K. K. Wagh Institute of Engineering Education and Research, Nashik
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Model Answer Winter 2025

Exam Seat No.:
End-Sem Examination-I — Winter 2025
Academic Year: 2025-26 — Sem: I
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Name of Course: Management Information System — Course Code: 2409516
Max. Marks: 30 — Duration: 1:15 Hrs.

Q. No.	Details	Max. Marks	CO No.	BT Level
Q.1	Define a Transaction Processing System (TPS). **Answer:** Transaction Processing System (TPS) Definition: A Transaction Processing System (TPS) is an information system that collects, processes, stores, and updates data generated from daily routine business transactions. It forms the foundation of all other information systems in an organization. Objectives of TPS: To process large volumes of transactions accurately To ensure data reliability and consistency To provide real-time information for operations To support other management information systems Features / Characteristics: High speed processing Accuracy and reliability Large data storage capability Real-time or batch processing Standardized and repetitive operations Examples of TPS:Payroll processing system Sales order processing system Banking transaction system (ATM) Billing and invoicing system Inventory transaction system Importance of TPS: Acts as the data source for MIS, DSS, and EIS Helps in smooth day-to-day operations	[3]	CO1	L1

	Improves organizational efficiency and productivity Reduces manual errors and processing time Conclusion: Transaction Processing System (TPS) is the backbone of business operations, ensuring accurate and efficient handling of			
Q.2	Describe how the Marketing and Sales functional subsystem supports an organization's goals. Answer: The Marketing and Sales functional subsystem is a part of the Management Information System (MIS) that supports activities related to marketing, selling, customer service, and market analysis. It helps the organization to promote products and increase sales effectively. Roles of the Marketing and Sales Functional Subsystem: Market Research and Customer Analysis It collects and analyzes data about customer needs, preferences, and market trends. This helps the organization to understand customer behavior and improve products and services. Sales Planning and Forecasting The system helps in predicting future sales based on past records and current market conditions. This supports planning for production, inventory, and revenue targets. Advertising and Promotion Support It supports planning and evaluation of advertising campaigns by providing information about customer responses and promotional effectiveness. Order Processing and Customer Service The subsystem manages customer orders, billing, delivery status, and after-sales services, ensuring timely and accurate order fulfillment. Sales Performance Analysis It provides reports on sales targets, sales achieved, and individual salesperson performance. This helps management in monitoring and controlling sales activities. Customer Relationship Management (CRM) It maintains customer databases and helps in building long-term relationships through better communication, feedback, and support services.	[3]	CO2	L2

	Importance: Increases sales and revenue Improves customer satisfaction Helps in better decision-making Provides competitive advantage Conclusion: The Marketing and Sales functional subsystem plays a vital role in connecting the organization with customers and ensuring growth through effective marketing strategies and efficient sales operations.			
Q.3	a) List and identify the types of Information Systems. Answer: An Information System (IS) is a set of interrelated components that collect, process, store, and distribute information to support decision-making, coordination, control, and operations in an organization. Different types of information systems are used at different levels of management. Types of Information Systems: **Transaction Processing System (TPS)** A Transaction Processing System is used to record and process daily routine business transactions accurately and quickly. It handles large volumes of data related to sales, purchases, payroll, billing, inventory, and banking operations. TPS is mainly used at the operational level of management and serves as the main source of data for other systems Examples: Payroll system ATM system Sales billing system Inventory transaction system **Management Information System (MIS)** MIS uses data from TPS and converts it into summarized reports for middle-level managers. It helps in planning, controlling, and decision-making. MIS provides periodic reports such as weekly sales reports, monthly production reports, and financial summaries Functions of MIS:	[8]	CO1	L1

Supports managerial decisions
Helps in performance monitoring
Improves coordination between departments

Decision Support System (DSS)
DSS is a computer-based system that helps managers in making semi-structured and complex decisions. It uses data, models, and analytical tools to analyze different alternatives and perform what-if analysis.

Features of DSS:

- Interactive system
- Supports decision-making
- Uses mathematical and statistical models
- Provides flexible reports

Examples:

- Stock market analysis system
- Budget planning system
- Sales forecasting system
- Executive Information System (EIS)
  EIS is designed for top-level management to support strategic decision-making. It provides summarized, graphical, and real-time information about the organization's performance.

Features of EIS:

- Easy to use
- Provides dashboards and charts
- Supports drill-down facility
- Focuses on long-term planning

Examples

CEO performance dashboard
Corporate strategy monitoring system

Office Information System (OIS)
OIS supports day-to-day office activities and communication within the organization. It improves office productivity and efficiency

Examples:Word processing

Email systems

Spreadsheets

Document management systems

Professional Information System (PIS)
PIS is used by professionals such as engineers, doctors, architects, and scientists to support their specialized work.

