DegreeLive

BBA	SEMESTER V	UNIVERSITY OF KERALA	COURSE CODE: UK5SECMGT301

COMPUTERIZED ACCOUNTING

EXAM REVISION NOTES

JOIN WHATSAPP CHANNEL →

MODULE I

FOUNDATIONS OF COMPUTERIZED ACCOUNTING SYSTEMS

Computerized Accounting System (CAS) Concept and Scope: A Computerized Accounting System is an integrated, software-driven information architecture that captures, processes, stores, and extracts financial transactions according to established Generally Accepted Accounting Principles (GAAP). Rather than relying on physical journals and paper ledgers, CAS utilizes relational database engines, automated double-entry validation, and real-time financial reporting routines. Entering a single transaction voucher instantaneously and simultaneously updates subsidiary ledgers, general ledgers, inventory stock, tax obligations, and dynamic financial statements.

Core Features and Advantages of CAS over Manual Accounting: 1. Instantaneous Processing: Single voucher entry immediately cascades updates across the entire accounting database. **2. Absolute Arithmetic Precision:** Algorithmic calculations eliminate human casting, subtraction, and transposition errors. **3. Automated Double-Entry Equilibrium:** Software prevents saving unbalanced journal entries where debits do not equal credits. **4. Centralized Data Repository:** Single database eliminates redundant clerical books and synchronizes sales, warehouse, and treasury data. **5. Real-Time Reporting:** Instantaneous generation of Day Books, Trial Balances, and Balance Sheets at any hour without month-end clerical batch delays. **6. Scalability:** Accommodates growing transaction volumes, multiple branches, and multi-currency operations without expanding clerical headcount.

The Five Core Structural Components of CAS: 1. Hardware: Physical electronic machinery including multi-core processor servers, solid-state drives (SSDs), barcode scanners, network switches, and UPS backup power units. **2. Software:** Operating systems, relational database management systems (RDBMS), and application accounting packages (Tally Prime, Zoho Books, SAP). **3. Personnel (Brainware):** Data entry operators, professional accountants, database administrators, and statutory auditors. **4. Procedures:** Standardized operating guidelines governing voucher authorization workflows, password rotation, and backup schedules. **5. Data:** Raw commercial master records (chart of accounts, customer files) and transactional voucher logs.

Principles of Account Grouping and Classical Hierarchy: Account grouping categorizes individual financial ledgers into homogeneous hierarchical classes based on economic character and reporting destination: **1. Assets:** Subdivided into Current Assets (cash, bank, debtors, stock) and Non-Current Fixed Assets (plant, machinery, buildings). **2. Liabilities:** Subdivided into Current Liabilities (sundry creditors, short-term debt, tax dues) and Non-Current Liabilities (long-term bank loans, debentures). **3. Equity:** Shareholder capital, reserves, and retained earnings. **4. Revenue:** Direct operational sales income and indirect non-operating incomes. **5. Expenses:** Direct manufacturing/trading expenses and indirect administrative operating costs.

Typology of Account Codification Systems: Codification assigns unique symbols to ledgers for rapid database processing: **1. Sequential Coding:** Consecutive numbers assigned chronologically (001, 002); simple but lacks structural hierarchy and expansion logic. **2. Block Coding:** Dedicated numerical blocks reserved for major classes (1000-1999 for Assets, 2000-2999 for Liabilities); separates classes but lacks sub-account depth. **3. Hierarchical Coding:** Structured positional digits representing organizational tiers (e.g., 1-1-02-005: 1=Assets, 1=Current Assets, 02=Bank Accounts, 005=HDFC Bank); delivers infinite scalability and automated roll-up reporting. **4. Mnemonic Coding:** Intuitive alphabetic abbreviations (e.g., HDFC-KOC-CUR); easy for human recall but difficult to standardize across massive corporate ERPs.

