PRAHLADRAI DALMIA LIONS COLLEGE OF COMMERCE & ECONOMICS
ISO 9001: 2015 Certified

<u>NOTICE</u>

24th February, 2025

ATKT Internal and Practical Examination
B.Sc.I.T. (SEMESTER-V)

<u>INSTRUCTIONS FOR THE STUDENTS HAVING ATKT IN INTERNALS</u>

1. Date of Submission of the Assignments-03 March, 2025
2. Timings 11:00 AM to 12:00 Noon. Reporting time for students: at least 10 minutes before the mentioned time. Venue: Computer Lab.
3. Students have to be present in person for the submission.
4. Submission of assignments to be done on proper A4 size paper, handwritten by the candidate himself only. The Front page should contain details of Roll no, Name of the student, Semester, Subject.
5. Print out of the questions uploaded should be attached along with the assignment.
    Students should enclose a photocopy of the ATKT fee paid receipt along with each of his projects.
6. On the date of submission there will be a viva voce on the given questions/topics.
7. If the student fails to present himself on the given date and time he will be marked ABSENT for the said subject.
8. Any Submissions after the above mentioned date and time will not be accepted and entertained under any circumstances.
    NOTE - Student who has paid ATKT fees for internal components but has not been allotted questions or has any query is requested to contact Dr. Rupali Mishra on or before, 28th February 2025 by mailing on bscit@dalmialionscollege.ac.in

Dr. Rupali Mishra   **CA. Durgesh Kenkre**   **Ms. Subhashini Naikar**   **Prof. (Dr.) D. N. Ganjewar**

(Coordinator - BSc.IT)   **Exam Convener**   **Vice- Principal, SFC**   **(Principal)**

DI/N-STD/GEN/00

Subject Name	Name Of The Student And Questions
INTERNET OF THINGS (INTERNAL)	**RAI SIMRAN VINOD** 1. Explain the role of sensors and actuators in IoT systems. 2. Discuss the challenges in IoT security and privacy. 3. How does cloud computing support IoT applications? 4. Explain the MQTT protocol and its significance in IoT communication. 5. Describe the role of embedded systems in IoT development.
	TIWARI PRAFUL JITENDRA (OLD) 1. Explain the different layers of IoT architecture. 2. What are the differences between IoT and traditional embedded systems? 3. Describe the role of RFID technology in IoT applications. 4. What are the major challenges faced in IoT deployment? 5. Explain the importance of real-time data processing in IoT.
INTERNET OF THINGS (PRACTICAL)	**TIWARI PRAFUL JITENDRA (OLD)** 1. Write a Python program to control an LED using Raspberry Pi and GPIO. 2. Develop a small IoT project that reads temperature and humidity using a DHT11 sensor. 3. Create a web-based interface to monitor real-time sensor data using IoT.
ARTIFICIAL INTELLIGENCE (INTERNAL)	**KHOCHADE PRATHAMESH PRAKASH** 1. Explain the working of the A* search algorithm with an example. 2. What is the difference between propositional logic and first-order logic? 3. Discuss the role of neural networks in Artificial Intelligence. 4. What is the Min-Max algorithm? Explain its application in game playing. 5. Describe different types of machine learning models used in AI.
	PATEL SAFWAN FAZAL 1. What is the Turing Test? How does it determine machine intelligence? 2. Explain the concept of reinforcement learning with an example. 3. Describe the differences between supervised and unsupervised learning. 4. What are knowledge-based systems in AI? Give an example. 5. Explain the concept of fuzzy logic and its application in AI.
	SHAIKH ARSHIYA ASHRAF 1. What is the importance of Natural Language Processing (NLP) in AI? 2. Explain the role of expert systems in AI applications. 3. What are genetic algorithms? How are they used in AI? 4. Describe the concept of forward and backward chaining in inference mechanisms. 5. What are the major ethical concerns in Artificial Intelligence?
	RAI SIMRAN VINOD 1. What is the difference between symbolic AI and connectionist AI? 2. Explain the working of the perceptron model in neural networks. 3. How does computer vision contribute to AI applications? 4. Describe the steps involved in building a chatbot using AI techniques. 5. What are intelligent agents? Explain their structure and working.
	TIWARI PRAFUL JITENDRA (OLD) 1. What is the difference between deep learning and machine learning? 2. Explain the role of activation functions in neural networks.

