UNIT I INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT 9
Project Definition – Contract Management – Activities Covered By Software Project Management – Overview Of Project Planning – Stepwise Project Planning.

UNIT II PROJECT EVALUATION 9

UNIT III ACTIVITY PLANNING 9

UNIT IV MONITORING AND CONTROL 9

UNIT V MANAGING PEOPLE AND ORGANIZING TEAMS 9

TOTAL = 45 PERIODS

TEXT BOOK:

REFERENCES:
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) How are S/w projects categorized?(or) 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 represented with geometric models
- Complexity - The proposed model is based on the widely known and accepted
- Confirmity - 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.
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
1. Identify different approaches to planning technical projects: rolling wave
2. Planning…stage gate process…critical chain project management
3. Common construction project life cycle
4. Common pharmaceutical project life cycle

7) What are the three successive processes that bring a new system? (Nov/Dec 2011)
- 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

10) What are the phases in software development life cycle?
1) Requirement analysis 2) Architecture design 3) Detailed design 4) Code and test 5) Integration 6) Qualification testing. 7) Installation.
8) Acceptance support

11) Define Requirement Analysis.
This investigates what the potential users and their managers and employers require as features and qualities of the new system.

12) 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.

13) 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 systems that is part of a larger system.

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

14) 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.

15) 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.

16) What are the activities of management?
1. Planning – deciding what is to be done.
2. Organizing – making arrangements.
3. Staffing – selecting the right people for the job
5. Monitoring – checking on progress
6. Controlling – taking action to remedy hold-ups
7. Innovating – coming up with new solutions
8. Representing – liaising with clients, users, developers, suppliers

17) What are the problems with software project from manager’s point of view?
1. Poor estimates and plans.
2. Lack of quality standards and measures.
3. Lack of techniques to make progress visible.
4. Lack of guidance about organizational decisions.
5. Poor role definition. 6. Incorrect success criteria

18) What are the problems with software project from student’s point of view?
1. Inadequate specification of work.
2. Lack of knowledge of application area.
3. Lack of standards.
4. Narrow scope of technical expertise.

19) 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

20) What are the steps involved in step wise planning?
1. Identify project scope and objectives.
2. Identify project infrastructure.
3. Analyze project characteristics.
4. Identify project products and activities.
5. Estimate effort for each activity.
6. Identify activity risks.
7. Allocate resources.
9. Execute plan / lower levels of planning.

21) How to identify project infrastructure?
- Establish relationship between project and strategic planning.
- Identify installation standards and procedures.
- Identify project team organization.

22) How to manage activity risks?
1. Identify and quantify activity-based risks.
2. Plan risk reduction and contingency measures where appropriate.
3. Adjust plans and estimates to take account of risks.

23) Define project stakeholders.
Stakeholders are the people involved in or affected by the project activities.
Stakeholders power - Integrate all expectations of several people

24) How to review and publicize plan?
- Review quality aspects of project plan.
- Document plans and obtain agreement.

25) What are the four main differences between software projects and other projects?
Invisibility, Complexity, Conformity, Flexibility

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

27) What are the elements of the product description? (Nov/Dec 2011)
Name/identity of the product
Purpose of the product
Derivation of the product
Composition of the product
Form of the product
The relevant standards
Quality criteria

PART –B

1) Explain the difference between software projects and other projects in detail.
Invisibility When a physical artefact such as a bridge or road is being constructed the progress being made can actually be seen. With
software, progress is not immediately visible. One way of perceiving software project management is as the process of making visible that which is invisible.

**Complexity** Per dollar, pound or euro spent, software products contain more complexity than other engineered artefacts.

**Conformity** The ‘traditional’ engineer is usually working with physical systems and physical materials like cement and steel. These physical systems can have some complexity, but are governed by physical laws that are consistent. Software developers have to conform to the requirements of human clients. It is not just that individuals can be inconsistent. Organizations, because of lapses in collective memory, in internal communication or in effective decision making can exhibit remarkable ‘organizational stupidity’ that developers have to cater for.

**Flexibility** The ease with which software can be changed is usually seen as one of its strengths. However, this means that where the software system interfaces with a physical or organizational system, it is expected that, where necessary, the software will change to accommodate the other components rather than vice versa. This means the software systems are likely to be subject to a high degree of change.

3) **Explain contract management and technical project management.**
Many organizations contract out ICT development to outside specialist developers. In such cases, the client organization will often appoint a ‘project manager’ to supervise the contract. This project manager will be able to elegrate many technically oriented decisions to the contractors. For instance, the project manager will not be concerned about estimating the effort needed to write individual software components as long as the overall project is fulfilled within budget and on time. On the supplier side, there will need to be project managers who are concerned with the more technical management issues. This book leans towards the concerns of these ‘technical’ project managers.

3) **Explain activities covered by the software project management.**

**The feasibility study** This investigates whether a prospective project is worth starting – that it has a valid business case. Information is gathered about the requirements of the proposed application. Requirements elicitation can, at least initially, be complex and difficult. The client and other stakeholders may be aware of the problems they wish to overcome and the aims they wish to pursue, but not be sure about the means of achievement. The probable developmental and operational costs, along with the value of the benefits of the new system, will also have to be estimated. With a large system, the feasibility study could be treated as a project in its own right – and have its own planning sub-phase. The study could be part of a strategic planning exercise examining and prioritizing a range of potential software developments. Sometimes an organization has a policy where a group of projects is planned as a programme of development.

2. **Planning** If the feasibility study produces results which indicate that the prospective project appears viable, then planning of the project can take place. However, for a large project, we would not do all our detailed planning right at the beginning. We would formulate an outline plan for the whole project and a detailed one for the first stage. More detailed planning of the later stages would be done as they approached. This is because we would have more
detailed and accurate information upon which to base our plans nearer to the start of the later stages.

3. **Project execution** The project can now be executed. The execution of a project often contains *design* and *implementation* sub-phases. Students new to project planning often find it difficult to separate planning and design, and often the boundary between the two can be hazy. Essentially, design is thinking and making decisions about the precise form of the *products* that the project is to create. In the case of software, this could relate to the external appearance of the software, that is, the user interface, or the internal architecture. The plan lays down the *activities* that have to be carried out in order to create these products. Planning and design can be confused because at the most detailed level, planning decisions are influenced by design decisions. For example, if a software product is to have five major components, then it is likely that there will be five sets of activities that will create them.