Internal Controls, Audit Trail, and Data Integrity (MCA Mandate): Role-Based Access Control (RBAC): Segmenting user permissions to enforce least privilege; billing clerks cannot access bank balances or modify past vouchers. **Segregation of Duties:** The maker who initiates an invoice cannot authorize electronic bank payment. **Audit Trail (Edit Log):** Statutory MCA mandate requiring accounting software to maintain an immutable log recording the user ID, timestamp, and before-and-after values of every voucher creation, modification, or deletion, with zero administrative bypass options. **ACID Database Properties:** Enforcing Atomicity (all-or-nothing execution), Consistency (rule preservation), Isolation (transaction independence), and Durability (permanent non-volatile storage).

Database Normalization and Forensic Auditing (Benford's Law): Database Normalization (1NF, 2NF, 3NF): Decomposing flat accounting spreadsheets into relational tables to eliminate data redundancy and update anomalies; 1NF ensures atomic line items; 2NF eliminates partial functional dependencies; 3NF removes transitive dependencies (e.g., separating customer postal data). **Auditing Through the Computer (CAATs):** Testing internal software code logic using the test data method, integrated test facility (ITF), and generalized audit software (GAS). **Benford's Law in Forensic Auditing:** Natural logarithmic distribution of first digits where digit 1 appears in 30.1% of authentic transactions; forensic algorithms analyze digit frequency spikes to uncover fraudulent invoice padding and duplicate payment schemes.

Cloud Multi-Tenancy and the Account Aggregator (AA) Ecosystem: Multi-Tenant Database Isolation: Cloud SaaS architecture where multiple corporate subscribers share common server infrastructure while software logical partitions prevent unauthorized cross-tenant data visibility. **The Indian Account Aggregator Framework:** RBI-regulated financial data sharing consent architecture enabling CAS packages to fetch digitally signed financial bank statements and credit histories directly from lending institutions in real-time, eliminating physical paper bank statement attestation.

MODULE II

COMPUTERIZED ACCOUNTING PACKAGES AND ARCHITECTURE

Architectural Evolution of Accounting Packages: Progressed across three generations: **1. File-Based Desktop Systems:** Flat-file databases (dBase, FoxPro) on single personal computers; single-user, vulnerable to local hard drive failure. **2. Client-Server On-Premise Networks:** Multi-tier architecture on local area networks (LAN); desktop clients handle data entry while dedicated servers manage relational database storage, transactional locking, and security (Tally ERP 9, Busy). **3. Cloud-Native Multi-Tenant SaaS:** Applications hosted on hyperscale cloud centers (AWS, Azure); accessed via browsers or mobile apps; continuous automated backups and seamless API connectivity (Zoho Books, Xero, NetSuite).

Analysis of Leading On-Premise Packages: Tally Prime: Dominant Indian platform; proprietary C++ binary data engine; lightning-fast keyboard-driven entry velocity; universal Alt+G "Go To" search engine; statutory Tally Prime Edit Log for immutable audit trail compliance. **QuickBooks Desktop:** International graphical application using document-centric entry forms (checks, invoices); user-friendly for non-accountants; phased out in favor of cloud subscriptions. **Busy Accounting:** Premier Indian SME package; outstanding batch-wise inventory tracking, manufacturing expiry controls, and automated GST billing.

Cloud Accounting Software Systems: Zoho Books: India-centric cloud platform; seamless direct GSTN integration for one-click GSTR filing; client collaboration payment portal; native synchronization with Zoho CRM and Inventory. **Xero:** Global cloud platform renowned for intuitive interface; rule-based automated bank feed reconciliation; massive third-party API ecosystem; unlimited user collaboration model. **FreshBooks & Wave:** Tailored for freelancers and micro-businesses; FreshBooks emphasizes time-tracking and project invoicing; Wave offers free core accounting monetized via payment processing fees. **Oracle NetSuite:** Enterprise cloud ERP managing multi-subsidiary global corporate consolidations and complex manufacturing workflows.

Open Source Accounting Architectures: ERPNext: Open-source Python/Frappe framework with MariaDB backend; native Indian GST compliance, multi-currency general ledger, and manufacturing BOM; self-hostable with zero recurring licensing costs. **Odoo:** Modular open-source suite; Community edition provides foundational double-entry ledgers; Enterprise edition adds automated bank synchronization and consolidated financial statements.

