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Bachelor of Business Administration (BBA) | Fifth Semester | UK5SECMGT301

Computerized Accounting

Course Code: UK5SECMGT301 • Module 5 Notes

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Inventory Management and System Administration

University of Kerala • FYUGP BBA Semester V • UK5SECMGT301 Module 5 Notes

1. Architectural Foundations of Inventory Management in CAS

In modern commercial trading, wholesale distribution, and manufacturing enterprises, inventory represents the physical manifestation of corporate working capital. Mismanaged inventory paralyzes cash flow, triggers costly production stoppages, and causes immense shrinkage losses. In a Computerized Accounting System (CAS), **Integrated Inventory Accounting** harmonizes physical warehouse stock movements with financial ledger accounting, ensuring that every physical pallet received or dispatched updates both the warehouse inventory balance and the general ledger simultaneously.

The primary operational objectives of computerized inventory management encompass:

- **Real-Time Stock Visibility:** Providing continuous, instantaneous visibility into physical stock quantities, reserved order balances, goods in transit, and available-to-promise inventory across multiple geographic warehouses.
- **Automated Cost of Goods Sold (COGS) Calculation:** Eliminating tedious manual stock valuation at month-end by continuously recalculating inventory asset values and cost of sales upon every receipt and dispatch.
- **Prevention of Stock-Outs and Over-Stocking:** Utilizing automated reorder level alerts and lead-time calculations to trigger timely purchase replenishment before critical inventory is exhausted.
- **Minimizing Inventory Shrinkage:** Maintaining granular audit trails of all stock movements, enabling immediate detection of pilferage, unauthorized wastage, or unrecorded customer deliveries.
- **Batch-Wise and Expiry Tracking:** Enforcing strict FIFO and FEFO (First-Expired, First-Out) dispatch rules for perishable pharmaceuticals, chemicals, and packaged food items.

2. Inventory Master Creation Architecture

Establishing inventory operations in CAS requires configuring four foundational master data structures in a hierarchical and relational sequence:

1. Units of Measure (UoM)

The standard mathematical units in which physical stock items are quantified, purchased, stored, and billed:

- **Simple Units of Measure:** Base physical units that cannot be subdivided further (e.g., Symbol: *Nos* - Numbers; *Pcs* - Pieces; *Kgs* - Kilograms; *Mtrs* - Meters; *Ltrs* - Liters). Each unit is configured

with a formal name and the number of permitted decimal places (e.g., 0 decimal places for Pieces, 3 decimal places for Kilograms to permit fractional weights like 12.450 kg).

- **Compound Units of Measure:** Formulated relationships between two simple units expressing packaging conversions (e.g., `1 Box = 24 Pcs`, `1 Carton = 12 Boxes`, `1 Metric Ton = 1,000 Kgs`). Compound units enable an enterprise to purchase inventory in bulk wholesale containers (cartons) while billing retail customers in individual units (pieces) with automated stock balance conversion.

2. Stock Groups

The primary organizational classification used to categorize stock items into homogeneous families sharing similar physical properties, manufacturing processes, or commercial uses. For an industrial equipment distributor, Stock Groups might encompass: *Electrical Switchgear*, *Hydraulic Valves*, *Pneumatic Actuators*, and *Fasteners*. Groups can be nested hierarchically into parent groups and sub-groups (e.g., *Electrical Switchgear* → *Air Circuit Breakers*), enabling multi-tier inventory roll-up reports.

3. Stock Categories

A parallel classification axis that cuts across different stock groups to categorize items along alternative commercial dimensions, such as brand names, quality grades, or energy ratings. For example, a consumer electronics retailer may establish Stock Categories based on brand manufacturers: *LG*, *Samsung*, *Sony*, and *Whirlpool*. An executive can query total inventory value for the "Samsung" category across all disparate stock groups (televisions, refrigerators, air conditioners, smartphones) simultaneously.

4. Godowns (Multi-Location Warehouses)

Physical storage locations where merchandise is stored. Enterprises configure hierarchical godown trees reflecting physical facilities: *Cochin Central Warehouse*, *Aluva Manufacturing Godown*, *Kozhikode Regional Depot*, and *Trivandrum Showroom Display*. The software tracks stock quantities, batch lots, and rack bin locations independently for every individual godown.

