



Ist Internal Exam 2019

BCA_III

Subject :- SAD

Time Allowed: 1:30 Hours

Max. Marks: 40

I) Very short Answer questions

2*5=10

Q1. What is system?

A system is a group of interacting or interrelated entities that form a unified whole. A system is delineated by its spatial and temporal boundaries, surrounded and influenced by its environment, described by its structure and purpose and expressed in its functioning.

Q2. define prototype ?

Prototype is a working model of software with some limited functionality. The prototype does not always hold the exact logic used in the actual software application and is an extra effort to be considered under effort estimation.

Q3. What do you mean Risk analysis?

Risk analysis is the process of identifying and analyzing potential issues that could negatively impact key business initiatives or critical projects in order to help organizations avoid or mitigate those risks

Q4. What is SDLC?

Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality softwares. ... It is also called as Software Development Process. SDLC is a framework defining tasks performed at each step in the software development process.

Q5. Write phase s of SDLC model ?

SDLC (Software Development Life Cycle) Phases, Methodologies, Process, and Models

1. Requirement Gathering and Analysis.
2. Design.
3. Implementation or Coding.
4. Testing.
5. Deployment.
6. Maintenance.

II) short Answer questions

4*4=16

Q1. Define management process ?

Management process is a process of setting goals, planning and/or controlling the organizing and leading the execution of any type of activity, such as: a project (project management process) or. a process (process management process, sometimes referred to as the process performance measurement and management system).

Q2. Write short note on class or object?

Classes and Objects are basic concepts of Object Oriented Programming which revolve around the real life entities. A class is a user defined blueprint or prototype from which objects are created. It represents the set of properties or methods that are common to all objects of one type.

Q 3.write management functions ?

1. Planning

Planning is looking ahead. According to Henri Fayol, drawing up a good plan of action is the hardest of the five functions of management. This requires an active participation of the entire organization. With respect to time and implementation, planning must be linked to and coordinated on different levels. Planning must take the organization's available resources and flexibility of personnel into consideration as this will guarantee continuity.

2. Organizing

An organization can only function well if it is well-organized. This means that there must be sufficient capital, staff and raw materials so that the organization can run smoothly and that it can build a good working structure. The organizational structure with a good division of functions and tasks is of crucial importance. When the number of functions increases, the organization will expand both horizontally and vertically. This requires a different type of leadership. Organizing is an important function of the five functions of management.

3. Commanding

When given orders and clear working instructions, employees will know exactly what is required of them. Return from all employees will be optimized if they are given concrete instructions with respect to the activities that must be carried out by them. Successful managers have integrity, communicate clearly and base their decisions on regular audits. They are capable of motivating a team and encouraging employees to take initiative.

4. Coordinating

When all activities are harmonized, the organization will function better. Positive influencing of employees behaviour is important in this. Coordination therefore aims at stimulating motivation and discipline within the group dynamics. This requires clear communication and good leadership. Only through positive employee behaviour management can the intended objectives be achieved.

Q4. Define importance of communication?

Communication is the act of one or more persons conveying information to someone else. The content of the communication can be facts, ideas, concepts, opinions, attitudes and emotions. ... Communication is very important because it's the only way we can effectively work together on anything.

Importance of Communication:

Effective communication is vital for efficient management and to improve industrial relations. In modern world the growth of telecommunication, information technology and the growing competition and complexity in

production have increased importance of communication in organisations large and small irrespective of their type and kind. A corporate executive must be in a position to communicate effectively with his superiors, colleagues in other departments and subordinates. This will make him perform well and enable him to give his hundred percent to the organisation.

The following points can illustrate the importance of communication in human resource management:

1. Base for Action:

Communication acts as a base for any action. Starting of any activity begins with communication which brings information necessary to begin with.

2. Planning Becomes Easy:

Communication facilitates planning. Planning is made easy by communication. Any type of information regarding the human resource requirement of each department of the organisation with their qualifications, the type and kinds of job etc. can be collected through communication which helps in human resource planning. Policies and programmes for their acquisition can be prepared and implemented. In the entire process communication plays a vital role, it also facilitates managerial planning of the organisation.

3. Means of Coordination:

Communication is an important tool for coordinating the efforts of various people at work in the organisation.

4. Aids in Decision-Making:

The information collected through communication aids in decision-making. Communication facilitates access to the vital information required to take decisions.

