



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 VI

Internal Examination Oct., 2026

BSc.(Information Technology), NEP BATCH DATE - 6/10/2026

INSTRUCTIONS FOR THE STUDENTS HAVING ATKT IN INTERNALS:

1. **Date of Submission of the Projects- 16th October, 2026 (Timings 11:30 am sharp)**
2. **Reporting time for students: at least 10 minutes before the mentioned time. Venue: 2nd floor staff room). Please meet Dr. Rupali Mishra.**
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 the same need to meet Dr. Rupali Mishra on or before 09 October, 2026 (by 11 am).**

Dr. Rupali Mishra

(Coordinator - BSc.IT)

CA. Durgesh Kenkre

Exam Convener

Ms. Subhashini Naikar

Vice- Principal, SFC

Prof. (Dr.) D. N. Ganjewar

(Principal)

TYBSc.I.T. SEMESTER IV 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

302 AGRAHARI SNEHA ANIL KUMAR

Internal

Soft Test & Qlty Ass

- 1. Define quality. Explain why quality is both a fact and a perception, and describe the core components of quality.**
- 2. Explain Total Quality Management (TQM) and its quality principles. How does continual improvement support quality?**
- 3. Why does software have defects? Explain the pillars of a Quality Management System.**
- 4. What is testing? Explain the fundamental test process and the principles of software testing.**
- 5. Explain the Requirement Traceability Matrix. Describe the test policy, test strategy and test plan.**
- 6. Explain boundary value testing (normal, robust and worst-case). Generate test cases for a function that accepts an integer from 1 to 100.**
- 7. Explain equivalence class testing and decision table-based testing, with a small example of each.**
- 8. What is path testing? Explain program graphs, DD-paths and basis path testing. Draw a program graph for a simple code fragment.**
- 9. Differentiate between verification and validation. Explain the V-model with the testing activity at each stage.**
- 10. Explain the levels of testing (unit, integration, system, acceptance). Describe any three special tests: regression, smoke and usability testing.**

Info Sec

- 1. Explain the evolution of information security. How is security investment justified, and how do you build a security program?**
- 2. What is risk analysis? Explain threat definition and the types of attacks.**
- 3. Explain the CIA triad and defense models. What are zones of trust?**
- 4. Compare symmetric-key and public-key cryptography. Explain how Public Key Infrastructure (PKI) works.**
- 5. Explain database security layers. Describe database backup and recovery, and auditing and monitoring.**
- 6. Explain firewall evolution, core firewall functions and firewall design.**
- 7. Explain wireless network security: vulnerabilities, threats and hardening practices.**
- 8. What is an IDS? Explain its types, detection models and deployment considerations. What role does SIEM play?**

9. Explain VoIP components, vulnerabilities and countermeasures. Briefly explain PBX security.
10. Explain the Secure Development Lifecycle and web application security practices. Describe physical security controls (locks, entry controls and intrusion detection).

Buss Int & Data Analy

1. Define business intelligence. Explain its architecture and the role of data, information and knowledge in effective decisions.
2. What is a decision support system? Explain how one is developed and how it has evolved from earlier information systems.
3. Explain the structure of mathematical models and the classes of models used for decision making.
4. What is data mining? Explain the data mining process and the main analysis methodologies.
5. Explain data preparation: data validation, transformation and reduction.
6. Explain classification problems and how classification models are evaluated. Describe Bayesian methods.
7. Explain logistic regression, neural networks and support vector machines for classification.
8. Explain partition and hierarchical clustering methods. How are clustering models evaluated?
9. Explain marketing models (relational marketing, sales force management) and supply chain optimization models.
10. What is Data Envelopment Analysis? Explain the efficient frontier and the CCR model. Also explain the structure of an expert system.

Prin of G.I.S / Fund of G.I.S

1. Define GIS. Explain GISystems, GIScience and GIApplications, and the difference between spatial data and geoinformation.
2. Explain geographic phenomena, geographic fields and geographic objects, with examples.
3. Explain regular and irregular tessellations and vector representations of geographic data.
4. What are topology and spatial relationships? Explain scale and resolution.
5. Explain GIS architecture and functionality, and the stages of spatial data handling. What is a Spatial Data Infrastructure (SDI)?
6. Explain the relational data model and the reasons for using a DBMS. How are GIS and DBMS linked?
7. Explain coordinate systems and map projections. What is a coordinate transformation?
8. Explain satellite-based positioning: absolute and relative positioning, and errors in absolute positioning.
9. What is spatial data quality? Explain positional, attribute and temporal accuracy, lineage, completeness and logical consistency.
10. Explain vector and raster overlay operators, network analysis and interpolation. Describe how to map qualitative and quantitative data.

