Bachelor of Vocation (B.Voc.)

Networking & Mobile Applications (IInd Year)
KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Bachelor of Vocation (Networking and Mobile Applications)
(w.e.f 2017-2018)

SEMESTER III

<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Nomenclature</th>
<th>Duration of Exam</th>
<th>External</th>
<th>Internal</th>
<th>Max Marks</th>
<th>Type</th>
<th>Hours per Semester</th>
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<td>BVNM-16-31</td>
<td>Relational Database Management System</td>
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<td>BVNM-16-34</td>
<td>Mobile-Commerce &amp; User-Centered Interface Design</td>
<td>3 Hours</td>
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SEMESTER IV

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Unit I
Data Models - Types and Comparison, Entity Type, Entity Set, Attributes and their Types, Keys, ER Diagram, Data Integrity.  
RDBMS - Concept, Components, Codd’s Rules.

Unit II
Relational Algebra - Selection, Projection, Union, Intersection, Cartesian Product, Different Types of Join. Database Anomalies. Normalization - 1NF, 2NF, 3NF, BCNF.

Unit III
Data Definition Using SQL Database - Data Types, Tables, Creating Tables, View In Tables, Eliminating Duplicacy, Insert, Delete, Update and Modify, Renaming, Truncating and Destroying Tables.  
Data Constraints - Types, Implementation.  
Data Functions - Scalar, Group Functions, Aggregate etc. Creating Index, Duplicate and Unique Index, Reverse Key Index, Bit Map Index, Function Based Index.

Unit IV

TEXT BOOKS:

REFERENCE BOOKS:
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Unit I


Java Programming - History of Java, Comments, Data Types, Variables, Constants, Scope and Life Time of Variables, Operators, Operator Hierarchy, Expressions, Type Conversion and Type-Casting, Enumerated Types, Control Flow Block, Scope, Conditional Statements, Loops, Break and Continue Statements, Simple Java Stand Alone Programs, Arrays, Console Input and Output, Formatting Output, Constructors, Methods, Parameter Passing, Static Fields and Methods, Access Control, This Reference, Overloading Methods and Constructors, Recursion, Garbage Collection, Building Strings, Exploring String Class.

Unit II

Inheritance - Inheritance Hierarchies, Super and Sub Classes, Member Access Rules, Super Keyword, Preventing Inheritance: Final Classes and Methods, The Object Class and its Methods.

Interfaces - Interfaces Vs. Abstract Classes, Defining an Interface, Implementing Interfaces, Accessing Implementations Through Interface References, Extending Interfaces.

Packages - Defining, Creating and Accessing a Package, Understanding CLASSPATH, Importing Packages.

Unit III

Exception Handling - Dealing with Errors, Benefits of Exception Handling.

The Classification of Exceptions - Exception Hierarchy, Checked Exceptions and Unchecked Exceptions, Usage of Try, Catch, Throw, Throws and Finally, Re-Throwing Exceptions, Exception Specification, Built In Exceptions, Creating own Exception Sub Classes.

Collection Framework In Java - Introduction to Java Collections, Overview Of Java Collection Frame Work, Generics, Commonly Used Collection Classes Array List, Vector, Hash Table, Stack, Enumeration, Iterator, String Tokenizer, Random, Scanner, Calendar and Properties.

Unit IV

GUI Programming With Java - The AWT Class Hierarchy, Introduction to Swing, Swing Vs., AWT, Hierarchy for Swing Components.


Layout Management - Layout Manager Types - Border, Grid and Flow.

Event Handling - Events, Event Sources, Event Classes, Event Listeners, Relationship Between Event Sources and Listeners, Delegation Event Model, Examples: Handling a Button Click, Handling Mouse Events, Adapter Classes.

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Unit I


Unit II

**Cellular Network Generations** - GSM, CDMA, GPRS with its Architectures and Application Areas.

**Wireless LANs** - Introduction to Wireless LAN (IEEE-802.11)-Architecture, Services, Physical layer, MAC Sub-Layer, MAC management Sub-Layer, Other IEEE 802.11 standards, HIPERLAN, Wi-Max standard.

Unit III


Unit IV


TEXT BOOKS:


REFERENCE BOOKS:

 BVNM-16-34 Mobile Commerce & User-Centered Interface Design

Maximum marks: 100
Time: 3 hours

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Unit I


Unit II

Electronic Payments - The Set Protocol, Payment Gateway, Digital Certificates, Tokens, Smart Card, Credit Card, Magnetic Strip Card, E-Checks, Credit/Debit Card Based EPS, Online Banking.

Unit III


Unit IV

Interaction/Interface Evaluation - The Role Of Evaluation, Collection Of Usage Data, Methods For Conducting Usability Studies-Technology Aspects Of UCD and HCI, Input And Output Devices And Methodologies, Interaction Styles

TEXT BOOKS:

REFERENCE Books:
Unit I

**Introductory Concepts:** Operating system functions and characteristics, historical evolution of operating systems, Types of operating systems, Methodologies for implementation of O/S services system calls, system programs.

Unit II

**Process Management:** Process concepts, Process states and Process Control Block.

**CPU Scheduling:** Scheduling criteria, Levels of Scheduling, Scheduling algorithms, Multiple processor scheduling.

Unit III


UNIT IV

**Device Management -** I/O Hardware, Application I/O Interface, Kernel I/O Subsystem, Transforming I/O to Hardware Operation, Streams.

**Disk Scheduling -** Disk Structure, Disk Management, Swap-Space Management.

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Unit-I


Cryptographic Techniques - Plain Text and Cipher Text, Substitution Techniques, Transposition Techniques, Encryption and Decryption.

Symmetric and Asymmetric Key Cryptography, Key Range and Key Size, Possible Types of Attacks.

Unit-II

Computer-Based Symmetric Key Cryptographic Algorithms - Algorithm Types and Modes, An Overview of Symmetric Key Cryptography, Diffie-Hellman Key Exchange Algorithm, DES, International Data Encryption Algorithm (IDEA), RC5, Blowfish, AES, Differential and Linear Cryptanalysis.

Unit III

Computer-Based Asymmetric Key Cryptography - Brief History of Asymmetric Key Cryptography, An Overview of Asymmetric Key Cryptography, The RSA Algorithm, Symmetric and Asymmetric Key Cryptography Together, Digital Signatures, Knapsack Algorithm, Some other Algorithms.

Unit IV


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Unit I

Unit II
Black Box Testing - Introduction, Equivalence Class Partitioning, Boundary Value Analysis, State Transition Test, Cause Effect Graphing and Decision Table Techniques. Advanced Black Box Techniques.

Unit III
White Box Technique - Statement Coverage, Branch Coverage, Path Coverage, Gray Box Testing, Instrumentation and Tool Support of Gray Box Testing, Intuitive and Experience Based Testing, Advanced White Box Techniques.

Unit IV

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Unit I
Storage in Android - Internal, External, Sqlite - Sqlite API, Spinner, Listview, Content Provider- Built-In and Custom.

Unit-II
Android Notification - Api, Creating Notification Builder, Setting Notification Properties, Issue Notifications, Attaching Actions, Notification Compact, Builder Class Android Notification Examples

Unit III

Unit-IV
android Animation - Animation API, Drawable Class, Rotate Animation, Fade Animation, Zoom Animation, Animation Examples.
Graphics API - 2D Graphics, Android, Graphics Canvas, Android Graphics Paintclass,
Android Map - V2 API, Adding Map, Customizing Map, Google Mapclass, Android Google Map Application.

TEXT BOOKS:

REFERENCE BOOKS: