

राष्ट्रिय जीवन बीमा कम्पनी लिमिटेड
प्राविधिक सेवा, सूचना प्रविधि समूह, तह ५, वरिष्ठ सहायक पदको आन्तरिक प्रतियोगितात्मक परीक्षाको
पाठ्यक्रम
द्वितीय पत्र (Paper II)
सेवा सम्बन्धी (Service Related)

खण्ड (A) - ७० अङ्क
(८ प्रश्न × ५ अङ्क र ३ प्रश्न × १० अङ्क)

1. Computer Organization and Architecture

- 1.1. Basic Computer Instructions: Memory-Reference, Register-Reference
- 1.2. Instruction Set and Data Representation
- 1.3. Input/Output(I/O) Mechanisms and Memory Addressing Techniques
- 1.4. Computer Structure and Functions: Data Processing, Storage, Movement, Control
- 1.5. Computer Components and Their Functions
- 1.6. Processor Architectures: Reduced Instruction Set Computer (RISC) and Complex Instruction Set Computer (CISC)
- 1.7. Parallel Processing: Single Instruction, Single Data (SISD), Single Instruction, Multiple Data (SIMD), Multiple Instruction, Single Data (MISD), Multiple Instruction, Multiple Data (MIMD)
- 1.8. Computer Architectures: Von Neumann and Harvard Architecture

2. Software Engineering Principles:

- 2.1. Software Process: Software Development Life Cycle (SDLC) Overview and Development Approaches
- 2.2. Project Management: Planning, Cost, Risk, and Quality Basics
- 2.3. Requirements Engineering: Gathering, Analysis, and Validation
- 2.4. Design & Implementation: Basic Design, Coding, and Testing Concepts
- 2.5. Maintenance & Tools: Maintenance Types, Standards, and Software Tools

3. Information security

- 3.1. Goals of Information Security: Protect Data, Systems and Networks from Threats
- 3.2. Challenges and Cyber Threats: Overview of Cybercrime, Cyber Warfare, Cyber Terrorism, Cyber Espionage and Common Security Issues
- 3.3. Cyber Security Vulnerabilities: Weak Software, Poor System Management, Complex Networks, Open Data Access, Weak Passwords, Unprotected Connections and Low Awareness
- 3.4. Cyber Security Safeguards: Access Control, Auditing, Authentication, Biometrics, Encryption, Firewalls, Intrusion Detection, Ethical Hacking, Dos Protection, Security Policies and Threat Management

4. Database systems

- 4.1. Database Basics: Relational and Entity-Relationship (ER) Models, Structured Query Language (SQL), Functional Dependencies, File Storage
- 4.2. Transactions & Concurrency: Concept of Transactions, Concurrent Execution, Basic Concurrency Control
- 4.3. Crash Recovery: Types of Failures and Simple Recovery Techniques
- 4.4. Query & Optimization: Basic Query Processing and Simple Optimization
- 4.5. Indexing: Introduction to Hash-Based and Tree-Based Indexing
- 4.6. Security: Basic Database Protection Access Control and Backup

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5. Computer Networks

- 5.1. Protocol Stack & Switching: Layers, Switching Types, Performance
- 5.2. Link Layer: Error Control, Virtual Local Area Network (VLAN), Local Area Network (LAN), Wide Area Network (WAN), Wireless, Media Access Control (MAC)
- 5.3. Network Layer: Internet Protocol (IP), Subnetting, Internet Protocol Version 6 (IPv6), Routing, Quality of Service (QoS)
- 5.4. Transport Layer: Transmission Control Protocol/ User Datagram Protocol (TCP/UDP), Flow Control, Security
- 5.5. Application Layer: Hypertext Transfer Protocol (HTTP), File Transfer Protocol (FTP), E-mail, Domain Name System (DNS), Content Delivery Network (CDN)

