



Federal Board HSSC-I Examination

Computer Science Model Question Paper

Curriculum 2022-2023 (Inclusive Scheme of Studies 2024)

Section - A (Marks 17)

Time Allowed: 25 minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent.
Deleting/overwriting is not allowed. Do not use lead pencil.

ROLL NUMBER					
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Version No.			
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Candidate Sign. _____

Invigilator Sign. _____

Q1. Fill the relevant bubble against each question according to curriculum. Each part carries one mark.

Sr no.	Question	A	B	C	D	A	B	C	D
i.	What is the primary purpose of using histogram in data analysis?	To show the relationship between two variables	To display the distribution of a single variable	To summarize the mean and standard deviation of data	To compare categorical data	☐	☐	☐	☐
ii.	Which computational thinking process involves removing unnecessary details to focus on the essential parts?	Decomposition	Pattern Recognition	Abstraction	Algorithm Design	☐	☐	☐	☐
iii.	Which of the following is a method used to prevent unauthorized access to a network?	Worm	Virus	Firewall	Spyware	☐	☐	☐	☐
iv.	Which of the following tasks best demonstrates black box testing?	Reviewing the source code to find syntax errors	Using debugging tools, trace function calls	Type login details and click button to go to the dashboard	Testing how fast a function runs internally	☐	☐	☐	☐
v.	Which of the following is an example of practicing good digital citizenship?	Engaging in respectful online communication	Sharing sensitive information without permission	Plagiarizing content from the internet	Ignoring copyright laws	☐	☐	☐	☐
vi.	Which of the following symbols is used to identify single line comment in Python?	//	#	/*	>>	☐	☐	☐	☐
vii.	Which of the following is an example of an efficient algorithm?	An algorithm that finds an item in a list of 1000 items by checking each one	An algorithm that prints all the numbers from 1 to 1000	An algorithm that finds an item in a sorted list of 1000 items by dividing the list in half each time	An algorithm that repeats the same task multiple times without any change	☐	☐	☐	☐

viii.	To build a school management system, a software company asks principals about their needs. What data collection method is being used?	Simulation	Interview	Prototyping	Survey	☐ ☐ ☐ ☐
ix.	In the field of artificial intelligence, which subfield focuses on enabling machines to understand and interpret human language?	Computer Vision	Robotics	Machine Learning	Natural Language Processing	☐ ☐ ☐ ☐
x.	Which of the following statements best describes the role of digital entrepreneurship?	It focuses solely on traditional business models without incorporating digital technologies	It relies on manual processes and paperwork for business operations	It avoids online marketing and sales channels	It leverages digital technologies to create innovative products, services, or business models	☐ ☐ ☐ ☐
xi.	Which of the following is a significant environmental concern associated with the growth of data centers?	Lower water consumption	Decreased electronic waste	Higher carbon emissions due to energy consumption	Increased paper waste	☐ ☐ ☐ ☐
xii.	What will be the output of the following statement? for i in range(5): print(i)	0 1 2 3 4 5	0 1 2 3 4	1 2 3 4 5	Error in statement	☐ ☐ ☐ ☐
xiii.	Which of the following digital tools is commonly used for market research and analysis in digital entrepreneurship?	Social media platforms	Email clients	Spreadsheet software	Fax machines	☐ ☐ ☐ ☐
xiv.	Which of the following is an example of a statistic?	The average age of 50 randomly selected employees in company	The average height of all students in a country	The true proportion of voters supporting a candidate	The average income of every citizen in a state	☐ ☐ ☐ ☐
xv.	A hospital is considering new software to manage patient records. However, the cost of development is higher than the budget allocated and expected financial benefits. Which feasibility concern arises here?	Operational feasibility	Technical feasibility	Economic feasibility	Legal feasibility	☐ ☐ ☐ ☐
xvi.	Which of these behaviors shows a student is practicing digital responsibility?	Cross-checking facts from reliable sources before using them	Sharing an unverified news story because it sounds shocking	Ignoring copyrights and using any image found online	Clicking on every promotion that looks interesting	☐ ☐ ☐ ☐
xvii.	A data analyst wants to predict the price of a house based on its area (in square feet). Which type of machine learning algorithm is most suitable for this task?	Linear regression	Association	Classification	Clustering	☐ ☐ ☐ ☐



Federal Board HSSC-I Examination

Computer Science Model Question Paper

Curriculum 2022-2023 (Inclusive Scheme of Studies 2024)

Time allowed: 2.35 hours

Total Marks: 63

Note: Answer all parts from Section 'B' and all questions from Section 'C' on the E-sheet.
Write your answers on the allotted/given spaces.

SECTION – B (Marks 39)

Q.2 Attempt the following questions.

