

Class : 9

Time: 2 Hour

Full Marks:50

Unit	Type of Questions	Q. No.	Area	No. of Questions	Marks
1.	Short Questions	Group A (Short questions and Objective)10 Marks			
		1.a.	Computer System	2 × 1	2
		1.b			
		1.c	HTML & CSS	2 × 1	2
		1.d			
		1.e	Internet and Social Media	1 × 1	1
		1.f.	Cyber Security and Digital Citizenship	1 × 1	1
	Objectives	2	Technical terms(2)	2× 1	2
3		Full Forms(2) (Both from Computer Fundamentals)	2× 1	2	
2.	Subjective	Group B (Question Answer & Programs)-24 Marks			
		4.a	Computer System	1×2	2
		4.b		1×2	2
		4.c	Web Technology	1×2	2
		4.d		1×2	2
		4.e	Internet and Social Media	1×2	2
		4.f	Cyber security and Digital Citizenship	1×2	2
		4.g	Block programming	1×2	2
		4.h	Programming Concept Python	1×2	2
		4.i		1×2	2
		5	Output (Dry run) of the given program code	1×2	2
		6	Debug	1×2	2
		7	Analytical Question(based on the given program code)	2× 1	2
3.	Subjective	Group C(16 Marks) (Number system, HTML or CSS, Scratch and Python)			
		8	Number System i.ii. Conversion iii.iv. Binary Calculation	4X1	4
		9	HTML or CSS	1X4	4
		10	Write scratch script using different components	1 × 4	4
		11	Write a program in python (Any one out of two questions)	1 × 4	4
			Total	30	50

PRACTICAL ASSESSMENT/WORK

Time: 1 Hour

Full Marks:25

S.No	Group/Area	Topic	No of quest.	Marks
1	Block Programming	Students prepare a simple game or story-telling based project with the guidance of the teacher applies control, events, operator, variables, and sound components of scratch and publish the project on Scratch.	1	6
2	HTML (5 marks)	Develop simple webpage using notepad or similar tools including the features of html tags (basic and text formatting tags), lists, picture embedding, table and hyperlink.	1	5
3	CSS (5marks)	Demonstrate the use of inline and internal CSS (include it in basic text formatting tags)	1	5
4	Programming Concept (python)	Develop a simple real life project using Python programming and libraries such as calculators, mathematical operations, etc.	1	9
			Total	25

Project work (Internal Assessment) [25]

Specification Grid

Full Marks – 50

Time – 2 Hours

Item plan and marks distribution																		
S.N	Area/Unit	Working Hour	Full Marks	Knowledge			Understanding			Application			Higher Ability			Total		
				MCQ	S	L	MCQ	S	L	MCQ	S	L	MCQ	S	L	MCQ	S	L
1	Computer System	15	11	1		1		1		1	1		1			3	2	1
2	Number System	6	4					1			1						2	
3	Block Programming	6	5	1					1							1		1
4	Web Technology	10	8				1			1	1				1	2	1	1
5	Internet and Social Media	6	5	1				1						1		1	2	
6	Digital Citizenship and Cyber Security	6	5						1				1			1		1
7	Programming Concept (Python)	15	12	1	1					1	1	1		1		2	3	1
	Total	64	50	4	1	1	1	3	2	3	4	1	2	2	1	10	10	5
	Percentage			20%			30%			30%			20%					

Types and number of questions, marks and time allocation

Types of Question	Number of Questions	Marks	Time Allocation
Multiple Choice Question (MCQ)	$10 \times 1 = 10$	10	2 hours
Short Question (SQ)	$10 \times 2 = 20$	20	
Long Question (LQ)	$5 \times 4 = 20$	20	
Total	25	50	

- Item format in composite should be met as per the specification grid.
- Designated weightage of the units/content areas should be met.
- In case of SQ and LQ, ensure that 1 mark is assigned for each element expected as correct response.
- The distribution of cognitive domains of questions should approximately 20% knowledge/remembering, 30% understanding, 30% applying and 20% higher ability level. A variation of ± 2 marks will be allowed in the designated percentage.

SYLLABUS-2083
FIRST TERM (61 Days)

Opt II Computer Science

Grade: 9

S.No.	Topics	Periods	Teaching Methods	Teaching Materials	Evaluation Techniques & Tools	Remarks
1	Computer Fundamentals - Definition and features of computer system - Explore the application area of a computer system. - Functions of a computer system: Input, Process, Output, Storage (IPOS) with Basic Block Diagram. - Demonstrate the major input devices of a computer system. - Explain the function and components of CPU.	12	Explanation Discussion, Drawing	References books pictures devices	Quizzes and Tests Peer evaluation Presentation Rubrics Reflection Exit slip	
2	Programming Concepts - Define the concept of programming language and its types. - Explain the compiler and interpreter. - Draw a basic flow chart and algorithm to understand the programming logic - Introduction to coding, testing, and debugging	10	Explanation, Discussion and Practical Lab * if needed	References books and computer system	Home works , Unit test, Viva , Peer evaluation, Presentation,	
3	Block Programming - Describe concept of block programming and its purpose. - Demonstrate online or offline-based block programming and tools, their features, interfaces, and blocks. - Construct simple applications using block-based programming languages and components of the MIT Scratch programming tools. - Describe the concept of a micro bit and its applications. - Define the concepts of Arduino and UNO.	30	Explanation, Discussion and Practical Lab	References books and computer system	Evaluation of develop game and logics Quizzes Presentation Develop project Home works ,Unit test, Viva and Practical test And Practical file	
4	Revision	9	Discussion	Question collection	viva	
	Total	61				

