



PRAHLADRAI DALMIA LIONS COLLEGE  
OF COMMERCE & ECONOMICS

ISO 9001: 2015 Certified

**NOTICE**

Date: 26/03/2024





**B.Sc. (Information Technology)**

**ATKT Internal/Practical Examination April' 2024  
Semester VI**

**INSTRUCTIONS FOR THE STUDENTS HAVING ATKT IN INTERNALS /  
PRACTICALS**

1. The viva voce will be conducted offline.
2. Date of Submission of the Project 2nd April, 2024 at 11.00 A.M. in the computer lab.
3. Students must write their Internal/practical ATKT project in their own handwriting on A4 size foolscap paper. On top of every page a student has to write his/her Complete Name, Program (Dept.), Semester, Roll no., Class and Contact No.
4. Student has to attach a photocopy of questions allotted to him/her along with his answers.
5. Students have to attach an ATKT fee payment receipt along with his/her project.
6. On the date of submission, there will be a viva voce for which the student has to present himself/herself, failing which he/she will be marked absent.
7. Submissions after the above mentioned date and time will not be accepted and entertained under any circumstances.

Note: For any query mail to: [bscit@dalmialionscollege.ac.in](mailto:bscit@dalmialionscollege.ac.in)

			
<b><u>Ms. Rupali Mishra</u></b>	<b><u>CA. Durgesh Kenkre</u></b>	<b><u>Ms. Subhashini Naikar</u></b>	<b><u>Prof. (Dr.) D. N. Ganjewar</u></b>
<b><u>(Coordinator - BSc IT)</u></b>	<b><u>Exam Convener</u></b>	<b><u>Vice- Principal, SFC</u></b>	<b><u>(Principal)</u></b>

**DI/R-IPS/EXAM/00**



# PRAHLADRAI DALMIA LIONS COLLEGE OF COMMERCE & ECONOMICS

ISO 9001: 2015 Certified

## **NOTICE**

### **Semester VI (Internal Exam)**

#### **SUBJECT : SOFTWARE QUALITY ASSURANCE**

**TIWARI PRAFUL JITENDRA**

1. Explain how applying principles from a specific management framework can improve the software development process. Highlight the role of continuous improvement and cultural changes in producing superior software products, including an example of a principle in action.
2. Discuss the structure and foundational supports of a system used to manage quality in software development. Emphasize the impact of organizational culture and customer orientation on software quality and productivity.
3. Describe the essential steps in testing software and the importance of a strategic approach to testing for enhancing team efficiency. Address common misconceptions about testing and propose solutions to overcome these challenges.
4. Compare two specific techniques used in unit testing, providing examples of their application to a software function. Offer guidelines for effectively utilizing these techniques.
5. Outline the various levels of testing throughout the software development lifecycle and their contribution to software quality. Additionally, focus on one type of specialized testing, explaining its importance and how it would be applied in a software project.

#### **SUBJECT : SECURITY IN COMPUTING**

**TIWARI PRAFUL JITENDRA**

1. Discuss the role of the CIA Triad in secure design principles. How do these principles guide the development of a comprehensive security strategy, and how can they be applied to mitigate risks associated with modern storage solutions?
2. Explain the difference between symmetric-key and public-key cryptography, including the advantages and disadvantages of each. How does Public Key Infrastructure (PKI) enhance the security of digital communications?
3. Describe the core functions of firewalls and their evolution over time. How have additional capabilities been integrated into modern firewalls to address emerging threats, and what considerations should be taken into account when designing a firewall strategy?
4. Outline the key features of Intrusion Detection Systems (IDS) and Security Information and Event Management (SIEM) tools. How do these systems contribute to an organization's overall security posture, and what are the deployment considerations for each?
5. Analyze the importance of secure application design in the context of the Secure Development Lifecycle. Discuss best practices for web application security and how they address common vulnerabilities to ensure the protection of sensitive data.