**Requirements analysis** This starts with *requirements elicitation* which investigates what the potential users and their managers and employers require as features and qualities of the new system. These will relate to the system as a whole. A quality requirement might be, for instance, that the user should be able to complete a transaction within a certain time. In this case transaction time would be affected by the speed of human operation, as well as hardware and software performance. These ‘customer-facing’ requirements then have to

- **Architecture design** This maps the requirements to the components of the system that is to be built. At the system level, decisions will need to be made about which processes in the new system will be carried out by the user and which can be computerized. This design of the *system architecture* thus forms an input to the development of the *software requirements*. A second architecture design process then takes place which maps the *software requirements* to *software components*.

- **Code and test** This could refer to writing code in a procedural language such as C# or Java, or could refer to the use of an application-builder such as Microsoft Access. Initial testing to debug individual software components would be carried out at this stage.

- **Integration** The individual components are collected together and tested to see if they meet the overall requirements. Integration could be at the level of software where different software components are combined, or at the level of the system as a whole where the software and other components of the system such as the hardware platforms and networks and the user procedures are brought together.

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

- **Installation** This is the process of making the new system operational. It would include activities like setting up standing data (such as payroll details for employees if this were a payroll system). It would also include setting system parameters, installing the software onto the hardware platforms and user training.

- **Acceptance support** This is the resolving of problems with the newly installed system, including the correction of any errors that might have crept into the system, and any extensions and improvements that are required. It is possible to see software maintenance as a series of minor software projects. In many
environments, most software development is in fact maintenance

4) **What is management? Explain the problems with software projects.**

It has been suggested that management involves the following activities:

- **Planning** – deciding what is to be done;
- **organizing** – making arrangements;
- **staffing** – selecting the right people for the job etc;
- **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, developer, suppliers and other Stakeholders

Identified the following commonly experienced problems:

- poor estimates and plans;
- lack of quality standards and measures;
- lack of guidance about making organizational decisions;
- lack of techniques to make progress visible;
- poor role definition – who does what?
- incorrect success criteria.

The above list looks at the project from the manager’s point of view. What about the staff who make up the members of the project team? Below is a list of the problems identified by a number of Computing and Information Systems degree students who had just completed a year’s industrial placement:

- inadequate specification of work;
- management ignorance of ICT;
- lack of knowledge of application area;
- lack of standards;
- lack of up-to-date documentation;
- preceding activities not completed on time – including late delivery of equipment;
- lack of communication between users and technicians;
- lack of communication leading to duplication of work;
- lack of commitment – especially when a project is tied to one person who then moves;
- narrow scope of technical expertise;
- changing statutory requirements;
- changing software environment;
- deadline pressure;
- lack of quality control;
- remote management;
- lack of training.

5) **Explain stakeholders and business case.**

Stakeholders are the people involved in or affected by the project actives

- In general, they could be users/clients or developers/implementers. They could be within the project team
- Outside the project team, but within the same organization.
- Outside both the projects team and the organization.

**Internal to the project team** This means that they will be under the direct managerial control of the project leader.

- **External to the project team but within the same organization** For example, the project leader might need the assistance of the information management group in order to add some additional data types to a database or the assistance of the users to carry out systems testing. Here the commitment of the people
involved has to be negotiated.

- **External to both the project team and the organization** External stakeholders may be customers (or users) who will benefit from the system that the project implements or contractors who will carry out work for the project. One feature of the relationship with these people is that it is likely to be based on a legally binding contract.

**Business Case**
Benefits of delivered project must outweigh costs. The costs include
- Development
- Operation

Benefits.
- Quantifiable
- Non-quantifiable.

6) **Explain management control in detail.**

Management, in general, can be seen as the process of setting objectives for a system and then monitoring the system to see what its true performance is. In the ‘real world’ it is shown as being rather formless. Especially in the case of large undertakings, there will be a lot going on about which management should be aware. This will involve the local managers in data collection. Bare details, such as ‘location X has processed 2000 documents’, will not be very useful to higher management: *data processing* will be needed to transform this raw *data* into useful *information*. This might be in such forms as ‘percentage of records processed’, ‘average documents processed per day per person’ and ‘estimated completion date’. In our example, the project management might examine the estimated completion date for completing data transfer for each branch. These can be checked against the overall target date for completion of this phase of the project. In effect they are comparing actual performance with one aspect of the overall project objectives. They might find that one or two branches will fail to complete the transfer of details in time. They would then need to consider what to do. The project manager would need to calculate carefully what the impact would be in moving staff from particular branches. This is *modelling* the consequences of a potential solution. Several different proposals could be modelled in this way before one was chosen for implementation. Having implemented the decision, the situation needs to be kept under review by collecting and processing further progress details. For instance, the next time that progress is reported, a branch to which staff have been transferred could still be behind in transferring details. This might be because the reason why the branch has got behind in transferring details is because the manual records are incomplete and another department, for whom the project has a low priority

7) **Explain the step-wise project planning in detail.** *(Nov/Dec 2011)*

Explain the following steps in detail
8) **How to analyze the project characteristics?**

   The characteristics which distinguish projects can be summarized as follows:
   - Non-routine tasks are involved.
   - Planning is required.
   - Specific objectives are to be met or a specified product is to be created.
   - The project has a pre-determined time span.
   - Work is carried out for someone other than yourself.
   - Work involves several specialisms.
   - Work is carried out in several phases.
   - The resources that are available for use on the project are constrained.
   - The project is large or complex.

9) **Explain the steps involved in to identify activity risks.** *(Nov/Dec2011)*

   - Identify and quantify risks for activities
     - damage if risk occurs (measure in time lost or money)
     - likelihood if risk occurring
   - Plan risk reduction and contingency measures
     - risk reduction: activity to stop risk occurring
     - contingency: action if risk does occur
   - Adjust overall plans and estimates to take account of risks
     - e.g. add new activities which reduce risks associated with other activities e.g. training, pilot trials, information gathering
10) Explain the steps in project planning with case studies example.

