



Prahladrai Dalmia Lions College Commerce & Economics
(Government Aided & Affiliated to University of Mumbai & AICTE, New Delhi)
NAAC Re-accredited with 'A' Grade (III Cycle) ISO 21001:2018 Certified
University of Mumbai Recognised Research Centre in Accountancy, Commerce &
Business Economics
A Government Approved Hindi Linguistic Minority Institute

ATKT SEMESTE II

Internal Examination Oct., 2026.

BSc.(Computer Science), NEP BATCH DATE - 2/10/2026

INSTRUCTIONS FOR THE STUDENTS HAVING ATKT IN INTERNALS:

1. **Date of Submission of the Projects- 9th October, 2026 (Timings 9:30 am)**
2. **Reporting time for students: at least 10 minutes before the mentioned time. Venue: 2nd floor staff room). Please meet Dr. Sneha Hathi and Ms. Prachi Sanghvi.**
3. Students have to be present in person for the submission.
4. Submission of projects 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 project. Students should also 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.**
9. **Note: If students have any discrepancies in the below mentioned questions or any queries related to same need to meet Dr. Sneha Hathi on or before 03rd October, 2026 (by 11 am).**

Dr. Sneha Hathi	CA Durgesh Kenkre	Ms. Subhashini Naikar	Prof. (Dr.) D N. Ganjewar
BSc. CS Co-Ordinator	Exam Convenor	Vice Principal, SFC	Principal

DI/N-STD/GEN/00

INTERNAL ATKT PROJECT TOPIC QUESTIONS

STUDENT TO ANSWER ALL THE QUESTIONS

FYBSc.CS SEMESTER II ATKT INTERNAL PROJECT QUESTIONS

NOTE: Students shall attempt any five questions out of the same as per their subjects allocated and in which they have ATKT only in internals

Subject - Design and Analysis of Algorithm

1. What are Lists? Explain the various operations on lists.
2. Evaluate the expression from infix to postfix expression -
 $K + L - M * N + (O \wedge P) * W / U$
3. What is Divide and Conquer algorithm? Apply on the given string and convert it in alphabetical order such as = { DALMIACOLLEGE }
4. Differentiate between Stack and Queues. (any five points)
5. Assume that the numbers given below represent counts of letters in the hundreds from a file. For example, in the file there will be exactly 20*100 occurrences of the letter 'a', 11*100 occurrences of the letter 'c', etc., a:20, c:11, d:2, e:10, o:15, m:8, s:10, t:22, u:2. What is an optimal Huffman code based on the following set of frequencies?
 - a. Draw the tree. Show your work at every step.
 - b. Prepare and fill in the table the Huffman encoding for each letter.
 - c. Calculate the average code length.
6. What is recursion. Compare and contrast recursion and iteration. What are the advantages and disadvantages of each?
7. What is Queue? Explain the concepts of FRONT and REAR in a queue with suitable representation.
8. Define algorithm. Why is the correctness of the algorithm important?
9. Differentiate between Stack and Array. (any five points)
10. Find the longest common subsequence for the string such as X = abadaba and Y = bababba and display it matrix form

Subject - Object Oriented Programming

1. Explain the concept of inheritance and its types in C++.
2. Explain default constructor with the help of an example.
3. What do you mean by Exception handling. Explain its need.
4. Create class 'Shape'. Derive two classes Triangle and Rectangle from Shape. Write appropriate function in class Triangle and Rectangle to accept dimensions of triangle and rectangle for calculating Area(). Here make Area() function virtual which is common for all and which will calculate area for triangle and rectangle.
5. What is a destructor? Write a simple C++ program demonstrating the use of a destructor.
6. Differentiate between a parameterized and a default constructor
7. Explain the terms : a) Data binding b) Message passing
8. How does data security is ensured in C++ using encapsulation?
9. Explain the concept of Polymorphism in detail
10. Explain the organization of data and functions in OOPs

Subject - DS_R Programming

1. Explain R user interface in brief.
2. Explain functions in R with examples.
3. Explain packages and how to use them in R?
4. How to load and save data in R?
5. What are lists and dataframes in R?
6. Explain R objects with examples.
7. What is sample with replacement in R. Illustrate with an example.
8. Explain atomic vectors in R with its types.
9. How to use the help pages in R?
10. Explain matrices and arrays in R.

