SPLIT-UP SYLLABUS

SUB: INFORMATICS PRACTICES (065)

CLASS - XII (NEW SYLLABUS)

(Session 2021-22 onward)

DISTRIBUTION OF MARKS

UNIT	UNIT NAME	MARKS
1	Data Handling using Pandas and Data Visualization	30
2	Database Query using SQL	25
3	Introduction to Computer Networks	7
4	Societal Impacts	8
	Project	-
	Practical	30
	Total	100

MONTH- WISE DISTRIBUTION

Month	Topics to be covered	Th.	Pr
April	**Unit 1: Data Handling using Pandas and Data Visualization** Data Handling using Pandas -I • Introduction to Python libraries- Pandas, Matplotlib. • Data structures in Pandas - Series and Data Frames. • Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing. • Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing; Joining, Merging and Concatenation. Importing/Exporting Data between CSV files and Data Frames.	25	20
May-June	Data handling using Pandas – II • Descriptive Statistics: max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance. • DataFrame operations: Aggregation, group by, Sorting, Deleting and Renaming Index, Pivoting. • Handling missing values – dropping and filling. • Importing/Exporting Data between MySQL database and Pandas.	15	20
July	Data Visualization • Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram, pie chart, frequency polygon, box plot and scatter plot. • Customizing plots: color, style (dashed, dotted), width; adding label, title, and legend in plots.	30	25

August	**Unit 2: Database Query using SQL** • Math functions: POWER (), ROUND (), MOD (). • Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (),LTRIM(),RTRIM(),TRIM (). • Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().Aggregate Functions: MAX (), MIN (), AVG (), SUM(), COUNT (); using COUNT (*). • Querying and manipulating data using Group by, Having, Order by. • Operations on Relations - Union, Intersection, Minus, Cartesian Product, JOIN	25	25
September	**Unit 3: Introduction to Computer Networks** • Introduction to networks, Types of network: LAN, MAN, WAN. • Network Devices: modem, hub, switch, repeater, router, gateway	25	20
October	**HALF YEARLY EXAMINATION**		
	• Network Topologies: Star, Bus, Tree, Mesh. • Introduction to Internet, URL, WWW and its applications- Web, email, Chat, VoIP. • Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. • Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.	10	05
November	**Unit 4: Societal Impacts** • Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. • Awareness about health concerns related to the usage of technology. • Revision, Project Work	15	05
Dec-Jan	• **Pre-Board Examination**		
Feb	• **Revision & AISSCE Practical Examination**		

PRACTICAL WORK

INFORMATICS PRACTICES (065) : CLASS - XII

Marks Distribution

S.No.	Unit Name	Marks
1	Programs using Pandas and Matplotlib	8
2	SQL Queries	5
3	Practical file (minimum of 20 programs based on Pandas , 5 based on Matplotlib and 20 SQL queries must be included)	5
4	Project Work (using concepts learned in class XI and XII)	7
5	Viva-Voce	5
TOTAL		30

*Refer CBSE Curriculum for detailed guidelines for Project work.