Case Study examples.
Step 1: Identify project scope and objectives.
   Project objectives, Project authorities, Modified project objectives.
Step 2: Identify project Infrastructure.
   Role of existing strategic plans, identifying standards, project organization.
Step 3: Analyse project characteristics.
   High-level risks.
Step 4: Identify project products and activities.
   Product break down structure, IOE has standard PFD, Identifying product instances.,
   Activity network for IOE Maintenance Accounts.
Step 5: Estimate effort for each activity.
   IOE Maintenance Group Accounts- breaking activities down into manageable tasks.
Step 6: Identify activity risks.
   Identifying risks for Amanda
Step 7: Allocate Resources.
   Taking resource constraints into account,
Step 8: Review/Publicize plan
   IOE existing quality standards
Step 9 & 10: Execute plan and lower levels of planning
   Lower level planning for individual modules.

11) For each stage of a typical IS development project list the type of personnel who are likely to be involved. (Nov/Dec 2011)
   - Project leader
- End user
- Stakeholders
  1) Internal to the project team
  2) External to the project team but within the same organization
  3) External to both the project team and the organization.

UNIT –II
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 programmes?
   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 programmes.
   The collection of projects that an organization undertakes within a particular planning cycle is
   sometimes refer to portfolio. Decisions have to be made about which projects to implement
   within that budget within the accounting period.

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

6) Define Research and development programmes.
   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) Write the difference between programme managers and project managers.

<table>
<thead>
<tr>
<th>Programme manager</th>
<th>Project manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many simultaneous projects</td>
<td>One project at a time</td>
</tr>
<tr>
<td>Personal relationship with skilled resources</td>
<td>Impersonal relationship with resource type</td>
</tr>
<tr>
<td>Need to maximize utilization of resources</td>
<td>Need to minimize demand for resources</td>
</tr>
<tr>
<td>Projects tend to be similar</td>
<td>Projects tend to be dissimilar</td>
</tr>
</tbody>
</table>

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 only come about when changes have been made to the structure and operations of the organizations. These are detailed in 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.** *(Nov/Dec 2011)*
    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.
    - \( TDEV = 3 \cdot (PM)^{(0.33 + 0.2\cdot (B - 1.01))} \)
    - 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
    - \( ESLOC = ASLOC \cdot (1 - AT/100) \cdot AAM \).
    - 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.

17) **Define operational costs.**
    It consists of the costs of operating the system once it has been installed.
    \( EAC = AC + ETC \). Current variances are seen as a typical and the ...

18) **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.

19) **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- Successfull Projects Fortunately for *project managers*
• Internal rate of return- delegation of general management authority to the Project Leader

20) Give the formula of Net Present Value (Nov/Dec 2011)

\[ NPV = I_0 + \sum \frac{F_t}{(1 + r + p_t)^t} \]

\( F_t \) = net cash flow for period \( t \)
\( r \) = required rate of return
\( I_0 \) = initial cash investment
\( p_t \) = inflation rate during period \( t \)

21) Give the formula of payback period and ROI. (Nov/Dec 2011)

\[ \text{Payback Period} = \frac{\text{Investment}}{\text{Annual Cash Savings}} \]

Significance
creating a project charter to formally initiate projects

ROI = average annual profit/total investment * 100

22) Define Decision tree.

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

Advantages
Assistance in upgrading, designing and developing a software.

23) What is IRR? How it is calculated? (Nov/Dec 2011)

Internal Rate of Return (IRR) – The percentage discount that will zero the NPV

PART-B

1) Write in detail for project management with strategic programme.

Project management with strategic programme
Effective programme management requires that there is a well-defined programme goal and that all the organization’s projects are selected and tuned to contribute to this goal. A project must be evaluated according to how it contributes to this programme goal and its viability, timing, resourcing, and final worth can be afftected by the programme as a whole. Successful strategic assessment of a potential project there should therefore be a strategic plan defining the organization’s objectivities.

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

A typical project for this company involves
- A shoe design to a brief provided by the client.
- Obtaining approval of the design
- Creating a prototype of the shoe
- Setting up production for the shoe with a manufacturer.

3) Explain in detail strategic programme management.

A programme brief is now produced which would be the equivalent of feasibility study for the programme
Several projects together implement a single strategy. For example, merging two organizations will involve many different activities e.g. physical re-organization of offices, redesigning the corporate image, merging ICT systems etc. Each of these activities could be project within an overarching programme.

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viability, timing, resourcing, and final worth can be affected by the programme as a whole. Successful strategic assessment of a potential project there should therefore be a strategic plan defining the organization’s objectives.

4) **What are the different types of programme?**

   - Strategic
   - Business cycle programmes
   - Infrastructure programmes
   - Research and development programmes
   - Innovative partnerships

   **Strategic**

   Several projects together implement a single strategy. For example, merging two organizations will involve many different activities e.g. physical re-organization of offices, redesigning the corporate image, merging ICT systems etc. Each of these activities could be project within an overarching programme.

   **Business cycle programmes**

   A portfolio of project that are to take place within a certain time frame e.g. the next financial year.

   **Infrastructure programmes**

   In an organization there may be many different ICT-based applications which share the same hardware/software infrastructure.

   **Research and development programmes**

   In a very innovative environment where new products are being developed, a range of products could be developed some of which are very speculative and high-risk but potentially very profitable and some will have a lower risk but will return a lower profit. Getting the right balance would be key to the organization’s long term success.

   **Innovative partnerships**

   e.g. pre-competitive co-operation to develop new technologies that could be exploited by a whole range of companies.

5) **Explain the benefits of management.** Explain the following concept in detail.

   1) Mandatory compliance
   2) Quality of service
   3) Productivity
   4) more motivated force
   5) Internal management benefits
   6) Risk reduction

6) **Explain cost-benefit evaluation techniques.** (Nov/Dec 2011)

   Explain the following methods with example.

   Net profit, Payback period, Return of investment, Net present value, Internal rate of return.