Strategic Software Selection Criteria and TCO Evaluation: Management evaluates packages across five parameters: **1. Scale Alignment:** Matching transaction complexity with software capabilities (desktop Tally for retail vs. cloud Zoho Books for multi-branch firms). **2. Total Cost of Ownership (TCO):** Evaluating upfront licenses, server hardware, implementation consulting, annual maintenance renewals, and IT support salaries over a 5-year lifecycle. **3. Statutory Agility:** Guaranteed vendor updates for revised GST slabs, E-Way rules, and MCA audit log mandates. **4. Security and Concurrency:** AES-256 encryption, granular RBAC, and solid-state NVMe storage delivering high IOPS. **5. Vendor Longevity:** Financial stability of the software vendor and widespread availability of trained accounting talent.

Installation Architecture and Environment Configuration: Single-User (Silver): Application and database installed on a single desktop for sole proprietors. **Multi-User (Gold):** Centralized Tally Server / Database Host on Gigabit LAN managing master data, with multiple client entry terminals operating under record-level locking. **Environment Best Practices:** Segregating program files (C: drive) from company data directories (D: drive); configuring firewall database port exclusions (Port 9000); scheduling automated nightly encrypted backups following the 3-2-1 backup rule.

Remote Cloud Virtualization and Data Migration Methodologies: Tally on Cloud (Hosted RDP): Deploying on-premise software on cloud virtual machines (AWS, Azure) accessed via Remote Desktop Protocol; provides multi-branch real-time centralized data with zero local synchronization latency. **Data Migration Strategies: Big Bang Cut-Over:** Complete switch on fiscal year-end (March 31); high operational risk. **Parallel Running:** Operating both legacy and new CAS packages concurrently for 1 to 3 months until trial balance parity is certified. **System Extensibility:** Open Database Connectivity (ODBC) enabling live SQL queries from Excel/Power BI; Tally Definition Language (TDL) for custom invoice layouts and automated approval workflows.

MODULE III

COMPANY CREATION AND CORE LEDGER OPERATIONS

Company Creation Parameters and Security Configuration: Company creation establishes the isolated database container for financial records. **Key Setup Fields:** Company trade name, mailing address, state selection (crucial for determining intra-state vs. inter-state GST), currency symbol (Rs. / INR), financial year beginning date (April 1), and books beginning date (actual operational start date; prohibits back-dated vouchers prior to this date). **Security Controls:** TallyVault cryptographic container encryption masks company names as asterisks; User Access Control assigns role-based login credentials; disabling educational mode blocks unauthorized external opening.

Master Setup: Groups, Sub-Groups, and Ledger Account Creation: Predefined Hierarchy: 28 predefined groups in standard CAS (15 Primary groups like Capital Account, Current Assets, Current Liabilities, Fixed Assets, Loans; 13 Sub-groups like Bank Accounts, Cash-in-hand, Sundry Debtors, Sundry Creditors). **Ledger Parameters:** Ledger name, alphanumeric alias for keyboard entry, parent group classification, opening balances, bank account details for auto-BRS, and statutory PAN/GSTIN registration numbers.

Comprehensive Typology of Accounting Vouchers: 1. Contra Voucher (F4): Purely internal cash and bank transfers (cash deposited into bank, petty cash withdrawals, inter-bank transfers). **2. Payment Voucher (F5):** All cash/bank disbursements for vendor bills, operating expenses, and tax remittances. **3. Receipt Voucher (F6):** Inflows from customer receivables, owner capital introduction, and interest income. **4. Journal Voucher (F7):** Non-cash adjusting entries (depreciation provisions, accruals, bad debt write-offs, fixed asset credit purchases). **5. Sales Voucher (F8):** Customer billing in Item Invoice mode (inventory items) or Accounting Invoice mode (professional services). **6. Purchase Voucher (F9):** Procurement of goods and services updating inventory and Input Tax Credit (ITC).

