DMI COLLEGE OF ENGINEERING

DEPARTMENT OF INFORMATION TECHNOLOGY

IT8075

SOFTWARE PROJECT MANAGEMENT

QUESTION BANK
(Two Marks & Sixteen Marks)

YEAR/SEMESTER-IV/VII

UNIT –I: INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT

PART A

1. What is a project?

The dictionary definitions put a clear emphasis on the project being a planned activity. A project is a unique venture with a beginning and an end, conducted by people to meet established goals within parameters of cost, schedule and quality.

2. What are the characteristics of a project?

- Non-routine tasks are involved
- Planning is required
- Specific objects are to be met or a specified product is to be correct
- The project has a predetermined time span.

3. What is the different software projects and other types of project?

- Invisibility- Software can't be rep-resented with geometric models
- Complexity- The proposed model is based on the widely known and accepted
- Conformity- The controlling document for a software
- Flexibility- project management performance

4. Why organize an activity or job as a project?

- It allows you to better structure and organize the tasks that need to be performed
- Well-developed approaches and tools are available for managing projects
- Easy-to-use software is available for scheduling and budgeting projects.

5. Define Contract Management. (May/Jun2017)(Apr2018).

Contract management or contract administration is the management of contracts made with customers, vendors, partners, or employees. Contract management includes negotiating the terms and conditions in contracts and ensuring compliance with the terms and conditions, as well as documenting and agreeing on any changes that may arise during its implementation or execution. It can be summarized as the process of systematically and efficiently managing contract creation, execution, and analysis for the purpose of maximizing financial and operational performance and minimizing risk.

6. What are the Technical Project Planning Methodologies

- Identify different approaches to planning technical projects: rolling wave
- Planning…stage gate process…critical chain project management
- Common construction project life cycle
- Common pharmaceutical project life cycle

7. What are the three successive processes that bring a new system?(Nov/Dec2017)

- The feasibility study- Evaluate the cost of the software development against the Software Engineering Planning- outline the structure of the project
- Project Execution- Product Implementation Product implementation activities

8. Define Feasibility Study.

It is based on an outline design of system requirements in terms of Input, Processes, Output, Fields, Programs, and Procedures. This can be quantified in terms of volumes of data, trends, frequency of updating, etc.

9. What is meant by planning?

Planning as a process involves the determination of future course of action, that is, why an action, what action, how to take action, and when to take action. These why, what, how, and when are related with different aspects of planning process.

Define Requirement Analysis.

This investigates what the potential users and their managers and employers require as features and qualities of the new system.

10. What is meant by qualification testing?

The system, including the software components, has to be tested carefully to ensure that all the requirements have been fulfilled.

11. What is the difference between Information systems and embedded systems?

Information systems:-

Information System includes databases that include useful "information". Information Systems is the discipline concerned with the development, use, application and influence of information systems. An information system, following a definition of Langefors, is a technologically implemented medium for recording, storing, and disseminating linguistic expressions, as well as for drawing conclusions from such expressions.

The technology used for implementing information systems by no means has to be computer technology. A notebook in which one lists certain items of interest is, according to that definition, an information system. Likewise, there are computer applications that do not comply with this definition of information systems. Embedded systems are an example.

Embedded Systems:-

Embedded systems include small computers that make things work, such as the computer in your radio, television or the computer that controls your vehicle engine. An embedded system is a computer system that is part of a larger system.

Examples:
- Washing machine
- Car engine control
- Mobile phone

12. Differentiate Objectives Vs products.

Objectives are goals or aims which the management wishes the organization to achieve.
These are the end points or pole-star towards which all business activities like organizing, staffing, directing and controlling are directed.

A project might be to create a **product**, the details of which have been specified by the client.
The client has the responsibility for justifying the product.

13. What is management?

Management can be defined as all activities and tasks undertaken by one or more Persons for the purpose of planning and controlling the activities of others in order to achieve objectives or complete an activity that could not be achieved by others acting independently.

14. What are the activities of management?(Apr2018)

- Planning –Deciding what is to be done.
- Organizing – making arrangements.
- Staffing-selecting the right people for the job
- Directing-giving instructions.
- Monitoring – checking on progress
- Controlling- taking action to remedy hold-ups
- Innovating-coming up with new solutions.
- Representing – liaising with clients, users , developers , suppliers

15. What are the problems with software project from manager's point of view?(May/Jun2018)

- Poor estimates and plans.
- Lack of quality standards and measures.
- Lack of techniques to make progress visible.
- Lack of guidance about organizational Decisions.
- Poor role definition. 6.Incorrect success criteria
-

16. What are the problems with software project from student's point of view?(May/Jun2019)

- Inadequate specification of work.
- Lack of knowledge of application area.
- Lack of standards.
- Narrow scope of technical expertise.

17. What is meant by management control?

The process of setting objectives for a system and then monitoring the systems to see what is true performance, A change is proposed by anyone evaluating the software.

18. What are the steps involved in step wise planning?

- Identify project scope and objectives.
- Identify project infrastructure.3.Analyze project characteristics.
- Identify project products and activities.
- Estimate effort for each activity.
- Identify activity risks.
- Allocate resources.
- Review / publicize plan9. Execute plan/ lower levels of planning.

19. How to identify project infrastructure?

- Establish relationship between project and strategic planning.
- Identify installation standards and procedures.
- Identify project team organization.

20. How to manage activity risks?

- Identify and quantify activity-based risks.
- Plan risk reduction and contingency measures where appropriate
- Adjust plans and estimates to take account of risks.

21. Define project stake holders.

Stakeholders are the people involved in or affected by the project actives **Stake holders power**-Integrate all expectations of several people.

22. How to review and publicize plan?

- Review quality aspects of project plan
- Document plans and obtain agreement.

## 23. Define process. (Nov/Dec2019)

A software process provides the framework from which a comprehensive plan for software development can be established.

24. What is a product breakdown structure (PBS)? show the hierarchical diagram of sample PBS.

A product breakdown structure is an effective tool that details the physical components of a particular product, or system, under consideration. The formal PBS comes in the form of a hierarchy. It begins with the final product at the top of the hierarchy followed by the sub-categorized elements of the product. The product breakdown structure is similar to the work breakdown structure (WBS). Like WBS, a product breakdown structure serves to reduce a complex project, or product, into manageable components. As a result, teams can obtain a clear understanding of a product, its components, and what is required to provide those components. Figure 1 (below) is a sample product breakdown structure.

1) **Explain the difference between software projects and other projects in detail.**

- Invisibility- Software can't be rep-resented with geometric models,
- Complexity- The proposed model is based on the widely known and accepted
- Conformity- The controlling document for a software
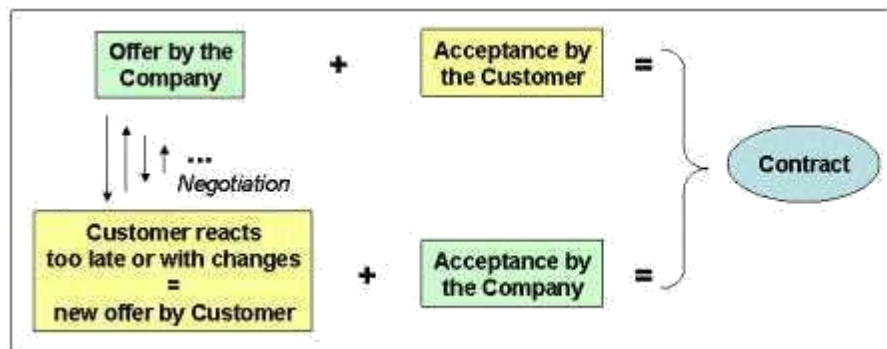- Flexibility- project management performance
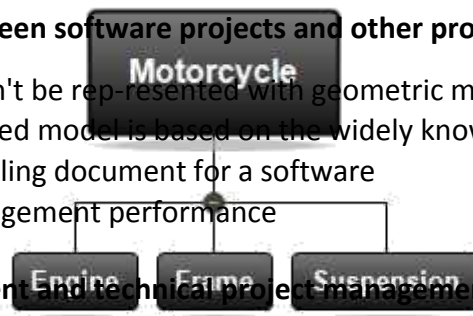
2) **Explain contract management and technical project management.**

A contract is any agreement between two or more parties where one party agrees to provide certain deliveries or services, and the other party agrees to pay for those deliveries or services.

How do we get a contract between two parties?

It just takes an offer by a company and the simple acceptance of that offer by the customer, and we

have a contract. Typically, we will see some negotiation going on between the two parties before one of them accepts the last offer of the other party. However, since it is so easy to end up in a legally binding contract situation, the first step, generally the offer by the company has to be prepared very carefully.

Even for smaller projects we usually need more than two parties to contribute. So, another important aspect is, how many different parties we need and how the contractual structure should look like. In sub-section Project Contract Structure, we summarize the basic structures to choose.