7) **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. Draw the diagram and explain with table.

8) **Explain decision trees with examples.**

   - A **decision tree** is a diagramming analysis technique used to help select the best course of action in situations in which future outcomes are uncertain.

   - **Estimated monetary value (EMV)** is the product of a risk event probability and the risk event’s monetary value.

   - You can draw a decision tree to help find the EMV.
9) Explain risk evaluation. (Nov/Dec 2011)

Rank the risks according to management priorities, by risk category and rated by likelihood and possible cost or consequence.
Risk identification and ranking
Risk and Net Present value
Cost-benefit analysis
Risk profile analysis
Decision trees.

Project 1’s EMV = $60,000 — 32,000 = $28,000
Project 2’s EMV = —$10,000 — 2,000 + 42,000 = $30,000

10) Explain how a project can be evaluated against strategic, technical and economic criteria. (Nov/Dec 2011)

Evaluation of individual projects
- Technical assessment
  Consist of evaluating the required functionality against the hardware and software availability.
- Cost benefit analysis
  Two steps
  1) Identifying and estimating all of the costs and benefits of carrying out the project and operating the delivered application
  2) Expressing these cost and benefits in common units
- Categories of cost
  1) Development cost
  2) Setup cost
  3) Operational cost
- Benefits
  1) Quantified and valued benefits
  2) Quantified but not valued
  3) Identified but not easily valued

UNIT-III
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?
   1) Feasibility assessment
   2) Resource allocation
   3) Detailed costing
   4) Motivation
   5) Coordination

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.
   1. Project - engineering resources has been developed by TASK
   2. Deliverables - term for the quantifiable goods or services
   3. Components - designing the floor plane
   4. work-packages - Models for the description of software artifacts
   5. 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?
   1. A project network should have only one start node.
   2. A project network should have only one end node.
   3. A node has duration. Links normally have no duration.
   4. Precedents are the immediate preceding activities.
   5. Times moves from left to right
   6. A network may not contain loops.
   7. 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 ‘hommocked’ 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?**
   1) A project network may have only one start node
   2) A project network may have only one end node
   3) A link has duration Nodes have no duration
   4) Times moves from left to right
   5) Nodes are numbered sequentially
   6) 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?**
   1. Affect of this product on company revenue?
   2. Reasonableness of delivery deadline?
   3. number of customers who will use this product
   4. interoperability constraints
   5. Sophistication of end users?
   6. Costs associated with a defective product?

16. **What are things to be considered in risk management?**
   o Risk Identification- Organizations and project teams
   o Risk Analysis- Includes a download demo and other decision analysis tools
   o Risk Planning- assessment is an important part
   o Risk Monitoring- identify 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?**
   1) Risk identification 2) Risk analysis and prioritization.
   3) Risk planning 4) Risk monitoring.

21. **Define risk assessment.**
   Using this formula
   \[ \text{Risk exposure} = (\text{potential damage}) \times (\text{probability of occurrence}) \]

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 is activity on node?**
   In constructing activity on node network we:
1) A project network may have only one start node
2) A project network may have only one end node
3) A link has duration. Nodes have no duration
4) Times moves from left to right
5) Nodes are numbered sequentially
6) A network may not contain loops.

24. **What is activity on arrow?** *(Nov/Dec 2011)*
   In constructing activity on arrow network we:
   1) draw a node for each activity
   2) add an arrow from (activity) node i to (activity) node j if activity i must be finished before activity j can start (activity i precedes activity j). Note here that all arcs have arrows attached to them (indicating the direction the project is flowing in).

25. **What is risk management?** *(Nov/Dec 2011)*
   - Contingency
   - Deciding on the risk action
   - Creating and maintaining the risk register.

**PART-B**

1. **What are the objectives of activity planning?**
   - Feasibility assessment
   - Resource allocation
   - Detailed costing
   - Motivation
   - Co-ordination

2. **Write the steps involved in project schedule.**
   - The first 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 construct an ideal activity plan. This activity plan is generated by step 4 and step 5 in the diagram.
   - The second step is activity risk analysis.
   - The third step is resource allocation.
   - The final step is schedule production.

3. **Explain the approaches for identifying the activities.**
   - The activity based approach
     Work-based: draw up a Work Breakdown Structure listing the work items needed
     - Product-based approach
       - list the deliverable and intermediate products of project – product breakdown structure (PBS)
       - Identify the order in which products have to be created
     - work out the activities needed to create the products
   Hybrid Base approach
   Combination of activity based and product based
4. Explain in detail formulating a network model.
   o A project network should have only one start node.
   o A project network should have only one end node.
   o A node has duration.
   o Links normally have no duration.
   o Precedents are the immediate preceding activities.
   o Times moves from left to right.
   o A network may contain loops.
   o A network should not contain dangles.

5. Explain forward pass and backward pass explain with example.
   The forward pass is carried out to calculate the earliest dates on which each activity may be started and completed.

Write the reasons for forward pass

```
A  6 wks
  Hardware design

B  4 wks
  Software design

C  3 wks
  Build hardware

D  4 wks
  Code software

E  10 wks
  User manual

F  3 wks
  File take-on

G  6 wks
  User training

H  2 wks
  Install and test

Start

Finish
```
the seconds 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 consider for the reasons
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.
• As early as possible
• the forward pass is carried out to calculate the earliest dates on which each activity may be started and completed.
• Write the reasons for forward pass

The seconds 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 consider for the reasons.

6. Explain the measures for activity float.
Calculate the total float for each activity; it really belongs to a path through the network. There are number of measures of activity float include the following:

Free float: The time by which an activity may be delayed without affecting any subsequent activity. It is calculated as the difference between the earliest completion date for the activity and the earliest start date of the succeeding activity. This might be considered a more satisfactory measure of float for publicizing to the staff involved in undertaking activities.

Interfering Float: The difference between total float and free float.

7. Explain activity-on-arrow networks.
Rules and conventions of activity-on-arrow-network.
• A project network should have only one start node
• A project network should have only one end node
• A node has duration
• Links has duration
• Nodes have no duration
• Times move left to right
• Nodes are numbered sequentially
• A network may not contain loops
• A network may not contain dangles

8. Explain the categories of 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.

Things to be considered in risk management
• 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- identify Development Environment Risks.

