

data structure viva questions lab Academic PDF

Data Structure Viva Questions Lab

Understanding data structures is fundamental for computer science students, especially when preparing for viva exams and practical lab assessments. A well-prepared set of viva questions can significantly boost your confidence and help you demonstrate a clear understanding of core concepts. This article provides a comprehensive guide to common data structure viva questions encountered in lab sessions, structured for SEO and easy navigation.

Importance of Data Structure Viva Questions in Lab

Data structures are the backbone of efficient algorithm design and problem-solving. Viva questions in labs typically assess a student's grasp of basic and advanced data structures, their applications, and implementation skills. Being well-versed with potential questions can:

- Help you prepare effectively for viva exams.
- Improve your understanding of data structures.
- Enable you to articulate concepts clearly during viva sessions.
- Enhance your practical coding skills.

Common Data Structure Viva Questions

In this section, we explore frequently asked viva questions categorized by data structures.

Arrays

What is an array?

- An array is a collection of elements stored in contiguous memory locations.
- It holds elements of the same data type.
- Arrays allow constant time access to elements via indices.

Explain the types of arrays.

- One-dimensional arrays: A linear list of elements.
- Multi-dimensional arrays: Arrays of arrays (e.g., matrices).

What are the advantages and disadvantages of arrays?

Advantages:

- Fast access via index.
- Simple implementation.

Disadvantages:

- Fixed size after declaration.
- Costly to insert or delete elements in the middle.

Linked Lists

What is a linked list?

- A linked list is a linear data structure where elements (nodes) are linked using pointers.
- Each node contains data and a pointer to the next node.

Types of linked lists

- Singly linked list
- Doubly linked list
- Circular linked list

Advantages of linked lists over arrays

- Dynamic size
- Efficient insertions and deletions

Stack

What is a stack?

- A stack is a linear data structure following Last In First Out (LIFO) principle.
- Supports mainly two operations: push (insert) and pop (delete).

Applications of stacks

- Expression evaluation
- Backtracking algorithms
- Function call management

Implementation methods

- Using arrays
- Using linked lists

Queue

What is a queue?

- A queue is a linear data structure following First In First Out (FIFO) principle.
- Supports operations like enqueue (insert) and dequeue (delete).

Types of queues

- Simple queue
- Circular queue
- Deque (Double-ended queue)

Use cases

- Scheduling processes
- Buffer management

Trees

What is a tree data structure?

- A hierarchical structure consisting of nodes connected by edges.
- Contains a root node and subtrees.

Types of trees

- Binary tree
- Binary search tree (BST)
- Balanced trees (AVL, Red-Black Tree)
- Heap

Common operations

- Traversals (Inorder, Preorder, Postorder)
- Insertion
- Deletion

Graphs

What is a graph?

- A collection of nodes (vertices) connected by edges.
- Can be directed or undirected.

Applications of graphs

- Network routing
- Social network analysis
- Scheduling problems

Graph traversal algorithms

- Depth-First Search (DFS)
- Breadth-First Search (BFS)

Important Algorithms and Concepts in Data Structures

Sorting Algorithms

- Bubble sort
- Selection sort
- Insertion sort
- Merge sort
- Quick sort
- Heap sort

Searching Algorithms

- Linear search
- Binary search

Hashing

- Hash tables
- Collision handling techniques (chaining, open addressing)

Recursion and Backtracking

- Recursive algorithms
- Backtracking techniques in problem solving

Practical Lab Questions for Data Structures

Implementation-Based Questions

- Write a program to implement a singly linked list.
- Create a stack using arrays.
- Implement a binary search tree with insert and delete operations.
- Develop a program to perform BFS and DFS on a graph.
- Write code for sorting algorithms like quicksort or mergesort.

Conceptual and Analytical Questions

- Explain the time complexity of various data structure operations.
- Discuss the advantages of using linked lists over arrays.
- How does a hash table handle collisions?
- Describe the process of balancing a binary tree.

Problem-Solving Scenarios

- Given an array, find the maximum subarray sum.
- Implement a queue using stacks.
- Design a data structure for a real-world application, such as a parking lot management system.

Tips for Preparing Data Structure Viva Questions Lab

- Understand core concepts: Focus on definitions, types, and applications.
- Practice coding: Write implementations for common data structures.
- Review time and space complexities: Be prepared to analyze algorithms.
- Solve previous viva questions: Practice with past papers or lab questions.
- Explain with diagrams: Use diagrams to clarify data structure structures during viva.