Contract management is a continuous process, starting with analysis and evaluation of the customer's inquiry, and carrying on until contract closure, upon fulfillment of all contractual obligations.
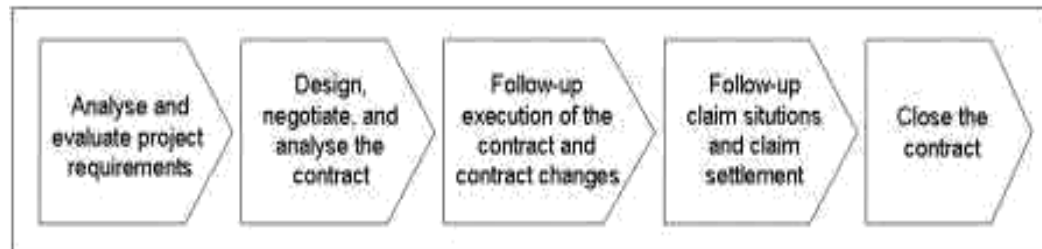
This process overview indicates that contract management activities seem to belong to the responsibilities of the project manager and the whole project team. In fact, they do; however, in larger projects where we have large contracts it is best practice to involve a full-time contract manager who brings in his professional experience, takes responsibility for that process, and ensures the contribution of all team members.

Contract preparation comprises analysis and evaluation of the other parties' requirements, a clear statement of our own requirements, and negotiation in order to reach agreement between the involved parties. After signing the contract, upon handover, the implementation team needs to analyze the contract in order to ensure that they understand what has been signed and needs to be implemented. When preparing and signing a contract in definition and planning phase, we anticipate how we want to implement the required project results, and fix this anticipation in our planning documents. This means that all our project planning is based on assumptions on how the project environment will develop over implementation and closure phase. As a simple matter of life, these assumptions can turn out to be wrong: certain conditions can change, or certain events can happen so that changes or deviations of the plans and of the contract become necessary. Thus, it would be helpful to prepare the project plans and the contract in a way so that those necessary changes can be implemented with mutual agreement of all involved parties.

Technical Project Planning Methodologies
- Identify different approaches to planning technical projects: rolling wave
- Planning…stage gate process…critical chain project management.
- Common construction project life cycle.
- Common pharmaceutical project life cycle.

3) Explain activities covered by the software project management. (Nov/Dec2019)(Nov/Dec2017) (May/Jun2019)(Apr 2018)
- Project identification
- Project definition
- Project planning
- Project organization
- Resource allocation
- Tracking, monitoring ,control
- Project termination

4) What is management? Explain the problems with software projects.(Nov/Dec2019)(Nov/Dec2018)

Management can be defined as all activities and tasks undertaken by one or more Persons for the purpose of planning and controlling the activities of others in order to achieve objectives or complete an activity that could not be achieved by others acting independently. The activities of Management control are following:

- Planning –Deciding what is to be done.
- Organizing – making arrangements.
- Staffing-selecting the right people for the job
- Directing-giving instructions.
- Monitoring – checking on progress

- Controlling- taking action to remedy hold-ups
- Innovating-coming up with new solutions.
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Problems with software project from manager's point of view:
- Poor estimates and plans.
- Lack of quality standards and measures.
- Lack of techniques to make progress visible.
- Lack of guidance about organizational Decisions.
- Poor role definition. 6.Incorrect success criteria

Problems with software project from student's point of view
- Inadequate specification of work.
- Lack of knowledge of application area.
- Lack of standards.
- Narrow scope of technical expertise.

5) Explain stakeholders and business case.

The importance of stakeholder management is to support an organization in achieving its strategic objectives by interpreting and influencing both the external and internal environments and by creating positive relationships with stakeholders through the appropriate management of their expectations and agreed objectives. Stakeholder Management is a process and control that must be planned and guided by underlying Principles.

Stakeholder Management, within business or projects, prepares a strategy utilizing information (or intelligence) gathered during the following common processes:

Stakeholder Identification - Interested parties either internal or external to organization/project.

Stakeholder Analysis - Recognize and acknowledge stakeholder's needs concerns, wants, authority, common relationships and interfaces and align this information within the Stakeholder Matrix.

Stakeholder Matrix - Positioning stakeholders according to the level of influence, impact or enhancement they may provide to the business or its projects.

Stakeholder Engagement - Different to Stakeholder Management in that the engagement does not seek to develop the project/business requirements, solution or problem creation, or establishing roles and responsibilities. It is primarily focused at getting to know and understand each other, at the Executive level. Engagement is the opportunity to discuss and agree expectations of communication and, primarily, agree a set of Values and Principles that all stakeholders will abide by.

Communicating Information - Expectations are established and agreed for the manner in which communications are managed between stakeholders – who receives communications, when, how and to what level of detail. Protocols may be established including security and confidentiality classifications.

Stakeholder Agreements: A collection of agreed Decisions between stakeholders. This may be the lexicon of an organization or project, or the Values of an initiative, the objectives, or the model of the organization, etc. These should be signed by key stakeholder representatives.

Contemporary or modern business and project practice favors transparent, honest and open stakeholder management processes.

6) Explain the step-wise project planning in detail.(Nov/Dec2020)(May/Jun2019)(Apr2018)
- Identify project scope and objectives.
- Identify project infrastructure.3.Analyze project characteristics.
- Identify project products and activities.
- Estimate effort for each activity.
- Identify activity risks.
- Allocate resources.
- Review / publicize plan9. Execute plan/ lower levels of planning.

7) How to analyze the project character tics?(May/Jun2017)
Explain the following characteristics:
- A positive relationship with an active, intelligent client
- Strong project management
- Clear requirements, well managed
- Ruthless change management
- Pervasive process focus
- Effective controls and communication
- Technical leadership and excellence

8) Explain the steps involved in to identify activity risks.

The first thing to understand in risk management is that it's a on-going activity. It's not about identifying risks upfront and then forging ahead regardless. It's too easy to forget the risks once the project is started and fail to recognize and raise new risks when the project is underway.

The key steps to risk management are summarized below.
- Risk Assessment
- Risk Reduction /Minimization/ Containment
- Risk Monitoring
- Risk Reporting
- Risk Evaluation

A key part to project management is a common language. The diagram below shows the key steps of risk management in the overall context of analysis and control. As outlined in the introduction, there are two key outcomes for risk management, action and awareness. Through risk control we manage action, through risk analysis we manage awareness.

The diagram below shows the breakdown of risk management. On the left we have risk analysis which comprises of reviewing risks, evaluating risks and reducing risks. This is the "action" side of risk management. On the right we have risk control which comprises of risk monitoring and reporting. This is the awareness and prevention side of risk reporting.

10) Explain the various SDLC activities as outlined by ISO 12207 with a neat diagram.(may/Jun2017)

ISO/IEC 12207 *Systems and software engineering — Software life cycle processes* is an international standard for software lifecycle processes. It aims to be *the* standard that defines all the tasks required for developing and maintaining software.

The standard has the main objective of supplying a common structure so that the buyers, suppliers, developers, maintainers, operators, managers and technicians involved with the software development use a common language. This common language is established in the form of well-defined processes.
The structure of the standard was intended to be conceived in a flexible, modular way so as to be adaptable to the necessities of whoever uses it.

The standard is based on two basic principles: modularity and responsibility. Modularity means processes with minimum coupling and maximum cohesion. Responsibility means to establish a responsibility for each process, facilitating the application of the standard in projects where any people can be legally involved.

The set of processes, activities and tasks can be adapted according to the software project. These processes are classified in three types: basic, for support and organizational. The support and organizational processes must exist independently of the organization and the project being executed. The basic processes are instantiated according to the situation.

Activities:
- Acquisition
- Supply
- Development
- Operation
- Maintenance
- Destruction

UNIT-II:PROJECT EVALUATION
PART-A

1. Define project Evaluation.
 Project evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies and programs, particularly about their effectiveness and efficiency.

2. What is meant by programme?
 D.C. Ferns defined a programme as "a group of project that are managed in a coordinated way to gain benefits that would not be possible were the projects to be managed independently".

3. What is the concept of strategic programme?
 Several projects together can implement a single strategy. For example the merging of two organizations could involve the creation of unified payroll and accounting applications.

4. Define business cycle programme.
 The collection of projects that an organization undertakes within a particular planning cycle is sometimes referring to portfolio. Decisions have to be made about which projects to implement within that budget within the accounting period.

5. Define Infrastructure programme.
 Some organizations have very integrated information systems. The distinct activities can be integrated.

6. Define Research and development programme.

Truly innovative companies especially those that are trying to develop new product for the market, are well aware that projects will vary in terms of their risk of failure and the potential returns.