5. Stock Items

The ultimate transactional inventory master node representing the specific physical product bought, stored, and sold. Configuring a Stock Item requires defining comprehensive attributes:

- **Name, Description, and Part Number:** The commercial trade name and internal manufacturer part number (SKU code).
- **Group and Category Assignment:** Associating the item with its parent Stock Group and commercial Category.
- **Unit of Measure:** Assigning base simple or compound units.
- **Statutory GST and Tariff Details:** Entering the 8-digit HSN code, statutory GST tax rate (e.g., 18%), and taxability status (Taxable, Exempt, Nil Rated).

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- **Stock Valuation Method:** Designating the inventory valuation algorithm (FIFO, Weighted Average, Standard Cost, Last Purchase Cost).
- **Opening Balance:** Recording existing physical stock quantity, godown location, unit cost rate, and opening inventory value upon system setup.

Master Component	Primary Function	Configuration Parameters	Concrete Business Example
Units of Measure	Standard unit of quantification	Symbol, Formal Name, Decimal Places, Compound Ratios	Simple: *Pcs*; Compound: *1 Box = 100 Pcs*
Stock Groups	Functional product classification	Parent Group, Sub-Group hierarchy	*Industrial Machinery → Electric Motors*
Stock Categories	Cross-cutting commercial classification	Brand name, quality grade, energy rating	*Brand: Siemens; Rating: IE3 High Efficiency*
Godowns / Locations	Physical warehouse tracking	Location Name, Address, Storage Racks	*Ernakulam Central Distribution Godown*
Stock Items	The specific transactional SKU	Part Number, HSN, Tax Slab, Valuation Method	*3-Phase Induction Motor 5HP (HSN: 85015210)*

3. The Order-to-Fulfillment Inventory Cycle in CAS

In mature commercial and industrial enterprises, goods do not move instantaneously upon invoice printing. Purchasing and sales operations flow through an extended operational cycle involving commercial purchase orders, physical warehouse delivery challans, quality inspection rejections, and final financial billing. Modern CAS platforms manage this workflow through dedicated **Inventory Vouchers**:

The Procurement (Inward) Inventory Workflow

1. **Purchase Order (Function Key: Alt+F4):** A formal commercial order placed with an external supplier specifying required stock items, agreed quantities, negotiated unit prices, delivery deadlines, and freight terms. *Important Accounting Note:* A Purchase Order is a non-financial commitment; it does not update inventory stock levels or create accounts payable liabilities in the general ledger.
2. **Receipt Note / Goods Receipt Note - GRN (Function Key: Alt+F9):** Recorded at the warehouse receiving dock when the physical freight consignment arrives. The warehouse supervisor enters the GRN, referencing the supplier's Purchase Order number. The software instantly increases physical stock quantities in the designated godown. In the financial ledger, the software credits a temporary liability account ("Purchase Bills to Come") without yet crediting the

vendor's legal account, recognizing that the physical goods have arrived but the formal invoice has not yet been processed.

3. **Rejections Out (Function Key: Alt+F6):** If physical inspection reveals broken, sub-standard, or incorrect items, the warehouse supervisor records a Rejections Out voucher, immediately returning the defective items to the supplier and decrementing warehouse physical stock.
4. **Purchase Voucher (Function Key: F9):** When the vendor's official tax invoice arrives in the accounts department, the accountant enters a Purchase Voucher, selecting the original GRN tracking number. The CAS automatically pulls in the received item lines, clears the temporary "Purchase Bills to Come" suspense liability, debits the Inventory / Purchase ledger, debits Input Tax Credit (ITC), and credits the vendor's legal Sundry Creditor account.

The Sales (Outward) Inventory Workflow

1. **Sales Order (Function Key: Alt+F5):** Capturing a customer's formal purchase order. Reserves inventory in the system without decrementing physical stock.
2. **Delivery Note / Delivery Challan (Function Key: Alt+F8):** Issued by the dispatch warehouse when goods are packed and loaded onto transport vehicles. Decrements physical stock from the godown and debits a temporary customer asset account ("Sales Bills to Make").
3. **Rejections In (Function Key: Alt+F6):** If the customer refuses delivery of damaged packages at the doorstep, a Rejections In voucher records the returned items back into warehouse inventory.
4. **Sales Voucher (Function Key: F8):** Generating the statutory GST Tax Invoice linked to the Delivery Note, clearing "Sales Bills to Make," crediting Sales Revenue, crediting Output GST liabilities, and debiting the customer's Sundry Debtor account.

