KENDRIYAVIDYALAYASANGATHAN, MUMBAI REGION
SPLIT-UP SYLLABUS FOR CLASS XI : 2017-18
Sub : INFORMATICS PRACTICES(065)

Unit	Topic	Periods			Marks
		Theory	Practical	Total	
1	Introduction to Computer systems	26	10	36	10
2	Introduction to Programming	54	44	98	25
3	Relational Database Management System	60	38	98	30
4	IT Applications	10	08	18	05
	Total	140	98	240	**70**

Month(s)	Topics to be Covered	Number of Periods	
	Unit 1: Introduction To Computer Systems:	Theory	Practical
June – July 2017	**Hardware Concepts:** Computer organization (basic concepts): CPU, Memory (RAM and ROM), I/O devices, communication bus, ports (serial, parallel), device specific ports; **Input devices:** Keyboard, Mouse, Light pen, Touch Screen, Graphics Tablet, Joystick, Microphone, OCR, Scanner, Smart Card reader, Barcode reader, QR Code reader, Biometric sensor, web camera; **Output Devices:** Monitor/Visual Display Unit (VDU), LCD screen, Television, Printer (Dot Matrix printer, Desk jet/ Inkjet/ Bubble jet printer, Laser printer), Plotter, Speaker; **Secondary Storage Devices:** Floppy Disk, Hard Disk, Compact Disk, Magnetic Tape, Digital Versatile Disk (DVD),Flash Drive, Memory cards. Comparative properties of storage media; **Memory Units:** bit, Byte (Kilobyte, Megabyte, Gigabyte, Terabyte, Petabyte) **Encoding scheme :** ASCII,ISCII & UNICODE E-waste disposal. **Security of Computer System:** Sources of attack and possible damages, malware – virus, worms, spyware and cookies as security threat, malware detection using a tool. Computer security, digital certificate, digital signature, firewall, password, file access permissions **Types of Software:** (a) **System Software:** i) **Operating systems**: Need for operating system, major functions of Operating System; Examples of OS for mainframe (eg: Linux etc),PC/Server (eg: Windows, Ubuntu etc.), and mobile devices eg: Android, ios and Symbian. ii) **Language Processors:** Assembler, Interpreter, and Compiler (b) **Utility Software:** Compression tools, disk defragmenter, anti-virus (c) **Application Software:** i) **General Purpose Application Software:** Word Processor, Presentation Tool, Spread sheet Package, Database Management System, Integrated Development Environment (IDE) ii) **Specific Purpose Application Software**: Inventory Management System, Purchasing System, Human Resource Management System, Payroll System, Financial Accounting, Hotel Management and Reservation System etc.	26	10

August 2017	**Unit 2: Introduction To Programming : -1**	20	16

	[Periodic Test]
	Getting started with Programming using IDE :
	Introduction, Rapid Application Development using IDE
	    (Integrated Development Environment) such as Netbeans; Familiarization of IDE using basic Interface components- Label, Text Field, Text Area, Button, Checkbox, Radio Button.
	Developing General Application - **Getting Familiar with Java Swing User Interface components-**
	    Frame, Dialog, OptionPane, Panel, ScrollPane, Label,TextField, TextArea, Button, CheckBox, RadioButton,
	
	Basic component handling methods and properties: setText(), getText(), isSelected(),setSelected(),isEnabled(),isVisible()		

September 2017	**Unit 2: Introduction To Programming : -2**	18	18
	Developing General Application : ComboBox, List, PasswordField **Programming Fundamentals :** **Data Types**: Concept of data types; Built-in data types - byte, short, int, long, float, double,char, string, Boolean **Variables:** Need to use variable, declaring variables, variable naming convention, Assigning value to variables; **Integer object method:** parseInt **Double object method:** parseDouble, parseFloat **Control Structures:** ➢ Decision Structure – if, if-else		
October 2017	**Half Yearly Exam syllabus up to 25-sept 2017**		
	Unit 2: Introduction To Programming : -3	16	10

	Programming Fundamentals :
	Control Structures:
	    ➢ Decision Structure – switch;
	    ➢ Looping Structure- while, do . . while, for;
	
	Programming Guidelines:
	General Concepts; Modular approach;
	Stylistic Guidelines: Clarity and simplicity of expressions and names; Comments, Indentation; Running and debugging programs, Syntax Errors, Run-Time Errors,Logical Errors;
	
	Problem Solving Methodology:
	Understanding of the problem, Identifying minimum number of inputs required for output, breaking down problem into simple logical steps.		