(13x3 = 39)

Q#	Question	Marks		Question	Marks								
i.	Correct the following Python code segments by removing errors:	3	OR	Given the following pseudocode:	3								
	<table><tr><td>Incorrect code</td><td>Code without errors</td></tr><tr><td>num1 = 10 num2 = "5" result = num1 + num2 print(result)</td><td></td></tr><tr><td>fruits = ["Islamabad", "Karachi", "Lahore"] print(fruits [3])</td><td></td></tr><tr><td>num1 = 10 num2 = 0 result = num1 / num2 print(result)</td><td></td></tr></table>			Incorrect code		Code without errors	num1 = 10 num2 = "5" result = num1 + num2 print(result)		fruits = ["Islamabad", "Karachi", "Lahore"] print(fruits [3])		num1 = 10 num2 = 0 result = num1 / num2 print(result)		Step 1: Initialize a variable sum with 0 Step 2: Initialize a variable i with 2 Step 3: While i is less than or equal to N Step 4: Add i to sum Step 5: Increment i by 2 Step 6: Print sum Modify the pseudocode to print the product of odd numbers from 1-30.
	Incorrect code			Code without errors									
	num1 = 10 num2 = "5" result = num1 + num2 print(result)												
	fruits = ["Islamabad", "Karachi", "Lahore"] print(fruits [3])												
num1 = 10 num2 = 0 result = num1 / num2 print(result)													
ii.	What is slope and intercept for the linear relationship? Give example from daily life.	3	OR	Briefly explain any three types of cloud computing models.	3								
iii.	A city healthcare provider is in the process of upgrading its software to improve patient care and enhance data security. Using this case study, recommend the most suitable implementation method of SDLC. Justify your recommendation by outlining any two considerations.	1+2	OR	Differentiate between supervised and unsupervised learning with daily life example.	3								
iv.	Why is prototyping important? Give three reasons.	3	OR	Compare star and ring topologies with respect to scalability, reliability, and architecture.	3								
v.	Compare local and global variable with example.	2	OR	Consider the following examples of scenarios and identify whether the waterfall or agile model would be the most suitable for development. a. Building construction b. Developing web application c. Digital marketing campaign d. Automobile production e. Public works projects f. Research projects	0.5x 6								
vi.	What is an assistive technology? Also write down its two uses in daily life.	1+2	OR	Write down any three positive impacts of AI systems.	3								
vii.	Categorize the following scenarios by identifying whether the linear or binary search algorithms is more appropriate choice. Also justify your answer.	3	OR	What will be displayed after executing the following statements?	3								
				<table><tr><td>Python Statements</td><td>Output</td></tr></table>	Python Statements	Output							
Python Statements	Output												

	<table><tr><th>Scenario</th><th>Search algorithm</th><th>Reason</th></tr><tr><td>Bounded data ranges</td><td></td><td></td></tr><tr><td>Small data sets</td><td></td><td></td></tr><tr><td>Large, sorted data sets</td><td></td><td></td></tr></table>	Scenario	Search algorithm	Reason	Bounded data ranges			Small data sets			Large, sorted data sets					<table><tr><td>x = ["apple", "banana", "mango"] print(type(x))</td><td></td></tr><tr><td>x = "Hello World" print(type(x))</td><td></td></tr><tr><td>x = 20.5 print(type(x))</td><td></td></tr></table> a.	x = ["apple", "banana", "mango"] print(type(x))		x = "Hello World" print(type(x))		x = 20.5 print(type(x))		
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x = "Hello World" print(type(x))																							
x = 20.5 print(type(x))																							
viii.	Evaluate the following expression using the correct order of operations in Python: (2 + 3 ** 2 + 4 // 2 * 5 % 3 - 1) * 2	3	OR	Draw OR and NAND gates with their truth table.	1.5+ 1.5																		
ix.	Write down three advantages of infographics.	3	OR	List down any three tools to create a prototype.	3																		
x.	Convert the following Boolean expression to the logic circuit: F = XYZ + X̄YZ + X̄Z	3	OR	Write a Python program that takes an alphabet as input and prints whether it is a vowel or a consonant.	3																		
xi.	What are the common applications of simulation that benefit everyday activities? (Provide any three applications)	3	OR	What is the impact of the digital divide on connectivity? What strategies should be taken to bridge the digital divide? (Give any two)	1+2																		
xii.	How are logic gates useful in daily life? Give any three applications.	3	OR	What is the difference between correlation and causation? Illustrate with example.	3																		
xiii.	Complete the following Python code that exits when x is "Physics". subjects = ["Computer", "English", "Physics"] for x in _____: if x == _____: _____ print(x)	3	OR	Write a Python function find_max() that takes two numbers as input and returns the maximum number.	3																		

SECTION – C (Marks 24)

Note: Attempt all questions. Marks of each question are equal.

(4 x 6=24)

Q. No.	Question	Marks	Question		Marks								
Q.3	Simplify the Boolean Function F, using Karnaugh Map. $F = \overline{A}\overline{B}\overline{C} + \overline{A}B\overline{C} + A\overline{B}\overline{C} + A\overline{B}C + A\overline{B}\overline{C} + ABC$ Also construct a logic circuit for simplified expression.	3+3	OR	Write a Python program to compute the area of circle and rectangle by using function.	6								
Q.4	What are data collection methods? Contrast any two data collection methods with respect to strength, weakness, reliability, cost and validity.	1+5	OR	What is encryption? Compare Symmetric and Asymmetric encryption with respect to efficiency, security, ease of implementation, key length, and large data handling.	1+5								
Q.5	Sort the following numbers in ascending order using Bubble sort algorithm: <table border="1"><tr><td>10</td><td>9</td><td>26</td><td>4</td><td>1</td><td>8</td><td>37</td><td>5</td></tr></table>	10	9	26	4	1	8	37	5	6	OR	Write a Python program to count even and odd numbers in a list by using while loop.	6
10	9	26	4	1	8	37	5						
Q.6	What is the importance of blockchain technology? Explain any two technologies that enabled blockchain.	2+4	OR	What is a reliable information source? Explain any four sources of reliable information.	2+4								