4. Inventory Intelligence, Stock Movement, and Ageing Analysis

Computerized inventory systems provide rich operational intelligence, enabling management to identify slow-moving capital and streamline supply chain flows:

1. Stock Summary and Godown Summary Reports

The premier operational report displaying opening stock, inward receipts, outward issues, and closing stock balances across all items, groups, and warehouses. Management can drill down from total inventory value into specific godown locations, individual item batch numbers, and serial records.

2. Movement Analysis (FSN Analysis)

Classifies inventory items based on their sales velocity and consumption frequency:

- **Fast-Moving Goods (F):** Items experiencing high turnover and continuous customer demand. Require high safety stocks and automated reordering to prevent lost sales.
- **Slow-Moving Goods (S):** Items with steady but modest demand. Require tight inventory control to avoid tying up working capital.

- **Non-Moving Goods (N):** Dormant items that have experienced zero transactions over the preceding 6 to 12 months. Flagged for aggressive promotional discounting, supplier buy-back, or scrap write-off.

3. Stock Ageing Analysis

Categorizes unsold inventory into chronological age brackets based on receipt date (e.g., 0–30 Days, 31–60 Days, 61–90 Days, 91–180 Days, and Over 180 Days). This identifies aging inventory before products exceed statutory shelf-life expiry dates or suffer physical technological obsolescence.

5. Mathematical Models for Reorder Level and Stock Control

To eliminate manual guesswork in inventory replenishment, modern CAS platforms calculate mathematical replenishment thresholds:

$$\text{Reorder Level (ROL)} = \text{Maximum Consumption} \times \text{Maximum Lead Time}$$

Formula Legend:
Reorder Level (ROL) = The specific inventory quantity threshold that automatically triggers a new purchase order.
Maximum Consumption = The peak rate of item consumption or sales experienced during peak operating periods (units per day).
Maximum Lead Time = The maximum calendar time required by the supplier to manufacture, ship, and deliver the goods (in days).

$$\text{Minimum Level} = \text{ROL} - (\text{Normal Consumption} \times \text{Normal Lead Time})$$

Formula Legend:
Minimum Level (Safety Stock) = The absolute buffer stock below which inventory must never fall, protecting against unexpected delivery delays.
Normal Consumption = Average daily consumption rate.
Normal Lead Time = Average supplier delivery lead time (in days).

$$\text{Maximum Level} = \text{ROL} + \text{Reorder Quantity} - (\text{Minimum Consumption} \times \text{Minimum Lead Time})$$

Formula Legend:
Maximum Level = The ceiling inventory level above which stock should never rise, preventing over-investment of working capital and storage congestion.
Reorder Quantity (ROQ) = The standard replenishment order lot size (Economic Order Quantity).
Minimum Consumption / Lead Time = The lowest possible usage rate and fastest possible supplier delivery transit time.

6. Physical Stock Verification and Stock Adjustment Vouchers

Regardless of how sophisticated an accounting software package is, discrepancies inevitably arise between the **Book Stock** (what the software records) and the **Physical Stock** (what actually sits on warehouse shelves). These discrepancies result from evaporation, warehouse spillage, minor handling breakages, unrecorded sample distributions, or physical theft.

Physical Inventory Verification Methodologies

- **Periodic (Annual) Wall-to-Wall Count:** Ceasing all warehouse operations at the close of the financial year (March 31) to physically count every stock item across all facilities. While thorough, it causes severe operational disruption.
- **Continuous (Cycle) Counting:** Dividing the inventory catalog into rotating schedules where warehouse staff count a specified category of items every day throughout the year. High-value Class A items are counted monthly, while low-value Class C items are counted annually, ensuring continuous verification without halting commercial operations.