Examples:

- Computer-Aided Design (CAD)
- Medical diagnosis system
- Scientific research software

Expert System (ES)
An Expert System is a computer-based system that imitates the decision-making ability of a human expert. It uses knowledge and rules to solve complex problems.

Components of Expert System:

- Knowledge base
- Inference engine
- User interface

Applications of Expert System:

- Medical diagnosis
- Loan approval
- Fault detection
- Legal advice

Importance of Information Systems:

- Improves efficiency and productivity
- Supports accurate decision-making
- Enhances coordination and control
- Provides competitive advantage
- Reduces manual work and errors

Conclusion:
Different types of information systems perform different roles at various levels of management. Together, they help an organization to operate smoothly, make better decisions, and achieve its business goals effectively

OR

b) State Functions of Management with suitable examples**.**
Answer:

	Management is the process of planning, organizing, staffing, directing, and controlling the efforts of organizational members and the use of resources to achieve organizational goals efficiently and effectively. The main functions of management are as follows: **Planning** Planning is the first and most important function of management. It involves setting objectives and deciding in advance the actions to be taken to achieve those objectives. It includes forecasting, setting goals, and preparing policies and plans. Example: A production manager plans the number of units to be produced next month based on market demand. **Organizing** Organizing involves arranging tasks, allocating resources, and assigning responsibilities to achieve planned objectives. It includes creating departments and defining authority and responsibility relationships. Example: A company divides its operations into departments such as production, marketing, finance, and human resources and assigns managers to each department. **Staffing** Staffing is concerned with recruiting, selecting, training, and developing employees for various positions in the organization. It ensures that the right person is placed in the right job. Example: A company hires new sales executives and provides training to improve their selling skills **Directing** Directing involves guiding, motivating, leading, and supervising employees to achieve organizational goals. It ensures that employees work efficiently and willingly. Example: A manager motivates employees through incentives and gives instructions to complete work on time. **Controlling** Controlling is the process of measuring actual performance, comparing it with planned standards, finding deviations, and			

	taking corrective action to ensure that goals are achieved Example: A sales manager compares actual sales with target sales and takes corrective steps if sales are lower than expected. Importance of Functions of Management: • Helps in achieving organizational goals • Improves efficiency and productivity • Ensures proper utilization of resources • Maintains coordination among departments • Helps in effective decision-making Conclusion: The functions of management are closely related and interdependent. All the functions work together to ensure that the organization operates smoothly and achieves its objectives successfully.			
Q.4	a) Explain the different types of planning. (8 Marks) Answer: Planning is the primary function of management that involves setting objectives, defining strategies, and determining the actions required to achieve organizational goals**.** In a large manufacturing organization, planning ensures smooth operations, optimum use of resources, and timely achievement of targets. Types of Planning in a Large Manufacturing Organization **Strategic Planning** Long-term planning (typically 3–5 years or more) Focuses on organizational goals, growth, and overall direction Decisions are made by **top management** **Example:** Planning to expand production capacity or enter new markets. **Tactical Planning** Medium-term planning (1–3 years) Focuses on implementation of strategic plans Decisions are made by **middle management** **Example:** Planning monthly production schedules, inventory procurement, or marketing campaigns.	[8]	CO2	L2

Operational Planning

Short-term planning (daily, weekly, monthly)

Focuses on routine activities and processes

Decisions are made by **lower-level managers and supervisors**
Example: Scheduling daily work for production lines, assigning tasks to workers.

Contingency Planning

Planning for unforeseen events or emergencies

Ensures preparedness for risks like machine breakdown, supply shortage, or labor strikes
Example: Maintaining backup suppliers or standby machinery.

Financial Planning

Planning related to budgets, costs, and investment of funds

Ensures proper allocation of financial resources
Example: Allocating funds for purchasing raw materials or upgrading machinery.

Production Planning

Focuses on optimizing manufacturing processes

Ensures that the right quantity of products is produced at the right time
Example: Planning production based on demand forecasts and resource availability.

Importance of Planning in Manufacturing:

- Reduces uncertainty in operations
- Ensures effective utilization of resources
- Improves coordination between departments
- Helps in achieving organizational goals on time
- Enables quick response to market changes

Conclusion:
Different types of planning—strategic, tactical, operational, contingency, financial, and production—work together in a large

manufacturing organization to ensure **smooth operations, efficient resource use, and achievement of objectives**.

OR

b) Compare the traditional and current planning approaches used in a modern IT-based company. (8 Marks)

Answer:

Planning is a managerial function that involves **setting objectives and determining the best course of action** to achieve organizational goals. In modern IT-based companies, planning can follow either **traditional approaches** or **current (modern) approaches** depending on the business environment.