SEO Keywords to Target

- Data structure viva questions
- Data structure lab questions
- Common viva questions on data structures
- Data structure interview questions
- Data structure practical questions
- Data structure implementation lab
- Data structures for beginners
- Data structure algorithms
- Data structure and algorithms viva

Conclusion

Mastering data structure viva questions lab is essential for success in practical exams and interviews. By understanding fundamental concepts, practicing coding, and reviewing common questions, students can confidently demonstrate their knowledge. Remember to focus on clarity of explanation, visualize structures with diagrams, and stay updated with the latest data structure concepts for a comprehensive preparation.

Related Resources:

- Data Structures and Algorithms Tutorials
- Sample Data Structure Viva Questions
- Coding Practice Platforms
- University Lab Manuals on Data Structures

By preparing thoroughly on these topics, you'll be well-equipped to excel in your data structure viva questions lab and advance your understanding of core computer science principles.

Data Structure Viva Questions Lab: An In-Depth Review and Guide

Embarking on a data structure viva questions lab can be both an intimidating and rewarding experience for students and budding programmers. This lab serves as a crucial platform to reinforce theoretical concepts through practical application, preparing students for real-world problem-solving scenarios and technical interviews. The process of preparing for, participating in, and excelling at such an oral examination involves understanding fundamental data structures, their implementations, advantages, limitations, and typical interview questions. This article offers a comprehensive review of what a data structure viva questions lab entails, the key topics involved, and effective strategies to succeed, all structured with clarity using headings and subheadings.

Understanding the Purpose of a Data Structure Viva Questions Lab

A data structure viva questions lab is designed to assess a student's grasp of core data structures and algorithms through oral questioning. Unlike written exams, vivas assess not only knowledge but also conceptual clarity, problem-solving ability, and communication skills. The lab typically involves:

- Explaining data structures and their use cases
- Writing code snippets or pseudo-code
- Solving problems on the spot
- Discussing complexities and optimization strategies

The primary goal is to ensure that students can translate theoretical knowledge into practical solutions, a skill vital for software development, competitive programming, and technical interviews.

Key Topics Covered in a Data Structure Viva Questions Lab

A comprehensive data structure viva encompasses a wide array of topics, each critical for mastering the subject. Below are the main areas usually explored.

Arrays and Strings

Arrays and strings form the foundation of many algorithms and data structures. Viva questions often test:

- Basic operations: insertion, deletion, traversal
- Multi-dimensional arrays
- String manipulation techniques
- Common problems like anagrams, substring search, etc.

Linked Lists

Linked lists are fundamental dynamic data structures. Expected questions include:

- Singly and doubly linked lists
- Circular linked lists
- Operations: insertion, deletion, reversal
- Use cases and advantages over arrays

Stacks and Queues

These are linear data structures used for managing data in specific orders. Questions may involve:

- Implementation using arrays or linked lists
- Applications such as expression evaluation, backtracking
- Variations like priority queues, deque

Trees and Binary Search Trees

Hierarchical structures are central to many algorithms. Viva questions often cover:

- Tree traversal methods: inorder, preorder, postorder
- Binary Search Tree (BST) operations
- Balanced trees: AVL, Red-Black Trees
- Applications like database indexing and expression trees

Heaps and Priority Queues

Heaps are specialized tree-based structures useful for efficient priority management.

- Min-heap and max-heap properties
- Heapify operation
- Implementation of priority queues
- Applications like heap sort

Hashing and Hash Tables

Hashing provides fast data retrieval. Questions involve:

- Hash functions
- Collision resolution techniques (chaining, open addressing)
- Implementation challenges
- Use cases like caching

Graphs

Graph-based questions are common and involve:

- Representation: adjacency matrix vs adjacency list
- Traversal algorithms: BFS, DFS
- Shortest path algorithms: Dijkstra, Bellman-Ford
- Minimum spanning trees: Kruskal, Prim

Advanced Data Structures

Depending on the course level, viva questions may extend to:

- Trie
- Segment trees
- Fenwick trees (Binary Indexed Trees)
- Disjoint Set Union (Union-Find)

Common Types of Questions in Data Structure Viva

Understanding the nature of questions helps students prepare effectively. Typical categories

include:

Conceptual Questions

These test understanding of basic principles:

- "Explain the difference between an array and a linked list."
- "What is a balanced binary search tree and why is it useful?"