Stock Adjustment Vouchers in CAS

Reconciling physical discrepancies requires formal inventory adjustment vouchers:

- **Physical Stock Voucher (Function Key: Alt+F10):** The warehouse auditor keys in the verified physical count on hand (e.g., actual count is 95 units, whereas book stock records 100 units). The software automatically calculates the 5-unit deficit and adjusts the closing balance without altering historical transaction vouchers.
- **Stock Journal Voucher (Function Key: Alt+F7):** A versatile multi-purpose inventory voucher used for two critical operations:
  - **Inter-Godown Stock Transfers:** Transferring 50 units of air conditioners from *Ernakulam Central Warehouse* (Source / Consumption side) to *Calicut Retail Showroom* (Destination / Production side). Physical stock is transferred instantaneously across locations without triggering commercial sales tax liabilities.
  - **Manufacturing and Assembly:** In manufacturing enterprises, recording raw material consumption on the Source side and finished goods output on the Destination side based on a pre-configured **Bill of Materials (BOM)**.

7. System Administration, Role-Based Security, and Audit Log Compliance

The administration of a computerized accounting environment demands uncompromising security governance. Corporate financial databases contain proprietary customer lists, trade secret product formulations, executive salary figures, and commercial margin data that must be defended against internal sabotage and external cyber breaches.

Granular Role-Based Access Control (RBAC)

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System administrators configure custom security roles that strictly enforce the principle of least privilege:

- **Data Entry Operator:** Permitted only to create new Sales and Receipt vouchers. Strictly blocked from altering past vouchers, viewing the Cash Book, extracting Trial Balances, or viewing gross profit margins.
- **Inventory Supervisor:** Permitted to generate Purchase Orders, Receipt Notes, and Stock Journals. Blocked from viewing customer financial balances or bank ledgers.
- **Finance Manager:** Granted comprehensive operational authority to approve payments, execute bank reconciliations, post adjusting journal vouchers, and extract final financial statements.
- **External Statutory Auditor:** Granted strictly *Read-Only* inspection permissions across all general ledgers, Day Books, and audit trail logs, with zero authority to alter, create, or delete any data.

Statutory Audit Trail (Edit Log) Governance

In compliance with the statutory directives of the Ministry of Corporate Affairs (MCA), modern CAS software maintains an unalterable, continuous digital **Edit Log**:

- Every creation, modification, or deletion of a transaction is permanently recorded in an immutable database log.
- The log records the exact server timestamp, user login ID, terminal IP address, and stores full before-and-after snapshots of every altered field.
- The software architecture prevents administrators from pausing, modifying, or disabling the edit log feature. Any attempt to manipulate database logs directly through back-end SQL commands invalidates the system's cryptographic integrity hash, immediately alerting statutory auditors to unauthorized database tampering.

8. Disaster Recovery, Data Migration, and Cloud Backup Protocols

Accounting records represent irreplaceable institutional assets. An enterprise that loses its financial database faces immediate operational paralysis: billing stops, outstanding customer receivables cannot be verified, vendor payments freeze, and statutory tax authorities levy crippling non-compliance penalties.

Robust enterprise data administration enforces comprehensive data protection protocols:

- **Automated Scheduled Cloud Backups:** Deploying automated scripts that create encrypted, compressed snapshots of the company data directory every evening. The archive is transmitted over secure TLS 1.3 channels to geographically isolated cloud storage repositories (e.g., AWS S3 with Object Lock enabled).
- **The 3-2-1 Backup Rule:** Maintaining 3 independent copies of data, across 2 different storage media types (local server SSDs and off-site cloud storage), with at least 1 copy completely air-gapped and offline.

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- **Periodic Disaster Recovery Drills:** Testing data restoration procedures quarterly on isolated sandbox test servers to verify backup archive integrity and certify that the database can be fully restored within the enterprise's Recovery Time Objective (RTO under 2 hours) and Recovery Point Objective (RPO under 24 hours).
- **Data Import and Export Interoperability:** Utilizing standardized XML, JSON, and Microsoft Excel data interchange formats to seamlessly migrate opening master balances, export statutory GST reports, and synchronize multi-branch corporate ledgers across distributed enterprise environments.

9. Batch-Wise Inventory Control and Expiry Date Administration

In highly regulated industries—such as pharmaceuticals, packaged FMCG foods, agricultural chemicals, and cosmetics—inventory cannot be tracked merely by generic SKU counts. Every production run must be partitioned into distinct **Batches** or **Lots** carrying verified manufacturing and expiration dates. Selling or dispensing expired stock triggers immediate statutory prosecution under drug control regulations and consumer protection statutes.