Subject - Environmental Management & Sustainable Development -II

1. Discuss the constitutional provisions related to environmental protection in India, with special reference to Article 48A and Article 51A(g).
2. Discuss one national and one international case study related to environmental protection and sustainable development
3. Define pollution. Explain the concept of assimilative capacity of the environment and discuss point and non-point sources of pollution with examples
4. Explain Pollution control and management; Waste Management- Concept of 3R (Reduce, Recycle and Reuse) and sustainability
5. Short note on The Wild Life (Protection) Act, 1972; The Water (Prevention and Control of Pollution) Act, 1974; The Forest (Conservation) Act
6. Production processes and generation of wastes
7. Discuss in detail the Volatile Organic compounds (VOCs), Peroxyacetyl Nitrate (PAN)
8. Short Note on Polycyclic aromatic hydrocarbons (PAHs) and Persistent organic pollutants (POPs);

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Subject - Introduction to Marketing

1. What is marketing? Explain the scope of marketing?
2. Explain the concept of market segmentation and features
3. What is promotion? Explain the objectives and elements of promotion
4. Explain the internal factors of pricing
5. Explain the functions and responsibilities of a marketing manager
6. Discuss buying motives and types of buyers in detail.
7. What is selling and explain its features
8. Explain the consumer buying decision process with a suitable example
9. Explain the different concepts of marketing in detail
10. What is Pricing? Explain the factors affecting the pricing

Subject - Foundation of Behavioural skills

1. Discuss the importance of self-awareness and empathy in building healthy interpersonal relationships and emotional well-being.
2. Explain the classification of Value Education, highlighting personal values, social values, moral values, and spiritual values.
3. Describe the process of choice making—Choosing, Cherishing, and Acting—with suitable examples.
4. Discuss the various life skills required for professional life.
5. Discuss the stress management and 4 A's of stress management.
6. Discuss the creative thinking and critical thinking with one example.
7. Write difference between creative thinking and critical thinking
8. Discuss the concepts of IQ, EQ, and SQ. Explain their importance in overall personality development.

Subject - CC - Co-curricular activities

1. How does scene study aid in understanding a character?
2. Explain the steps involved in developing a character for a role.
3. Discuss the scope of career opportunities in performing arts.
4. Explain the challenges in developing improvisational skills.
5. Explain Career Opportunities in Fine Arts.
6. Elaborate on Evolution of Abstract Art in India.
7. Discuss the Role of Tradition in Shaping Contemporary Art.
8. Elaborate on Themes and Philosophy of S.H. Raza's "Bindu" Series.
9. Explain Materials and Techniques in Ancient Tribal Art.
10. What is Role of Mythology and Nature in Tribal and Folk Art?

Subject - Computer Science Practical 2

1. Explain the concept of class and object in C++ with suitable syntax and examples.
2. Explain function overloading in C++ with an example. How does C++ achieve compile-time polymorphism?
3. Explain exception handling in C++. Describe the use of try, throw, and catch with an example.
4. Write a C++ program to create a class Employee containing employee ID, name, basic salary. Calculate:
 - $\text{HRA} = 20\% \text{ of basic salary}$
 - $\text{DA} = 10\% \text{ of basic salary}$
 - $\text{Gross Salary} = \text{Basic} + \text{HRA} + \text{DA}$
 - Display the employee details and gross salary.
5. Explain the Binary Search algorithm. State its best-case and worst-case time complexity.
6. Explain the process of converting an infix expression to postfix expression using a stack.
Simplify - $A + B * C ^ (D \$ E) / F - G$
7. Explain the following tree traversal techniques:
 - Preorder
 - Inorder
 - Postorder
8. Explain the Queue data structure and its FIFO principle. What are overflow and underflow?

Subject - Web Technologies

- 1.Design a web page using basic and advanced text formatting tags.
- 2.Design a web page using ordered and unordered list.
- 3.Design a web page by choosing background and foreground colours.
- 4.Write an HTML code to display your CV.
5. Design of a page to demonstrate the use of navigation between web pages.
6. Create hyperlink to an email address.
7. Design a web page by creating and linking external style sheet.
8. Design a web page by making image as a hyperlink
9. Design a basic table with two rows and three columns.
10. Write an HTML code for understanding elements , tags and basic structure of HTML files.

Subject - Advanced Python Programming

1. Write a recursive function to print the factorial for a given number.
2. Define a function that computes the length of a given list or string.
3. Write a program that takes two lists and returns True if they have at least one common member.
4. Write a Python program to print a specified list after removing the 0th, 2nd, 4 th and 5th elements.
5. Write a Python script to sort (ascending and descending) a dictionary by value.
6. Write a Python program to sum_all the items in a dictionary.
7. Write a Python program to read an entire text file.
8. Write a Python program to read last n lines of a file.
9. Implement the concept of inheritance using python.
10. Write a program to implement exception handling..

Subject - हिन्दी भाषा : कौशल के आधार

1. लेखन कौशल का अथाएवित्वरूप
2. लेखन कौशल की उपयोहगता एविमहत्व
3. लेखन कौशल की हवहियाँ
4. लेखन कौशल केभदे एविहवशेषताएँ
5. भाषण कौशल का महत्व एविउपयोहगता
6. भाषण कौशल की हवशेषताएँ
7. भाषण कौशल की हवहियाँ
8. श्रवण कौशल का अथाएवित्वरूप