Implementation Questions

Require students to demonstrate coding skills:

- "Implement a stack using arrays."
- "Write a function to reverse a linked list."

Application-Based Questions

Focus on practical applications:

- "Design a system to manage a priority queue."
- "How would you detect a cycle in a graph?"

Complexity Analysis

Assess understanding of efficiency:

- "What is the time complexity of inserting an element into a heap?"
- "Compare the space complexity of hash tables vs trees."

Preparation Strategies for Data Structure Viva Questions Lab

Success in a viva hinges on thorough preparation and clear communication. Here are key strategies:

Master the Fundamentals

- Understand the core concepts and properties of each data structure.
- Be able to explain their advantages and limitations.

Practice Coding and Pseudocode

- Write clean, bug-free code for common data structures.
- Practice explaining your code aloud.

Solve Typical Viva Questions

- Review previous question papers and common interview questions.
- Prepare concise, precise answers with examples.

Understand Complexities

- Be comfortable analyzing time and space complexities.
- Know how to optimize solutions.

Use Visual Aids and Diagrams

- Draw diagrams to explain data structures during viva.
- Use visualizations to clarify traversal or modification operations.

Stay Calm and Communicative

- Clearly articulate your thought process.
- Don't rush; take time to formulate answers.

Features and Pros/Cons of Data Structure Viva Questions Lab

Features:

- Emphasizes conceptual clarity and problem-solving
- Encourages oral communication skills
- Provides immediate feedback on understanding

- Prepares students for real-world technical interviews

Pros:

- Builds confidence in explaining technical topics
- Enhances problem-solving speed
- Reinforces theoretical knowledge through practical application
- Develops communication skills essential for teamwork and interviews

Cons:

- Can be intimidating for shy or less confident students
- May focus heavily on rote memorization rather than deep understanding
- Limited scope compared to full coding assignments
- Performance can be affected by nervousness, not just knowledge

Conclusion

A data structure viva questions lab is an invaluable component of computer science education, bridging the gap between theoretical understanding and practical proficiency. It prepares students not only to excel in exams but also to face technical interviews with confidence. Success in this lab depends on mastering core concepts, practicing implementation, analyzing complexities, and developing effective communication skills. While the format can be challenging, the benefits—enhanced understanding, problem-solving ability, and interview readiness—are well worth the effort. With consistent practice, clear explanations, and a thorough grasp of fundamental data structures, students can turn this challenging experience into a rewarding learning journey that lays a solid foundation for their future careers in software development and research.

Question What is a data structure and why is it important in programming? A data structure is a way of organizing and storing data so that it can be accessed and modified efficiently. It is important because it optimizes performance, simplifies problem-solving, and enhances code organization. Explain the difference between an array and a linked list. An array stores elements in contiguous memory locations, allowing quick access via indices, but has a fixed size. A linked list consists of nodes linked by pointers, allowing dynamic sizing but with slower access time due to traversal. What is a stack and where is it used? A stack is a linear data structure that follows the Last In First Out (LIFO) principle. It is used in function call management, expression evaluation, backtracking algorithms, and undo operations. Describe a queue and give an example of its application. A queue is a linear data structure following the First In First Out (FIFO) principle. It is used in scheduling processes, handling requests in servers, and breadth-first search in graphs.

What is a binary tree, and what are its types? A binary tree is a hierarchical data structure where each node has at most two children. Types include binary search trees, balanced trees (like AVL trees), complete binary trees, and full binary trees. Explain the concept of hash tables and their advantages. Hash tables store key-value pairs using a hash function to compute an index for efficient data retrieval. Advantages include fast lookup, insertion, and deletion operations, typically in constant time. What is the difference between depth-first search (DFS) and breadth-first search (BFS)? DFS explores as far as possible along each branch before backtracking, using a stack or recursion. BFS explores all neighbors at the current depth before moving to the next level, using a queue. Why are trees important in data structures? Trees provide an efficient way to organize data hierarchically, enabling fast search, insertion, and deletion operations. They are fundamental in databases, file systems, and network routing.