Modern CAS platforms incorporate sophisticated **Batch-Wise Inventory Engines**:

- **Master Item Configuration:** During stock item setup, the administrator enables "Maintain in Batches" and activates "Track Date of Manufacturing" and "Use Expiry Dates."
- **Inward Receipt Logging:** When purchase vouchers or goods receipt notes are recorded, the warehouse operator is prompted to enter the unique supplier batch number, physical date of manufacture, and certified expiration date. The software tracks stock balances independently for every individual batch.
- **First-Expiry, First-Out (FEFO) Dispatch Logic:** During sales voucher entry, the CAS automatically prompts the billing clerk with the oldest active batch that is closest to its expiration date (FEFO), ensuring that aging stock is liquidated first and minimizing warehouse obsolescence.
- **Automated Expired Stock Sale Blocks:** The software's algorithmic validation engine permanently blocks billing operators from selecting or invoicing any batch whose expiration date has passed, providing an absolute digital safeguard against unlawful sales of expired merchandise.
- **Recall Tracking Intelligence:** If a manufacturer issues a product safety recall for a contaminated batch, the CAS can extract an instantaneous audit report detailing every customer who purchased that specific batch number within seconds, facilitating immediate product recalls.

10. Bill of Materials (BOM) and Manufacturing Costing Architecture

For manufacturing, assembly, and packaging enterprises, computerized accounting extends beyond buying and selling finished goods to encompass the complete transformation of raw materials into finished products. The architectural cornerstone of manufacturing accounting in CAS is the **Bill of Materials (BOM)**.

A **Bill of Materials** is a comprehensive engineering and accounting recipe specifying the exact quantities of raw materials, sub-assemblies, consumable packing supplies, and scrap percentages required to produce a single standard unit of a finished product:

- **Standard Component Specification:** For example, producing 1 unit of a *Solar Inverter* requires 1 Main Circuit Board, 2 Cooling Fans, 1 Steel Chassis Enclosure, 4 Silicon Power Transistors, and 0.5 Hours of Assembly Labor.
- **Manufacturing Journal Vouchers:** When a production batch is completed in the factory, the accountant records a **Manufacturing Journal** (a specialized form of Stock Journal). The user simply enters the quantity of finished goods produced (e.g., 50 Solar Inverters). The software automatically calculates the required raw materials based on the BOM, decrements component stocks from the raw materials godown, and increments the finished goods godown with 50 units.
- **Allocation of Additional Manufacturing Overheads:** The Manufacturing Journal allows the accountant to allocate direct factory labor costs, power expenditures, and machine depreciation directly to the finished product cost. The software calculates the true **Effective Cost per Unit** of the manufactured goods, updating inventory valuation in the general ledger with complete mathematical precision.

11. Barcode Automation and RFID Scanning Integration in Warehouse CAS

Manual data entry of complex 12-digit SKU numbers and serial codes during high-volume warehouse operations leads to intolerable human typing errors, misplaced consignments, and slow checkout queues. Modern enterprise CAS architectures eliminate manual typing by integrating automated **Barcode** and **Radio Frequency Identification (RFID)** hardware:

Barcode Standardization and Digital Printing

Modern CAS packages integrate native barcode generation engines supporting standardized symbologies (e.g., EAN-13, UPC-A, Code 128, and GS1-128 DataBar):

- **Automated Shelf and Item Label Printing:** The software prints customized adhesive barcode labels directly from purchase vouchers or stock item masters, incorporating product names, MRP prices, batch numbers, and scannable barcode strips.
- **High-Speed Point-of-Sale (POS) Integration:** At retail checkout counters or wholesale dispatch bays, operators scan the barcode using optical laser scanners. The software instantly retrieves the stock item, populates the unit price, applies pre-configured discount rules, and calculates GST taxes in less than 200 milliseconds per item, accelerating customer throughput by over 400%.

RFID Scanning in Multi-Tier Warehousing

In large industrial transshipment distribution centers, passive **RFID (Radio Frequency Identification)** tags are applied to pallets and shipping cartons. As automated forklift vehicles transport pallets through warehouse dock doors, overhead RFID antenna portals read hundreds of

tagged items simultaneously without requiring line-of-sight laser alignment. The RFID gateway transmits real-time API payloads to the CAS, generating automated Goods Receipt Notes (GRN) or Delivery Challans instantaneously.

