Test your Understanding-The Answers

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Module 1 – Project management methodology

A. Introduction to Project Management

Project Management requires the organization of three things: **(1) people**, **(2) equipment** and **(3) procedures**. Project managers are concerned with how to get a particular job done. The jobs, or projects, coordinated by project managers have set activities that are required to meet stated **(4) objectives**. The first documented Project Management techniques were in the early 1900s with the development of the **(5) GANTT** chart method. The principles of Project Management were refined further in the 1950s with the development of the **(6) Critical** Path Method (CPM) and the Program **(7) Evaluation** and **(8) Review** Technique (PERT).

B. The Phases of Project Management

Project management is characterised by four specific stages. These distinct steps are: **(1) Investigation**, Planning and **(2) Design**, (**(3) Production** and, lastly, Monitoring and **(4) Evaluation**. During the Investigation phase the initial **(5) commissioning** of the project takes place and goals and **(6) aims** are identified. At the end of this phase a project **(7) brief** is given to the project team or project manager. During the Planning and Design phase milestones and key time markers are identified to keep the project on **(8) schedule**. It is also important during this phase to break the project into tasks or activities and to define the **(9) purpose** of each. The Production phase should provide a **(10) completed** project, ready to be 'handed over' to clients. In the final phase of Project Management, the Evaluation and Monitoring phase, the **(11) success** of the project is assessed. The project is assessed based on **(12) effectiveness** and **(13) efficiency** factors.

C. Project Management Methodology questions

Q1. What is the role of a Project Manager?

A1. Project Managers concern themselves with how to get a particular job done. They organise people, equipment and procedures in an appropriate way to get a project completed in time and within budget

Q2. Why are project management techniques used by organisations?

A2. Project Management techniques ensure that organisational objectives and system objectives are met in a timely, accurate, relevant and complete way. They provide the adequate control of people, resources and procedures and clearly identify tasks that must be completed and the desired completion time.

Q3. When were the first project management techniques documented?

A3. The first documented techniques were in the early 1900s with the development of the GANTT chart method.

Q4. Project management methodology has four distinct phases. What are they?

A4. Phase 1: Investigation

Phase 2: Planning and Design

Phase 3: Production

Phases 4: Monitoring and Evaluation

Q5. What does Phase 1, the Investigation phase of project management, involve? Who undertakes this phase?

A5. This phase involves the initial commissioning of the project, the identification of initial aims and goals and investigation into the possible way the project can be completed. The Investigation phase is undertaken by top-level management or strategic planners.

Q6. List four steps in Phase 2, the Planning and Design Phase of project management.

A6. Choose from any of the following:

- Defining the exact purpose of the project and clearly defining goals
- Breaking the project into tasks or activities and defining the purpose of each
- Estimating the shortest and longest possible time required for each activity
- Identifying milestones and key time markers in the project that keep the project on schedule
- Determining the sequence of each activity and any constraints affecting the sequence
- Deciding which activities should be completed before others can commence
- Identifying activities that can be done simultaneously
- Assigning resources, people, materials and equipment to activities
- Costing of resources
- Drawing up a calendar of events

Q7. What does Phase 3, the Production Phase of project management involve?

A7. This phase involves: providing resources, completing the set activities, monitoring, controlling and recording the progress of the project on a GANTT chart, comparing current progress to the planned schedule, updating and refining the schedule as required and monitoring resources to ensure there are no problems meeting the budget.

Q8. In the Evaluation and Monitoring phase of project management what questions might a Project Manager address?

A8. The Project Manager might address issues of quality asking questions such as: How well it has the project met the objectives? Is the final quality of the product satisfactory? The Manager might also address issues of cost: Did the project stay within the budget specified? Lastly issues of time would be considered: Did the project finish on or before the specified date? Was it the shortest possible time for the project?

Module 1 – Topic - Project management tools

A. Project Management Tools

A GANTT chart displays tasks along a **(1) horizontal** time scale. GANTT charts should show the best possible way to complete the task in the **(2) shortest** time. Activities can be done in **(3) parallel** or sequentially, and the GANTT chart shows this clearly. PERT diagrams or critical path networks, on the other hand, use a graphical form to show relationships between **(4) activities** and **(5) time frame**. On a PERT diagram network **(6) diagrams** show the interdependence of events and the **(7) critical** path is used to show the sequence of events that have the sum of the longest duration. To allow for uncertainty when organizations are estimating activity times, three estimates are provided, the **(8) pessimistic** time, the most **(9) probable** time and the **(10) optimistic** time.

Module 1 – Topic - Project management Documentation

A. Documentation

Documentation is essential for the success of any **(1) information** system. It helps those that interact with the system by providing **(2) training** or acting as a reference. Documentation **(3) records** all the details that will help current developers and users plus any futures ones. The software product should be fully supported with technical documentation so that any programmer in the future can understand the process and the **(4) code** that was developed.

