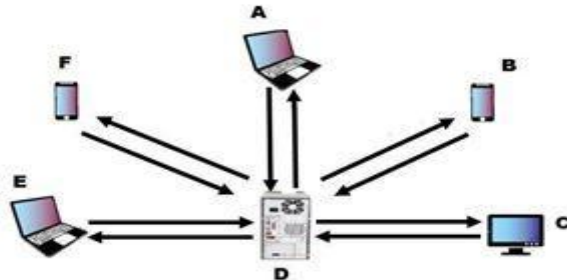


KENDRIYA VIDYALAYA SANGATHAN LUCKNOW REGION**Class-XII****PreBoard-I Session: 2022-23****Computer Science (083)****Maximum Marks: 70****Time Allowed: 3 Hours****General Instructions:**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q34 against part c only.
8. All programming questions are to be answered using Python Language only.

SECTION A		
1.	Which of the following can be used as valid identifier name? A. 4 th Sum B. Total C. Number# D. while	1
2.	Which operator has the highest Priority / Precedence? a) ** b) > c) not d) %	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.	Consider the given expression: 10 > 5 and 7 > 12 or not 18 > 3 Which of the following will be correct output if the given expression is evaluated? (a) True (b) False (c) None (d) Error	1
5.	What will be the output of following code? S="CBSE2023" print(S[: -2]) print(S[-4 : :])	1
6.	Which of the following mode represents of both writing and reading binary format in file? A. wb+ B. wb C. w D. w+	1
7.	Write SQL query to add a column price with datatype numeric and size 10, 2 in a table product.	1
8.	Name1 VARCHAR(20) Name2 CHAR(20) If Name1 stores value as 'Ram' and Name2 stores value as 'Rama', then Name1 will consume _____ characters' space and Name2 will consume _____ characters' space.	1
9.	Which line of code produces an error? A. "one" + 'two' B. 1+ 2 C. "one"+ "2" D. '1'+2	1
10.	Candidate keys which are not selected as Primary key is known as A. Primary Key B. Candidate Key C. Alternate Key D. Foreign Key	1
11.	 For the above given text file what will be the output of following code?	1

	f=open('test.txt','r') f.seek(3) print(f.read())	
12.	Which of the following special characters can be used to name a table? A. @ B. % C. ^ D. _ (underscore)	1
13.	Main function of Router is to A. Transfer one protocol to another B. Connect multiple nodes C. Convert Digital signal to Analog signals D. Interconnects different networks	1
14.	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
15.	You create a table named EMPLOYEES. What among the following is possible? A. It can be referred to as eMPLOYEES B. It can be referred to as EMPLOYees C. It can be referred to as employees D. All of the above	1
16.	Which of the following statements will remove a column from the table? A. ALTER TABLE table table_name DROP COLUMN (job); B. ALTER TABLE table_name DROP (job varchar2(10)); C. ALTER TABLE table table_name DROP COLUMN (job varchar2(10)); D. ALTER TABLE table_name DELETE (job varchar2(10));	1
17.	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, while Overflow means no further element can be pushed into stack. Based on above discussion, choose the appropriate option: (a) A is True but R is False. (b) A is False but R is True. (c) Both A and R are True and R is the correct explanation of A. (d) Both A and R are True but R is not the correct reason of A. (e) Both A and R are False.	1
18.	Given below are two statements one labelled as Assertion (A) and other is labelled as a Reason (R) . Assertion (A): The readline([n]) method available in pickle module and reads one complete line from a binary file. Reason (R): The readline() method reads one line at a time ending with a newline (\n). It can also be used to read a specified number (n) of bytes of data from a file but maximum up to the newline character (\n). Consider the above statement and choose the correct answer from the options given below: A. Both (A) and (R) are true, and (R) is the correct explanation of (A). B. Both (A) and (R) are true, but (R) is not the correct explanation of (A). C. (A) Is true but (R) is false. D. (A) is false but (R) is true.	1
SECTION B		
19.	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)	2
20.	Write two points of difference between Circuit Switching and Packet Switching.	2

	OR	
	Write two points of difference between XML and HTML.	
21.	(a) Given is a Python string declaration: <pre>ott="Rocket-Boys season-1"</pre> Write the output of: <code>print(ott[::-3])</code> (b) Write the output of following code: <pre>d = {'x': 1, 'y': 2, 'z': 3} a = d.pop('y') print(a) print(d)</pre>	1+1
22.	(a) Which SQL command is used to display existing databases? (b) Which SQL command is used to display schema of a table?	1+1
23.	 Refer to the above diagram and answer the questions given below - The arrow from device D to pointing to A represents? - HTTP request - HTTP response - HTTP request & response - All of the above - Which of the following device(s) can have IP Addresses? - D - E - B - All of the above	1+1
24.	Predict the output of the Python code given below: <pre>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 return flag L1=[12,45,34,23] L2=[33,64,34,56] print(over(L1,L2))</pre> OR <pre>T1 = (1, 2, 3, 4, 5 ,6) L1 =list(T1) L2 = []</pre>	2