12. Enterprise Cloud Security: Cryptographic Vaults and Data Governance

As commercial accounting systems increasingly migrate from isolated desktop computers to networked corporate servers and distributed multi-tenant cloud platforms, enforcing enterprise-tier cybersecurity and data governance becomes paramount:

- **End-to-End Cryptographic Encryption:** Accounting data must be protected using industry-standard **AES-256 (Advanced Encryption Standard)** encryption for data stored at rest on physical solid-state drives, and **TLS 1.3 (Transport Layer Security)** cryptographic handshakes for all data packets transmitted across network switches or internet connections.
- **Multi-Tenant Database Isolation:** In cloud SaaS architectures (such as Zoho Books and NetSuite), the cloud infrastructure provider enforces rigorous logical and physical database schema isolation, guaranteeing that one corporate subscriber can never view, query, or compromise the financial ledgers of another enterprise.
- **Periodic Vulnerability Assessments and Penetration Testing (VAPT):** Corporate IT departments subject accounting servers to rigorous semi-annual penetration testing to detect unpatched operating system vulnerabilities, weak administrative credentials, or exposed network ports before malicious cyber syndicates can exploit them.

13. Selective Inventory Control Frameworks in CAS: ABC, VED, and HML Models

In large industrial, wholesale, and retail enterprises maintaining tens of thousands of active stock items, it is physically and economically unfeasible to exercise identical levels of intensive control over every single item. Modern CAS platforms integrate automated **Selective Inventory Control** algorithms to optimize managerial bandwidth and working capital allocation:

1. ABC Analysis (The Pareto Principle of Consumption Value)

Classifies inventory items based on their annual consumption monetary value (Annual Consumption Value = Annual Usage Quantity × Unit Purchase Cost):

- **Class A Items (High Value):** Represent roughly 10% to 15% of total physical inventory items, but account for 70% to 80% of total annual consumption expenditure. Require continuous managerial monitoring, tight cycle counting, minimal safety buffers, and just-in-time supplier delivery contracts.
- **Class B Items (Moderate Value):** Represent roughly 20% to 30% of inventory items and 15% to 20% of consumption value. Managed via standard automated reorder point systems and periodic quarterly audits.

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- **Class C Items (Low Value):** Represent 50% to 70% of physical item counts, but account for only 5% to 10% of total annual consumption value (e.g., standard nuts, bolts, washers, office stationery). Managed via bulk purchasing, high safety stocks, and simple two-bin visual replenishment systems, eliminating costly administrative tracking.

2. VED Analysis (Criticality to Operations)

Applied extensively in manufacturing plants and transport fleet maintenance to classify equipment spares based on the criticality of their functional availability:

- **Vital Items (V):** Spares whose absence halts an entire production line or risks human safety (e.g., main turbine bearings). Must be maintained in stock at all times regardless of cost.
- **Essential Items (E):** Spares whose absence causes moderate operational friction or reduced manufacturing throughput. Moderate stock buffers maintained.
- **Desirable Items (D):** Non-critical items whose temporary absence causes zero production disruption. Sourced on demand without maintaining permanent warehouse stock.

3. HML Analysis (Unit Price Classification)

Classifies items purely based on their unit purchase price into High-price, Medium-price, and Low-price tiers, guiding physical security protocols and authorization limits for warehouse stock issues.

14. Consignment In-Transit Governance and FASTag API Verification

Under India's national logistics framework, managing physical goods movement requires tight coordination between CAS systems and physical highway infrastructure:

- **FASTag Toll Integration:** National Highways Authority of India (NHAI) electronic toll plazas integrate with the national GST E-Way Bill system. As freight transport vehicles cross electronic toll booths, RFID FASTag scans log real-time vehicle GPS coordinates directly onto government servers.
- **Automated In-Transit Expiry Monitoring:** Under CGST Rule 138(10), an E-Way Bill is valid for 1 day for every 200 kilometers of transit distance. If transport vehicles suffer mechanical breakdowns or highway traffic blockages, the E-Way bill must be officially extended within 8 hours before or after its statutory expiration time. Modern CAS packages track active vehicle transit logs via API, alerting dispatch managers to extend expiring waybills before highway enforcement authorities intercept vehicles.
- **Detention and Seizure Defense under Section 129:** In the event of roadside transport inspections by state GST mobile squads, drivers can present digitally signed invoice QR codes on mobile smartphones, enabling instant officer verification and preventing arbitrary consignment detention.