Voucher Entry Mechanics and Narration Standards: Single Entry Mode: Header account selected for cash/bank; multiple ledger payments listed below for rapid logging. **Double Entry Mode:** Classical explicit To/By or Dr/Cr rows mandatory for compound journal entries. **Narration Standards:** Legally binding factual explanations citing supporting bill numbers, bank NEFT/RTGS UTR numbers, and managerial approval references to ensure statutory audit compliance.

Stock Valuation Methodologies in CAS: Inventory directly dictates Cost of Goods Sold (COGS = Opening Stock + Net Purchases - Closing Stock) and balance sheet asset values. **1. First-In, First-Out (FIFO):** Oldest acquired units issued first; ending stock reflects current replacement prices; during inflation, yields lower COGS and higher reported profits. **2. Last-In, First-Out (LIFO):** Most recent units issued first; prohibited under Ind AS 2 / IAS 2 for statutory reporting. **3. Moving Weighted Average Cost (WAC):** Recalculates unit cost after every incoming purchase batch: Weighted Average Unit Cost = Sum of (Quantity * Cost) / Sum of Quantity; smooths out purchase price spikes. **4. Standard Cost:** Inventory valued at engineered standard rates with variance accounts capturing cost deviations.

Debit Notes, Credit Notes, and Cost Center Accounting: Credit Notes (Alt+F6): Issued to customers for sales returns, volume turnover rebates, and over-billing corrections; automatically adjusts outward tax liability in GSTR-1. **Debit Notes (Alt+F5):** Issued to suppliers for purchase returns and short-shipment claims. **Cost Centers and Categories:** Multi-dimensional tracking allocating expenses (e.g., travel expenses allocated across Kochi, Calicut, and TVM branch cost centers) without cluttering the primary Chart of Accounts.

Auto-BRS and Multi-Currency Foreign Exchange Realization: Automated Bank Reconciliation (Auto-BRS): Importing electronic statements (CSV, MT940); algorithmically matching cheque numbers and instrument IDs; one-click adjusting voucher creation (Alt+J) for bank charges and interest credits. **Multi-Currency Engine:** Multi-currency transaction logging with daily buying/selling rate matrices; automated system detection and posting of realized foreign exchange variances to the Forex Gain/Loss ledger upon invoice settlement.

Trade Discounts vs. Cash Discounts in CAS Billing: Trade Discount: Deducted directly on the face of the invoice before calculating net taxable value; does not appear as a separate ledger account in the general ledger. **Cash (Settlement) Discount:** Allowed for prompt payment within agreed credit terms (e.g., 2/10 net 30); recorded as a distinct expense ledger ("Discount Allowed A/c") during receipt voucher entry; requires formal credit note generation under Section 15(3) of the CGST Act if granted post-supply.

MODULE IV

FINANCIAL REPORTING AND BUSINESS COMPLIANCE

Automated Generation of Primary Books of Account: Day Book: Chronological register of all daily vouchers with multi-dimensional filtering by voucher type, ledger, and narration; full drill-down capability into original vouchers. **Cash Book:** Real-time tracking of cash receipts, disbursements, and closing balances; automated pop-up alerts prevent negative cash-in-hand balances. **Bank Book:** Sub-ledgers for commercial current accounts and bank overdrafts, tracking running book balances, uncleared cheques, and sanctioned credit limits.

Trial Balance Extraction and Error Rectification: Automated Extraction: Instantaneous verification of double-entry mathematical equilibrium (Total Debits = Total Credits). **Viewing Perspectives:** Group-wise summary vs. detailed ledger-wise views; Gross Trial Balance vs. Net closing balance views. **Accounting Errors:** Errors of omission (unrecorded bills), errors of commission (wrong customer account posted), errors of principle (capital expenditure debited as revenue expense), and compensating errors remain undetected by Trial Balance arithmetic. **Rectification:** Rectified strictly via formal Journal Vouchers (F7) preserving the digital audit trail rather than altering historical vouchers.

