

Exam.	Regular		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	IV / II	Time	3 hrs.

Subject: - Information Systems (CT751)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt **All** questions.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.

1. Some people say, 'Information is always costlier than hardware'. Do you agree or disagree? In any case justify your argument, providing some relevant example too. [8]
2. What do you mean by extended validation? How can you recognize websites using EV and SSL certificates? [3+5]
3. What are typical characteristics that a systems designer has to look for in any Enterprise management system? Write in detail with the three different system references of ERP, SCM and CRM. [8]
4. What do you mean by data mining? How it is related to dataware house? Differentiate OLAP and OLTP. [2+2+4]
5. The famous bank in town, Chuchche Bank, has DSS built onto the FMS, which automatically estimates the cash amount required for next day to get from central treasury for every branch of the bank, during the end-of-day processing. Present the design and DFDs of such DDS in detail. Clearly state the assumptions that you are going to make on the availability of data and other constraints, first. [10]
6. Explain Change Management. What are different change management tactics that is to be applied during execution of change management? [3+5]
7. Prepare a brief note on 'cloud computing' with clear statements on associated technologies, their types and various issues. [6]
8. Discuss about Tactical operational Information Systems and Strategic. [8]
9. Write short notes on the followings: [4×4]
 - a) Big-data processing using Hadoop system
 - b) Collective intelligence through social-network
 - c) Link analysis as web structure mining
 - d) Critical success factors of IS

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1. What is an Information System? Explain the different types of information system that support business operations and managerial decision making. [2+6]
2. Describe the role of security audit for information system. What are the necessary protocols to ensure the stringent security for modern information system? [4+4]
3. Explain in detail about Enterprise management system (EMS) with practical example. What are the benefit using EMS? [6+2]
4. Differentiate between OLTP and OLAP. Explain the use of Intelligent Agents for Contemporary Information System. [4+4]
5. What are the elements of IS planning? Explain with example if the strategic IS planning of an organization. [3+5]
6. What is critical success factors? Explain with example. What are the factor one needs to take for successful change management in an organization? [4+4]
7. Explain the importance of web mining and its types. [5]
8. What do you mean by cold start problem in collaborative filtering? Explain with example. [5]
9. Explain link analysis for the web based environment with example. [6]
10. Differentiate between Map reduce and Hadoop systems. Explain the process of Information Retrival in detail with example. [4+4]
11. Explain about cloud computing and its associated technologies. Discuss different types of cloud computing. [4+4]

Exam.	New Back (2066 & Later Batch)		
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1. Explain Information System Architecture. List different types of Information System? [3+3]
2. What do you mean by security? Why do we need a layered approach to managing security? Is it desirable / possible to have less secured system and still have high throughput and performance? Explain. [2+2+4]
3. Suppose you are assigned for the customer relationship management job of an online shop that does not have any physical store. What will be your plans to convert and retain your customers? [8]
4. Prepare a note on intelligent agents with listing of minimum requirement versus the specific requirements to be called in as intelligent agent for any software code piece. Justify your answer with sample example. [5+5]
5. What is change management in the context of any IS implementation? How closely it is associated and CMMI concepts and with Configuration Management Database (CMDB) functionalities? [8]
6. What is recommender system? What specifics are required to transform a generic recommender system into a personalized recommender system? Illustrate with specific examples. [5+5]
7. Why Information Retrieval (IR) is considered as important in cloud unlike less important in other standalone and local IS? Justify your answer with IR scopes and significance in within these two types of settings. [5+5]
8. Compare the followings. [2×4]
 - a) General collaborative filtering Vs One-class Collaborative filtering
 - b) GFS Vs HDFS and their corresponding architecture
9. Write short notes on: [3×4]
 - a) Link Analysis
 - b) GDSS
 - c) SCM