Types of risk
Project risk
Technology risk
9. What are the approaches in risk identification?
   Risk identification consists of listing all of the risks that can adversely affect the successful execution of the project.
   Hazard identification - identify the reasons for failure the activities List the factors involving the hazard
   Application factors. Staff factors, Project factors, Project methods, Hardware/software factors, Changeover factors, Supplier factors, Environment factors, and Health and safety factors.

10. Explain the risk planning.
   Risk planning consists of drawing up contingency plans and where appropriate, adding these to the project’s task structure. With small projects, risk planning is likely to be the responsibility of the project manager, but medium or large projects will benefit from the appointments of a full-time risk manager. Explain the following
   - Risk acceptance,
   - Risk avoidance,
   - Risk reduction,
   - Risk transfer

11. How to evaluate the pert techniques.(Nov/Dec 2011)
   Using PERT to evaluate the effects of uncertainty.
   PERT was developed to take account of the uncertainty surrounding estimates of task durations. It was developed in an environment of expensive, high-risk and state-of-the-art projects – not that dissimilar to many of today’s large software projects.

   The method is very similar to CPM technique, but instead of using a single estimate for the duration of each task, PERT requires three estimates
   - Most likely time.
   - Optimistic time.
   - Pessimistic time.

12. Explain with an example how critical path can be identified in precedence network.(Nov/Dec 2011)
   Formulating a network model
   - Constructing Precedence network
   - Representing lagged activities
   - Hammock activities
   - Labeling conventions
   Adding the time dimension
   - Forward pass
   - Backward pass
   Identifying the critical path

   UNIT - IV
   PART-A

1. Why cost monitoring is important?(Nov/Dec 2011)
   Monitoring is collecting and reporting information concerning previously defined project performance elements. It is an important component of project control. A project might be on time, but only because more money has been spend on activities than originally budgeted.

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?
   1. 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?
   1. Identify the key 2) Break these key elements into constituent
   2. Assess each of the second-level elements on the scale green for on target
   3. Review all the second-level assessments to arrive at first-level assessments.
   4. Review first- and second-level assessments to produce an overall Assessment.

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.
   o is a measure of progress
   o enables us to assess the “percent of completeness” of a project using quantitative analysis rather than rely on a gut feeling
   o “Provides accurate and reliable readings of performance from as early as 15 percent into the project.”
   o 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?
   1) Critical path activities
   2) Activities with no free float
   3) Activities with less than a specified float
   4) Activities using critical resources
   5) High risk activities.

10. What are the steps in change control procedures?
    o 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.
    o 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?
    1) Fixed price contracts
    2) Time and materials contracts
    3) 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**
1) Known customer expenditure
2) Supply motivation
3) Higher prices to allow for contingency

**Disadvantages**
1) Difficulties in modifying requirements
2) Upward pressure on the cost of changes
3) Threat to system quality.

15. Define time and materials contracts.

- A 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
  - i. resembles a cost-reimbursable contract because it is open-ended and full cost of project is not predetermined
  - ii. but can resemble a fixed-price contract if unit rates are set

16. What are the advantages and disadvantages of time and materials contracts?

**Advantages**
1) Ease of changing requirements. 2) Lack of price pressure

**Disadvantages**
1) Customer liability 2) 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 are the advantages and disadvantages of fixed per unit delivered contracts?

**Advantages**
1. Customer understanding 2. Comparability
3. Emerging functionality 4. Supplier efficiency 5. Life-cycle range

**Disadvantages**
1. Difficulties with software size measurements
2. Changing requirements.

19. What are the processes of evaluation need?

1) Security of the proposal documents 2) Interviewing supplier’s representatives.
3) Demonstrations. 4) Practical tests.

20. What are the services to be provided in contracts?

1. Training 2. Documentation 3. Installation
6. Transitional insurance agreements.


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. List the methods for assigning earned value in earned value analysis. (Nov/Dec 2011)

- 0/100 technique
- 50/50 technique
- Milestone technique

23. Write any 2 advantages of function point analysis (Nov/Dec 2011)

- External input types
PART-B

1. Explain project control cycle in detail.
Project control is a continuous process of monitoring progress against that the plan and where necessary, revising the plan to take after completion of the project.

2. How to prepare activity assessment sheet?
- One popular way of overcoming the objections to partial completion reporting is to avoid asking for estimated completion dates.
- Traffic-light method
- Identify the key (first level) elements for assessment in a piece of work
- Break these key elements into constituent elements (second level)
- Assess each of the second level elements on the scale green for ‘on target’, amber for ‘not on target but recoverable’ and red ‘not on target and recoverable only with difficulty’
- Review all the second level assessments to arrive at first level assessments:
- Review first and second level assessments to produce an overall assessment
- Time sheet
- Activity assessment sheet
3. **Explain the method Earned value Analysis.**

Earned value analysis has gained in popularity in recent years and may be seen as a refinement of the cost monitoring. Earned value analysis is based on

The assigned value is the original budgeted cost for the item and is known as the baseline budget or Budgeted Cost of Work Scheduled (BCWS). The total value credited to a project at any point is known as the earned value or budgeted cost of work performed. (BCWP) explain all the variance.

They are three techniques must be applied

- The 0/100 technique.
- The 50/50 technique.
- The milestone technique.

**Explain the change in control procedures.**

A change in a program specification will normally be carried through into changes to the program design and then change code

- A simple control procedure for operational systems might have the following steps

- One or more users might perceive a need for a system and ask for a change request to be passed to the development staff.
- The user management consider the changes request and if they approve it pass it to the development management.
- The development management delegate a member of staff to look at the request and to report on the practicality and the cost of carrying out the change.
- They would, as part of this, assess the products that would be affected by the change.
- The development management report back to the user management on the findings and the user management decide whether, in view of the cost quoted, they wish to go ahead.
- One or more developers are authorized to take copies of the master products that are to be modified.
- The copies are modified. In the case of software components this would involve modifying the code and recompiling and testing it.
- When the development of new versions of the product has been completed the user management will be notified and copies of the software will be released for user acceptance testing.
- When the users are satisfied that the products are adequate they will authorize their operational release. The master copies of configuration items will be replaced.

