WEST BENGAL COUNCIL OF HIGHER SECONDARY EDUCATION

SUBJECT: <u>MODERN COMPUTER APPLICATION (COMA)</u>

CLASS – XII   **SEMESTER – III**   **FULL MARKS: 35**

Unit 1	Python Programming 25 Marks	80 Hrs
	• Familiarization with the basics of Python programming ¬ Introduction to Python, Features of Python, executing a simple "hello world" program, execution modes: interactive mode and script mode, Python character set, Python tokens (keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r - value, use of comments.	4
	• Knowledge of data types ¬ Number (integer, floating point, complex), Boolean, sequence (string, list, tuple), None, Mapping(dictionary), mutable and immutable data types.	2
	• Operators ¬ Arithmetic operators, relational operators, logical operators, assignment operators, augmented assignment operators, identity operators (is, is not), membership operators (in not in).	3
	• Expressions, statement, type conversion, and input/output ¬ Precedence of operators, expression, evaluation of an expression, type-conversion (explicit and implicit conversion), accepting data as input from the console and displaying output.	3
	• Errors: Syntax errors, logical errors, and run-time errors.	2
	• Flow of Control ¬ Introduction, use of indentation, sequential flow, conditional and iterative flow.	4
	• Conditional statements ¬ if, if-else, if-elseif-else.	5
	• Iterative Statement ¬ for loop, range (), while loop, break and continue statements, nested loops.	7
	• Strings ¬ Introduction, string operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions /methods–len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(),lstrip(), rstrip(), strip(), replace(), join(), partition(), split().	10
	• Lists ¬ Introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions / methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists.	14
	• Introduction to Python modules ¬ Importing module using 'import <module>' and using from statement, importing math module (pi(), sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), randint(), randrange()), statistics module (mean(), median(), mode()).	12

	• Functions ¬ Types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope).	14 Hrs
Unit 2	E-Commerce 10 Marks	20 Hrs
	• An introduction to Electronic Commerce • What is E-Commerce (Introduction and Definition), Main activities E-Commerce, Goals of E-Commerce, Technical Components of E- Commerce, Functions of E-Commerce, Advantages and disadvantages of E-Commerce, Scope of E-Commerce, Electronic Commerce Applications, Electronic Commerce and Electronic Business (C2C, C2G, G2G, B2G, B2P, B2A, P2P, B2A, C2A, B2B, B2C). • Internet, Intranet & Extranet, Role of Internet in B2B Application, Web promotion, Banner, Exchange, Shopping Bots.	8
	• Electronic Payment System ¬ Introduction, Types of Electronic Payment System, Payment Types, Value Exchange System, Credit Card System, Electronic Fund Transfer, Paperless bill, Modern Payment Cash, Electronic Cash.	6
	• Internet Marketing ¬ The PROS and CONS of online shopping, The cons of online shopping, Justify an Internet business, Internet marketing techniques, The E- cycle of Internet marketing, Personalization e-commerce.	6