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1. Why do we need Information Systems? Explain the relationship between balanced scorecard and Information System. [3+3]
2. What do you mean by the Information Systems audit? Explain the purpose of various Computer Assisted Auditing Techniques and Tools. [10]
3. Please explain about the Enterprise Resource Planning (ERP), Business Value of ERP, Benefits of ERP and the Causes of ERP Failures in detail. [6]
4. What is knowledge management (KM)? Illustrate KM significance with data-knowledge hierarchy triangle and associated components. [5+5]
5. What are the critical success factors of an IS implementation and operation? Relate your answer with any IS exposure that you have, OR you would like to see in any lousy processing currently you are facing these days! [8]
6. What is collaborative filtering? What specifics are there in one class versus multi-class collaborative filtering? Explain with specific examples. [5+5]
7. What makes the Map Reduce as the defacto standard of scalable filing system? How closely Map Reduce is associated with GFS and HDFS? Explain in brief. [5+5]
8. Compare the followings: [2×4]
 - a) Text mining Vs Web uses mining
 - b) Link analysis in web Vs Link analysis in cloud
9. Write short notes on: [3×4]
 - a) Enterprise Resource Planning
 - b) Differentiate OLTP and OLAP
 - c) Next Generation Balanced Scorecard

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1.
 - a. Define Information System. What are different quality requirements that an information system should possess? [4]
 - b. Discuss different classification of information system with regard to different level of management? Provide suitable examples to support your answer. [4]
 2.
 - a. Define physical and logical security that can be applied in information systems. What are key threats and vulnerabilities against with any information systems should be protected? What are different controls/measures that can be applied to protect information system against such threats? [2+4+4]
 - b. How do you define cyber crime and theft of intellectual property rights? Discuss with suitable cases. [4]
 3.
 - a. What do you understand by an Enterprise Systems? Discuss the architecture of Enterprise systems. What reason do you think that organizations are motivated to establish enterprise systems? [4]
 - b. What is the use of CRM systems in enterprise? Discuss key feature and functionality of a CRM system. [4]
 4.
 - a. How do you differentiate between MIS and DSS systems with respect to the information they present to users and the way information are processed? [4]
 - b. What do you mean by a Data Warehouse? Why is it required? Discuss how Data Warehouse is related to Data Mining with a suitable diagram. [4]
 - c. Discuss four different areas of information systems that use artificial intelligence and related techniques. [4]
 5.
 - a. What do you mean by a strategic information system? What are different benefits of using strategic information systems? [5]
 - b. What do you understand by balanced score card (BSC) approach? Discuss the importance of BSC for managing IS implementations. [5]
 6.
 - a. What is a web? How is it organized? Discuss the working method of search engine with respect to the structure of the web? [5]
 - b. What do you mean by a collaborative filtering? Discuss the concept of collaborative filtering with suitable practical example. [5]
 - c. What do you understand by a web mining? Discuss web mining with regard to content, usage and structure mining. [4]
 7.
 - a. What are different issues that should be taken into consideration while choosing cloud as information system platform? [5]
 - b. What are different techniques and methods developed to handle voluminous data? Discuss two of such techniques [5]
 - c. What are the key challenges in handling the voluminous data in the cloud architecture? [4]

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1. Define Information System. Explain the types of IS used in an organization. [2+6]
2. Explain SSL Certificates for client server connections over the web. What do you mean by Extended Validation? [6+4]
3. What is an Information Audit? What benefits will you obtain after going through Information Audit? [1+3]
4. What do you understand by Enterprise Systems? Discuss the architecture of Enterprise Systems. For what reason do you think that organizations are motivated to establish enterprise systems? [2+3+3]
5. Describe the role of Analytical Modeling in DSS. What are the differences between Management Information System (MIS) and Executive Support System (ESS)? [5+3]
6. Differentiate between OLTP and OLAP. [4]
7. Why IS planning is needed for an organization. Explain Strategic Information System. [3+2]
8. Why change management is considered as important activity during Information Systems implementation? Discuss different change management practices which should be practiced during implementations. [5]
9. Describe Link Analysis for the web based environment. What is PageRank? What do you mean by cold start problem in Collaborative Filtering? [4+3+3]
10. What do you mean by Collective Intelligence? [4]
11. Discuss cloud computing technology and their types. [8]
12. Differentiate between Mapredure and Hadoop Systems. [6]

