

राष्ट्रिय जीवन बीमा कम्पनी लिमिटेड  
प्राविधिक सेवा, सूचना प्रविधि समूह, तह ८, सह व्यवस्थापक पदको खुला तथा आन्तरिक प्रतियोगितात्मक  
परीक्षाको पाठ्यक्रम  
द्वितीय पत्र (Paper II)  
सेवा सम्बन्धी (Service Related)

खण्ड (A) - ७० अङ्क  
(५ प्रश्न × १० अङ्क, १ प्रश्न × २० अङ्क)

**1. Information Technology (IT) Strategy and Planning**

IT Planning and Strategy, Importance of IT in National Development, Social and Cultural Aspects of IT, Information Superhighway, Strengths-Weaknesses-Opportunities-Threats (SWOT) Analysis, Strategic Use and Implementation of IT, Role of IT in Automation and Customer Services

**2. Computer Architecture**

Control Unit (CU), Arithmetic and Logic Unit (ALU), (Reduced Instruction Set Computer) RISC and (Complex Instruction Set Computer) CISC Architectures, Addressing Modes, Memory Systems, Cache Memory, (Central Processing Unit) CPU Design and Architecture, I/O Organization and Management, Parallel Processing, Redundant Array of Independent Disks (RAID) Management

**3. Software Engineering and Software Project Management**

Information Systems and Modern System Analysis Techniques, System Development Life Cycle (SDLC), Object-Oriented Software Development, Agile Software Development, Client-Server Computing, Clean Room Software Development, Software Testing Techniques, Software Quality and Quality Assurance, Software Reengineering, Software Configuration Management, Constructive Cost Model (COCOMO) Model, Software Estimation Techniques, Time Value of Money, Investment Analysis and Break-Even Analysis, Financial Analysis for Software Projects, Team-Building Approaches, Issue Tracking and Management, Verification and Validation, Business Process Reengineering (BPR), Unified Modelling Language (UML) Diagrams and Modeling, Project Planning and Scheduling, Intelligent Agents

**4. Network and Information Security**

Data Classification from Security Perspective, Risks of Data Loss, Operational Security, Data Backup Strategies, Access Control Through Authentication and Login, Protection Against Malware and Viruses, Organizational Security Principles, Data Privacy and Confidentiality, Cryptography Fundamentals, Secret-Key Cryptography, Public-Key Cryptography, Authentication Mechanisms, Public Key Infrastructure (PKI), Cyber-Attacks and System Security, Intrusion Detection System (IDS), Intrusion Prevention System (IPS), Types of Attacks and Protection Strategies

**5. Operating Systems**

Overview of Operating Systems, Functions and Characteristics of Operating Systems, Job Scheduling, Processor Scheduling, Scheduling Algorithms, Process Hierarchies, Deadlock Concepts, Deadlock Prevention, Deadlock Detection, Deadlock Avoidance, Banker's Algorithm, Virtual Memory and Storage Management, Page Replacement Strategies, File Management Systems, Windows Operating System, UNIPlexed Information Computing System (UNIX OS, Linux Operating Systems - Case Studies, Mobile Operating Systems, Special-Purpose Operating Systems, Inter-Process

## राष्ट्रिय जीवन बीमा कम्पनी लिमिटेड

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Communication (IPC), Process Synchronization, Distributed Operating Systems, Memory Management

### 6. **Computer Networks**

Network Fundamentals, Network Architectures, Network Protocols, (Open Systems Interconnection) OSI Reference Model, Transmission Control Protocol/Internet Protocol (TCP/IP) Protocol Suite, Types of Networking, Network Security Vulnerabilities, Insecure Software, Misconfigurations, Weak Authentication Mechanisms, Human Factors in Security, Virtual Private Network (VPN), Remote Access Technologies, Internet and World Wide Web (WWW), Disaster Recovery Concepts, Distributed Systems, Privacy and Security Issues, Advanced Internet Protocol (IP) Switching and Routing, Network Design-Case Studies, Sub-Netting, Routing Protocols