6. E-Commerce Technology

- 6.1. Introduction to E-Commerce, Basics of E-Commerce and Online Business Operations
- 6.2. E-Payments & Technologies: Principles of E-Payments, E-Banking, Encryption/Decryption, Extensible Markup Language (XML), Representational State Transfer (REST), Secure Sockets Layer/Transport Layer Security (SSL/TLS) Protocols
- 6.3. E-Commerce Strategies: Methods And Approaches for Conducting Business Online Effectively
- 6.4. E-Commerce Security: Common Security Threats and Safe Practices for Online Transactions
- 6.5. E-Business Models: Different Online Business Interactions: Business to Business (B2B), Business to Customer (B2C), Business to Employee (B2E), Customer to Customer (C2C), Government to Government (G2G), and Government to Customer (G2C)

7. Operating System

- 7.1. Processes and Threads: Symmetric Multiprocessing, Microkernels, Concurrency, Mutual Exclusion, Deadlock and Synchronization
- 7.2. Scheduling: Concept and Algorithms
- 7.3. Memory Management
- 7.4. Input Output and Files: I/O Devices and Its Organization, Principles of I/O Software and Hardware, Disks, Files and Directories Organization, File System Implementation
- 7.5. Distributed Systems: Distributed Message Passing, Remote Procedure Call (RPC), Client/Server Computing, Clusters

8. Emerging Technologies

- 8.1. Block Chain: Concept, Architecture, Benefits, Risks, and Real-World Applications
- 8.2. Big Data: Concept, Characteristics, Processing, and Applications in Decision Making
- 8.3. Cloud Computing: Concept, Service Models, Deployment Models, Benefits, and Uses
- 8.4. Cryptocurrency: Concept, Working Mechanism, Benefits, Risks, and Regulatory Considerations

खण्ड (B) - ३० अङ्क

(४ प्रश्न × ५ अङ्क र १ प्रश्न × १० अङ्क)

9. सम्बन्धित कानूनी व्यवस्था (Relevant Legal Provisions)

- 9.1. नेपालको संविधान: भाग १,३,४ र अनुसूची (Constitution of Nepal: Part १, २, ४ and Schedules)

राष्ट्रिय जीवन बीमा कम्पनी लिमिटेड

प्राविधिक सेवा, सूचना प्रविधि समूह, तह ५, वरिष्ठ सहायक पदको आन्तरिक प्रतियोगितात्मक परीक्षाको

पाठ्यक्रम

- 9.2. बीमा ऐन, २०७९ र बीमा नियमावली, २०८१ (Insurance Act, 2079 and Insurance Regulations, 2081)
- 9.3. राष्ट्रिय जीवन बीमा कम्पनी लिमिटेडको प्रबन्धपत्र, नियमावली (Memorandum of Association and Articles of Association of Rastriya Jeewan Beema Company Limited)
- 9.4. राष्ट्रिय जीवन बीमा कम्पनी लिमिटेड कर्मचारी सेवा, शर्त तथा सुविधा सम्बन्धी विनियमावली (Employee Service, Conditions and Facilities Bylaw, 2082 of Rastriya Jeewan Beema Company Limited)
- 9.5. विद्युतीय (इलेक्ट्रोनिक) कारोबार ऐन, २०६३ (Electronic Transactions Act, 2063)
- 9.6. सूचना तथा सञ्चार प्रविधि नीति, २०७२ (Information Technology Policy, 2015)
- 9.7. सम्पत्ति शुद्धीकरण (मनी लाउन्डरिङ) निवारण ऐन, २०६४ (Asset (Money) Laundering Prevention Act, 2008)
- 9.8. बीमकको सूचना प्रविधि मार्गदर्शन, २०७६ (Information Technology Guidelines for Insurers, 2019)
- 9.9. डिजिटल बीमा नीति मार्गदर्शन, २०८१ (Digital Insurance Policy Guideline, 2024)
- 9.10. सार्वजनिक खरिद ऐन, २०६३ र सार्वजनिक खरिद नियमावली, २०६४: सामान्य परिचय र खरिद प्रक्रिया सम्बन्धी आधारभूत जानकारी (Public Procurement Act, 2063 and Public Procurement Regulation, 2064: An Overview and Fundamental Information on Procurement Procedures)