7. <u>Write the difference between programme managers and project managers.</u>

Programme manager	Project manager
Many simultaneous projects	One project ata time
Personal relationship with skilled resources	Impersonal relationship with resource type
Need to maximize utilization of resources	Need to minimize demand for resources
Projects tend to be similar	Projects tend to be dissimilar

8. Define programme mandate.
- This should include the new services or capabilities the programme should deliver.
- How the organization will be improved by use of the new services or capability.
- How the programme fits with corporate goals and any other initiatives

9. How the programme will brief?

A programme brief is now produced which would be the equivalent of a feasibility study for the programme, used by achievers in all fields.

10. Define vision statement.

A preliminary vision statement which describes the new capacity that the organization seeks. **Significance**-When the project begins, the project **...** The goal of the *vision statement* is to describe what the project is expected.

11. What is meant by blueprint?

The achievement of the improved capability described in the vision statement can when changes have been made to the structure and operations of the organizations. These are detailedin the blueprint.

12. What are things to be considered in the blueprint?
- Business models outlining the new process required.
- Organization structure-The information systems
- Data and information requirements
- Costs, performance and service level requirements.

13. What are the benefits of management?
- 1)Mandatory compliance
- 2) Quality of service
- 3)Productivity
- 4)More motivated force
- 5)Internal management benefits
- 6)Risk reduction

14. Define technical assessment.

Technical assessment of a proposed system consists of evaluating the required functionality against the hardware and software available. Organizational policy aimed at the provision of a uniform and consistent hardware/software infrastructure is likely to place limitations on the nature of technical solutions that might consider.

15. What are the steps in cost-benefit analysis?
- Identifying and estimating all of the costs and benefits of carrying out the project and operating the delivered application.
- Expressing these costs and benefits in common units.

16. Define development costs.
Development costs include the salaries and other employment costs of the staff involved in the development project and all associated costs.
- $TDEV = 3 \cdot (PM)(0.33+0.2*(B-1.01))$
- PM is the effort computation and B is the exponent computed as discussed above (B is 1 for the early prototyping model). This computation predicts the nominal schedule for the project.

17. Define setup costs.
Setup costs include the costs of putting the system into place. These consists of mainly the costs of the new hardware
- ESLOC = ASLOC * (1-AT/100) * AAM.
- ASLOC and AT as before.
- AAM is the adaptation adjustment multiplier computed from the costs of changing the reused code, the costs of understanding how to integrate the code and the costs of reuse Decision making.

18. Define operational costs.
It consists of the costs of operating the system once it has been installed. EAC = AC + ETC. Currentvariances are seen as a typical and the **...** Fixed *Costs*, *Costs* do not change

19. What is meant by cost flow forecasting?
As important as estimating the overall costs and benefits of a project is the forecasting of the cash flow that will take place and their timing. A cash flow forecast will indicate when expenditure and income will take place.

20. What are the cost-benefit evaluation techniques?
- Net profit- *net profit* and discounted cash flow automatically
- Payback period- projects will provide a true return-on-investment while meeting an acceptable Return of investment- successfully complete projects and receive a *return* on *investment*.
- Net present value- Successful Projects Fortunately for *project managers*
- Internal rate of return- delegation of general management authority to the Project Leader

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1. What are the steps involved in project evolution?

Project evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies and programs, particularly about their effectiveness and efficiency **Develop program logic and review needs**

- Develop the evaluation brief
- Commission the evaluation project
- Manage development of the evaluation design
- Manage development of the evaluation work plan
- Manage implementation of the work plan, including production of report(s)
- Disseminate report and support use of the evaluation

2. Write in detail for project management with strategic assessment.

Strategic planning is defined as an organization's process of defining its strategy, or direction and making Decisions on allocating its resources to pursue this strategy.

- Briefly explain what it deals with?
- What do we do?
- For whom do we do it?
- How to we excel?
- For successful strategic assessment, there should be a strategic plan which defines:
- Organization's objectives.
- Provides context for defining programme
- Provides context for defining programme goals.
- Provide context for accessing individual project.

3. How to manage the allocation of resources within programmes with examples.

In strategic planning, resource allocation is a plan for using available resources, for example, human resources, especially in the near term, to achieve goals for the future. It is the process of allocating scarce resources among the various projects or business units.

There are a number of approaches to solving resource allocation problems e.g. resources can be allocated using a manual approach, an algorithmic approach or a combination of both.

There may be contingency mechanisms such as a priority ranking of items excluded from the plan, showing which items to fund if more resources should become available and a priority ranking of some items included in the plan, showing which items should be sacrificed if total funding must be reduced.

Resource allocation may be decided by using computer programs applied to a specific domain to automatically and dynamically distribute resources to applicants.

This is especially common in electronic devices dedicated to routing and communication. For example, channel allocation in wireless communication may be decided by a base transceiver station using an appropriate algorithm.

4. What re the steps involves in creating a programme?

In large organization, programme management is taken care by programme director and programme executive, rather than, project manager, who will be responsible for the strategic assessment of project.

Any potential software system will form part of the user organization's overall information system and must be evaluated within the context of existing information system and the organization's information strategy.

If a well – defined information system does not exist then the system development and the assessment of project proposals will be based on a more "piece meal approach".

Piece meal approach is one in which each project being individually early in its life cycle.
- Typical issues and questions to be considered during strategic assessment
- Issue – 1: objectives:
- How will the proposed system contribute to the organization's stated objectives? How, for example, might it contribute to an increase in market share?
- Issue – 2: is plan
- How does the proposed system fit in to the IS plan? Which existing system (s) will it replace/interface with? How will it interact with systems proposed for the later development?
- Issue – 3: organization structure:
- What effect will the new system have on the existing departmental and organization structure?
- For example, a new sales order processing system overlap existing sales and stock control functions?
- Issue – 4: MIS:
- What information will the system provide and at what levels in the organization? In what ways will it complement or enhance existing management information system?
- Issue – 5: personnel:
- In what way will the system proposed system affect manning levels and the existing employee skill base? What are the implications for the organization's overall policy on staff development.
- Issue – 6: image:
- What, if any, will be the effect on customer's attitudes towards the organization? Will the adoption of, say, automated system conflict with the objectives of providing a friendly service?

5. Explain cost-benefit evaluation techniques.
a) It is one of the important and common way of carrying "economic assessment" of a proposed information system.
b) This is done by comparing the expected costs of development and operation of the systemwith its benefits.

c) So it takes an account:
   i. Expected cost of development of system

       ii.   Expected cost of operation of system

      iii.   Benefits obtained

d) Assessment is based on:

      iv.   Whether the estimated costs are executed by the estimated income.

       v.   And by other benefits

e) For achieving benefit where there is scarce resources, projects will be prioritized and resources are allocated effectively.

f) The standard way of evaluating economic benefits of any project is done by "cost benefit analysis"

Cost benefit analysis comprises of two steps:

- Step-1: identifying and estimating all of the costs and benefits of carrying out the project.
- Step-2: expressing these costs and benefits in common units.

Step-1:

It includes

- Development cost of system.
- Operating cost of system.
- Benefits obtained by system.

     When new system is developed by the proposed system, then new system should reflect the above three as same as proposed system.

     Example: sales order processing system which gives benefit due to use of new system.

Step-2:

Calculates net benefit.

     Net benefit = total benefit = total cost.

      (cost should be expressed in monetary terms).

- Three types of cost
- Development costs: includes salary and other employment cost of staff involved.
- Setup costs: includes the cost of implementation of system such as hardware, and also file conversion, recruitment and staff training.
- Operational cost: Costs require to operate system, after it is installed.

6. **Explain decision trees with examples**.

    Decision tree provide tools for evaluating expected outcomes and choosing between alternate strategies.

Advantages

    Assistance in upgrading, designing and developing software.

- Identify over risky projects
- Choose best from risk
- Take suitable course of action
- Decision tree of analysis risks helps us to
- Extend the existing system
- increase sales
- improve the management information
- Replace the existing system
- Not replacing system leads in loss
- Replace it immediately will be expensive.

7. Explain risk evaluation

Risk evaluation

Risk evaluation is meant to decide whether to proceed with the project or not, and whether the project is meeting its objectives.

Risk Occurs:

- When the project exceed its original specification
- Deviations from achieving it objectives and so on.
- Risk Identification and ranking
- Risk and Net Present Value
  For riskier projects could use higher discount rates
    Ex: Can add 2% for a Safe project or 5 % for a fairly risky one.
- Cost benefit Analysis
- Risk profile analysis
- Decision trees

8. What is meant by cash flow forecasting? Explain with example.

As important as estimating the overall costs and benefits of a project is the forecasting of the cash flow that will take place and their timing. A cash flow forecast will indicate when expenditure and income will take place.

- It estimates overall cost and benefits of a product with respect to time.
- Negative cash flow during development stage.
- +ive cash flow during operating life.
- During development stage
- Staff wages
- Borrowing money from bank
- Paying interest to bank
- Payment of salaries
- Amount spent for installation, buying h/w and s/w
- Income is expected by 2 ways.
- Payment on completion
- Stage payment

9. Explain the "internal rate of return "method for measuring the profitability of a project. Also mention its advantage over the NPV method.

