikan Network & Sc Instt. (ANSTI)
7. Franiss JRD; A Text Book of fluid Mech. for Engg. Student
8. R Mohanty; Fluid Mechanics; PHI

List of Experiment (Pl. expand it):

1. To determine the local point pressure with the help of pitot tube.
2. To find out the terminal velocity of a spherical body in water.
3. Calibration of Orifice meter and Venturi meter
4. Determination of Cc, Cv, Cd of Orifices
5. Calibration of Nozzle meter and Mouth Piece
6. Reynolds experiment for demonstration of stream lines & turbulent flow
7. Determination of meta-centric height
8. Determination of Friction Factor of a pipe
9. To study the characteristics of a centrifugal pump.
10. Verification of Impulse momentum principle.