Related keywords: data structures, viva questions, lab exam, programming interview, array questions, linked list, stack and queue, binary trees, sorting algorithms, algorithm design

GNDU AMRITSAR VIVA DATE

gndu amritsar viva date: Your Complete Guide to Exam Dates and Preparation

Are you a student enrolled at Guru Nanak Dev University (GNDU) in Amritsar? If yes, then you might be eagerly waiting for the upcoming viva dates that mark a significant milestone in your academic journey. Knowing the **gndu amritsar viva date** is essential for planning your study schedule, ensuring timely submission of required documentation, and preparing thoroughly for your viva voce. This comprehensive guide provides all the necessary information related to GNDU Amritsar viva dates, including how to stay updated, preparation tips, and frequently asked questions.

Understanding the GNDU Amritsar Viva Examination

Before diving into specific dates, it's important to understand what the viva examination entails at GNDU Amritsar.

What is a Viva Voce?

The viva voce, commonly known as a viva, is an oral examination conducted to assess a student's understanding of their thesis, project, or coursework. It is an integral part of postgraduate and doctoral programs, serving as a platform for evaluators to gauge the depth of knowledge, research skills, and presentation abilities of the student.

Purpose of the Viva Examination

The main objectives include:

- Verifying the originality and quality of research or coursework.
- Assessing the student's comprehension of their subject matter.
- Providing feedback for potential improvements.
- Determining whether the student is ready for the next academic phase or degree completion.

When Are GNDU Amritsar Viva Dates Announced?

Official Announcement Timeline

Typically, GNDU announces viva dates several weeks before the examination window. The schedule is released by the respective departments or the university's examination cell through official channels such as the university website, notice boards, and email notifications.

Factors Influencing Viva Date Announcements

Several factors can influence the announcement of viva dates:

- Completion of coursework or thesis submission deadlines.
- Availability of examiners and faculty members.
- Academic calendar and other university examinations.
- COVID-19 pandemic or other unforeseen circumstances.

Typical Timeline for Viva Dates

While exact dates vary each year, the general timeline is:

- Submission of thesis or coursework: 1-2 months before viva.
- Announcement of viva schedule: 2-4 weeks before the exam.
- Viva examinations conducted: Usually within 1-2 months after submission.

How to Find Out About GNDU Amritsar Viva Date

Official Sources for Updates

To stay informed about your viva date, regularly check the following sources:

- **GNDU Official Website:** The primary source for all official notices, schedules, and updates. Visit the examination section or department-specific pages.
- **Department Notice Boards:** Physical or digital notices posted by your department or faculty.
- **Email Notifications:** Many departments send direct emails to students regarding viva dates and related instructions.
- **Student Portals:** Some courses or departments have dedicated portals where updates are posted.
- **Social Media Handles:** Follow GNDU's official social media accounts for timely updates.

How to Ensure You're Prepared

- Regularly check official channels for updates.
- Contact your department or supervisor if you haven't received any communication close to the expected date.
- Join student forums or groups related to GNDU for peer support and information sharing.

Preparation Tips for GNDU Viva Examination

Effective preparation is key to a successful viva. Here are some essential tips:

Understand Your Thesis or Coursework Deeply

- Review your research, methodology, and findings thoroughly.
- Be prepared to explain and justify your research choices.
- Anticipate questions related to your topic.

Practice Your Presentation Skills

- Prepare a clear, concise presentation summarizing your work.
- Practice delivering your presentation confidently.
- Engage in mock viva sessions with peers or mentors.

Review Potential Questions

- Common questions include:
- What motivated your research?
- What are the key findings?
- What challenges did you face?
- How does your work contribute to the field?
- What are the future implications?

Prepare Necessary Documentation

- Keep multiple copies of your thesis or coursework.
- Carry identification and any required forms.
- Prepare a list of references and data sources.

Stay Calm and Confident

- Practice stress management techniques.
- Ensure adequate rest before the exam day.
- Dress professionally and arrive early.

Important Tips for Post-Viva Procedures

After your viva, there are several steps to follow:

- Await the examiners' report and feedback.
- If required, revise your thesis or coursework as per suggestions.
- Submit the final corrected version within the stipulated time.
- Verify your results and degree completion procedures.

Common Questions About GNDU Amritsar Viva Date

Q1: Can I request a change in the viva date?