# PRAHLADRAI DALMIA LIONS COLLEGE OF COMMERCE & ECONOMICS

ISO 9001: 2015 Certified

## **NOTICE**

### **SUBJECT : BUSINESS INTELLIGENCE**

**TIWARI PRAFUL JITENDRA**

1. Discuss the significance of business intelligence (BI) in contemporary business decision-making. How do ethical considerations influence the deployment and use of BI systems in organizations?
2. Define decision support systems (DSS) and explain how they have evolved alongside information systems. Describe the typical components of a DSS and how it aids in decision-making processes.
3. Explain the structure and development process of mathematical models for decision-making. How do different classes of models cater to various decision-making scenarios in business?
4. Describe the data mining process and its importance in extracting meaningful insights from large datasets. How do representation of input data and analysis methodologies impact the outcomes of data mining?
5. Compare and contrast Bayesian methods, logistic regression, neural networks, and support vector machines as techniques for classification in data analysis. Discuss the application of each method in solving business intelligence problems.

### **SUBJECT : PRINCIPLES OF GIS**

**TIWARI PRAFUL JITENDRA**

1. Describe the relationship between GIS, GISystems, GIScience, and GIApplications. How do spatial data and geoinformation serve as the foundation for these components, and what are some fundamental observations about the nature of GIS?
2. Explain the concept of models and modeling in representing the real world within GIS. Discuss the roles of maps and spatial databases in this context and how they contribute to spatial analysis.
3. Discuss the importance of spatial referencing and positioning in GIS. How do coordinate systems, map projections, and satellite-based positioning technologies like GPS contribute to the accuracy and utility of spatial data?
4. Outline the stages of spatial data handling in GIS. From data capture and preparation through to storage, query, analysis, and presentation, describe how each stage contributes to effective spatial data management.
5. Compare and contrast vector and raster overlay operators in GIS. Provide examples of how each can be used in spatial analysis and discuss the implications of error propagation in spatial data processing.



**PRAHLADRAI DALMIA LIONS COLLEGE  
OF COMMERCE & ECONOMICS**

ISO 9001: 2015 Certified

**NOTICE**

**SUBJECT : CYBER LAWS**

**PRAFUL TIWARI**

1. Critically analyze the provision of arrest without a warrant under Section 80 of the IT Act, 2000. Discuss the balance between the necessity of empowering law enforcement to act swiftly against cyber crimes and the potential for misuse leading to arbitrary arrests. How do checks and balances play a role in this context?
2. Explain the concept of "cyber crime" as defined under the IT Act, 2000, and enumerate the types of offenses that fall under this category. Discuss the challenges that the digital age poses to traditional legal frameworks in addressing cyber crimes and the strategies proposed to combat these offenses effectively.
3. Discuss the legal challenges and implications of forming contracts in the cyber world, especially focusing on click-wrap and shrink-wrap contracts. How does the Indian Contract Act, 1872, accommodate or fail to accommodate the unique aspects of contract formation on the Internet?
4. Examine the concept of copyright infringement in the digital realm, specifically focusing on the challenges posed by activities like meta-tagging, hyperlinking, and the use of digital platforms such as Napster. How do international legal developments, especially in the US, influence copyright enforcement against ISPs and content distributors?
5. Analyze the protection offered to cyber consumers under the Indian Consumer Protection Act. Discuss whether digital goods and services are adequately covered under the current legislation, and the jurisdictional challenges that arise when goods or services are provided by entities based in foreign lands to consumers in India.