5. Provides Effective Leadership:

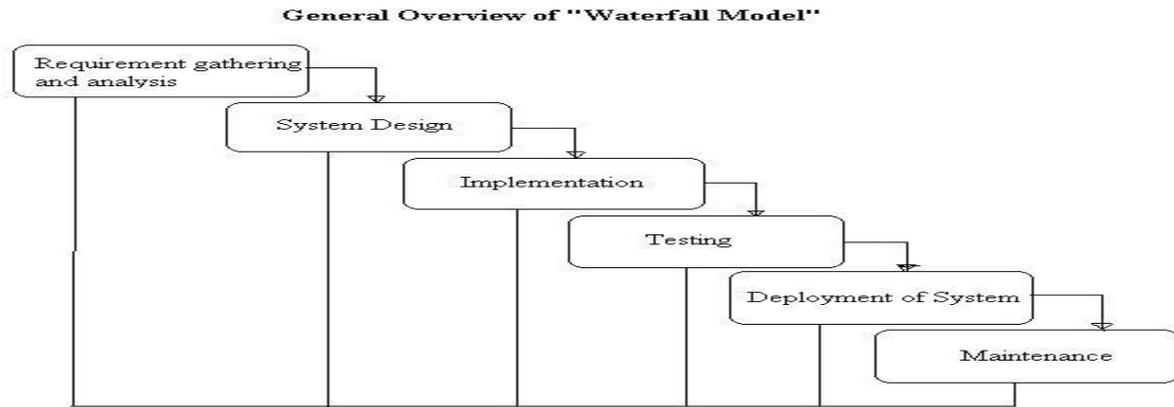
A communication skill bring manager near to his subordinates and exchange ideas and submits appropriate proposals, knows their opinions, seeks advices and make decisions. This enables a manager to win confidence of his subordinates through

constantly communicating with them and removing probable misunderstandings. In this way he leads his people to accomplish the organisational goal.

III) Long Answer questions

2*7=14

Q 1. Explain waterfall model ?



Phases of Waterfall Model in Software Engineering

There are several phases in the waterfall model. They are briefly explained below. Let us understand the concept of **Waterfall model with example** of a banking application for illustrating the topic.

Let us assume that the Citibank is planning to have a new banking application developed and they have approached your organization in the 1990's.

Requirements Gathering and Analysis

In this phase the requirements are gathered by the business analyst and they are analyzed by the team. Requirements are documented during this phase and clarifications can be sought.

The Business Analysts document the requirement based on their discussion with the customer.

Going through the requirements and analyzing them has revealed that the project team needs answers to the following questions which were not covered in the requirements document –

- Will the new banking application be used in more than one country?
- Do we have to support multiple languages?

- How many users are expected to use the application? etc

System Design

The architect and senior members of the team work on the software architecture, high level and low level design for the project.

It is decided that the banking application needs to have redundant backup and failover capabilities such that system is accessible at all times.

The architect creates the Architecture diagrams and high level / low level design documents.

Implementation

The development team works on coding the project.

They take the design documents / artifacts and ensure that their solution follows the design finalized by the architect.

Since the application is a banking application and security was a high priority in the application requirements, they implement several security checks, audit logging features in the application.

They also perform several other activities like a senior developer reviewing the other developers code for any issues. Some developers perform static analysis of the code.

Testing

The testing team tests the complete application and identifies any defects in the application.

These defects are fixed by the developers and the testing team tests the fixes to ensure that the defect is fixed.

They also perform regression testing of the application to see if any new defects were introduced.

Testers with banking domain knowledge were also hired for the project so that they could test the application based on the domain perspective.

Security testing teams were assigned to test the security of the banking application.

Deployment

The team builds and installs the application on the servers which were procured for the banking application.

Some of the high level activities include installing the OS on the servers, installing security patches, hardening the servers, installing web servers and application servers, installing the database etc.

They also co-ordinate with network and IT administrative teams etc to finally get the application up and running on the production servers.

Maintenance

During the maintenance phase, the team ensures that the application is running smoothly on the servers without any downtime.

Issues that are reported after going live are fixed by the team and tested by the testing team.

Q 2. Describe about spiral mode

Spiral model is one of the most important Software Development Life Cycle models, which provides support for **Risk Handling**. In its diagrammatic representation, it looks like a spiral with many loops. The exact number of loops of the spiral is unknown and can vary from project to project. **Each loop of the spiral is called a Phase of the software development process.** The exact number of phases needed to develop the product can be varied by the project manager depending upon the project risks. As the project manager dynamically determines the number of phases, so the project manager has an important role to develop a product using spiral model.

The functions of these four quadrants are discussed below-

1. Objectives determination and identify alternative solutions: Requirements are gathered from the customers and the objectives are identified,

elaborated and analyzed at the start of every phase. Then alternative solutions possible for the phase are proposed in this quadrant.

2. Identify and resolve Risks: During the second quadrant all the possible solutions are evaluated to select the best possible solution. Then the risks associated with that solution is identified and the risks are resolved using the best possible strategy. At the end of this quadrant, Prototype is built for the best possible solution.

3. Develop next version of the Product: During the third quadrant, the identified features are developed and verified through testing. At the end of the third quadrant, the next version of the software is available.

4 Review and plan for the next Phase: In the fourth quadrant, the Customers evaluate the so far developed version of the software. In the end, planning for the next phase is started.

