MONTHLY SYLLABUS
SESSION-2017-18
CLASS-XII
SUBJECT : COMPUTER SCIENCE
PYTHON

MONTH	CONTENT
April 2017	**REVIEW: C++ covered In Class -XI,** Revision of Programming Concepts of Python (Covered in Class XI). **Object Oriented Programming With Python** **Concept of Object Oriented Programming:** Data hiding, Data encapsulation, Class and Object. Polymorphism, Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies. self referential structures: **Practical's to the related topics:** **Classes:** Defining classes (attributes. methods). creating instance objects, accessing attributes & methods, using Built in class attributes (dict. doc. name, module, bases). **Practical's related to the topic.** **Classes:** using _ _init_ _() , _ del_ _0 method and _ _ str_ _( ) in a class. private attributes (limited support),Importance of "self' (acts as a pointer to current calling object). **Practical's related to the topic.** **Inheritance:** Single and multiple inheritance- Overriding methods.
May 2017	Using super () in derived class to invoke _init_() or overriden methods of parent class. **Practical's related to the topic.** UNIT TEST
July 2017	Advanced Programming with Python Stacks with lists **Practical's related to the topic**.

	Queues with lists **Practical's related to the topic.** **Data File handling:** Opening and closing files, file object, access modes, reading and writing a file Read(), redline(), redlines(), write(). **Practical's related to the topic.** **Data File:** File positions (seek(), tell()), renaming and deleting a file. **Practical's related to the topic.** Distinguish between text and binary file. Programs that manipulate data files. Exception Handling and Generate Functions.
August 2017	**Databases And SQL:** Introduction to data base concepts and its need. **Relational data model:** Concept of domain, tuple. relation. key, primary key, alternate key, candidate key; **Relational algebra:** Selection, Projection, Union and Cartesian product: **Practical's related to the topic.** **Structured Query Language:** **General Concepts:** Advantages of using SQL, Data Definition Language and Data Manipulation Language; **Data Types:** NUMBER / DECIMAL, CHARACTER/VARCHARN/VARCHAR2, DATE; **Practical's related to the topic.** **SQL Commands:** CREATE TABLE, DROP TABLE. ALTER TABLE, UPDATE .....SET..... INSERT, DELETE: SELECT. DISTINCT. FROM, WHERE. IN, BETWEEN, GROUPBY, HAVING, ORDERBY:
September 2017	**SQL functions:** SUM, AVG, COUNT, MAX AND MIN; Obtaining results (SELECT query) from 2 tables using equi-join. Cartesian product and Union. Practical's related to the topic. **Revision for SA - I Exam.**

	Summative Assessment SA-I **Ist Term Examination (2017-18)**
	Second Term October-2017 to March-2018
October 2017	**Discussion of question paper of SA-I** **BOOLEAN ALGEBRA:** Role of Logical Operations in Computing. Binary-valued Quantities, Logical Variable, Logical Constant and Logical Operators: AND, OR, NOT; Truth Tables: Closure Property, Commutative Law, Associative Law, Identity law, Inverse law, Principle of Duality, Idem potent Law, Distributive Law, Absorption Law,lnvolution law, DeMorgan's Law and their applications; Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for minimization of Boolean expressions (up to 4 variables); Application of Computing Logic: Logic Gates (NOT, AND, OR, NAND, NOT), Use(AND, OR) in search engine queries; **Application of Boolean Logic:** Digital electronic circuit design using basic Logic Gates (NOT, AND, OR. NAND, NOR) Use of Boolean operators (NOT. AND. OR) in SQL SELECT statements Use of Boolean operators (AND, OR) in search engine queries.
November 2017	**COMMUNICATION AND OPEN SOURCE CONCEPTS:** Evolution of Networking: ARPANET, Internet, Interspace, Different ways of sending data across the network with reference to switching techniques (Circuit. Message and Packet switching) Data Communication terminologies: Concept of Channel. Baud. Bandwidth (Hz. KHz. MHz) and Data transfer rate (bps. kbps. Mbps, Gbps. Tbps) **Practicals to the related topics**: **Transmission media:** Twisted pair cable, coaxial cable, optical fiber, infrared, radio link. microwave link and satellite link, Network devices. a?7 Modem, RJ45 connector, Ethernet Card. Hub, Switch, Gateway Network Topologies and types: Bus,

	Star, Tree; PAN, LAN. WAN, MAN Network Protocol: TCP/IP, File Transfer Protocol (FTP), PPP, Remote Login)17 elnet), Internet Wireless/Mobile Communication protocol such as GSM, CDMA, GPRS, WLL; **Revision:** 1G. 2G and 3G Electronic mail protocols such as SMTP, POP3 Protocols for Chat and Video Conferencing VoIP protocols such as Wi-Fi and WiMax ; Network Security Concepts: Threats and prevention from Viruses, Worms. Trojan horse, Spams Use of Cookies. Protection using Firewall: India IT Act. Cyber Law. Cyber Crimes, IPR issues. **WebServices:** VVVVW. Hyper Text Markup Language (HTML),eXtensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP): Domain Names; URL: Protocol Address: **Revision:** Website, Web browser, WebServers; Web Hosting, Web Scripting - Client side (VB Script, Java Script, PHP) and Server side (ASP, JSP, PHP), Web 2.0 (for social networking)Open Standards Introduction to open standards and its advantage in development of inter-operable environment. Open Source Concepts Proprietary and Open Source Software. Freeware, Shareware, FLOSS/FOSS,GNU,FSF, OSI,W3C **Revision**
December 2017	Revision and Practice from Sample papers for Mock Test. MOCK TEST Mock Test paper discussion. Practice from CBSE sample papers. Remedial classes.
January to February 2018	**Common Pre-Board school Examination** *Revision and Board Practical Examination.*
March 2018	**Board Examination 2017-18**

Practical File :
Must have minimum 20 programs. 15 SQL commands along with the output based on any table/relation **Project Work :** The project has to be developed in PYTHON with Object Oriented Technology. (The project is required to be developed in a group of 2-3 students). Project report (Listing ,Sample Outputs , Documentation).