Roll No. | | | | | |

INDIAN SCHOOL SALALAH

FIRST TERM EXAMINATION – SEPTEMBER 2024

COMPUTER SCIENCE (083)

Class: XII **Date: 22/09/2024**

Time: 3 HRS **Maximum Marks: 70**

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

SECTION A

1	Illustrate the use of break statement inside a loop	1
2	Given is a Python string declaration: Str1="##CBSE Examination@2025##" Write the output of: print(Str1[::-1])	1
3	What will be the output of following statements? D1 = {"cat":17, "dog":6, "elephant":23, "bear":20} print ("tiger" in D1) (a) True (b) False (c) Error (d) None	1
4	Which of the following file mode will make the file zero length while opening? a. ab b. wb c. rb d. None of these	1
5	Consider the statements given below and then choose the correct output from the given options: S="Technology Fest@2024 " print(S[3:-3:3]) a. cogFt b. 0tFgo c. hlye@ d. hlye@0	1

6	Covert the following for loop into while loop without changing the logic for i in range(10,-2,-2): print(i)	1
7	**Rewrite** the following Python code after removing all syntax error(s). **Underline the corrections done**. Def main(): r = input(int(Enter radius)) A =pi * maths(pow)(r,2) Print("Area="+A)	1
8	Which of the following statements correctly explain the function of seek() method? a. tells the current position within the file. b. determines if you can move the file position or not. c. indicates that the next read or write occurs from that position in a file. d. moves the current file position to a given specified po sition.	1
9	What will be the output of the following code: t=(4,5,6) t1=t*2 print(t1) a) (4,5,6,4,5,6) b) (4,4,5,5,6,6) c) (8,10,12) d) None of the above	1
10	The value specified in the function call is called _____	1
11	Give the output after execution of the following statements Lst=[10, 12,67,58,34,54,46,24] print(Lst[1:6:2])	1
12	What will the following expression be evaluated to in Python? print(int (13.25*2 +4/2+1)) A.26 B.27 C.28 D.29	1
13	Name DDL command from following. a. drop b)select c) insert d)update	1
14	A set of possible data values for an attribute is termed as	1
15	In Cartesian product the degree of the resultant table will be equal to _____and the cardinality to _____	1
16	Predict the output: (i) Select substr("Artificial Inelligence", 5,6) ; (ii) Select round(564.45,-2);	1
17	Give the full form of (i) SIM (ii) WLL	1

18	Give 1 example of client side script and server side script	1
19	If the web server is not able to locate the requested page, it sends a page containing the _____ error message to the client's browser. i. Error 401 ii. Error 402 iii. Error 403 iv. Error 404	1
	Q20 and 21 are ASSERTION AND REASONING based questions. Mark the correct choice as a) Both A and R are true and R is the correct explanation for A. b) Both A and R are true and R is not the correct explanation for A. c) A is True but R is False. d) A is false but R is True.	
20	Consider Push and Pop operation of Stack. Push operation is used to insert an element into stack and Pop is used to delete the element from the top of the stack. **Assertion**(A): Program should check for Overflow condition, before executing Push operation on stack and similarly check for Underflow before executing Pop operation. **Reason**(R): In stack underflow, means there is no element available in the stack, Overflow means no further element can be pushed into stack.	1
21	**Assertion(A):** DBMS is an application package which arranges the data in orderly manner in a tabular form. **Reason(R):** It is an interface between database and the user. It allows the users to access and perform various operations on stored data using some tools.	1
	SECTION B	

