

Unit 1. Production, Planning and Control: Definition and importance, types of production -job, batch and mass forecasting, routing, scheduling, dispatching and follow up. Break even analysis and Gantt chart Project scheduling, application of CPM and PERT techniques Analysis and control of project cost in CPM and PERT, simple numerical problems.

Unit 2. Inventory Control : Definition, types of inventory - Codification and standardization ABC analysis.

Economic ordering quantity Procurement cost, carrying charges, lead-time, re-order point, simple problems. Definitions, types of inspection and procedure Statistical quality control - Basic theory of quality control, Process capability Control charts for variables - and R, relationship between control limits and specification limits. Control chart for fraction defective (p), control chart for number of defect

Unit 3 Job Evaluation and Wage Plans & Industrial Legislation: Objective, Methods of job evaluation, job evaluation procedure, merit rating (Performance appraisal), method of merit rating, wage and wage incentive plans.

Need for Industrial legislation, Factories act 1948, Industrial dispute act 1947, The Indian trade unions act 1926, Industrial employment act 1946, Payment of wage act 1936, Workmen compensation act 1923, Payment of bonus act 1965, Employees provident fund scheme .

Unit 4. Work Study : Definition, advantages and procedure of work-study. Difference between production and productivity, Factors to improve productivity Method Study :- Definition, objectives and procedure of method study. Symbols, flow process chart (man-machine-material), flow diagram, machine chart, two hand chart Critical examination. Developing a new method Principles of motion economy. Therblig symbols, SIMO chart, simple problems. Work Measurement -time study, definition, principle and method of time study Stop watch study - number of reading, calculation of basic time, rating techniques, normal time, allowances, standard time Simple numerical problems. Work Sampling - Definition, method, advantages and disadvantage of work sampling Applications.

Unit 5. Plant Location and Layout : Definition, factors affecting the site selection of plant Factor affecting plant layout Types of layout - process, product, combination and fixed position layout Techniques in making layout-Flow diagram, templates, distance volume matrix, travel chart Line balancing, workstation

Material Handling : Principles of economic material handling Hoisting equipment - forklift truck, Cranes- mobile motor cranes, overhead cranes, travelling bridges crane. Derrick crane. Whiler crane Conveying equipment - Package conveyors, gravity roller conveyors, screw conveyors, flight or scraper conveyors, bucket conveyors, bucket elevators, belt conveyors, pneumatic conveyors.