PRACTICAL EXAM

Time: 1hrs

F.M =25

P.M=10

S.No	Group/Area	Topic	No of questions	Marks
1	Block Programming (25)	Create simple games using different components of Scratch	1+1+1	5x3
		Show the working mechanism of Microbit and Arduino using an online simulator.	1+1	5+5
		Total	5	25

MID TERM (59 Days)

S.No	Topics	Periods	Teaching Methods	Teaching Materials	Evaluation Techniques & Tools	Remarks
1	Number System - Discuss the number system and its application. - Calculate the binary number system: Addition, Subtraction - Demonstrate the conversion of the number system between binary, octal, and hexadecimal.	10	Explanation, Discussion, Drawing, Slides	References books pictures Multimedia devices	Homework unit test Peer evaluation, Presentation,	
2	Computer Hardware - Describe the basic concept of the mother board and its bus structure. - Explain the concept of primary and secondary memory and its types and functions. - Explain the common storage devices used in computer systems and their comparison. - Demonstrate the major output devices: monitor, printer, and speaker. - Explain the peripheral devices and demonstrate the different ports in a computer system.	12	Explanation Discussion, Drawing	References books pictures devices	Home works , Unit test, Viva and drawings presentation, exit slip Peer evaluation	
3	Web Technology - Describe the concept of web technology. - Define the WDLC. - Explain the concept of UI / UX, wireframe in web design. - Explain HTML and its tags. - Demonstrate text formatting, an anchor, a list, a table, and an image tag on a web page. - Apply the form and div tags to the web page. - Describe CSS and its application. - Embed CSS script in HTML - Apply inline, internal, and external basic CSS to the web page.	30	Explanation Discussion, Computer System	References books pictures devices	Home works, Unit test, Viva and drawings. Presentation of web pages	
4	Revision	7	Discussion	Question collection	viva	
	Total	59				

PRACTICAL EXAM

Time: 1hrs

F.M =25

P.M=10

S.No	Group/Area	Topic	No of questions	Marks
1	HTML & CSS (25 marks)	Formatting/inserting text , image, table, order and unordered list Apply form and div in HTML	1+1+1=3	15
		Develop simple webpage using notepad or similar tools including the features of html tags and demonstrate the use of inline and internal CSS (include it in basic text formatting tags)	1	10
				25

S.No	Topics	Periods	Teaching Methods	Teaching Materials	Evaluation Techniques & Tools	Remarks
1	Internet & Social Media - Describe concept of WWW, web browser, search engine and URL - Explain concept of remote login - Explain concept of protocols(HTTP, HTTPS) - Describe email and its uses - Describe the use of social media in different purpose in safety way - Demonstrate video online meeting using online virtual tools - Explain a blog and its features	14	Explanation Discussion.	References books pictures devices	Home works, Unit test, Viva and drawings.	
2	Computer Software - Define computer software and explain its types. - Describe the open and proprietary software concepts. - Compare the features of system software and application software. - Define the mobile software and web applications.	10	Explanation Discussion, Practical Lab	References books pictures devices	Home works, Unit test, Viva and drawings.	
3	Python Programming - Explain the basic structure of a Python programme, basic syntaxes, I/O statement and string formatting, with data types and variables. - Describe the type of casting concept. - Demonstrate the use of operators in Python, including arithmetic, relational, logical, and assignment operators. - Demonstrate the conditional statement in Python.	16	Explanation Discussion and Practical Lab.	References books and Computer System.	Home works, Unit test, Viva and drawings. Rating Scale Demo Presentation	
4	Revision	6	Discussion	Question collection	viva	
	Total	46				

PRACTICAL EXAM

Time: 1hrs

F.M =25

P.M=10

S.No	Group/Area	Topic	No. of Questions	Marks
1	Programming Concept (python)	Demonstrate the use of I/O statements. Demonstrate the concept of constant, variable and data types. Demonstrate the use of various operators.	1+1+1	5+5+5
		Demonstrate the use of if, if else and elif	1+1	5+5
			5	25

ANNUAL EXAMINATION (55 Days)

S.No	Topics	Periods	Teaching Methods	Teaching Materials	Evaluation Techniques & Tools	Remarks
1	Cyber Security & Digital Citizenship - Describe the concept of cyber security and cybercrime. - Explore the prevention methods for cybercrime. - Describe the safe browsing techniques. - Define the concept of a digital citizen. - List good netiquette and online behaviours. - Clarify the concept of digital footprints, privacy, and data security issues in online	15	Explanation Discussion, Drawing	References books pictures devices	Home works, Unit test, Viva and drawings.	
2	Advanced Python (Loops, List, Dictionary, Functions) - Demonstrate iteration on Python - Apply list and dictionary in programming. - Demonstrate string, numeric and mathematical functions in python.	20	Explanation Discussion, Practical lab.	References books pictures devices	Home works, Unit test, Viva and practical lab test.	
3	Project Work (Scratch + Web + Python) a) Students prepare a simple game or story-telling based project with the guidance of the teacher applies control, events, operator, variables, and sound components of scratch and publish the project on Scratch. b) Develop your personal web page using suitable tools (e.g. Dreamweaver, Chrome DevTools or similar) , including <list>, <A>, , <table>, <form>, <div> html tags, and internal and inline CSS. c) Develop a simple real life project using Python programming and libraries such as calculators, mathematical operations, etc.	15	Discussion practical lab	Computer System Projects Reference	Practical and VIVA	
4	Final Revision	5	Discussion	Question collection	viva	
	Total	55				

PRACTICAL EXAM

Time: 1hrs

F.M =25

P.M=10

S.No	Group/Area	Topic	No. of Questions	Marks
1	Programming (python)	- Demonstrate the use of for, while loop, list and dictionary - Demonstrate and use string functions and mathematical functions	1+1+1+1+1	25
			5	25