5. **What is meant by contract? Explain the supply process in detail.**

A contract is an agreement between two parties that creates an obligation to perform (or not perform) a particular duty. A legally enforceable contract requires:

- Where equipment is being supplied then, in English law, this may be regarded as a contract for the supply of goods. In the case of the supply of software this may be regarded as supplying service or the granting of a license to use the software, which remains in the ownership of the supplier.

6. **Explain the different types of contract in detail.**

A contract is an agreement between two parties that creates an obligation to perform (or not perform) a particular duty. A legally enforceable contract requires:

- **Types of contract**
  - Fixed price contracts
  - Time and materials contract
  - Fixed price per delivered unit contracts

**1) Fixed price contracts**

As the name implies, in this situation a price is fixed when the contract is signed. The customer knows that, if there are no changes in the contract terms, this is the piece to be paid on the completion of the work. In order for this to be effective, the customer’s requirement has to be known and fixed at the outset. In other words when the contract is to construct a s/w system, the detailed requirements analysis must already have been carried out.
Advantages of this method
If there are few subsequent changes to the original requirements, the customers will have a known outlay.

Supplier motivation:- the supplier has a motivation to manage the delivery of the system in a cost-effective manner

Disadvantages

Higher prices to allow for contingency:
The supplier absorbs the risk for any errors in the original estimate of product size. To reduce the impact of this risk, the supplier will add a margin when calculating the price to be quoted in a tender.

Difficulties in modifying requirements
The need to change the scope of the requirements sometimes becomes visible as the system is developed this can cause roughness between the supplier and the customer

Upward presence on the cost of changes
When computing against other potential supplier the supplier will try to quote as low a price as possible. if once the contract is signed, further requirements are put forward, the supplier is in a strong position to demand a high price for these changes.

Threat to system quality
The need to meet a fixed price can mean that the quality of the software suffers.

2) Time and materials contracts
With this type of contract, the customer is charged at a fixed rate per unit of effort. For example, per staff-hour. At the start of the project, the supplier normally provides an estimate of the overall cost based on their current understanding of the customer’s requirements, but this is not the basis for the final payment.

Advantages
- Ease of changing requirements
- Changes to requirements are dealt with easily, where a project has a research orientation and the direction of the project changes as options are explored, then this can be an appropriate method of calculating payment:
- Lack of price pressure
- The lack of price pressure can allow better quality software to be produced.

Disadvantages
- Customer liability
- The customer absorbs all the risks associated with poorly defined or changing requirements.
- Lack of incentives for supplier: the supplier has no incentive to work in a cost-effective manner or to control the scope of the system to be delivered.

3) Fixed price per unit delivered
- This is often associated with function point (FP) counting. The size of the system to be delivered is calculated or estimated at the outset of the project.
- The size of the system to be delivered might be estimated in lines of code.
- A price per unit is also quoted. The final price is then the unit price multiplied by the number of units delivered contracts

Advantages
- Customer understanding: the customer can see how the price is calculated and how it will vary with changed requirements
- Comparability: pricing schedules can be completed
- Emerging functionality: the supplier does not bear the risk of increasing functionality
- Supplier efficiency:- the supplier still has an incentive to deliver the required functionality in a cost-effective manner
• Life-cycle range: the requirements do not have to be definitively specified at the outset. Thus the development contract can cover both the analysis and design stages of the project.

Disadvantages
• Difficulties with software size measurements
• Changing requirements

Another way

1) Open
c) Restricted
3) Negotiated

1) Open tendering process
• Any supplier can bid to supply the goods and services
• Invitation to tender must be considered and evaluated in the same way as all others

2) Restricted tendering process
• In this case, there are bids only from suppliers who have been invited by the customer
• Reduce the number of suppliers

3) Negotiated procedure
• Single supplier might be justified

7. Explain the various methods for visualizing the progress of a project. (Assessing the state of a project (Nov/Dec 2011))

Collected data about project progress, a manager needs some way of presenting that data to greatest effect.

Explain with examples
• The gantt chart
  Gantt charts, or bar charts, are popular due to their simplicity.
  The Gantt Charts combines the two functions of planning and scheduling
  – Activities are listed down the left-hand side.
  – A time scale is shown along the bottom.
  – The estimated duration for each activity is indicated by a line or bar spanning the period during which the activity is expected to be accomplished
  – Column that indicate who is responsible for each task can be added to the chart.
• With Gantt Charts, the scheduling of activities occurs simultaneously with their planning
• Do not display the interrelationships of activities.
• If one activity is delayed, it is not obvious how that will affect other activities.
• Most project management software can show interdependencies with arrows.

• The slip chart
8. What are the stages in contract management? (Nov/Dec 2011)

Requirement analysis

This step is to be skimped when the user has many day-today pressures and not much time to think future developments. In this situation, it can be useful to bring in an external consultant to draw up a requirement document. Even here, users and their managers need to look carefully at the resulting requirements document to ensure that it accurately reflects their needs.

The requirements define carefully the functions that need to be carried out by the new application and all the necessary inputs and outputs for these functions.

- Each requirement needs to be identified as being either mandatory or desirable.
- Evaluation Plan
- Invitation to tender
- Evaluation of proposals.

9. What are the typical terms of a contract? Explain with examples.

Definitions: the terminology used in the contract document may need to be defined, for example, who is meant by the words ‘client’ and ‘supplier’

- Form of agreement
- Goods and services to be supplied
- Environment
- Customer commitment
- Standards
- Timetable
- Price and payment methods

10. Explain how controlling changes to a project requirements (Nov/Dec 2011)

- Configuration librarian’s role
- Change control procedures
- Changes in the scope of the system

UNIT - V

PART-A

1. What are the objectives of managing people and organizing teams?
   1. Identify some of the factors that influence people’s behavior in project.
   2. Select and induct new staff into a project.
   3. Increase staff motivation.
   4. Improve group working.
   5. Use the most appropriate leadership styles.