	3. What are heuristic search techniques? Provide an example. 4. Describe the concept of probabilistic reasoning in AI. 5. Explain backpropagation in neural networks and its importance.
ARTIFICIAL INTELLIGENCE (PRACTICAL)	**TIWARI PRAFUL JITENDRA (OLD)** 1. Write a Python program to implement the A* search algorithm. 2. Develop a Tic-Tac-Toe game using the Min-Max algorithm. 3. Implement a simple neural network using Python and TensorFlow.
ADV. JAVA TECHNOLOGY / ENTERPRISE JAVA (INTERNAL)	**TIWARI TANMAY TARAKANT** 1. Explain the difference between Servlets and JSP with examples. 2. Discuss the role of Hibernate in Java persistence. 3. What are Enterprise Java Beans (EJB)? Explain its types. 4. Explain the concept of session tracking and its techniques. 5. Describe the Java Naming and Directory Interface (JNDI) and its applications.
	PATHAK RAKESH MUKUND 1. What is the role of JDBC in Java database connectivity? 2. Explain the different types of session beans in Enterprise Java Beans (EJB). 3. How does JavaServer Faces (JSF) simplify web application development? 4. What are Java Servlets? Explain their lifecycle. 5. Discuss the differences between JSP and ASP.NET.
	KHOCHADE PRATHAMESH PRAKASH 1. What is the purpose of the Hibernate framework in Java? 2. Explain the concept of JavaMail API with an example. 3. Describe the role of filters in Java web applications. 4. What are the advantages of using Java Naming and Directory Interface (JNDI)? 5. How does Java provide support for multithreading?
	SUTHAR DEEPAK BHAGIRATH 1. Explain the significance of Java Beans in application development. 2. What are the key differences between JSP and Servlets? 3. Describe the working of Java Transaction API (JTA). 4. What are annotations in Java? Provide examples. 5. How does Java implement security in web applications?
	GAMARE YASH UTTAM 1. What is a WebSocket in Java, and how is it used? 2. Explain the working of JavaServer Pages (JSP) lifecycle. 3. Describe the role of the Spring framework in Java enterprise applications. 4. What is dependency injection, and how is it implemented in Java? 5. How does Java implement exception handling?
	PATEL SAFWAN FAZAL 1. What is the purpose of the Java Message Service (JMS)? 2. Explain how Java Management Extensions (JMX) work. 3. Describe how Java security architecture helps in securing applications. 4. What are different types of design patterns in Java? 5. Explain the concept of Java Reflection API and its applications.
	RAI SIMRAN VINOD 1. What is the purpose of Java Remote Method Invocation (RMI)? 2. Explain the differences between connection pooling and statement caching. 3. How does Java handle cryptography and secure data transmission?

	4. What are the benefits of using JavaFX for GUI applications? 5. Describe the working of a Singleton design pattern in Java.
	GAVANDE MANDAR PUNDALIK 1. What is JavaServer Faces (JSF), and how is it different from JSP? 2. Explain the purpose of Java EE Web Services (JAX-WS). 3. Describe the use of Aspect-Oriented Programming (AOP) in Java. 4. What are lambda expressions in Java, and how are they used? 5. How does Java provide support for functional programming?
	TIWARI PRAFUL JITENDRA (OLD) 1. What is the role of Java Persistence API (JPA) in application development? 2. Explain the concept of object-relational mapping (ORM) with an example. 3. What are the differences between checked and unchecked exceptions in Java? 4. How does Java implement memory management using the Garbage Collector? 5. Describe how Java provides support for RESTful web services.
ADV. JAVA TECHNOLOGY / ENTERPRISE JAVA (PRACTICAL)	**TIWARI PRAFUL JITENDRA (OLD)** 1. Write a Java Servlet program to authenticate a user based on login credentials. 2. Develop a JSP page that interacts with a MySQL database using Hibernate. 3. Implement a simple EJB application for an online banking system.
ADV WEB PROGRAM (INTERNAL)	**TIWARI PRAFUL JITENDRA (OLD)** 1. What are the advantages of using ASP.NET over traditional web development frameworks? 2. Explain the concept of ViewState and its role in state management in ASP.NET. 3. Discuss the importance of MVC architecture in web development. 4. What is ADO.NET? Explain its role in database connectivity. 5. Describe the different types of validation controls available in ASP.NET.
ADV WEB PROGRAM (PRACTICAL)	**TIWARI PRAFUL JITENDRA (OLD)** 1. Develop a simple login system using ASP.NET with session management. 2. Create an ASP.NET web page with form validation using validation controls. 3. Implement a CRUD (Create, Read, Update, Delete) operation using ADO.NET and SQL.