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B.Com Honours

Semester III

Calicut University

FINTECH

Course Code: COM3MN206 • Module 4 Notes

Module IV: Payments, Transactions, & Regulations

Covers mobile payments infrastructure, contactless payment technologies, e-commerce gateways, RegTech innovations, and regulatory compliance standards.

Unit 15: Mobile Payments & Digital Wallets – UPI Architecture & NPCI

Unified Payments Interface (UPI): Developed by NPCI (National Payments Corporation of India), enabling instant 24/7 bank-to-bank peer-to-peer and merchant payments via Virtual Payment Addresses (VPA / UPI ID) without revealing bank account details.

Unit 16: Contactless Payments & NFC Technology – Tokenization & RFID

1. NFC Technology: Near Field Communication enabling tap-and-pay card/mobile transactions within a 4 cm range.
2. Tokenization: Replaces sensitive 16-digit card numbers with a unique encrypted surrogate "token", securing transactions against data breaches.

Unit 17: Payment Gateways & E-Commerce Platforms – Merchant Discount Rate (MDR)

Merchant Discount Rate (MDR): The percentage fee charged to merchants by acquiring banks and payment gateways for processing digital transactions.

> **Merchant Settlement = Gross Sale Amount - (Gross Sale × MDR Rate %)**

Unit 18: Regulatory Challenges, Compliance, & RegTech – DPDP Act 2023 & RBI Sandbox

1. RegTech & Compliance: Automation of Anti-Money Laundering (AML) and Know-Your-Customer (KYC) compliance using AI.
2. DPDP Act 2023: Digital Personal Data Protection Act enforcing explicit user consent and strict data localization.
3. RBI Regulatory Sandbox: Controlled live testing environment for innovative FinTech products with regulatory relaxations.

Unit 19: Ethical Considerations & Cybersecurity in FinTech

Addressing algorithmic lending bias, dark UX patterns, zero-day cybersecurity exploits, and bridging the rural digital financial divide.

Practical Case Problem (E-Commerce Merchant Settlement & MDR Calculation): An e-commerce merchant processes Rs. 10,00,000 in monthly digital sales. Transaction split: (1) Credit Card Payments = Rs. 6,00,000 (MDR = 1.8%), (2) Debit Card Payments = Rs. 3,00,000 (MDR = 0.9%), (3) UPI Payments = Rs. 1,00,000 (Zero MDR under Govt mandate). GST on MDR charges = 18%. Calculate (a) Total MDR fee charged, (b) Total GST on MDR, and (c) Net amount credited to merchant bank account.

Step-by-Step Solved Settlement Computation:

- **1. Credit Card MDR Fee:** (6,00,000 imes 1.8% = ext{Rs. 10,800}).
- **2. Debit Card MDR Fee:** (3,00,000 imes 0.9% = ext{Rs. 2,700}).
- **3. UPI MDR Fee:** Rs. 0 (Zero MDR).

  > **Total Base MDR Fee = 10,800 + 2,700 + 0 = Rs. 13,500**

- **4. GST on MDR (18%):** (13,500 imes 18% = ext{Rs. 2,430}).
- **5. Total Transaction Deductions:** (13,500 + 2,430 = ext{Rs. 15,930}).
- **6. Net Merchant Account Settlement:**

  > **Net Settlement = Gross Sales (10,00,000) - Total Charges (15,930) = Rs. 9,84,070**