The internal rate of return on an investment or project is the "annualized effective compounded return rate" or rate of return that makes the net present value(NPV as NET*1/(1+IRR)^year) of all cash flows (both positive and negative) from a particular investment equal to zero. It can also be defined as the discount rate at which the present value of all future cash flow is equal to the initial investment or in other words the rate at which an investment breaks even.

Given a collection of pairs (time, cash flow) involved in a project, the internal rate of return follows from the net present value as a function of the rate of return. A rate of return for which this function is zero is an internal rate of return.

Given the (period, cash flow) pairs (n, C_n) where n is a positive inte ger, the total number of periods N, and the net present value N PV, the internal rate of return is given by r in:

$$NPV = \sum_{n}^{N} \frac{C_n}{(1+r)^n} = 0$$

The period is usually given in years, but the calculation may be made simpler if is calculated using the period in which the majority of the problem is defined (e.g., using months if most of the cash flows occur at monthly intervals) and converted to a yearly period thereafter.

Any fixed time can be used in place of the present (e.g., the end of one interval of an annuity); the value obtained is zero if and only if the NPV is zero. In the case that the cash flows are random variables, such as in the case of a life annuity, the expected values are put into the above formula. Often, the value of cannot be found analytically. In this case, numerical methods or graphical

methods must be used.

PART-A

1. **What are the steps involved in Activity Planning?**
   - Ensure that the appropriate resources will be available precisely when required.
   - Avoid different activities competing for the same resources at the same time.
   - Produce a detailed schedules showing which staff carry out each activity.
   - Produce a timed cash flow forecast.
2. **What are the objectives of activity planning?(Nov/Dec2012)(May/Jun2013)**
   - Feasibility assessment
   - Resource allocation
   - Detailed costing
   - Motivation
   - Co-ordination
3. **Define resource allocation.**

   What are the most effective ways of allocating resources to the project. When should the resources be available? The project plan allows us to investigate the relationship between timescales and resource availability.
4. **How will define the activities?**
   - A project is composed of a number of interrelated activities.
   - A project may start when at least one of its activities is ready to start.
   - A project will be completed when all of the activities it encompasses have been completed.
   - If an activity must have a clearly defined start and a clearly defined end-point normally marked by the production of tangible deliverable.
5. **What are the three different approaches to identifying the activities?**
   - Activity-based approach- constraints stemming from the relationships between projects
   - Product-based approach- instructor becomes an active member of the project team
   - Hybrid approach- Decision support system for *software project management.*
6. **Write short notes on WBS.**

   This involves identifying the main tasks required to complete a project and then breaking each of these down into set of lower-level tasks.

7. **Mention the five levels of WBS.**
   - Project- engineering resources has been developed by TASK
   - Deliverables- term for the quantifiable goods or services
   - Components- designing the floor plane
   - work-packages- Models for the description of *software* artifacts
   - Tasks- Creation and distribution of organizing *software*

8. **How will formulate the network model?**

   The first stage in creating a network model is to represent the activities and their interrelationships as a graph. Then constructing the precedence networks.

9. **What are the rules for constructing precedence networks?**
   - A project network should have only one start node.
   - A project network should have only one end node.
   - A node has duration. Links normally have no duration.
   - Precedents are the immediate preceding activities.
   - Times moves from left to right
   - A network may not contain loops.
   - A network should not contain dangles.

10. Define Hammock activities.

 Hammock activities which, in themselves, have zero duration but are assumed to start at the same time as the first 'hammocked' activity and to end at the same time as the last one.

11. What is meant by forward pass?

The forward pass is carried out to calculate the earliest dates on which each activity may be started and completed. Significance - calculation method used in Critical Path Method.

12. What is meant by backward pass?

The second stage in the analysis of a critical path network is to carry out a backward pass to calculate the latest date at which each activity may be started and finished without delaying the end date of the project. The calculating the latest dates, we assume that the latest finish date for the project is the same as the earliest finish date- that is we wish to complete the project as early as possible.

13. What are the rules of activity –on-arrow rules and conventions?
- A project network may have only one start node
- A project network may have only one end node
- A link has duration Nodes have no duration
- Times moves from left to right 5)Nodes are numbered sequentially
- A network may not contain loops.

14. Define Risk.

"An uncertain event or condition that, if it occurs has a positive or negative effect on a project objectives" include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk, and accepting some or all of the consequences of a particular risk.

15. What are the risks to business impact?
- Effect of this product on company revenue?
- Reasonableness of delivery deadline?
- number of customers who will use this product
- interoperability constraints
- Sophistication of end users?
- Costs associated with a defective product?

16. What are things to be considered in risk management?(Nov/Dec2012)
- Risk Identification- Organizations and *project* teams
- Risk Analysis- Includes a download demo and other Decision *analysis* tools
- Risk Planning- assessment is an important part
- Risk Monitoring- identifies Development Environment *Risks*.

17. Define Risk Identification.

Risk management begins with analyzing the risks involved in the project. Risk identification is not a One-off initiative since projects are constantly evolving and new risks arise while other risks may dissipate or reduce in importance.

18. Define risk analysis and risk monitoring.

Risk Analysis considers each identified risk and makes a judgment about the probability and seriousness of it

Risk Monitoring involves regularly assessing each identified risk to Decide whether that risk is becoming more or less probable and whether the effect of the risk have changed.

19. Define Risk Planning.

This project will develop the high- performance, computational technology infrastructure needed to analyze the past, present, and future geospatial distributions of living components of Earth environments.

20. What are the steps in risk planning?
- Risk identification
- Risk analysis and prioritization.
- Risk planning
- Risk monitoring.

21. Define risk assessment.
Using this formula

Risk exposure = (potential damage) * (probability of occurrence)

22. Define Hazard analysis.
A **hazard analysis** is a process used to assess risk. The results of a hazard analysis are the identification of unacceptable risks and the selection of means of controlling or eliminating them. The term is used in several engineering specialties, including avionics, chemical process safety, safety engineering and food safety.

23. What are called "Free floats" and "interfering floats"? how are they calculated.
Total float is the amount of time by which an activity may be delayed without delaying the project Completion Caution: interpret total floats of activities carefully - all cannot be used independently.

Free float is that part of total float which can be used without affecting floats of the succeeding activities. The part of total float which is not free is called interfering float Independent float is the amount of time which can be used without affecting the head and the tail events.

Total Float≥ Free Float ≥ Independent Float

Head event slack = Earliest start time of the next activity – Earliest completion time of the activity

Free float= Total float – Head event slack

Interfering float= Total float – Free float.

24. What is a "Dangle" in an activity Network? show an example?
A dangling activity such as "write user manual" should not exist as it is likely to lead to errors in subsequent analysis.
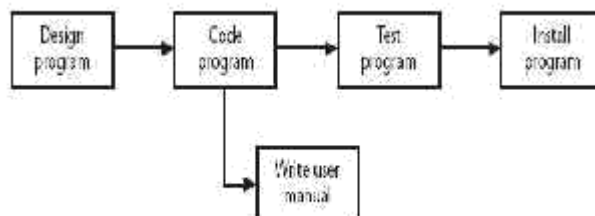
PART-B

1. What are the objectives of activity planning?
Feasibility assessment

Is the project possible within required timescales and resource constraints? It is not until we have constructed a detailed plan that we can forecast a completion date with any reasonable knowledge of its achievability.

Resource allocation

What are the most effective ways of allocating resources to the project? When should the resources be available? The project plan allows us to investigate the relationship between timescales and resource availability

Detailed costing

How much will the project cost and when is that expenditure likely to take place? After producing an activity plan and allocating specific resources, we can obtain more detailed estimates of costs and their timing.

Motivation

Providing targets and being seen to monitor achievement against targets is an effective way of motivating staff, particularly where they have been involved in setting those targets in the first place.

Co-ordination

When do the staffs in different departments need to be available to work on a particular project and when do staffs need to be transferred between projects? The project plan, particularly with large projects involving more than a single project team, provides an effective vehicle for communication and coordination among teams. Activity planning and scheduling techniques place an emphasis on completing the project in a minimum time at an acceptable cost or, alternatively, meeting a set target date at minimum cost. One effective way of shortening project durations is to carry out activities in parallel.

2. **Write the steps involved in project schedule.**
   - A stage of a larger project, the project plan must be developed to the level of showing dates when each activity should start and finish and when and how much of each resource will be required. Once the plan has been refined to this level of detail we call it a project schedule
   - Creating a project schedule comprises four main stages.

   First step
   - step in producing the plan is to Decide what activities need to be carried out and in what order they are to be done_ From this we can construct an ideal activity plan — that is, a plan of when each activity would ideally be undertaken were resources not a constraint
   - This activity plan is generated by Steps 4 and 5 of Step Wise

   Second step
   - The ideal activity plan will then be the subject of an activity risk analysis, aimed at identifying potential problems. This might suggest alterations to the ideal activity plan and will almost certainly have implications for resource allocation.