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

3. What are the factors consider in X theory?
   1. The average human has an innate dislike of work.
   2. There is a need therefore for correction, direction and control.
   3. 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?
   1. Physiological Needs - attention turns to safety and security
   2. Security or Safety Needs - Calculation, Domain, Consulting,
   3. Affiliation or Social Needs - Developing New Programs
   4. Esteem Needs - needs for esteem can become dominant
   5. Self-actualization Needs - include symmetry

7. Write short notes on 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 dissatisfiers 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.

   \[ \text{Force} = \text{valence} \times \text{expectancy} \]

   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?
   1. Skill variety- one or more of the offerings available from a variety of organizations
   2. Task variety- enhance Key words
   3. Task significance- autonomy, and feedback from the job
   4. Autonomy- for Consulting & Software Companies
   5. Feedback- submit your comments and suggestions

10. Mention the methods of improving motivation.

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

11. Write down the stages of Team formation model.(Nov/Dec 2011)

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

12. Differentiate between formal and informal structures.

    The formal structure is expressed in the staff hierarchy chart. It is basically concerned with authority about who has which boss. It is backed by an informal structure of contracts and communication that grows up spontaneously between members of staff during the course of work.

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?

    1. Structured- generally relatively simple, routine decisions where rules can be applied in a fairly straightforward way
    2. Unstructured- more complex and often requiring a degree of creativity.
15. Mention some mental obstacles to good decision making.
   1. Faculty heuristics - an innovative effort by students and members of staff
   2. escalation of commitment - behavior, sunk cost, risk propensity, risk perception,
   3. information overhead - enevelopers analyze, design, and develop software

16. What are the measures to reduce the disadvantages of group decision making?
   1. The cooperation of a number of experts.
   2. The problem is presented to the experts.
   3. The experts record their recommendations.
   4. These recommendations are collated and reproduced.
   5. The collect responses are recirculated.

17. Define Leadership.
    “The ability of a superior to influence the behavior of his subordinates and persuade 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?

19. What are the leadership models/theories?

20. What are the leadership styles?
    1. Directive autocrat - This manager makes all the decisions unilaterally and managesLearning to Lead
    2. permissive autocrat - Concepts using simple and precise free downloadable
    4. permissive democrat - Makes decisions participative subordinates have latitude

21) Define Stress. (or) What are the reasons for increase in stress?
    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. Stress can be caused by role ambiguity and role conflict.

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.

PART-B
1) Explain the stepwise framework where staffing concerns are important.
   • Some objectives can address health and safety during the project.
   • Although the project leader may have little control over organizational structure they need to be aware of its implications.
   • The scope and nature of activities can be set in a way that will enhance staff motivation.
   • Many risks to project success relate to staffing
   • The qualities of individual members of staff should be taken into account when allocating staff to activities.
2) Explain X theory and Y –theory. In detail

**McGREGOR'S THEORY X AND THEORY Y**

The management’s action of motivating human beings in the organisation, according to Douglas McGregor, involves certain assumptions, generalizations and hypotheses relating to human behaviour and human nature. They serve the purpose of predicting human behaviour. McGregor has characterised these assumptions in two opposite views, termed **Theory X** and **Theory Y**.

**Theory X.** This is the traditional theory of human behaviour. In this theory, McGregor has certain assumptions about human behaviour. These assumptions are as follows:
1. Management is a process of directing employees’ efforts, motivating them, controlling their actions, modifying their behaviour to fit the needs of the organisation.
2. Without this active intervention by management, people would be passive— even resistant—to organisational needs. They must be persuaded, rewarded, punished, controlled, and their activities must be directed.
3. The average man is by nature indolent—he works as little as possible.
4. He lacks ambition, dislikes responsibility, prefers to be led.
5. He is inherently self-centered, indifferent to organisational needs.
6. He is, by nature, resistant to change.
7. He is gullible, not very bright, the ready dupe of the charlatan and the demagogue.

These assumptions about human nature are negative in their approach, however much organisational processes have developed on these assumptions. Managers subscribing to these views about human nature attempt to structure, control and closely supervise their employees. They feel that external control is most appropriate for dealing with irresponsible and immature employees.

**Theory Y.** The assumptions of Theory Y are described by McGregor in the following words:
1. The expenditure of physical and mental effort in work is as natural as play or rest. The average human being does not inherently dislike work. Depending upon controllable conditions, work may be a source of satisfaction or a source of punishment.
2. External control and the threat of punishment are not the only means for bringing about effort towards organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.
3. Commitment to objectives is a function of the reward associated with their achievement. The most significant of such awards, e.g. the satisfaction of ego and self-actualization needs, can be a direct product of effort directed towards organizational objectives.
4. The average human being learns under proper conditions not only to accept, but to seek responsibility. Avoidance of responsibility, lack of ambition, and emphasis on security are generally consequences of experience, not inherent human characteristics.
5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organizational problems is widely, not narrowly, distributed in the population.

The assumptions of Theory Y suggest a new approach in management. It emphasises on the cooperative endeavour of management and employees. The attempt is to get maximum output with minimum amount of control and direction. Generally, no conflict is visible between organisational goals and individual goals. Thus, the attempts of employees which are in their best interests are also in the interests of the organization.

3) Explain the recruitment process (or) Describe the requirement process for choosing the right person for a job.(or) Explain how new staff can be selected and induced into a project (Nov/Dec 2011)

Recruitment is often an organizational responsibility: the person recruited might, over a period of time, work in many different parts of organization.

A general approach might be following.
- Create a job specification.
- Create a job holder profile.
- Obtain applicants.
- Examine CVs.
4) Define motivation. Explain maslow’s hierarchy of needs. (Nov/Dec2011)

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.

1. **MASLOW’S HIERARCHY OF NEEDS THEORY**

One of the most widely mentioned theories of motivation is the hierarchy of needs theory put forth by psychologist Abraham Maslow. Maslow saw human needs in the form of a hierarchy, ascending from the lowest to the highest, and he concluded that when one set of needs is satisfied, the next higher level need gets activated.