22	Predict the output of the Python code given below:
	
	def over(list1, list2):
	l1= len(list1)
	l2= len(list2)
	flag=False
	for i in range (l1):
	for j in range (l2):
	if list1[i]==list2[j]:
	flag=True
		2

	return flag L1=[12,45,34,23] L2=[33,64,34,56] print(over(L1,L2))	
23	Write a function, Words(S), that takes a string as an argument and returns a list containing words of the string that has vowels. **OR** Write a function SQUARE_LIST(L), where L is the list of elements passed as argument to the function. The function returns another list named 'SList' that stores the Squares of all Non-Zero Elements of L. For example: If L contains [9,4,0,11,0,6,0] The SList will have - [81,16,121,36]	2
24	Write the output of the code given below: D1 = {"sname": "Bunty", "age": 26} D1['age'] = 27 D1['address'] = "Delhi" print(D1.items())	2
25	What possible output(s) are expected to be displayed on screen at the time of execution of the following program import random M=[5,10,15,25,30] for i in range(1,3): first=random.randint(2,5)-1 sec=random.randint(3,6)-2 thd =random.randint(1,4) print(M[first], M[sec],M[thd],sep="#") (i) 10#25#15 20#25#25 (ii) 5#25#20 25#20#15 (iii) 30#20#20 20#25#25 (iv) 10#15#25# 15#20#10	2
26	Write about Foreign key & Candidate key	2

27	A table, SPORTSTARS has been created in a database with the following fields: Admn_No, Name, DOB, Sport, Medals, Class. Give the SQL command to delete the column Class from this table. Also write a command to make the Admn_No the Primary key.	2
28	Differentiate URL & Domain name with example **(OR)** Differentiate Hub & Switch	2
	SECTION C	
29	Write a method COUNTA() in Python to read content from text file 'Poem.txt' and print total number of words ending with letter 'e'. ***Example:*** If the file 'Poem.txt' content is as follows: *Shall I compare thee to a summer's day?* *Thou art more lovely and more temperate:* *Rough winds do shake the darling buds of May,* *And summer's lease hath all too short a date;* The COUNTA() function should display the output as: 7 **OR** Write a method TRANSFER() in Python to read content from text file 'Source.txt' and copy the content to another file 'destination.txt' with lines starting with small letters. ***Example:*** If the file 'Source.txt' content is as follows: *Willows whiten, aspens shiver.* *the sunbeam showers break and quiver* *In the stream that runneth ever* *by the island in the river* *Flowing down to Camelot.* Then the content of 'destination.txt' should be *the sunbeam showers break and quiver* *by the island in the river*	3
30	Write a function in Python PUSH(Arr), where Arr is a list of numbers. From this list push all numbers divisible by 5 into a stack implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.	3

31 Consider the table Customer given below: 3

Table : Customer

CID	CNAME	CITY	QUANTITY	DOP
C01	Gurpreet	New Delhi	150	2023-12-12
C02	Malika	Hyderabad	20	2024-02-02
C03	Brighty	Bangalore	100	2024-04-04
C04	Sahib	Chandigarh	50	2024-12-06
C05	Mehak	Chandigarh	25	2023-11-09

Based on the given table, write SQL queries for the following:

(i). Increase the quantity by 3 % for all the customers in CHANDIGARH.

(ii). Display name, city and date of purchase of all purchases of names

that contain the letter 'H'.

(iii) Display the city and sum of quantity purchased by customers in each city if the number of customer is more than 1

SECTION D

32 Consider a file, SPORT.DAT, containing records of the following structure: 4

[SportName, TeamName, No_Players]

Write a function, copyData(), that reads contents from the file SPORT.DAT and copies the records with Sport name as "**Basket Ball**" to the file named BASKET.DAT. The function should return the total number of records copied to the file BASKET.DAT.

OR

A Binary file, CINEMA.DAT has the following structure:

	[MNO,MNAME, MTYPE] Where MNO – Movie Number MNAME – Movie Name MTYPE is Movie Type Write a user defined function, findType(mtype), that accepts mtype as parameter and displays all the records from the binary file CINEMA.DAT, that have the value of Movie Type as mtype.	
33	Write a Program in Python that defines and calls the following user defined functions: (i) ADD() – To accept and add data of an employee to a CSV file 'record.csv'. Each record consists of a list with field elements as empid, name and mobile to store employee id, employee name and employee salary respectively. (ii) COUNTR() – To count the number of records present in the CSV file named 'record.csv'.	4
34	Write SQL commands for the queries (i) - (iv) based on the two tables TAXITYPE and TRAVEL TABLE: TAXITYPE **TCODE** | **TTYPE** | **PER KM** T01 | TEMPO TRAVELLER | 40 T02 | AC INNOVA | 20 T03 | AC ERTIGA | 15 T04 | AC HATCHBACK | 10 T05 | AC SEDAN | 10	4