A: Generally, viva dates are fixed by the university or department. However, if you have valid reasons such as health issues or unavoidable commitments, you can request a rescheduling through your department or exam coordinator. Approval is at the discretion of the university.

Q2: What happens if I miss my viva date?

A: Missing your viva without prior notice can delay your degree completion. It's crucial to communicate promptly with your department and seek rescheduling if needed.

Q3: Are viva dates different for various courses?

A: Yes. The dates vary depending on the program, department, and semester. Each department publishes its schedule separately.

Q4: How long does the viva examination usually last?

A: Typically, a viva lasts between 30 minutes to 2 hours, depending on the complexity of the research and the number of examiners.

Conclusion

Staying informed about the **gndu amritsar viva date** is crucial for a smooth examination experience. Regularly monitor official university channels, prepare diligently, and approach your viva with confidence. Remember, your viva is an opportunity to showcase your hard work and research expertise. With proper planning and preparation, you can excel and move closer to achieving your academic goals at GNDU Amritsar.

Good luck with your viva!

gndu amritsar viva date: An Essential Guide for Students and Faculty

The gndu amritsar viva date has become a focal point for students, faculty members, and administrative staff alike, especially as the academic calendar advances towards critical evaluation periods. Guru Nanak Dev University (GNDU) in Amritsar, a reputable institution offering diverse undergraduate, postgraduate, and doctoral programs, emphasizes thorough assessment procedures, including viva voce examinations. As students prepare to defend their thesis, dissertations, or project work, understanding the scheduling, procedures, and preparations related to the viva date is crucial. This article offers a comprehensive, reader-friendly exploration into the significance of the GNDU Amritsar viva date, how it is scheduled, what students should expect, and tips to ensure successful completion.

Understanding the Significance of the GNDU Amritsar Viva Date

The viva voce, commonly known as the viva, is an oral examination process where students present and defend their academic work before a panel of examiners. At GNDU Amritsar, the viva date is

integral to the academic assessment process for postgraduate and doctoral programs. Its significance can be summarized as follows:

- Final Evaluation Milestone: The viva often marks the culmination of months or years of research, coursework, or project work. Successfully passing it signifies that the student has met the academic standards set by the university.
- Quality Assurance: The viva helps assess the originality, depth, and understanding of the student's research or project.
- Academic Progression: For research scholars, clearing the viva is typically a prerequisite for thesis submission and subsequent degree conferment.
- Institutional Reputation: The conduct and scheduling of viva examinations reflect the university's commitment to maintaining academic excellence.

How GNDU Amritsar Schedules the Viva Date

Understanding the process of scheduling the viva date at GNDU Amritsar involves familiarity with university procedures, administrative protocols, and student responsibilities. Here's a detailed breakdown:

- Submission of Thesis/Dissertation/Project Report

Before scheduling the viva, students must submit the finalized version of their thesis, dissertation, or project report to the respective department or research committee. This submission often triggers the formal process for arranging the viva.

- Internal and External Evaluation

- Internal Evaluation: The department's research supervisor and an internal examiner review the submitted work.
- External Evaluation: An external examiner, often from another recognized institution, is invited to evaluate the work and participate in the viva.

Once both evaluations are completed and approved, the process moves forward.

- Scheduling the Viva

- Notification to Students: The university or department announces the tentative viva dates, typically via official communication channels such as email, notice boards, or the university portal.
- Coordination with Examiners: The department liaises with external examiners to confirm their availability.
- Final Date Declaration: The final viva date is officially notified to the student and all relevant parties, usually with a specific time and venue.

- Factors Influencing the Viva Schedule

- Examiner availability
- Academic calendar constraints
- Administrative processing times
- Student readiness

The university strives to accommodate all parties while adhering to academic timelines.

Typical Timeline and Important Dates

While specific dates may vary each semester, the following timeline provides a general framework:

- Thesis Submission Deadline: Usually 2-3 months before the scheduled viva.
- Evaluation Period: 4-6 weeks for internal and external evaluations.
- Viva Notification: Usually 2 weeks before the scheduled date.
- Viva Conducted: As per the announced schedule.
- Result Declaration: Usually within a week after the viva.

Students should regularly consult official GNDU notifications and stay in touch with their department coordinators for updates.

