

Construction Technology and Management

Introduction:-

Organization for Construction Projects

1. Pre- requisites for execution of works
2. Administrative approval.
3. Deposit of works.
4. Expenditure sanction.
5. Preparation of Estimation.
6. Power for appropriation and re-appropriation.
7. Co-ordination of works.
8. Deposit of works.
9. Original Detailed Estimation of works.
10. Execution of Original works.
11. Miscellaneous works.

Contracts

1. Difference between Contracts and Tendering.
2. Preparation of Tender Documents.
3. Annual Rates Contract System.
4. Time limit for publicity of Tenders.
5. Sale of Tender documents to registered contractors.
6. Rates Earnest Money.
7. Scrutiny of Tenders
8. Preparation of Bid Documents.
9. Essential features of Contracts.
10. Material arranged by the Contractor.
11. Milestone of Contract.
12. Payments to Contractor.

Construction Communication / Motivation of Work force

It enables an organization and is an integral part of the construction process. Beyond the argument, any improvement in communication can improve an organization's operating effectiveness. Good communication within an organization and between organizations contributing to the construction project can improve Motivation levels and improve the processes. Conversely, inadequate communication can result in a Demotivated workforce and lead to problems in construction.

Construction projects are complex and risky, requiring the active participation of all contributors. Co-ordination of activities through interpersonal and group communication are essential in ensuring the project is completed successfully. Poor communication, lack of consultation and inadequate feedback are to be found as the root cause of defects in many constructed works. Poor co-ordination and communication of design information lead to design problems that cause design errors. Communication is the one aspect of the management of projects that pervades all others.

Labour Welfare

Labour welfare relates to taking care of the well-being of workers by employers, trade unions, governmental and non-governmental institutions and agencies.

1. Evolution of Labour Welfare.
2. Concept of Labour Welfare.
3. Scope of Labour Welfare.
4. Principles of Labour Welfare.
5. Importance of Labour Welfare Measures.
6. Qualifications and function of Labour welfare Measures.
7. Theories of Labour Welfare.
8. Employees of Welfare funds.

Construction Management

Project management is the process of steering a project from the start through its lifecycle. The main objective of project management is to complete a project within the established goals of time, budget, and quality.

1. Projects life cycles.
2. Phases of Projects managements.
3. Lean Projects Managements.
4. Iterative and incremental project management
5. Critical chain Projects managements.
6. Projects Manager Roles and responsibilities.
7. Risk managements.
8. Projects Monitoring
9. Milestones.

CPM and PERT

Project management can be defined as a structural way of planning, scheduling, executing, monitoring, and controlling various phases of a project. To achieve the end goal of a project on time, PERT and CPM are two project management techniques that every management should implement. These techniques help in displaying the progress and series of actions and events of a project.

1. Definition of CPM and PERT
2. Advantages and Disadvantages of CPM.
3. Advantages and Disadvantages of PERT.
4. Charts for CPM and PERT.
5. Difference of CPM and PERT.
6. CPM Examples.
7. PERT Examples.
8. Importance of construction scheduling for the job purpose.

Construction Equipment

1. *Definition of Construction equipment's.*
2. *Advantages and utilization of construction equipment's.*
3. *Classification of Construction equipment's.*
 - (a) *Earth Moving Equipment's.*
 - (b) *Construction Vehicles.*
 - (c) *Material handling equipment's.*
 - (d) *Construction equipment's.*
4. *Earth moving equipment's.*
 - (a) *Equipment's that come in Earth moving work.*
 - (b) *Application of the Earth moving equipment's.*
 - (c) *Factors that the Earth moving works.*
 - (d) *Uses of the equipments.*
 - (e) *Economically factors of the equipments.*
5. *Construction Vehicles.*
 - (a) *Equipment's that come in Construction Vehicles work.*
 - (b) *Application of the Construction vehicles equipment's.*
 - (c) *Factors that the Construction vehicles works.*
 - (d) *Uses of these equipments.*
 - (d) *Economically factors of the equipments.*
6. *Material handling equipment's.*
 - (a) *Equipment's that come in Material handling equipment's.*
 - (b) *Application of the Material handling equipment's.*
 - (c) *Factors that the Material handling equipment's.*
 - (d) *Uses of these equipments.*
 - (d) *Economically factors of the equipments.*
7. *Construction equipment's.*
 - (a) *Equipment's that come in Construction equipment's.*
 - (b) *Application of the Construction equipment's..*
 - (c) *Factors that the Construction equipment's..*
 - (d) *Uses of these equipments.*
 - (d) *Economically factors of the equipments.*

Equipment Management

1. Role in quality management system.
2. Program considerations.
3. Selecting and Acquiring Equipment.
4. Getting Equipment Ready for Service.
5. Preventive maintenance.
6. Equipment inventory
7. Troubleshooting, Service, Repair, and Retiring Equipment.
8. Service and repair.
9. Developing documents and policies for recordkeeping.
10. Recording maintenance information.

Quality Controls

Project quality is often taken for granted and inadequate attention has been given to this parameter. Subsequently, in the absence of effective quality management procedures, considerable time, and resources are wasted every year. This is due to the high level of uncertainties surrounding the definition of quality and the subjectivity associated with the assessment of quality as well as the large number of variables involved in its assessment

1. Terminologies.
2. Methodologies
3. Quality tool used at construction projects.
4. Quality control measures used on site.
5. Quality management during planning and designing phase of construction projects.
6. Barriers to working of project team with respect to quality.
7. Importance of quality management System at construction projects.
8. Quality improvement activities run by you on your site.
9. Tests conducted on materials on site and their schedule.