TABLE: TRAVEL

CNO	CNAME	TRAVELDATE	KM	TCODE	NOP
101	Randeep	2018-11-07	200	T01	12
102	Sharad Bali	2018-12-21	120	T04	4
105	Sangeeta M	2019-04-25	450	T01	15
103	Manish Nagpal	2019-01-29	280	T02	5
107	Veronica	2019-03-12	365	T04	2
104	Dinesh Hoon	2019-10-28	290	T05	4

i. Display cname and ttype from the tables taxitype and travel.

ii. Display the average Km and greatest PERKM of AC SEDAN and AC ERTIGA types.

iii. Display the cname, KM and NOP of all travel in the descending order of KM.

iv. Display the details of all travels with traveldate after 2019-05-10

35 Sandy wants to (i) write function to insert records in the table named Student in MYSQL database SCHOOL: — 4

- rno(Roll number)- integer
- name(Name) – string
- class_sec - String
- DOB (Date of birth) – Date
- Fee – float

(ii) Write function to display all the records of students whose class_sec is XIIB

Note the following to establish connectivity between Python and MySQL:

- Username – root
- Password - tiger
- Host - localhost

SECTION E

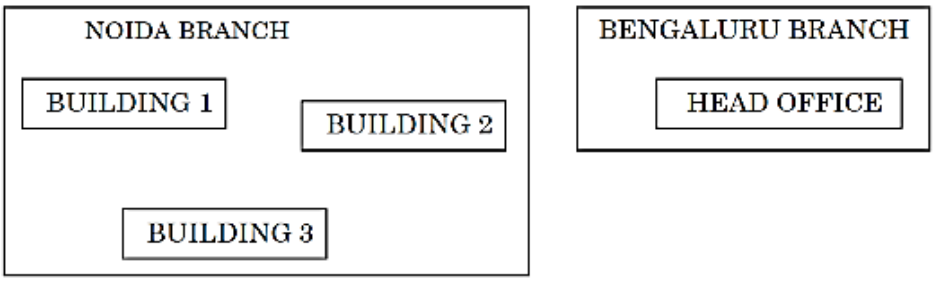
36 Write functions to handle the binary file "mobile.dat", which contains data in the structure of [mobileid, brand, modelno, price] — 5

(i) To write function mobileadd() to add record to the file mobile.dat

(ii) To write function disp_mob(modelno) to display the record whose modelno is passed as an argument

37 ABC Consultants are setting up a secure network for their office campus at Noida for their day-to-day office and web-based activities. They are planning to have connectivity between — 5

three buildings and the head office situated in Bengaluru. As a network consultant, give solutions to the questions (i) to (v), after going through the building locations and other details which are given below :



Distance between various blocks/locations :

Building	Distance
Building 1 to Building 3	120 m
Building 1 to Building 2	50 m
Building 2 to Building 3	65 m
Noida Branch to Head Office	1500 km

Number of computers

Building	Number of Computers
Building 1	25
Building 2	51
Building 3	150
Head Office	10

1) Suggest the most suitable place to install the server for this organization. Also, give reason to justify your suggested location.
2) Suggest the cable layout of connections between the buildings inside the campus.
3) Suggest the placement of the following devices with justification : Switch , Repeater
4) The organization is planning to provide a high-speed link with the head office situated in Bengaluru, using a wired connection. Suggest a suitable wired medium for the same.
5) The System Administrator does remote login to any PC, if any requirement arises. Name the protocol, which is used for the same.