The basic human needs placed by Maslow in an ascending order of importance are:

1. **Physiological Needs** These are the basic needs for sustaining human life itself, such as food, water, warmth, shelter, and sleep. Maslow felt that until these needs are satisfied to the degree necessary to maintain life, other needs will not motivate people.

2. **Security or Safety Needs** These are the needs to be free of physical danger and of the fear of losing a job, property, food, or shelter.

3. **Affiliation or Social Needs** Since people are social beings, they need to belong, to be accepted by others. It includes friendship, the need to love and be loved, socializing, etc.

4. **Esteem Needs** Once people begin to satisfy their need to belong, they tend to want to be held in esteem both by themselves and by others. This kind of need produces such satisfactions as respect, power, prestige, status, and self-confidence.

5. **Self-actualization Needs** This is the highest need in the hierarchy. It is the desire to become what one is capable of becoming—to fully realize one's potential and to accomplish what one is capable of achieving.

Maslow suggests that the various levels are overlapping, each higher-level need emerging before the lower-level need has been completely satisfied. Since one need does not disappear when another emerges, all needs tend to be partially satisfied in each area. When the peak of a need is passed, that need ceases to be the primary motivator. The next level need then begins to dominate.

5) Explain the expectancy theory of motivation. (Nov/Dec2011)

**VROOM'S EXPECTANCY THEORY**

Another approach to motivation is the expectancy theory of the psychologist Victor H. Vroom. He holds that people will be motivated to do things to reach a goal if they believe in the worth of that goal and if they can see that what they do will help them in achieving it. Vroom's theory is that people's motivation toward doing anything will be determined by the value they place on the outcome of their effort (whether positive or negative), multiplied by the confidence they have that their efforts will materially aid in achieving a goal. In other words, Vroom makes the point that motivation is a product of the anticipated worth that an individual places on a goal and the chances he or she sees of achieving that goal. Using his own terms, Vroom's theory may be stated as

\[
\text{Force} = \text{valence} \times \text{expectancy}
\]

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.

When a person is indifferent about achieving a certain goal, a valence of zero occurs; there is a negative valence when the person would rather not achieve the goal. The result of either would be, of course, no motivation. Likewise, a person would have no motivation to achieve a goal if the expectancy were zero or negative. Hence the force exerted to do something will depend on both valence and expectancy. Moreover, a motive to accomplish some action might be determined by a desire to accomplish something else. Vroom identified these as first-level and second-level outcomes. For example, a person might be willing to work hard to please his boss (first-level outcome) in order to get higher pay (second-level outcome). Or a manager might be willing to work hard to achieve company goals (first-level outcome) for the sake of getting a promotion (second-level outcome). Vroom used the term ‘instrumentality’ to indicate the extent to which the achievement of first-level outcomes lead to the achievement of second-level outcomes.

6) Explain the methods to increase staff motivation? (Nov/Dec2011)
• Set specific goals.
• Provide feedback.
• Consider job design.
• Two measures for job design
• Job enlargement
• Job enrichment.

7) **What are the steps needed to become a team?**
Work with group of member to achieve a common goal of organization.

- Forming
- Storming
- Norming
- Performing
- Adjourning
- Different types of people
- Group performance
- Additive tasks
- Compensatory tasks
- Disjunctive tasks
- Conjunctive tasks

Group Depends on
- Someone coming up with the right answer
- The others recognizing it as being correct

8) **Explain the leadership style in detail.** (Nov/Dec 2011)

**Some definitions of leadership:**

1] “The ability of a superior to influence the behavior of his subordinates and persuade them to follow a particular course of action”. (Chester Barnard)

2] “The activity of influencing people to strive willingly for mutual objectives”. (George Terry)

3] “A leader is one who guides and directs other people. He must give effective direction and purpose”. (Allen)

4] “The ability to secure desirable actions from a group of followers voluntarily without the use of force”. (Alford and Beatty)

5] “The ability to persuade others to seek defined objectives enthusiastically”. (Keith Davis)

Explain the following
- Coercive
- Connection
- Legitimate
- Reward
- Expert power
- Information power
- Referent power

9) **Explain the organizational structures.**

**Organization** is defined as collection of people for achieving common objectives, The term ‘organization’ is also used in two other senses. In the first sense it is used to denote the process of organizing. In the second sense it is used to denote the result of that process, namely, the organization structure

- Formal vs informal structures.
- Hierarchical approach.
- Staff vs line
**Line and staff organization:** A pattern in which staff specialists assist and advise line managers to perform their duties. The staff positions or departments are generally of advisory nature. The staff specialists may provide services to a particular position, department, or the organization as a whole.

**Merits:**
1. Planned specialization,
2. Quality decisions,
3. Prospect for personal growth,
4. Training ground for personnel.

**Demerits:**
1. Lack of well defined authority,
2. Potential for line-staff conflicts.

10) **Explain the stress and healthy and safety in detail.**

i) Stress
   
   Once a project gets rolling, you should expect members to be putting in at least 60 hours a week. The project leader must except to put in as many hours as possible.

   **Role conflict**

ii) Health and safety.

   Responsibility for safety must be clearly defined at all levels
   - Top management must be committed to the safety policy
   - The delegation of responsibilities for safety must be clear
   - Job descriptions should include definitions of duties related to safety
   - Budget

11) **Explain the Oldham-Hackman job characteristics model in detail.**

   Explain the following
   - Skill variety
   - Task identity
   - Task significance
   - Autonomy
   - Feedback

12) **Explain the various types of decision making with obstacles in group decision making.**

   Decision making is an indispensable part of management process and a manager's life is filled with making decisions. Managers see decision making as their central job because they constantly choose what is to be done, who is to do, when to do, where to do, and how to do. Looking at the role of decision making in management:

   - **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.

   **Some mental obstacles to good decision making**
   - Faulty heuristics
   - Escalation of commitment
   - Information overload

   **Some obstacles group decision making**
   - It is time consuming
   - It can stir up conflicts within the group

13) **Explain how to improve group performance. (Nov/Dec 2011)**

   - Additive tasks
   - Compensatory tasks
   - Disjunctive tasks
   - Conjunctive tasks