Aspect	Traditional Planning	Current (Modern) Planning
Time Horizon	Long-term and fixed; plans are usually rigid	Flexible and adaptive; short-term and long-term plans coexist
Decision-Making	Centralized; decisions taken by top management	Decentralized; employees at all levels contribute to planning
Assumptions	Assumes stable market conditions and predictable environment	Assumes dynamic market, uncertainty, and rapid technological changes
Flexibility	Low; difficult to adapt to changes	High; allows modifications based on real-time data
Tools & Techniques	Manual or basic computerized methods	Advanced IT tools, ERP systems, real-time analytics, and AI-based forecasting
Focus	Efficiency and routine operations	Innovation, competitiveness, and strategic growth
Examples in IT Companies	Fixed annual budget and project plan	Agile project management, continuous updates in software

	releases **Conclusion:** While traditional planning provides stability, modern IT-based companies benefit from **flexible, adaptive, and technology-driven planning approaches** that allow them to respond effectively to a rapidly changing environment.			
Q.5	**a)** Use the components and architecture of DSS to support managerial decision-making in an enterprise. **Answer:** A **Decision Support System (DSS)** is a computer-based information system that helps managers in making **semi-structured and unstructured decisions** by providing relevant data, models, and analytical tools. DSS enables better decision-making by supporting problem-solving, analysis, and evaluation of alternatives. Components of DSS: **Database Management System (DBMS)** Stores internal and external data relevant to decision-making. Provides fast access to historical and current data. **Example:** Sales records, customer feedback, inventory levels. **Model Base Management System (MBMS)** Contains mathematical and analytical models to process data. Supports what-if analysis, forecasting, and optimization. **Example:** Profit forecasting models, inventory optimization models. **User Interface** Provides an interactive platform for managers to query, analyze, and visualize data. Ensures easy access and interpretation of information. **Example:** Dashboards, graphs, charts.	[8]	CO3	L3

Knowledge Base (Optional)

Stores rules, procedures, and best practices for decision-making.

Helps managers apply prior experience to new problems.

Architecture of DSS:

Data Layer – Includes all relevant internal and external data sources.

Model Layer – Provides analytical tools and models for decision-making.

User Interface Layer – Allows interaction between managers and the system.

Integration Layer – Connects databases, models, and external information systems for seamless operation

Supporting Managerial Decision-Making:

Problem Identification: DSS helps managers recognize key issues and trends.

Data Analysis: Managers can analyze large volumes of data quickly using DSS.

Alternative Evaluation: DSS allows testing of different strategies through models and simulations.

Decision Implementation: Provides recommendations or insights for executing decisions.

Monitoring & Feedback: DSS tracks results and updates data for future decisions.

Example:
In a retail company, a DSS can help a manager decide on **stock levels** by analyzing past sales, seasonal trends, and supplier performance.

OR
b) Illustrate the characteristics and techniques of Group Decision Making in an organizational setting.
Answer:

Group Decision Making (GDM) is the process of **making decisions collectively by a group of people** rather than individually. It is commonly used in organizations to **leverage diverse expertise, knowledge, and perspectives** for better decision outcomes.

Characteristics of Group Decision Making:

Collective Effort

Decisions are made collectively by a team rather than a single individual.

Promotes participation and shared responsibility.

Diversity of Ideas

Team members contribute different experiences, knowledge, and viewpoints.

Encourages creativity and innovative solutions.

Interaction and Communication

Continuous discussion, debate, and information sharing among members.

Enhances understanding and consensus building.

Structured or Unstructured Process

Can follow formal procedures (meetings, voting) or informal discussions.

Decision Rules and Consensus

Groups often use majority voting, consensus, or expert opinion to finalize decisions.

Techniques of Group Decision Making:

Brainstorming

Encourages team members to generate as many ideas as possible without criticism.

Helps in creative problem-solving.

	Nominal Group Technique (NGT) Team members individually write ideas, discuss them, and then rank the solutions. Reduces dominance of outspoken members and ensures equal participation. **Delphi Technique** Experts provide inputs independently through questionnaires. Responses are aggregated and shared with the group until consensus is reached. **Multi-Voting** Members vote on multiple options to prioritize or select the best solution. **Consensus Mapping** Visual tools like decision trees or charts are used to illustrate options and outcomes. Application in Organizational Setting: **Example:** In a software company, a group of managers and developers collectively decide on the features of a new product using brainstorming and consensus techniques. **Outcome:** Better decision quality, reduced risks, and enhanced acceptance of decisions by all stakeholders. **Conclusion:** Group Decision Making combines diverse expertise, structured techniques, and collaborative effort to achieve **better, more informed, and widely accepted decisions** in an organizational setting.			