I.T Act & Cyber Law

1. Explain the power of arrest without warrant under the IT Act, 2000. Discuss Section 80 and the check on arbitrary arrests.
2. Explain the concept of cyber crime under the IT Act, 2000: hacking, cyber fraud, viruses and defamation.
3. Explain cyber pornography, harassment and e-mail abuse as offences. How does the Act handle jurisdiction in cyber crime?
4. Explain monetary penalties, adjudication and appeals under the IT Act, 2000. What strategies exist to tackle cyber crime?
5. What are click-wrap and shrink-wrap contracts? Explain their status under the Indian Contract Act, 1872.
6. Explain jurisdiction in the cyber world: the civil law of jurisdiction in India and the cause of action.
7. What is cyber squatting? Explain domain name disputes and meta-tagging.
8. Explain copyright in the cyber world: ownership, infringement, remedies and the liability of ISPs. Discuss software piracy.
9. Explain digital signatures, digital signature certificates and the role of Certifying Authorities. How is e-governance in India affected?
10. Explain the status of electronic records as evidence under the Indian Evidence Act, 1872. How are cyber consumers protected under the Consumer Protection Act?

Practical

Proj Imp

Bring black book of your project implementation done.

**358 VISHWAKARMA SATYENDRA
RAMMILAN**

Internal

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Business Intelligence

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Practical

Proj Imp

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Sec in Com

1. **Configure OSPF MD5 authentication on routers. Write the commands and verify.**
2. **Configure a router for NTP, syslog logging and SSH connections. Write the commands.**
3. **Configure local AAA authentication for the console and vty lines. Show how to verify it from the console and from PC-A.**
4. **Configure, apply and verify an extended numbered ACL. Explain how the ACL is applied to an interface.**
5. **Use ACLs to restrict remote router access to management station PC-C and mitigate attacks. Write the commands.**
6. **Configure IPv6 ACLs. Explain how they differ from IPv4 ACLs.**
7. **Configure a Zone-Based Policy Firewall. Define the zones, class maps, policy maps and zone pairs.**
8. **Enable IOS IPS using the CLI and modify an IPS signature. Write the steps.**
9. **Configure Layer 2 security: make the Central switch the root bridge, secure spanning-tree parameters and enable port security against CAM table overflow.**
10. **Configure and verify a site-to-site IPsec VPN, or configure an ASA with a DMZ, static NAT and ACLs, using the CLI.**

Business Intelligence

1. **Import legacy data from Excel and SQL Server into a target system, using a sample database such as Northwind or AdventureWorks. Write the steps.**
2. **Perform an ETL process to build a database in SQL Server. Explain extraction, transformation and loading steps.**
3. **Create a data staging area for a selected database. Explain why a staging area is used.**
4. **Create a cube with suitable dimension and fact tables. Differentiate ROLAP, MOLAP and HOLAP.**
5. **Create an ETL map and schedule it for execution. Write the steps.**
6. **Write and execute MDX queries to extract data from the data warehouse. Give two sample queries.**
7. **Import data warehouse data into Excel and create a Pivot Table and Pivot Chart. Explain how a cube is used for analysis.**
8. **Apply what-if analysis for data visualization and generate reports from warehouse data.**
9. **Perform data classification using a classification algorithm. Explain the steps and how you interpret the output.**
10. **Perform clustering, and linear or logistic regression, on warehouse data using R, Excel or Power BI. Write the steps and interpret the result.**

- 1. Install QGIS and explore vector and raster datasets. Write the steps.**
- 2. Add vector layers in QGIS, set their properties and formatting, and calculate line lengths and statistics.**
- 3. Add raster layers, apply raster styling, and perform raster mosaicking and clipping.**
- 4. Make a map in QGIS, import a CSV file using plugins, and download OpenStreetMap data.**
- 5. Work with attributes and terrain data in QGIS. Write the steps.**
- 6. Work with map projections and WMS data. Explain how to change a layer's CRS.**
- 7. Georeference a scanned topo sheet or aerial image, and digitize map features.**
- 8. Perform table joins, spatial joins and points-in-polygon analysis. Run a spatial query.**
- 9. Perform nearest neighbor analysis, sample raster data using points, and interpolate point data.**
- 10. Use the Processing Modeler or batch processing to automate a workflow, and create an atlas with Print Composer. Also explain how to validate map data.**