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- 1) What is an information system? How is it different from Information technology?
Discuss different components of information system? [2+2+2]
- 2) Discuss standard user interface in terms of parts of information system? What are different considerations while designing user interface for an information system. [3+3]
- 3) Feasibility analysis is termed as an important activity during information system selection. Discuss different 'tests' that has to be taken care of during feasibility analysis. Explain the tests using an example situation of information system selection [3+3]
- 4) Why do you think that selection of computer hardware for any kind of information system is an important decision for any organization? Discuss different factors that an organization should consider during hardware selection for information system. [3+3]
- 5) What is meant by conceptual design of Information System? Discuss various steps involved in the conceptual design of a system. [2+4]
- 6) What do you understand by system implementation? Discuss different steps in system implementation along with different approaches in system conversion. [3+3]
- 7) Discuss the characteristics of a Geographic Information System (GIS)? Discuss at least five different uses of (GIS) for scientific/business purpose. [3+3]
- 8) What are different types of information systems? Differentiate the characteristics of a Management Information System (MIS) and Decision support system (DSS). [4+2]
- 9) What do you mean by Data Mining? How is it related to Data Ware house? Discuss the process of generating business knowledge using data mining techniques [2+2+2]
- 10) Discuss how of Internet, Intranet and Extranet technologies are being massively used by the organizations in the 21st century to operate their business and gain competitive edge in terms of managing their customers, employees and partners. Provide suitable example. [6]
- 11) Plan an information system for a marketing company that has one head office and ten branches. Discuss different information system components required for the setup (hardware, system software, communication network, outsources services and any third party software). Provide the detail specification for each of the Information System components required for the setup. Also make a top level diagram of the entire setup. [12]
- 12) Write short notes on any Four [2×4]
 - a. System operations and maintenance stage
 - b. Human Resource Information System
 - c. Check List methodology for system design
 - d. Structured design

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1. What are the things to be considered while implementing information system? Explain. [10]
2. Explain multi protocol networks with its special features. [10]
3. Enumerate constraints faced during conceptual and detailed design. [10]
4. Discuss various implementation alternatives and how do you evaluate the implemented system. [10]
5. Differentiate between MIS and Expert system with example. [10]
6. Explain the application generator with suitable diagram. [10]
7. Write short notes on: [5×4]
 - a) Email
 - b) Checklist oriented methodology
 - c) ISP
 - d) Decision support system

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1. Where are the various analysis to be carried out while executive feasibility analysis in information system. At what stages these exercises are carried out?
 2. Why geographical information system (GIS) is necessary? Explain different components of GIS. Explain with some case studies.
 3. Describe work group, Executive support system and Decision Support System. Briefly explain how internet based enterprise and global electronic commerce systems are revolutionizing the operation and management of today's business enterprises.
 4. Write short notes on:
 - a) Multi Protocol Networks
 - b) IS for Marketing
 - c) Process Oriented Methodology
 5. Describe internet and intranet. Give examples of several ways in which companies are using the internet and intranet for business applications.

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1. Identify and give examples of several major ways that enterprises are using internet and intranet for business applications? List power of GIS and example of powerful applications of GIS.
 2. What is transaction processing system? What is the difference between management information system and expert system?
 3. Explain expert system and its use in solving business applications. Explain how data warehousing and data mining tools are used in expert system for business applications.
 4. Describe the details, which need to be addressed for effective communication between human and computer while designing standard use interfaces.
 5. Explain multi protocol techniques. What are the features of multi protocol? What are the issues to be focused on communication media for any organization?
 6. Write short notes on: (any four)
 - a) Multi protocol network
 - b) GIS application in business
 - c) IS for marketing
 - d) IS for inventory control
 - e) Process oriented methodology

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1. Describe intranet. Identify and give examples of several major ways that comprises are using the Internet and Intranet for business applications? [11]
2. Explain groupware tools for electronic communications, conferencing and work group management. Give examples of how they can enhance the collaborations of teams and work group in a business enterprise. [11]
3. Explain Decision Support System (DSS). How it differs from Management Information System? Explain how Data Warehousing and Data Mining tools can be used for DSS applications. [11]
4. Briefly describe all activities to be carried in problem definition and feasibility analysis. Also explain why it is important to carry out such analysis. What should be the background of the experts who carry out such analysis? [11]
5. What is Transaction Process system? What is the basic difference between Management Information System and Expert System? [11]
6. What do you understand by documentation? Why it is an essential part of the system specially from the angle of Software Quality Control process. [11]
7. Write notes on following (any four): [3.5×4]
 - a) Multi Protocol Networks
 - b) GIS Application in Business
 - c) IS for Marketing
 - d) IS for Inventory Control
 - e) Process Oriented Methodology
