

**SUBJECT: INFORMATICS PRACTICES (065)****SESSION:2014-15****ClassXI(Theory)**

Duration:3hours

TotalMarks: 70

Unit	Topic	Marks
1.	IntroductiontoComputerSystems	10
2.	IntroductiontoProgramming	25
3.	RelationalDatabaseManagementSystem	30
4.	ITApplications	05
		70

S. No	Month	Topic Details	Tentative Required No. of Periods (Theory +Practical)	No. Of Tentative Working days
1	June	<p><b>Unit 1: Introduction to Computer Systems</b></p> <p><b>Hardware Concepts:</b></p> <ul style="list-style-type: none"> <li>• <b>Computer organization (basic concepts):</b> CPU, Memory (RAM and ROM), I/O devices, communication bus, ports (serial, parallel), device specific ports;</li> <li>• <b>Input devices:</b> Keyboard, Mouse, Light pen, Touch screen, Graphics Tablet, Joystick, Microphone, OCR, Scanner, Smart Card reader, Barcode reader, Biometric sensor, Web camera;</li> <li>• <b>Output Devices:</b> Monitor/Visual Display Unit (VDU), LCD screen, Television, Printer (Dot Matrix Printer, Deskjet/ Inkjet/ Bubble jet Printer, Laser Printer), Plotter, Speaker;</li> <li>• <b>Secondary Storage Devices:</b> Floppy disk, Hard disk, Compact disk, Magnetic tape, Digital Versatile disk (DVD), Flash drive, Memory cards.Comparative properties of storage media;</li> <li>• <b>Memory Units:</b> bit, byte (Kilobyte, Megabyte, Gigabyte, Terabyte, Petabyte)</li> <li>•E-waste disposal.</li> </ul>	13 (10+3)	10
2	July	<p><b>Security of computer system</b></p> <p>Sources of attack and possible damages, malware - virus, worms, trojan, spyware- and their propagation,cookies as security threat, malware detectionusing a tool.Computer security, Digital certificate, Digital signature, firewall, password, file access permissions</p> <p><b>Types of Software:</b></p> <p>a) System Software:</p> <p>(i) Operating systems: Need for operating system, major functions of Operating System; Examples of OS for mainframe, PC/Server, and mobile devices.</p> <p>(ii) Language Processors: Assembler, Interpreter, and Compiler</p> <p>b) <b>Utility Software:</b> Compression tools, disk</p>	34 (26+08)	25

		<p>defragmenter, anti-virus.</p> <p>c) <b>Application Software:</b></p> <p>(i) General Purpose Application Software: Word Processor, Presentation Tool, Spreadsheet Package, Database Management System, Integrated Development Environment (IDE)</p> <p>(ii) Specific Purpose Application software: Inventory Management System, Purchasing System, Human Resource Management System, Payroll System, Financial Accounting, Hotel Management and Reservation System, etc.</p> <p><b><u>Unit 2: Introduction to Programming</u></b></p> <p><b>Getting started with Programming using IDE</b></p> <ul style="list-style-type: none"> <li>• Introduction, Rapid Application Development using IDE (Integrated Development Environment); Familiarization of IDE using basic Interface components- Label, Text Field, Text Area, Button, Checkbox, Radio Button. (As per appendix A)</li> </ul>		
3	August	<p><b>Programming Fundamentals</b></p> <ul style="list-style-type: none"> <li>• <b>Data Types:</b> Concept of data types; Built-in data types - byte, short, int, long, float, double, char, String, boolean</li> <li>• <b>Variables:</b> Need to use variable, declaring variables, variable naming convention, assigning value to variables;</li> <li>• Integer object method: parseInt</li> <li>• Double object method: parseDouble, parseFloat</li> <li>• <b>Control structures:</b> Decision structure - if, if-else, switch; Looping structure- while, do . . while, for;</li> </ul>	30 (20+10)	23
4	September	<ul style="list-style-type: none"> <li>• Developing General Application (As per the guidelines at appendix B) - Getting Familiar with Java Swing User Interface components-Frame, Dialog, Option Pane, Panel, Scroll Pane, Label, Text Field, Password Field, Text area, Button, Check Box, Radio Button, Combo Box, List.</li> <li>• Basic component handling methods and properties: setText(), getText(), isSelected(), setSelected().</li> </ul> <p><b>Programming Guidelines:</b></p> <ul style="list-style-type: none"> <li>•General concepts; modular approach;</li> <li>•Stylistic guidelines: clarity and simplicity of expressions and names; comments, indentation;</li> <li>•Running and debugging programs, syntax errors, run-time errors, logical errors;</li> <li>•Problem solving methodology: Understanding of the problem, Identifying minimum number of inputs required for output, breaking down problem into simple logical steps.</li> </ul>	34 (20+14)	25
5	October	<p><b><u>Unit 3: Relational Database Management System</u></b></p> <p>Database Management System</p> <ul style="list-style-type: none"> <li>• <b>Introduction to database concepts:</b> database, relational database, relation/table, attribute/field, tuple / row;</li> <li>• <b>Data types:</b> Text (CHAR, VARCHAR), Number</li> </ul>	22 (15+7)	16