Automated Final Financial Statements Generation: Profit and Loss Account: Combines Trading Account (Gross Profit from Sales less COGS) and Profit & Loss Account (Operating Profit less Administrative/Non-Operating Expenses); automatically transfers Net Profit to Balance Sheet reserves; supports horizontal T-format and vertical Schedule III format. **Balance Sheet:** Real-time financial position snapshot according to Assets = Capital + Liabilities. **Liquidity Metrics:** Working Capital = Current Assets - Current Liabilities; Current Ratio = Current Assets / Current Liabilities (standard benchmark 2:1).

Statutory GST Configuration and Tax Invoicing: Tax Structure: Central GST (CGST) and State GST (SGST) on intra-state supplies; Integrated GST (IGST) on inter-state supplies; all configured under "Duties & Taxes" group. **HSN/SAC Mapping:** Mandatory 4, 6, or 8-digit tariff codes mapped to statutory tax slabs (0%, 5%, 12%, 18%, 28%). **Tax Invoice Mandates (Rule 46):** Sequential invoice numbers, supplier/buyer GSTINs, Place of Supply (POS), HSN codes, itemized tax breakdowns, and 64-character IRN with digitally signed QR code for e-invoicing compliance.

E-Way Bills and Tax Deducted at Source (TDS) Administration: E-Way Bills: Mandatory electronic transit document for consignments exceeding Rs. 50,000; Part A captures invoice details; Part B captures vehicle transport numbers; generated via automated JSON API payload. **TDS Configuration:** Automated tax deduction on commercial payments: Sec 194C (contractors @ 1-2%), Sec 194J (professional fees @ 10%), Sec 194I (rent @ 10%); enforces 20% punitive deduction if vendor lacks valid PAN; prepares quarterly Form 26Q and 24Q electronic returns.

Payroll Accounting Architecture in CAS: Seamless integration of employee compensation with general ledgers: **1. Masters:** Employee groups and individual profiles (PAN, Aadhaar, Bank IFSC, PF UAN). **2. Pay Heads:** Earnings (Basic Salary, DA, HRA, allowances); Employee Deductions (EPF @ 12%, ESI @ 0.75%, Professional Tax, TDS); Employer Contributions (Employer PF @ 12%, Employer ESI @ 3.25%). **3. Salary Structures:** Associating pay heads with percentage formulas. **4. Workflow:** Attendance voucher → automated Payroll voucher (Alt+A) → electronic bank payment disbursement → professional PDF Payslip generation.

GSTR-2B Automated ITC Reconciliation and MIS Reporting: GSTR-2B Matching Engine: Algorithmic cross-referencing matching purchase bills against auto-drafted portal credit statements; isolates missing ITC and sends automated reminders to defaulting vendors. **MIS Executive Reporting:** Real-time Cash Flow Statements under AS 3 (operating, investing, and financing flows); accounts receivable ageing reports with automated credit limit blocks preventing billing to overdue debtors. **Terminal Benefits:** Automated monthly actuarial gratuity provisions under the Payment of Gratuity Act 1972 and annual statutory bonus calculation schedules under the Payment of Bonus Act 1965.

MODULE V

INVENTORY MANAGEMENT AND SYSTEM ADMINISTRATION

Inventory Master Creation Architecture: Units of Measure (UoM): Simple units (Nos, Pcs, Kgs, Ltrs) and Compound units (1 Box = 24 Pcs) enabling bulk purchase and retail piece billing. **Stock Groups:** Hierarchical functional grouping (e.g., Electrical Switchgear → Circuit Breakers). **Stock Categories:** Cross-cutting commercial classifications by brand (Samsung, LG) or quality grade. **Godowns:** Multi-location warehouse tracking across factory stores, regional depots, and retail showrooms. **Stock Items:** Individual SKU nodes configured with part numbers, HSN codes, tax slabs, valuation methods, and opening stock values.

The Complete Order-to-Fulfillment Inventory Cycle: Procurement Cycle: Purchase Order (Alt+F4, non-financial order tracking) → Receipt Note / GRN (Alt+F9, increases warehouse physical stock and credits temporary liability) → Rejections Out (Alt+F6, returns defective goods to supplier) → Purchase Voucher (F9, converts tracking into legal vendor liability). **Sales Cycle:** Sales Order (Alt+F5, reserves inventory) → Delivery Note (Alt+F8, decrements physical warehouse stock) → Rejections In (Alt+F6, logs customer delivery rejections) → Sales Voucher (F8, generates legal GST tax invoice linked to delivery challan).

Inventory Intelligence and Stock Control Models: Stock Summary Reports: Real-time valuation across all items, batches, and godowns. **FSN Movement Analysis:** Fast-moving (continuous turnover, high safety stock), Slow-moving (steady modest demand), Non-moving (dormant stock flagged for clearance). **Stock Ageing Analysis:** Categorizing inventory into age brackets (0-30, 31-60, 61-90, >180 days) to prevent obsolescence. **Mathematical Replenishment Models:** Reorder Level (ROL) = Maximum Consumption * Maximum Lead Time; Minimum Level (Safety Stock) = ROL - (Normal Consumption * Normal Lead Time); Maximum Level = ROL + Reorder Quantity - (Minimum Consumption * Minimum Lead Time).

Physical Stock Verification and Adjustment Vouchers: Reconciling differences between software Book Stock and warehouse Physical Stock: **Verification Methods:** Annual wall-to-wall counts (comprehensive but disruptive) vs. continuous cycle counting (rotating daily counts of Class A, B, C items). **Adjustment Vouchers:** Physical Stock Voucher (Alt+F10) records actual verified counts; Stock Journal Voucher (Alt+F7) adjusts inventory deficits/spoilage and records inter-godown transfers (moving stock from central warehouse to branch showroom without triggering sales taxes).

Batch-Wise Tracking, Expiry Control, and BOM Manufacturing: Batch-Wise Control: Inward receipt logging of unique batch numbers, manufacturing dates, and expiry dates; First-Expiry, First-Out (FEFO) automated dispatch logic; automated software blocks preventing billing of expired stock; instantaneous batch recall tracking. **Bill of Materials (BOM):** Engineering recipe specifying component quantities and scrap allowances to produce finished goods; Manufacturing Journal decrements raw materials and increments finished goods, allocating direct labor and overheads to compute exact unit production costs.

System Administration, Role-Based Security, and Cloud Disaster Recovery: Granular RBAC: Restricting access by organizational seniority (billing clerks restricted to data entry; auditors granted read-only access). **Statutory MCA Edit Log:** Immutable, unalterable transaction audit logs tracking user IDs, timestamps, and before-and-after values. **Enterprise Cloud Security:** AES-256 database encryption at rest, TLS 1.3 encryption in transit, and multi-tenant database isolation. **Disaster Recovery Protocols:** Automated scheduled cloud backups, 3-2-1 backup rule, quarterly sandbox disaster recovery restoration drills, and standardized XML/JSON data migration interoperability.

Selective Inventory Control, Barcode Hardware, and FASTag Transit Governance: Selective Control Models: ABC Analysis (Class A: 70% value, 10% items; Class B: 20% value, 20% items; Class C: 10% value, 70% items); VED Analysis (Vital, Essential, Desirable equipment spares); HML Analysis (High, Medium, Low unit price tiers). **Barcode & RFID Automation:** Printing EAN-13 / Code 128 barcode labels directly from stock masters; laser barcode checkout accelerating billing velocity by 400%; RFID portal gates logging pallet movements automatically. **Consignment Highway Governance:** Real-time integration with NHAI FASTag toll gates tracking vehicle movements; automated E-Way bill expiry alerts ensuring timely extension requests within 8 hours to prevent vehicle seizure under CGST Section 129.

Cross-Docking, Drop-Shipping, and Third-Party Logistics (3PL) in CAS: Cross-Docking Architecture: Direct transfer of inward supplier shipments to outbound customer delivery vehicles with minimal warehouse dwell time, reducing holding costs. **Drop-Shipping Workflows:** Direct shipment from third-party manufacturer to final consumer; CAS creates linked Purchase and Sales vouchers while suppressing physical inventory decrements. **3PL Logistics Synchronization:** API integration with external courier aggregators (Shiprocket, Delhivery) automating shipping label generation, tracking status updates, and reverse logistics return management.

DegreeLive