Preparing for the GNDU Viva: Tips and Best Practices

A well-prepared student is more likely to perform confidently during the viva. Here are key tips to ensure readiness:

- Thoroughly Review Your Research Work

- Revisit your research methodology, data analysis, and conclusions.
- Be prepared to answer questions about the relevance and significance of your work.

- Anticipate Common Questions

- Why did you choose this particular research topic?
- What challenges did you face, and how did you overcome them?
- How does your work contribute to existing knowledge?

- Practice Your Presentation

- Prepare a clear and concise presentation highlighting key aspects.
- Practice answering questions aloud, preferably in front of peers or mentors.

- Understand the Evaluation Criteria

- Clarity of presentation
- Depth of understanding
- Originality and novelty
- Methodological rigor

Knowing what examiners look for can help tailor your responses effectively.

- Ensure All Documentation is in Order

- Finalized thesis/dissertation report
- Abstract, acknowledgments, and bibliography
- Any required forms or approval letters

Having organized documentation demonstrates professionalism and readiness.

What to Expect During the Viva

During the viva, students can anticipate a structured yet interactive session:

- Introduction: The student briefly presents their research or project.
- Question & Answer Session: Examiners probe various aspects, challenging the student's understanding.
- Discussion: A back-and-forth dialogue about methodology, findings, and implications.
- Deliberation: Examiners may temporarily withdraw to discuss the outcome.
- Result Announcement: Immediate or within a few days, students are informed of their success or need for revisions.

It's important to remain calm, confident, and receptive to feedback during the process.

Post-Viva Procedures and Follow-Up

After the viva, students need to:

- Address Revisions: If required, make necessary amendments to the thesis or project report.
- Submit Final Copies: Once approved, submit the final, corrected version for degree processing.
- Await Degree Conferment: The university schedules graduation ceremonies and degree awards based on completion of all formalities.

Frequently Asked Questions (FAQs)

Q1: How can I find out the exact gndu amritsar viva date for my program?

A: Students should regularly check official university notices, their departmental communication channels, or contact their research supervisors or department coordinators for updates.

Q2: Is the viva date different for different programs?

A: Yes, the scheduling varies based on the program, research progress, and evaluation outcomes.

Q3: Can the viva date be rescheduled?

A: Rescheduling may be possible under exceptional circumstances, subject to approval by the university authorities and examiners.

Q4: What if I miss my scheduled viva?

A: Missing the scheduled viva typically requires re-scheduling, which involves administrative procedures and approval.

Conclusion

The gndu amritsar viva date is a pivotal moment in a student's academic journey, symbolizing their transition from research and preparation to official recognition of their scholarly efforts.

Understanding the scheduling process, preparing diligently, and approaching the viva with confidence can significantly influence the outcome. As GNDU continues to uphold rigorous academic standards, students must stay informed and proactive to navigate their viva successfully. Whether you are a research scholar or a postgraduate student, keeping track of your viva schedule and preparing thoroughly will ensure you meet this important academic milestone with confidence.

QuestionAnswer When is the GNDU Amritsar viva date scheduled for this year? The GNDU Amritsar viva date for this year is typically announced a few weeks before the examination, and students are advised to check the official university website or their student portal for the latest updates. How can I find out my specific GNDU Amritsar viva schedule? Students can find their specific viva schedule through the official GNDU Amritsar university portal or by contacting their respective department or faculty office directly. Are there any important preparations required for the GNDU Amritsar viva exam? Yes, students should review their coursework, prepare their presentations if required, and ensure they understand their research or project thoroughly. It's also helpful to practice answering potential questions related to their subject. What is the process to verify the GNDU Amritsar viva date if I missed the official announcement? If you missed the official announcement, you should contact your department or the university examination cell directly, or check the official GNDU Amritsar website for the most recent updates regarding the viva schedule. Will the GNDU Amritsar viva date be affected by any ongoing circumstances like COVID-19? Any changes to the GNDU Amritsar viva schedule due to ongoing circumstances will be officially communicated via the university's website or student notifications. Students are encouraged to stay updated through official channels.

Related keywords: GND University Amritsar viva date, GNDU Amritsar viva schedule, GNDU Amritsar exam dates, GNDU viva examination timetable, GNDU Amritsar results, GNDU semester exam dates, GNDU Amritsar degree viva, GNDU Amritsar interview schedule, GNDU Amritsar exam timetable, GNDU Amritsar academic calendar

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