Unit - 1

Role of construction industry in infrastructure development, components of infrastructure sector, Construction industry nature, characteristics, size, structure, role in economic development, construction management - necessity, applications, project management consultants - role, types, selection and appointment process, Project overruns and means to combat them, project monitoring and reporting systems, managerial correspondence and communications, generation and identification of project investment opportunities.

Unit - II

Chapter 2 : Construction Scheduling, Work Study and BIM 2-1 to 2-28

Construction project scheduling : definition, objectives factors affecting scheduling, work breakdown structure, project work break down levels, line of balance technique, project monitoring controlling, and introduction to building information modeling (BIM) based on software. Work study (time and motion study): definition, objectives, process of method study, symbols, multiple activity charts, two handed process chart, string diagram.

Unit - III

Need and importance of labour laws, study of some important labour laws associated with construction sector, workman's compensation act 1923, Building and other construction workers act 1996, child labour act, interstate migrant workers act, the minimum wages Act of 1948.

Capital investments : importance and difficulties, means of finance, working capital requirements, project cash flow projections and statements, project balance sheet, profit loss account statements.

Unit - IV

Chapter 5 : Risk Management and Value Engineering 5-1 to 5-34

Risk Management : Introduction, principles, steps in risk management, risk in construction, origin, use of mathematical models: sensitivity analysis, break even analysis, simulation analysis (examples), decision tree analysis, risk identification, mitigation of project risks, role of insurance in risk management and case study on risk management.

Value Engineering : Meaning of value, types of value, value analysis, value engineering and its application, energy cost escalation and its impact on infrastructure project.

Unit - V

Chapter 6 : Material Management 6-1 to 6-30

Material : Introduction, need, objectives and functions and scope of material management, integrated concept of material management, material management organization, various phases of material flow system, application of each phase, role of material manager, role of material management in construction management and its linkage with other functional areas, inventory control methods, EOQ Model, stores management and control, break even analysis, concept of logistics and supply chain management, role of ERP in material management and material resource information systems.

Unit - VI

Chapter 7 : Human Resource Management 7-1 to 7-18

Human resource : introduction, nature and scope of human resource management, human resource in construction sector, staffing policy and patterns, human resource management process, human resource development process, recruitment & selection, performance evaluation and appraisal, training & development, succession planning, compensation and benefits, career planning, human resources information systems, HR data and analytics, role of ERP in human resource management and human resource information system.

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