**NOTICE**

**Semester V (Practical Exam)**

**SUBJECT : PRINCIPLES OF GIS(PRACTICAL)**

**PRAFUL TIWARI**

1. Develop a project aimed at supporting city expansion while considering existing amenities and environmental conservation. Outline your approach to collecting and analyzing spatial data to identify suitable areas for residential development. Detail the analysis methods and how you would communicate your findings to the planning authorities.
2. Perform an analysis to evaluate the environmental impacts of introducing a new industrial zone near a water body. Describe the tools and data types you would use to assess effects on flora, fauna, and water quality. Explain the process of overlaying spatial data to evaluate risks and how you would present these potential impacts to involved parties.
3. Create a plan for a system that improves disaster readiness and response in an area frequently affected by severe weather. Discuss how you would integrate real-time positioning data with a comprehensive spatial database to manage resources effectively. Describe the decision-making process during a crisis, including how to use the system for emergency services coordination and public communication.

**PRAFUL TIWARI - SIC - PRACTICAL**

1. For a medium-sized business, create a comprehensive plan focusing on secure network architecture. Your proposal should include the selection and deployment of firewalls and other critical network devices, the establishment of trust zones, and strategies to secure wireless communications, along with ways to counteract prevalent wireless threats.
2. Propose an encryption strategy for an organization handling sensitive information. Detail the application of symmetric and asymmetric encryption methods, the role of a Public Key Infrastructure (PKI) in managing encryption keys, and approaches for safeguarding data at rest. Furthermore, discuss the implementation of robust database security measures, encompassing backup and recovery procedures.
3. Outline the process for constructing a web application with security as a foundational element, adhering to established secure development practices. Describe essential security measures to mitigate common online threats, techniques for ensuring secure remote administration, and methods to secure client-side interactions to protect user data.

**SUBJECT : BUSINESS INTELLIGENCE - PRACTICAL**



# PRAHLADRAI DALMIA LIONS COLLEGE OF COMMERCE & ECONOMICS

ISO 9001: 2015 Certified

## **NOTICE**

### **TIWARI PRAFUL JITENDRA -**

1. Outline the steps for creating a system aimed at helping a retail business optimize its inventory levels based on past sales data. Discuss how you would incorporate decision-making processes and utilize insights from historical data to guide these decisions.
2. Propose a project that uses data analysis techniques to uncover patterns of customer attrition for a company in the telecommunications sector. Describe the initial data preparation, the analytical method to be applied, and the approach for model evaluation.
3. Design a strategy for managing and leveraging knowledge within a software development company to enhance organizational learning and innovation. Detail the activities involved, the technologies to be deployed, and the roles of team members in this strategy.

### **SINGH ABHISHEK KUMAR DHARMENDRA**

1. Develop a model for a manufacturing company to enhance its supply chain efficiency, incorporating logistical and production elements. Explain the mathematical model's framework and how decision-making is supported by analytical insights.
2. Describe a method for segmenting the market for an e-commerce business using data grouping techniques. Discuss the data preparation and validation process, the chosen method for grouping, and how the effectiveness of this segmentation will be assessed.
3. Create a plan for an advisory system in the financial services industry that offers investment advice. Outline the use of artificial intelligence principles, the architecture of the system, and the knowledge engineering process needed for its development.



**PRAHLADRAI DALMIA LIONS COLLEGE  
OF COMMERCE & ECONOMICS**

ISO 9001: 2015 Certified

**NOTICE**

**SUBJECT : ADVANCED MOBILE PROGRAMMING (PRACTICAL)**

**PRAFUL TIWARI**

1. Design and implement an application that features user registration and login functionalities across multiple screens. Users should be able to input their personal information on one screen to register and then use another screen to log in with their credentials. Detail the navigation between these screens using intents and explain how you handle transitions and data passing in the application lifecycle.
2. Create an application that displays a customizable list of items, each with an image and text, stored in a local database. Outline the process for setting up the database, populating it with data, and connecting it to the UI using a custom adapter. Include functionalities to add new items to the database and delete existing ones through the UI.
3. Develop a basic application that fetches and displays data from a web service based on user input. The app should allow users to enter a specific query, retrieve data in JSON format from an online API, and then display the results in a user-friendly format. Discuss the handling of network requests, JSON parsing, and the management of app permissions needed for accessing the internet.