   Third step
   - is resource allocation. The expected availability of resources might place constraints on when certain activities can be carried out

3. **Explain the approaches for identifying the activities.**
   - Defining activities
   - some assumptions that will be relevant when we start to produce an activity plan.
   - Activities must be defined so that they meet these criteria.
   - Any activity that does not meet these criteria must be redefined.
   - A project is composed of a number of interrelated activities. A project may start when at least one of its activities is ready to start.
   - A project will be completed when all of the activities it encompasses have been completed.
   - If an activity must have a clearly defined start and a clearly defined end-point, normally marked by the production of a tangible deliverable.
   - An activity requires a resource (as most do) then that resource requirement must be forecast able and is assumed to be required at a constant level throughout the duration of the activity.
   - The duration of an activity must be forecastable — assumingnormal circumstances, and the reasonable availability of resources.
   - Some activities might require that others are completed before they can begin these are known as precedence requirements).
   - Identifying activities
   - Essentially there are three approaches to identifying the activities or tasks that make up a project
   - the activity-based approach,
   - the product-based approach
   - the hybrid approach.

4. **Formulating a network model**
   - The first stage in creating a network model is to represent the activities and their interrelationships as a graph. In activity-on-node we do this by representing activities as links (arrowed lines) in the graph — the nodes (circles) representing the events of activities starting and finishing.
   - Constructing precedence networks
   - A project network should have only one start node
   - A project network should have only one end node
   - A node has duration
   - A node represents an activity and, in general, activities take time to execute.
   - Links normally have no duration
   - precedents are the immediate preceding activities In Figure 6.9, the activity 'Program test' cannot start until both 'Code' and 'Data take-on' have been completed and activity 'Install' cannot start until 'Program test' has finished. 'Code' and Data take-on' can therefore be said to be precedents of 'Program test', and 'Program test' is a precedent of 'Install'. Note that we do not speak of 'Code' and 'Data take-on' as precedents of 'Install' - that relationship is implicit in the previous statement.
   - Time moves front left to right
   - A network may not contain loops. A loop is an error in that it represents a situation that cannot occur in practice. While loops, in the sense of iteration, may occur in practice, they cannot be directly represented in a project network.
   - A network should not contain dangles . Redraw the network with a final completion activity — which, at least in this case, is probably a more accurate network model.

5. **What is the difference forward pass and backward pass explain with example.**
Forward Pass

   - The forward pass is carried out to calculate the earliest dates on which each activity may be started and completed.
   - Where an actual start date is known, the calculations may be carried out using actual dates. Alternatively we can use day or week numbers and that is the approach we shall adopt here. By convention, dates indicate the end of a period and the project is therefore shown as starting at the end of week zero (or the beginning of week 1).
   - The forward pass and the calculation of earliest start dates is calculated according to the following reasoning.
   - Activities A, B and F may start immediately, so the earliest date for their start is zero.
   - Activity A will take 6 weeks, so the earliest it can finish is week 6.
   - Activity B will take 4 weeks, so the earliest it can finish is week 4.
   - Activity F will take 10 weeks, so the earliest it can finish is week 10.
   - Activity C can start as soon as A has finished so its earliest start date is week 6. It will take 3 weeks so theearliest it can finish is week 9.
   - Activities D and E can start as soon as B is complete so the earliest they can each start is week 4. Activity D, which will take 4 weeks, can therefore finish by week 8 and activity E, which will take 3 weeks, can therefore finish by week 7.
   - Activity G cannot start until both E and F have been completed. It cannot therefore start until week 10 — the later of weeks 7 (for activity E) and 10 (for activity F). It takes 3 weeks and finishes in week 13.
   - Similarly, Activity H cannot start until week 9 — the later of the two earliest finished dates for the preceding activities C and a
   - The project will be complete when both activities H and G have been completed. Thus the earliest project completion date will be the later of weeks 11 and 13— that is, week 13.

The backward pass

☐ The second stage in the analysis of a critical path network is to carry out a backward pass to calculate the latest date at which each activity may be started and finished without delaying the end date of the project. In calculating the latest dates, we assume that the latest finish date for the project is the same as the earliest finish date — that is, we wish to complete the project as early as possible.
- The latest activity dates are calculated as follows.
- The latest completion date for activities G and 1-1 is assumed to be week 13.
- Activity H must therefore start at week 11 at the latest (13-2) and the latest
- start date for activity G is week 10 (13-3).
  ➢ The latest completion date for activities C and D is the latest date at which
  activity H must start — that is. Week 11. They therefore have latest start dates of week 8 (11-3) and week 7 (11-4) respectively.
- Activities E and F must be completed by week 10 so their earliest start dates are weeks 7 (10-3) and0 (10-10 respectively.
- Activity B must be completed by week 7 the latest start date for both activities D and El so its latest start is week 3 (7-4).
- Activity A must be completed by week 8 (the latest start date for activity C) so its latest start is week2 (8-6).
- The latest start date for the project start is the earliest of the latest start dates for activities A. B and F. This is week zero. This is, of course, not very surprising since it tells vi that if the project does not start on time it won't finish on time.

6. **Explain activity-on-arrow networks.(May/Jun2013)**
Activity-on-arrow network rules and conventions
- A project network may have only one start node
- A project network may have only one end node
- A link has duration
- Nodes have no duration
- Time moves from left to right
- Nodes are numbered sequentially
- A network may not contain loops

7. **Explain the categories of risk.**
- information system
- computer system
- description

8. **What are the approaches in risk identification?**
Approaches to identifying risks include:
- Use of checklists – usually based on the experience of past projects
- Brainstorming – getting knowledgeable stakeholders together to pool concerns
- Causal mapping – identifying possible chains of cause and effect

9. **Explain therisk planning**
The planning for risk includes these steps:
- Risk identification – what risks might there be?
- Risk analysis and prioritization – which are the most serious risks?
- Risk planning – what are we going to do about them?
- Risk monitoring – what is the current state of the risk?
- Risks can be dealt with by:
- Risk acceptance
- Risk avoidance
- Risk reduction
- Risk transfer
- Risk mitigation/contingency measures

10. How to evaluate the pert techniques

Network planning models

These project scheduling techniques model the project's activities and their relationships as a network. In the network, time flows from left to right.

- The two best known being CPM (Critical Path Method) and PERT (Program Evaluation Review Technique).
- Both of these techniques used an activity-on-arrow approach to visualizing the project as a network where activities are drawn as arrows joining circles, or nodes which represent the possible start and/or completion of an activity or set of activities.
- More recently a variation on these techniques, called precedence network, has become popular. This method uses activity-on-node networks where activities are represented as nodes and the links between nodes represent precedence (or sequencing) requirements.
- This latter approach avoids some of the problems inherent in the activity-on-arrow representation and provides more scope for easily representing certain situations. It is this method that is adopted in the majority of computer applications currently available. These three methods are very similar and it must be admitted that many people use the same name (particularly CPM) indiscriminately to refer to any or all of the methods.

11. Explain with an example how critical path can be identified in precedence networks? (Nov/Dec2011)(May/Jun2013)

A project usually consists of multiple activities that occur both simultaneously and sequentially. To determine the flow of these activities, you'll need to create a Precedence Diagram. After creating the Precedence Diagram, you can identify the activities that would, if delayed, cause your project to come in late. This is the Critical Path definition. A delay in any of the critical path activities will delay the entire project, regardless of whether the other project activities are completed on or before time.

The act of determining the Critical Path is known as the Critical Path Method or the Critical Path Analysis.

To determine the Critical Path and conduct Critical Path Analysis, you need to:
- Define the duration of each activity.
- Identify all the paths.
- Calculate the duration of each path.
- Identify the longest path.

1   Write short notes on monitoring.(Apr2014)
Monitoring is collecting and reporting information concerning previously defined project Performance elements.

2 Write short notes on control.
Control uses the information supplied by the monitoring techniques in order to bring project actual results in line with stated project performance standards.

3   What are the three steps in project control?
- Measuring & Monitoring
- Identifying/tracking key performance metrics
- Evaluating
- Analyzing causes of problems and potential corrective actions
- Correcting
- Taking corrective actions to bring project performance back in line with goals

4   What are the functions in traffic light-method?
- Identify the key 2)Break these key elements into constituent
- Asses each of the second-level elements on the scale green for on target
- Review all the second-level assessments to arrive at first-level assessments.
- Review first- and second –level assessments to produce an overall Assessments.

5   Define Gantt Chart
One of the simplest and oldest techniques project progress is the Gantt -chart this is essentially an activity bar chart indicating scheduled activity dates and duration frequently augmented with activity floats.

6   Define slip chart.
A slip chart is a very alternative favored by some project managers who believe it provides a more Striking visual indication of those activities that are not progressing to schedule the more the slip line bends, the greater variation from the plan.