### 7. **Database Management Systems**

Database Concepts and Models, Database Design Principles, Entity-Relationship (ER) Diagrams, Relational Database Management Systems (RDBMS), Normalization Concepts, Structured Query Language (SQL), Transaction Management, Concurrency Control, Query Processing and Optimization, DBMS Architecture, Data Mining, Data Warehousing, Distributed Database Management Systems, Recovery Systems, Database Programming and Applications, Data Center Management, Disaster Recovery Plan (DRP),

Big Data: Introduction, Architecture, Not Only Structured Query Language (NoSQL) Databases, Security, Privacy and Governance, Cloud-Based Big Data Platforms, Real-Time Data Processing, Applications and Use Cases of Big Data

### 8. **Latest Trends and Technologies**

Cloud Computing, Edge Computing, Grid Computing, Big Data and Analytics, Internet of Things (IoT) and Industrial IoT, Artificial Intelligence (AI) and Machine Learning (ML), Block chain and Distributed Ledger Technologies, Cryptocurrency Fundamentals, Microservices and Cloud-Native Architecture, Cyber-Physical Systems, Enterprise Mobility, Data Governance, Technology Innovation Management, Emerging (Information and Communication Technology) ICT Trends, Technology Risk Management, and Business Applications of Emerging Technologies

### 9. **E-Commerce Technology**

Introduction to E-Commerce, E-Commerce Technology Infrastructure, E-Commerce Business Concepts, Business Applications, Social Issues in E-Commerce, Electronic Payment Systems, Security Issues in E-Commerce, Public Key Infrastructure (PKI), Digital Signatures, Encryption and Decryption Techniques, System Automation, Reporting Systems, Business Intelligence, Intelligent Call Center Management

### 10. **Information Technology (IT) Project Management**

Requirement Engineering, (Program Evaluation and Review Technique/Critical Path Method) PERT/CPM Network, Investment Analysis and Breakeven Analysis, Time Value of Money, Financial Analysis, Software Estimation, Configuration Management, Team Building Approach, Issue Tracking and Management, Verification and Validation, Business Process Reengineering

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**खण्ड (B) - ३० अङ्क**  
**(३ प्रश्न × १० अङ्क)**

**11. सम्बन्धित कानूनी व्यवस्था (Relevant Legal Provisions)**

- 11.1 नेपालको संविधान (Constitution of Nepal)
- 11.2 बीमा ऐन, २०७९ र बीमा नियमावली, २०८१ (Insurance Act, 2079 and Insurance Regulations, 2081)
- 11.3 राष्ट्रिय जीवन बीमा कम्पनी लिमिटेडको प्रबन्धपत्र, नियमावली (Memorandum of Association and Articles of Association of Rastriya Jeewan Beema Company Limited)
- 11.4 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)
- 11.5 विद्युतीय (इलेक्ट्रोनिक) कारोबार ऐन, २०६३ (Electronic Transactions Act, 2063)
- 11.6 सूचना तथा सञ्चार प्रविधि नीति, २०७२ (Information Technology Policy, 2015)
- 11.7 सम्पत्ति शुद्धीकरण (मनी लाउन्डरिङ) निवारण ऐन, २०६४ {Asset (Money) Laundering Prevention Act, 2008}
- 11.8 बीमकको सूचना प्रविधि मार्गदर्शन, २०७६ (Information Technology Guidelines for Insurers, 2019)
- 11.9 डिजिटल बीमा नीति मार्गदर्शन, २०८१ (Digital Insurance Policy Guideline, 2024)
- 11.10 भ्रष्टाचार निवारण ऐन, २०५९ (The Prevention of Corruption Act, 2059)
- 11.11 सुशासन (व्यवस्थापन तथा सञ्चालन) ऐन, २०६४ {Good Governance (Management and Operation) Act, 2064}
- 11.12 सार्वजनिक खरिद ऐन, २०६३ र सार्वजनिक खरिद नियमावली, २०६४ (Public Procurement Act, 2063 and Public Procurement Regulation, 2064)