Note: Answer only Six questions.

Q1. Define (only five) of the following: GIS, Feasibility study, MIS, MTBF, Systems analyst, Coding sheet. (10 Marks)

Q2. Explain the four different types of DFD, and list only DFD symbols. (10 Marks)

Q3. What is the meaning of Information System Planning (ISP)? Explain its main components. (10 Marks)

Q4.
   a) The information systems resources and components are? (6 Marks)
   b) The Baseline Project Plan sections are? (4 Marks)

Q5.
   a) During the system implementation, there are major factors influencing likelihood of use (Implementation success factors); List them. (6 Marks)
   b) During the process of finalizing design specifications, what are the main characteristics of quality requirements? (4 Marks)

Q6. Explain the types of system maintenance, and list the factors that influence system maintainability. (10 Marks)

Q7. Define interviewing, and what are the two forms of it? List the main guidelines for effective interviewing? (10 Marks)

Good luck and wishing to success.
Q1.

**Geographic Information System (GIS):** Integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. It allows us to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts.

**Feasibility study:** A study that determines whether a requested system makes economic and operational sense for an organization.

**Management Information System (MIS):** provides information that is needed to manage organizations efficiently and effectively. Management information systems involve three primary resources people, technology, and information or decision making.

**Mean Time Between Failures (MTBF):** A measurement of error occurrences that can be tracked over time to indicate the quality of a system.

**Systems analyst:** a business professional who uses analysis and design techniques to solve business problems using information technology.

**Coding sheet:** Is an “old” tool for designing forms and reports, usually associated with text-based forms and reports for mainframe applications.

Q2.

1. **Current Physical**
   - Process labels identify technology (people or systems) used to process the data.
   - Data flows and data stores identify actual name of the physical media.

2. **Current Logical**
   - Physical aspects of system are removed as much as possible.
   - Current system is reduced to data and processes that transform them.

3. **New Logical**
   - Includes additional functions
   - Obsolete functions are removed
   - Inefficient data flows are reorganized

4. **New Physical**
   - Represents the physical implementation of the new system
DFD Symbols: Process, Data store, Source/sink, Data flow.

Q3.

Information Systems Planning (ISP): An orderly means of assessing the information needs of an organization and defining systems, databases, and technologies that will best meet those needs.

IS Plan Components:

1- Organizational mission: Briefly describe mission, objectives, and strategy of the organization.

2- Informational Inventory: Provide summary of current and future processes, functions, data entities, and information needs of the enterprise.

3- Mission and Objectives of IS: Describe primary role IS will play in the organization to transform enterprise from current to future state.

4- Constraints: Describe limitations imposed by technology and current levels of financial, technical, and personnel resources.

5- Long-term plan: Summarize overall information systems needs in the company and set long-term strategies for filling the needs.

6- Short-term plan: Show detailed inventory of present projects and systems and detailed plan for the current year.

7- Conclusions: Describe unknown but likely events that can affect the plan, presently known business change elements, and description of their impact on the plan.

Q4. A.

1. People resources:

   Users: (Accountants, Vendors, Engineers, Customers, Secretariat).

   IS Specialists: (system analysts, software developers, and system operators).

2. Hardware resources:

   Media.

   Tangible objects: (sheet of paper, magnetic or optical discs).

3. Software resources:

   Programs: operating systems
4. Data resources.

5. Network resources:
   (Internet, Internal networks, External networks)

Q4. B.
1. Introduction
2. System description
3. Feasibility assessment
4. Management issues

Q5. A.
1. Personal stake of users
2. System characteristics
3. User demographics
4. Organizational support
5. Performance
6. Satisfaction

Q5. B.
1. Complete: not missing any key description information
2. Consistent: does not conflict with other requirements
3. Modifiable: easily changed, with a history kept of changes
4. Traceable: to its original source

Q6.
Types of System Maintenance:
1. Corrective maintenance
   ➢ Changes made to a system to repair flaws in its design, coding, or implementation
2. Adaptive maintenance
Changes made to a system to evolve its functionality to changing business needs or technologies

3. Perfective maintenance
   - Changes made to a system to add new features or to improve performance

4. Preventive maintenance
   - Changes made to a system to avoid possible future problems

Factors that influence system maintainability:

1. Latent defects
2. Number of customers for a given system
3. Quality of system documentation
4. Maintenance personnel
5. Tools.
6. Well-structured programs.

Q7.

Interviewing: Dialogue with user or manager to obtain their requirements.

Two forms:

1. Open-ended: conversational, questions with no specific answers in mind
2. Closed-ended: structured, questions with limited range of possible answers

Guidelines for Effective Interviewing:

1. Plan the interview.
   a. Prepare interviewee: appointment, priming questions.
   b. Prepare agenda, checklist, and questions.
2. Listen carefully and take notes (tape record if permitted).
3. Review notes within 48 hours.
4. Be neutral.
5. Seek diverse views