7   Write short notes on Earned Value Analysis.
- It is a measure of progress
- It enables us to assess the "percent of completeness" of a project using quantitative analysis rather than rely on a gut feeling
- "Provides accurate and reliable readings of performance from as early as 15 percent into the project."
- A technique used to help determine and manage project progress and the magnitude of any variations from the planned values concerning cost, schedule, and performance.

8   Define Scheduled variance.

The schedule variance is measured in cost terms as EV-PV and indicates the degree to which the value of completed work differs from that planned.

9   What are the deciding levels of monitoring?
- Critical path activities
- Activities with no free float
- Activities with less than a specified float4)Activities using critical resources
- High risk activities.

10   What are the steps in change control procedures?
- One or more users might perceive a need for a modification to a system and ask for change request to be passed to the development staff.
- The user management consider the change request and, if they approve it ,
- Pass it to the development management.

11 Define managing contracts.

Contract management or **contract administration** is the management of contracts made with customers, vendors, partners, or employees. Contract management includes negotiating the terms and conditions in contracts and ensuring compliance with the terms and conditions, as well as documenting and agreeing on any changes that may arise during its implementation or execution. It can be summarized as the process of systematically and efficiently managing contract creation, execution, and analysis for the purpose of maximizing financial and operational performance and minimizing risk.

12 What are the different types of contract?
- Fixed price contracts.
- Time and materials contracts.
- Fixed price per delivered unit contracts.

13 What is meant by fixed price contracts?
- involve a fixed total price for a well-defined product or service
- may include incentives for meeting certain performance objectives or penalties if those objectives are not met.

14 Mention the advantages and disadvantages of fixed price contracts.
Advantages
- Known customer expenditure
- Supply motivation
- Higher prices to allow for contingency

Disadvantages
- Difficulties in modifying requirements
- Upward pressure on the cost of changes
- Threat to system quality.

15 Define time and materials contracts.
- hybrid of both fixed price and cost reimbursable, often used by consultants
- the buyer pays the seller for both the time and materials required to complete the work
- resembles a cost-reimbursable contract because it is open-ended and full cost of project is not predetermined
- but can resemble a fixed-price contract if unit rates are set

16 What are the advantages and disadvantages are time and materials contracts?
 Advantages
- Ease of changing requirements.
- Lack of price pressure

Disadvantages
- Customer liability
- Lack of incentives for supplier.

17 Define fixed per unit delivered contracts.
- require the buyer to pay the seller a predetermined amount per unit of service
- Detailed requirements analysis done and frozen before starting the contract
- Any change after then, need renegotiating

18 What the advantages and disadvantages are of fixed per unit delivered contracts? Advantages
- Customer understanding
- Comparability
- Emerging functionality
- Supplier efficiency
- Life-cycle range

Disadvantages
- Difficulties with software size measurements
- Changing requirements.

19 What are the processes of evaluation need?
- Security of the proposal documents
- Interviewing supplier's representatives.
- Demonstrations.
- Practical tests.

20 What are the services to be provided in contracts?
- Training
- Documentation
- Installation
- Conversion of existing files
- Maintenance agreements
- Transitional insurance agreements.

21 Define Acceptance.
When the work has been completed, the customer needs to take action to carry out acceptance testing. The contract may put a time limit on how long acceptance testing can take, so the customer must be organized to carry out this testing before the time for requesting correction expires.

22 Write any two advantages of function point analysis
- Improved project estimating;
- Understanding project and maintenance productivity;
- Managing changing project requirements;
- Gathering user requirements**.**

23   List the important roles of the configuration librarian
A configuration librarian is the owner of the configuration library and manager of all master copies of configuration items (CIs). In a multi-customer environment, a configuration librarian is a super user for the accounts he or she is assigned to.

A configuration librarian has the following responsibilities:
- Make sure the CIs registered in the database are correct and up to date
- Configure discovery
- Create CIs
- Update a CI instance
- Delete a CI
- Register a new CI
- Transfer ownership of a CI
- Transition a CI state
- Assign or remove CIs to or from an organization
- Create extended attributes for a CI type
- View CIs
- Generate a configuration management report

24 Name the popular visual tools used for monitoring and tracking the project progress.
- PERT
- CPM

PART-B

1. **Explain project control cycle in detail.**
   - Measuring & Monitoring
   - Identifying/tracking key performance metrics
   - Evaluating
   - Analyzing causes of problems and potential corrective actions
   - Correcting
   - Taking corrective actions to bring project performance back in line with goals

2. **Explain the method Earned value Analysis.**
   - It is a measure of progress
   - It enables us to assess the "percent of completeness" of a project using quantitative analysis rather than rely on a gut feeling
     - "Provides accurate and reliable readings of performance from as early as 15 percent into the project."
   - A technique used to help determine and manage project progress and the magnitude of any variations from the planned values concerning cost, schedule, and performance.
   - *Planned value (PV)* or *Budgeted cost of work scheduled (BCWS)* – original estimate of the effort/cost to complete a task (compare with idea of a 'price')
   - *Earned value (EV)* or *Budgeted cost of work performed* (BCWP) – total of PVs for the work completed at this time.

   Earned value – an example
   - Tasks
     - Specify module 5 days
     - Code module   8 days
     - Test module   6 days
   - At the beginning of day 20, PV = 19 days
   - If everything but testing completed, EV = 13 days
   - Schedule variance = EV-PV i.e. 13-19 = -6
   - Schedule performance indicator(SPI)=EV/PV
                         i.e 13/19 = 0.68
   - Actual cost (AC) is also known as Actual cost of work performed (ACWP)

- In previous example, if
  - ➢ 'Specify module' actually took 3 days (planned 5 days)
  - ➢ 'Code module' actually took 4 days (planned 8 days)
- Actual cost = 7 days
- Cost variance(CV)=EV-AC

  i.e. 13-7 = 6 days
- Cost performance indicator(CPI)=EV/AC i.e = 13/7 = 1.86
- Positive CV or CPI > 1.00 means project under budget or the work is completed better than planned.


3. Explain the change in control procedures.

Change control is a systematic approach to managing all changes made to a product or system. The purpose is to ensure that no unnecessary changes are made, that all changes are documented, that services are not unnecessarily disrupted and that resources are used efficiently.

- One or more users might perceive a need for a modification to a system and ask for change request to be passed to the development staff.
- The user management consider the change request and, if they approve it ,
- pass it to the development management.
- The role of change control:
- Identifying items that need to be subject to change control
- Management of a central repository of the master copies of software and documentation
- Administering change procedures
- Maintenance of access records

Typical change control process

- One or more users might perceive the need for a change
- User managementDecide that the change is valid and worthwhile and pass it to development management
- A developer is assigned to assess the practicality and cost of making the change
- Development management report back to user management on the cost of the change; user managementDecide whether to go ahead
- One or more developers are authorized to make copies of components to be modified
- Copies modified. After initial testing, a test version might be released to users for acceptance testing
- When users aresatisfied then operational release authorized – master configuration items updated
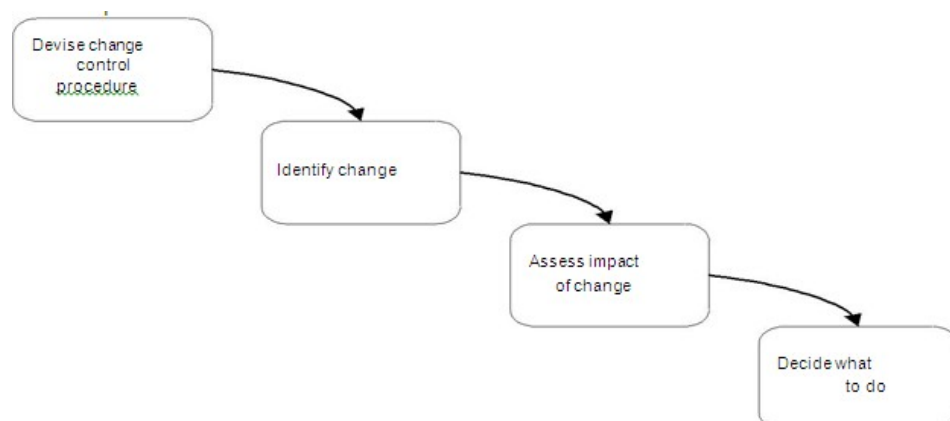
4. Explain the different types of contract in detail.

- Fixed price contracts
- Time and materials contracts
- Fixed price per delivered unit

5. **Explain fixed price contracts with advantages and disadvantages.**
   - involve a fixed total price for a well-defined product or service
   - may include incentives for meeting certain performance objectives or penalties if those objectives are not met.