		(DECIMAL, INT/INTEGER), Date and Time <b>•Keys:</b> candidate key, primary key, alternate key, foreign key; <b>• Examples of common Database Management System:</b> MySQL, Ingres, Postgres, Oracle, DB2, MS SQL, Sybase, etc.; Common Database management tools for mobile devices.		
6	November	<b>Introduction to MySQL</b>  (ANSI SQL 99 standard commands) <b>• Classification of SQL Commands:</b>  DML - SELECT, INSERT, UPDATE, DELETE DDL - CREATE, DROP, ALTER <ul style="list-style-type: none"> <li>• Creating and using a database: SQL CREATE command to create a database, USE command to select a database.</li> <li>• Creating a table: CREATE command to create a table, DESC command to display a table structure, INSERT command for inserting new rows, inserting new rows with null values and values of all the studied data types.</li> <li>• Displaying table data: SELECT command for selecting all the columns, selecting specific column(s) using arithmetic operators, operator precedence.</li> <li>• Defining and using column alias.</li> <li>• Eliminating duplicate values from display using DISTINCT keyword</li> </ul>	30 (22+08)	23
7	December	<ul style="list-style-type: none"> <li>• Limiting rows during selection (using WHERE clause)</li> <li>o Using comparison operators - =, &lt;, &gt;, &lt;=, &gt;=, &lt;&gt;, BETWEEN, IN, LIKE(%,_);</li> <li>o Logical operators -AND, OR, NOT and corresponding operator precedence;</li> <li>• Working with NULL values.</li> <li>• ORDER BY clause: Sorting in ascending/descending order, sorting by column alias name, sorting on multiple columns;</li> <li>• Manipulating data of a table/relation: update command to change existing data of a table, delete command for removing row(s) from a table.</li> <li>• Restructuring a table: ALTER TABLE for adding new column(s) and deleting column (s);</li> </ul>	24 (16+08)	18
8	January	<b>Functions in My SQL:</b>  <ul style="list-style-type: none"> <li>• String Functions: ASCII(), CHAR(), CONCAT(), INSTR(), LCASE(), UCASE(), LEFT(),LOWER(), LENGTH(), LTRIM(), MID(), RIGHT(), RTRIM(), SUBSTR(), TRIM(),UPPER(), ASCII()</li> <li>• Mathematical Functions: - POWER(), ROUND(), TRUNCATE().</li> <li>• Date and Time Functions: CURDATE(), DATE(), MONTH(), YEAR(), DAYNAME(), DAYOFMONTH(), DAYOFWEEK(), DAYOFYEAR(), NOW(), SYSDATE().</li> </ul>	32 (20+12)	24
9	February	<b>Unit 4: IT Applications</b>	30	23

		<ul style="list-style-type: none"> <li>• <b>e-Governance:</b> Definition, benefits to citizens, e-Governance websites and their salient features and societal impacts; e-Governance challenges.</li> <li>• <b>e-Business:</b> Definition, benefits to customers and business, e-Business websites and their salient features and societal impacts; e-Business challenges.</li> <li>• <b>e-Learning:</b> - Definition; benefits to students (learners), teachers (trainers) and school (institution) management; e-Learning websites and their salient features and societal impacts; e-Learning challenges.</li> </ul> <p>In each of the above domains, identify at least two real-life problems, list the input(s) required for the expected output(s), and describe the problem solving approach.</p> <p>Impact of ICT on society - social and economic benefits, infomania.</p> <p><b>Revision, Practical &amp; Project Work</b></p>	(15+15)	
10	March	<b>Revision &amp; Session Ending Examination</b>		