(5) system documentation involves developing and documenting all the process of system development and includes such things as data dictionaries, data flow diagrams and all other design documentation that occur throughout development. All equipment will be logged and all the technical parts of the system must be documented for future reference, this would include things like a network **(6) map**
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7) User documentation involves developing a set of **(8) documents** that assist the user to use the system, software or hardware being implemented. It would usually include items such as **(9) training** manuals, **(10) procedure** guides, **11) quick help** cards, frequently asked questions, etc.

(12) paper based documentation is the traditional form of user documentation.
(13) User.. manuals are the most common form of paper based documentation as they go through, in simple steps, the tasks that the end user would perform on a daily basis. However, over the last few years, **(14) online** documentation has become a popular way to give employees and/or end users the help and assistance they require.

When documenting processes it is important to identify the each user's documentation requirements. Users are normally categorised by their level of knowledge into one of three groups: **(15) novice**, **(16) intermediate** and **(17) expert** . Users can also be categorized by their level of involvement with the system into the following four groups: expert, specialists, **(18) adjunct** and **(19) incidentals**

B. Questions

Q1 Why is documentation essential to the success of any information system?

Documentation informs and explains the system. It helps those that interact with the system by providing training or acting as a reference guide

Q2 Explain at least three types of documentation

A1 System and Technical Documentation: involves developing and documenting all the processes of system development and includes such things as data dictionaries, data flow diagrams and all other design documentation that produced throughout development.

A2 User documentation: involves developing a set of documents that assist the user use the system, software or hardware being implemented. It normally consists of a set of paper-based and online facilities to train or help the user.

A3 Paper-based documentation: is the traditional form of user documentation. It consists of manuals and reference guides that are usually available in the computer section of local bookstores or libraries. It includes in-house documents. User manuals are the most common form of paper-based documentation.

A4 Online documentation: is usually a help manual in electronic form that takes advantage of hypertext and other multimedia elements.

A5 Other forms of documentation include: videos, web sites and multimedia packages that provide the end users with the help they need.

C. Fill in the documentation chart

User	Documentation required by the user
Novice	Need quick start guides, troubleshooting tips and user manuals that explain basic processes in detail
Intermediate	Need quick start guides, troubleshooting tips and user manuals that explain basic processes in detail
Expert	Need manuals with explanation of complex or advanced features

User	Define this user group and give an example of an employee with this level of involvement with the system
Experts	Support specialists, usually software or hardware technicians whose role is to maintain the system?
Specialists	These users depend on the use of information systems to do their work. They may include data entry operators, web developers and graphic designers.
Adjunct	People for whom information technology assists them in their work but is not essential. This group includes medical staff, teachers, accountants, lawyers and store managers.
Incidentals	Occasional users of an information system. Examples include a customer using a company's web-based product catalogue to order goods, accessing point-of-sale systems, or even interacting with an electronic switchboard with voicemail.

Module 2 – Topic - Project management Documentation

A. System Development Life Cycle

A. The Planning Phase

In order to define the scope of a project and to identify potential problem areas the development of any computer based information system must be carefully **(1) planned.** The planning phase normally follows a sequence of steps including recognising the **(2) problem**, setting project **(3) objectives**, conducting **(4) feasibility** studies and establishing control mechanisms.

B. The Analysis Phase

During the Analysis Phase of the SDLC existing systems are studied with the aim of designing a new or improved system. Steps involved in this phase include **(1) announcing** the project, creating a **(2) project** team, defining **(3) information** needs, defining system **(4) performance** criteria and creating a design **(5) proposal** . At the conclusion of this phase a decision must be made as to whether or not the project will **(6) proceed.**

C. The Design Phase

During the design phase the **(1) processes** and **(2) data** required by the new system are defined. During this phase it is important that a number of different **(3) alternatives** are investigated to ensure that the most efficient and effective **(4) solution** is adopted. Part of the design phase involves preparing an **(5) implementation** proposal.

D. The Implementation Phase

In the implementation phase physical and conceptual **(1) resources** required for the project are obtained. Some of the steps in this phase include preparing the **(2) physical** facilities, **(3) educating** the users/participants and **(4) cutting** over to the new system.

E. The Use/Evaluation Phase

Once the system has been **(1) implemented** the final phase in the project is the Use/Evaluation phase. During this phase the system should be in full use and meeting the **(2) objectives** that were set during the **(3) planning** phase. This phase has a number of steps including using the **(4) system**, auditing the system, and re-engineering
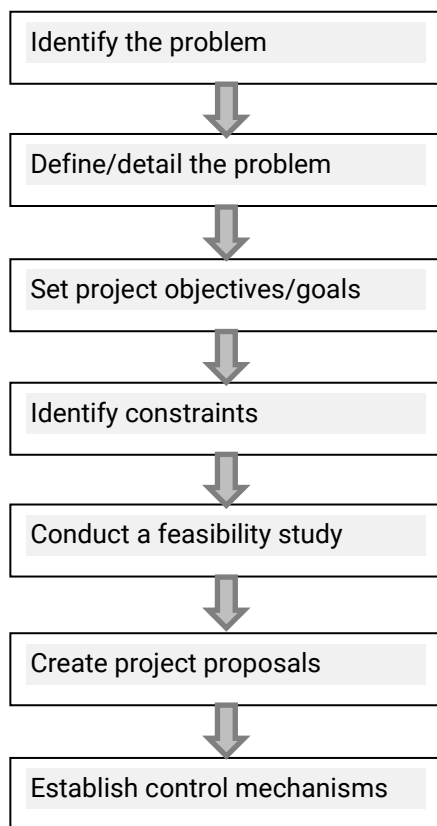**(5) proposals**.

Test your Understanding-The Answers

B. System Development Life Cycle Questions

Q1. List the five phases of the SDLC.

A1.   1. The Planning Phase
       2. The Analysis Phase
       3. The Design Phase
       4. The Implementation Phase

       5. The Use / Evaluation Phase

Q2. Make a flow chart showing the sequence of steps in the Planning Phase of the SDLC.

A2.

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┌─────────────────────────────┐
│ Identify the problem        │
└─────────────────────────────┘
               ↓
┌─────────────────────────────┐
│ Define/detail the problem   │
└─────────────────────────────┘
               ↓
┌─────────────────────────────┐
│ Set project objectives/goals│
└─────────────────────────────┘
               ↓
┌─────────────────────────────┐
│ Identify constraints        │
└─────────────────────────────┘
               ↓
┌─────────────────────────────┐
│ Conduct a feasibility study │
└─────────────────────────────┘
               ↓
┌─────────────────────────────┐
│ Create project proposals    │
└─────────────────────────────┘
               ↓
┌─────────────────────────────┐
│ Establish control mechanisms│
└─────────────────────────────┘
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Q3. During the Analysis Phase of the SDLC what must be identified in order to document what the current system does and to highlight the strengths and deficiencies in it?

A3. • sources of information
    • the types of information needed to analyse the system
    • the types of information needed to design the system
    • information flow (documented using system modelling tools)
    • problem areas in the current system

Q4. You are a manager in a company and are implanting a new information system. Who might you consult in order to perform an analysis of the current information system?

A4. In order to perform an analysis of an information system a number of people are consulted. They include: users of the information the system produces, users of the actual system, and people who support the system. This incorporates those who provide data, those who input data, those manipulate the data and those who receive data. As well as these groups it is important to consult those who own or run the organization.

Q5. In a top down approach to system design, the programmer will start by identifying the output that the system will need to produce. Why is it important to start the system development with the design of the output?

A5. In order to make the system a success it must be able to produce the outcomes that can solve the problem that has been identified. Therefore the output required needs to be outlined early in the process. Once output has been identified it places constraints on the system. While it may sound minor, the manner in which output is to be created and/or displayed is actually of great significance to the design of a computer system and therefore it must be identified as early as possible.

Q6. During the Design Phase of the SDLC what factors should a programmer consider when designing the input for the proposed information system?

A6. When designing input the programmer should: identify duplicate data, identify methods of reducing input errors, identify data validation checks and give thought to the design of the input collect screens or methods.

Q7. Implementing an information system can significantly affect the productivity and morale of employees. What steps might a company take to make this process as smooth and stress-free as possible?

A7. It is crucial that the implementation of an information system is carefully planned and that employees are informed about the nature of the changes that will be taking place. This process involves identifying where the system changes will be made, identifying the operators that will be affected by the changes, identifying equipment that is to be modified, introduced or made redundant, identifying staff training requirements and developing a timeline for the introduction of the new system. Once this has been done, an announcement of the changeover should be made to all employees. It should be announced to all staff and not just those directly affected.

Q8. There are a number of methods for 'cutting' over to a new information system. Describe the various options and the benefits of each.

A8. The 'cutover' method: involves a staggered introduction where elements of the system are introduced one at a time. This method makes it easier to ensure that the elements of the system are working as intended before the next element is introduced and allows the developers to quickly isolate problems in individual sections of the system.

Parallel systems: as the name suggests, this is where two systems (the current and the new ones) are run at the same time to perform the same job. While this duplicates the work, there are some significant advantages to this type of system. As the performance of the existing system is a known quantity, it gives the developers something to compare the performance and accuracy of the new system to.

The trial system: this is where a small version of the system is set up and trialed before the widespread introduction of the system. This trial emulates all aspects of the computer system to ensure that they work properly. It aims to reproduce as closely as possible the "real life" situation the system will be used in. Where the new system requires the old hardware and/or software to be removed, and it is not possible to have a cutover program or parallel systems, then the use of a trial system has significant benefits.

Q9. Computer based information systems need maintenance. What might this involve?

A9. Maintenance of an information system might involve software functions like the cleaning up of redundant files, compacting data files and upgrading of operating systems to hardware maintenance, such as the re-calibration of scanners.