   Advantages to customer:
   - known expenditure
   - supplier motivated to be cost-effective

   Disadvantages:
   - supplier will increase price to meet contingencies
   - difficult to modify requirements
   - upward pressure on the cost of changes
   - threat to system quality

6. **Explain time and material contract with advantages and disadvantages**
   - hybrid of both fixed price and cost reimbursable, often used by consultants
   - the buyer pays the seller for both the time and materials required to complete the work
   - resembles a cost-reimbursable contract because it is open-ended and full cost of project is not predetermined
   - but can resemble a fixed-price contract if unit rates are set

   Advantages to customer:
   - easy to change requirements
   - lack of price pressure can assist product quality

   Disadvantages:
   - Customer liability - the customer absorbs all the risk associated with poorly defined or changing requirements
   - Lack of incentive for supplier to be cost-effective

7. **What are the stages in contract management?**
   - Requirement plan
   - Evaluation plan
   - Invitation to tender
   - Evaluation of proposals.

8. **Explain Fixed price per deliver unit with advantages and disadvantages**
   - require the buyer to pay the seller a predetermined amount per unit of service
   - Detailed requirements analysis done and frozen before starting the contract
   - Any change after then, need renegotiating

   Advantages for customer
   - customer understanding of how price is calculated
   - comparability between different pricing schedules
   - emerging functionality can be accounted for
   - supplier incentive to be cost-effective

   Disadvantages
   - difficulties with software size measurement - may need independent FP counter
   - changing (as opposed to new) requirements: how do you charge?

9. **Describe the variousways in visualizing the progress of the project.(Nov/Dec2012)(may/Jun2013)**
   - Gantt chart
   - Slip chart
   - Timeline

10. **Explain the process of prioritizing monitoring. Give example.**
    - Priority list of activity to monitor
    - Critical activities
    - Non-critical activities with no free float
    - Non-critical activities with less than a specified float
    - High risk activities
    - Activities with critical resources

PART-A

1 What are the objectives of managing people and organizing teams?(Apr2014)
- Identify some of the factors that influence people's behavior in project.
- Select and induct new staff into a project.
- Increase staff motivation.
- Improve group working.
- Use the most appropriate leadership styles.

2 What are the three basic objectives of organizational behavior.(Apr2014)
- To select the best people for the job.
- To instruct them in the best methods.
- To give instructions in the form of higher wages to the best workers.

3 What are the factors consider in X theory?(May/June2013)
- The average human has an innate dislike of work.
- There is a need therefore for correction, direction and control.
- People tend to avoid responsibility.

4 What are the factors consider in Y theory?
- Work is as natural as rest or play.
- External control and coercion are not the only ways of bringing about effort directed towards an organization's ends.
- The average human can learn to accept and further seek responsibility.

5 Define Motivation.

Motivation is a general term applying to the entire class of drives, desires, needs, wishes, and similar forces. Managers, as a part of motivating their staff, do all such things which they hope will satisfy these drives and desires and induce the subordinates to act in a desired manner.

6 What are the needs in Maslow's hierarchy theory?(May/Jun2012)
- Physiological Needs - attention turns to safety and security
- Security or Safety Needs- Calculation, Domain, Consulting,
- Affiliation or Social Needs - Developing New Programs
- Esteem Needs- needs for esteem can become dominant
- Self-actualization Needs - include symmetry

7 Write short notes on Herzberg's motivation-hygiene theory

HERZBERG'S MOTIVATION-HYGIENE THEORY

Maslow's need approach has been considerably modified by Frederick Herzberg. His research purports to find a two-factor theory of motivation. In one group of needs are such things as company policy and administration, supervision, working conditions, interpersonal relations, salary, status, and job security. These were found by Herzberg and his associates to be only *dissatisfies* and not motivators. Their existence does not motivate in the sense of yielding satisfaction; their lack of existence would, however, result in dissatisfaction. Herzberg called them maintenance, hygiene or job context factors**.**

8 Write short notes on vroom's expectancy theory.

Force = valence x expectancy

Where **force** is the strength of a person motivation, **valence** is the strength of an individual's preference for an outcome, and **expectancy** is the probability that a particular action will lead to a desired outcome.

9   What are the factors to be considered in the Oldham-Hackman job characteristic model?
- Skill variety- one or more of the offerings available from a *variety* of organizations
- Task variety- enhance Key words
- Task significance- autonomy, and feedback from the job
- Autonomy- for Consulting & *Software* Companies
- Feedback- submit your comments and suggestions

10 Mention the methods of improving motivation.

Set specific tasks, provide feedback, and consider job design.

11 How to becoming a team?
- Forming- The members of the groups get to know each other and try to set up
- some ground rules about behaviour
- Storming- one nice packaging, all for publishing need
- Norming- Asset Management is a powerful and complete asset management solution
- Performing- Optimize project delivery across the *software*
- Adjourning - added a final stage

12 Define Forming.

The members of the groups get to know each other and try to set up some ground rules about behaviour.

13 Define team worker.

Skilled at creating a good working environment to manage all the people who are Developing Projects, team proposed to extend these concepts.

14 What are the two categorized for Decision making?
- Structured- generally relatively simple, routine Decisions where rules can be applied in a fairly straightforward way
- Unstructured- more complex and often requiring a degree of creativity.

15 Mention some mental obstacles to good decision making.
- Faculty heuristics- is an innovative effort by students and members of staff
- escalation of commitment- behavior, sunk cost, risk propensity, risk perception,
- information overhead- developers analyze, design, and develop *software*

16 What are the measures to reduce the disadvantages of group Decision making?
- The cooperation of a number of experts.
- The problem is presented to the experts.
- The experts record their recommendations.
- These recommendations are collated and reproduced.
- The collect responses are recirculated.

17 Define Leadership.

The ability of a superior to influence the behavior of his subordinates and persuades them to follow a particular course of action, do suggest here is that any analysis of project management.

18 What are the functions of leader?

- Goal-setter
- Planner,
- Executive,
- Expert,
- Spokesman,
- Controller of internal relationships,
- Administrator of rewards and punishments,
- Arbitrator and mediator,
- Role model,
- Symbol of the group, and
- Father figure.

19 What are the leadership models/theories?

- Trait theory,
- Leadership styles based on authority,
- Managerial grid,
- Continuum approach,
- Feidler's contingency model, and
- Path-goal theory.

20 What are the leadership styles?

- Directive autocrat,- This manager makes all the Decisions unilaterally and manages Learning to Lead
- permissive autocrat- Concepts using simple and precise free downloadable
- directive democrat- Management Styles Permissive Democrat Directive Autocrat document
- permissive democrat- Makes decisions participative subordinates have latitude

21 Define Stress.(Nov/Dec2011)(Nov/Dec2012)

Projects are about overcoming obstacles and achieving objectives. Almost by definition both the project manager and team members will be under pressure. Once a project gets rolling, you should expect members to be putting in atleast 60 hours a week. The project must except to put in as many hours as possible.

22 Define Departmentation

The process of grouping activities is commonly known as departmentation. This is the first real task in designing an organization Project Methods staff provided courseware development and training on office automation *software* trying to escape poverty, and engaging in *democratic* reforms

23 what do you understand by "Egoless Programming". (May/Jun2012)

Egoless programming is a style of computer programming in which personal factors are minimized so that quality may be improved.

24 What is bespoke system.(Nov/Dec2012)

Bespoke is a term used in the United Kingdom and elsewhere for an individually- or custom-made product or service. Traditionally applied to custom-tailored clothing, the term has been extended to information technology, especially for software consulting services. Typically, software consulting company's offer packaged (already invented and generally applicable) software and bespoke software for client needs that can't be satisfied by packaged software. In the U.S., bespoke software is often called customer custom-designed software.

25 **what is the use of checkpoints in monitoring.**
- Based on regular time intervals
- Can be weekly or monthly or quarterly
- Depend on what to check and how to
- Based on a particular event
- At the end of each activity
- In the middle of a critical activity
- Should be set before the plan was published
- Make sure everyone knows when and what the check points are

PART-B

1. **Explain the stepwise framework where staffing concerns are important.**
   Main Concerns
   - Staff Selection
   - Staff Development
   - Staff Motivation

   Well-being Staff during course of project Step Wise' - an overview
   - Select project
   - Identify project objectives
   - Identify project infrastructure
   - Analyze project characteristics
   - Identify products and activities
   - Estimate effort for activity
   - Review/ publicize plan
   - Identify activity risks
   - Allocate resources
   - Execute plan
   - Lower level planning Review Lower level detail For each activity

2. **Explain X theory and Y –theory. In detail Theory X**
   - The average human has an innate dislike of work
   - There is a need therefore for coercion, direction and control
   - People tend to avoid responsibility

   Theory Y
   - Work is as natural as rest or play
   - External control and coercion are not the only ways of bringing about effort directed towards an organization's end
   - Commitment to objectives is a function of the rewards associated with their achievement
   - The average human can learn to accept and further seek responsibility
   - The capacity to exercise imagination and other creative qualities is widely distributed.