November 2017	**Unit 3: Relational Database Management System: -1**	22	14

	Database Management System
	
	*Introduction to database concepts***:**
	    Database, Relational database, Relation/Table,Attribute/Field, Tuple / Row;
	*Data Types***:**
	    Text (CHAR, VARCHAR), Number (DECIMAL, INT/INTEGER), Date and Time
	*Keys***:**
	    Candidate key, Primary key, Alternate key, Foreign key;
	*Examples of common Database Management System***:**		

	MySQL, Ingres, Postgres, Oracle, DB2, MSSQL, Sybase etc.; Common Database management tools for mobile devices (eg: SQL Lite,Postgres SQL). **Introduction to MySQL :** (ANSI SQL 99 standard Commands) *Classification of SQL Commands***:** ☐ DML - SELECT, INSERT, UPDATE, DELETE ☐ DDL - CREATE, DROP, ALTER *Creating and using a database***:** CREATE DATABASE command to create a database, USE command to select a database.		
December 2017	**Unit 3: Relational Database Management System: -2**	20	12
	*Creating a table***:** CREATE TABLE 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. Selection and Projection of a table. *Displaying table data***:** SELECT command for selecting all the columns, selecting specific column(s), use of arithmetic operators. Defining and using column alias ,Eliminating duplicate values from display using DISTINCT keyword, Limiting rows during selection (using WHERE clause) ☐ Using Comparison operators - =, <, >, <=, >=, <>, BETWEEN, IN, LIKE(%,_); ☐ Logical Operators –AND, OR, NOT and corresponding operator precedence; Working with NULL values. **ORDER BY clause**: Sorting in Ascending/Descending order, sorting by column alias name, sorting on multiple columns; *Manipulating Data of a Table/Relation***:** UPDATE command to change existing data of a table, DELETE command for removing row(s) from a table. *Restructuring a table***:** ALTER TABLE for adding new column(s) and deleting column (s) and modifying column Structure. DROP command to delete a database or a table.		
	Winter Break : 24/12/2017 to 02/01/2018		
January 2017	**Unit 3: Relational Database Management System: -3**	18	12
	Functions in MySQL: *String Functions***:** ASCII(), CHAR(), CONCAT(), INSTR(), LCASE(), UCASE(), LEFT(), LOWER(),LENGTH(), LTRIM(), MID(), RIGHT(),RTRIM(), SUBSTR(), TRIM(), UPPER(). *Mathematical Functions***:** - POWER(), ROUND(), TRUNCATE(). **[Periodic Test 2]** *Date and Time Functions***:** CURDATE(), DATE(), MONTH(), YEAR(),DAYNAME(), DAYOFMONTH(), DAYOFWEEK(), DAYOFYEAR(),NOW(), SYSDATE().		
February 2017	**Unit 4: IT Applications :**	10	08
	*e-Governance***:** Definition, benefits to citizens, e-Governance websites and their salient features and societal impacts; e-Governance challenges. *e-Business***:** Definition, benefits to customers and business, e-Business websites and their salient features and societal impacts; net banking, mobile banking, e-Business challenges. *e-Learning***:** Definition, benefits to students (learners), teachers (trainers) and school (Institution) management; MOOCs (Massive Open Online Courses) ; e-Learning websites and their salient features and societal impacts; e-Learning Challenges.		

	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. Conceptualize the design of an ICT based national mission. **Impact of ICT on society :**social environmental and economic benefits, Info mania.		
	[Syllabus to be completed by 15th February 2018]		
	Revision and Practical Exam		
	[16th to 28thFeb. 2018]		
March-2017	**S.E. Exam**		

Question Paper Design
Class-XI (2017-18) and XII (2017-18)

S. No.	Typology of Questions	Very Short Answer (VSA) (1 mark)	Short Answer-I (SA-I) (2 marks)	Short Answer-II (SA-II) (4 marks)	Long Answer (L.A) (6 marks)	Total Marks	% Weightage
1	Knowledge Based	4	3	2	-	18	25.7
2	Conceptual Understanding	4	5	1	-	18	25.7
3	Reasoning Based	4	-	2	1	18	25.7
4	Skill based	-	1	2	1	16	22.9
	Total marks	**12**	**9**	**7**	**2**	**70(30)**	**100**