3. **Explain the recruitment process.**
   - Selecting the right person for the job
   - Besides the s/w tools the individuals selected for a job affect the programming productivity.
   - Experience
   - Person who can communicate well.
   - Recruitment Process
   - Recruitment is often an organizational responsibility.

- Eligible candidates- have a curriculum vitae which shows the right and required details
- Suitable candidates- who can actually do the job well.
- Assesses actual skills rather than experience.

  - Create a job specification.
  - Create a job holder profile.
  - Obtain applicants.
  - Examine CV's.
  - Interviews.
  - Other procedures.

4. **Define motivation. Explain Maslow's hierarchy of needs.**

   Motivation and application can often make up for shortfalls in innate skills

     Taylor's approach - financial incentives

     Abraham Maslow (1908-1970)

   - Motivations vary from individual to individual. People will be motivated by different things at different times. People will always feel dissatisfied, but the focus of the dissatisfaction changes over time.
   - hierarchy of needs – as lower ones fulfilled, higher ones emerge

Physiological needs

Physiological needs are the physical requirements for human survival. If these requirements are not met, the human body cannot function properly and will ultimately fail. Physiological needs are thought to be the most important; they should be met first.

Air, water, and food are metabolic requirements for survival in all animals, including humans. Clothing and shelter provide necessary protection from the elements. While maintaining an adequate birth rate shapes the intensity of the human sexual instinct, sexual competition may also shape said instinct.

Safety needs

With their physical needs relatively satisfied, the individual's safety needs take precedence and dominate behavior. In the absence of physical safety – due to war, natural disaster, family violence, childhood abuse, etc. – people may (re-)experience post-traumatic stress disorder or trans generational trauma. In the absence of economic safety – due to economic crisis and lack of work opportunities – these safety needs manifest themselves in ways such as a preference for job security, grievance procedures for protecting the individual from unilateral authority, savings accounts, insurance policies, reasonable disability accommodations, etc. This level is more likely to be found in children because they generally have a greater need to feel safe.

Safety and Security needs include:
- Personal security
- Financial security
- Health and well-being
- Safety net against accidents/illness and their adverse impacts

Love and belonging

After physiological and safety needs are fulfilled, the third level of human needs is interpersonal and involves feelings of belongingness. This need is especially strong in childhood and can override the need for safety as witnessed in children who cling to abusive parents. Deficiencies within this level of Maslow's hierarchy – due to hospitalism, neglect, shunning, ostracism , etc. – can impact the individual's ability to form and maintain emotionally significant relationships in general, such as:
- Friendship
- Intimacy
- Family

Esteem

All humans have a need to feel respected; this includes the need to have <u>self-esteem</u> and self-respect. Esteem presents the typical human desire to be accepted and valued by others. People often engage in a profession or hobby to gain recognition. These activities give the person a sense of contribution or value. Low self-esteem or an <u>inferiority complex</u> may result from imbalances during this level in the hierarchy. People with low self-esteem often need respect from others; they may feel the need to seek fame or glory. However, fame or glory will not help the person to build their self-esteem until they accept who they are internally. Psychological imbalances such as <u>depression</u> can hinder the person from obtaining a higher level of self-esteem or self-respect.

5. Explain the expectancy theory of motivation.

Vroom's expectancy theory assumes that behavior results from conscious choices among alternatives whose purpose it is to maximize pleasure and to minimize pain. Vroom realized that an employee's performance is based on individual factors such as personality, skills, knowledge, experience and abilities. He stated that effort, performance and motivation are linked in a person's motivation. He uses the variables Expectancy, Instrumentality and Valence to account for this.

Expectancy is the belief that increased effort will lead to increased performance i.e. if I work harder than this will be better. This is affected by such things as:
- Having the right resources available (e.g. raw materials, time)
- Having the right skills to do the job
- Having the necessary support to get the job done (e.g. supervisor support, or correct information on the job)

Instrumentality is the belief that if you perform well that a valued outcome will be received. The degree to which a first level outcome will lead to the second level outcome. i.e. if I do a good job, there is something in it for me. This is affected by such things as:
- Clear understanding of the relationship between performance and outcomes – e.g. the rules of the reward 'game'
- Trust in the people who will take the decisions on who gets what outcome
- Transparency of the process that decides who gets what outcome

Valence is the importance that the individual places upon the expected outcome. For the valence to be positive, the person must prefer attaining the outcome to not attaining it. For example, if someone is mainly motivated by money, he or she might not value offers of additional time off.

The three elements are important behind choosing one element over another because they are clearly defined: effort-performance expectancy (E>P expectancy) and performance-outcome expectancy (P>O expectancy).

E>P expectancy: our assessment of the probability that our efforts will lead to the required performance level.

P>O expectancy: our assessment of the probability that our successful performance will lead to certain outcomes.

Crucially, Vroom's expectancy theory works on **perceptions** – so even if an employer thinks they have provided everything appropriate for motivation, and even if this works with most people in that organization, it doesn't mean that someone won't perceive that it doesn't work for them.

At first glance expectancy theory would seem most applicable to a traditional-attitude work situation where how motivated the employee is depends on whether they want the reward on offer for doing a good job and whether they believe more effort will lead to that reward.

However, it could equally apply to any situation where someone does something because they expect a certain outcome. For example, I recycle paper because I think it's important to conserve resources and take a stand on environmental issues (valence); I think that the more effort I put into recycling the more paper I will recycle (expectancy); and I think that the more paper I recycle then less resources will be used (instrumentality).

Thus, Vroom's expectancy theory of motivation is not about self-interest in rewards but about the associations people make towards expected outcomes and the contribution they feel they can make towards those outcomes.

6. **What the methods involved in motivation?**
   - Fair pay and conditions
   - A comfortable, safe, working environment
   - Opportunities for employees to socialize and make friends
   - Clearly defined work responsibilities and goals
   - Education and training opportunities
   - Career opportunities

7. **What are the steps needed to become a team?**
   Becoming a team
   Five basic stages of development:
   - Forming
   - Storming
   - Norming
   - Performing
   - Adjourning

8. **Explain the leadership style in detail.**
   - Position power
   - Coercive power – able to threaten punishment
   - Connection power – have access to those who do have power
   - Legitimate power – based on a person's title conferring a special status
   - Reward power – able to reward those who comply
   - Leadership styles
   - Task orientation – focus on the work in hand
   - People orientation – focus on relationships
   - Where there is uncertainty about the way job is to be done or staff are inexperienced they welcome task oriented supervision
   - Uncertainty is reduced – people orientation more important
   - Risk that with reduction of uncertainty, managers have time on their hands and become more task oriented (interfering)

9. **Explain the organizational structures.**
   Formal organizational structures are categorized as:
   - Line organizational structure.
   - Staff or functional authority organizational structure.
   - Line and staff organizational structure.
   - Committee organizational structure.
   - Divisional organizational structure.
   - Project organizational structure.
   - Matrix organizational structure and
   - Hybrid organizational structure.

10. **How to improve group performance ?**
    - **Know Your Team**

      As a leader, you need to guide the development of your group. So, start by learning about the phases that a group goes through as it develops. When you understand these, you'll be able to preempt problems that could arise, including issues with poor group dynamics.
      Next, use Benne and Sheets' Group Roles to identify positive and negative group roles, and to understand how they could affect the group as a whole. This will also help you plan how to deal with potential problems.
    - **Tackle Problems Quickly**

      If you notice that one member of your team has adopted a behavior that's affecting the group unhelpfully, act quickly to challenge it. Provide feedback that shows your team member the impact of her actions, and encourage her to reflect on how she can change her behavior.

- **Define Roles and Responsibilities**

Teams that lack focus or direction can quickly develop poor dynamics, as people struggle to understand their role in the group

Create a team charter – defining the group's mission and objective, and everyone's responsibilities

– as soon as you form the team. Make sure that everyone has a copy of the document, and remind people of it regularly.

- **Break down Barriers**

Use team- building exercises to help everyone get to know one another, particularly when new members join the group. These exercises ease new colleagues into the group gently, and also help to combat the "black sheep effect," which happens when group members turn against people they consider different.

- **Focus on Communication**

Open communication is central to good team dynamics, so make sure that everyone is communicating clearly. Include all of the forms of communication that your group uses – emails, meetings, and shared documents, for example – to avoid any ambiguity. If the status of a project changes, or if you have an announcement to make, let people know as soon as possible. That way, you can ensure that everyone has the same information.

- **Pay Attention**

Watch out for the warning signs of poor group dynamics. Pay particular attention to frequent unanimous decisions, as these can be a sign of group think , bullying , or free riding. If there are frequent unanimous Decisions in your group, consider exploring new ways to encourage people to discuss their views, or to share them anonymously.

11. **Oldham-Hackman job characteristic model.**
- Skill variety- one or more of the offerings available from a *variety* of organizations
- Task variety- enhance Key words
- Task significance- autonomy, and feedback from the job
- Autonomy- for Consulting & *Software* Companies
- Feedback- submits your comments and suggestions.