	<pre> for i in L1: if i%2!=0: L2.append(i*2) T2 = tuple(L2) print(T2[::-1]) </pre>	
25.	Differentiate between Cardinality and Degree in SQL with appropriate example. OR What should be the data type for the column IFSC_Code storing alphanumeric bank code having 11 characters, e.g. SBIN0001898 & data type for the column PINCode storing 6-digit numeric PIN code for any address in India, e.g. 324100	2
SECTION C		
26.	A). What format does the SQL follow to store the DOB? B). What is Primary Key of a table? C). The DBMS acts as an interface between _____ and _____ of an enterprise-class system. i) Data and the DBMS ii) Application and SQL iii) Database application and the database iv) The user and the software	1+1+1
27.	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: <i>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;</i> 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: <i>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.</i> Then the content of 'destination.txt' should be <i>the sunbeam showers break and quiver by the island in the river</i>	3
28.	A departmental store MyStore is considering to maintain their inventory using SQL to store the data. As a database administrator, Abhay has decided that :	3

	• Name of the database - mystore • Name of the table - STORE • The attributes of STORE are as follows: ItemNo - numeric ItemName – character of size 20 Scode - numeric Quantity – numeric (i) Write Query to create table STORE? (ii) Identify the attribute best suitable to be declared as a primary key. (iii) What will be the Degree of table STORE.													
29.	Write a function LShift(Arr,n) in Python, which accepts a list Arr of numbers and n is a numeric value by which all elements of the list are shifted to left. Sample Input Data of the list Arr= [10,20,30,40,12,11], n=2 Output Arr = [30,40,12,11,10,20]	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. OR A company having a dictionary of various Departments and Number of computers (PC) available as key-value pairs. Write a program, with separate user-defined functions to perform the following operations: • Push the keys (name of the Department) of the dictionary into a stack, where the corresponding value (Number of PC) is 25 or more. • Pop and display the content of the stack. For example If the sample content of the dictionary is as follows: SETUP={"HR":10, "QUALITY":25, "SUPPORT":50, "PRODUCTION":20, "SUPPLY":25, } The output from the program should be: QUALITY SUPPORT SUPPLY	3												
SECTION D														
31.	TPU University is setting up its academic blocks at Udaipur and is planning to set up a network. The University has 3 academic blocks and one Human Resource Center as shown in the diagram below: Center to Center distances between various blocks/center is as follows: <table><tr><td>Law Block to Business Block</td><td>40m</td></tr><tr><td>Law Block to Technology Block</td><td>80m</td></tr><tr><td>Law Block to HR Centre</td><td>105m</td></tr><tr><td>Business Block to HR Centre</td><td>30m</td></tr><tr><td>Technology Block to HR Centre</td><td>15m</td></tr></table> No of computers in various blocks/center is as follows: <table><tr><td>Law Block</td><td>15</td></tr></table>	Law Block to Business Block	40m	Law Block to Technology Block	80m	Law Block to HR Centre	105m	Business Block to HR Centre	30m	Technology Block to HR Centre	15m	Law Block	15	1X5=5
Law Block to Business Block	40m													
Law Block to Technology Block	80m													
Law Block to HR Centre	105m													
Business Block to HR Centre	30m													
Technology Block to HR Centre	15m													
Law Block	15													

	<table><tr><td>Technology Block</td><td>40</td></tr><tr><td>HR Centre</td><td>115</td></tr><tr><td>Business Block</td><td>25</td></tr></table> a)Suggest an ideal layout for connecting these blocks/centers for wired connectivity. b)Which device will you suggest to be placed/installed in each of these blocks/centers to efficiently connect all the computers within these blocks/centers. c)Suggest the placement of following devices in the network with justification. i) Modem ii) Repeater d)The university is planning to connect its admission office in Delhi, which is more than 780 km from the university. Which type of network out of LAN, MAN, or WAN will be formed? Justify your answer. e) Suggest a device/software to be installed in the Technology block to take care of data security.	Technology Block	40	HR Centre	115	Business Block	25													
Technology Block	40																			
HR Centre	115																			
Business Block	25																			
32	(a) Write the output of the code given below: <pre>p='a' def sum(a,b=2): global p p=b+a%2 print(p, end= '\$') r=10 s=5 print(p) sum(r,s) print(p) sum(5) print(p)</pre> (b) A Company in Delhi uses database management system to store Workers details. The Company maintains a database WORKER under which there is a table. Description of table is as given below: <table><tr><th colspan="3">Table Name: WORKER_DETAIL</th></tr><tr><th>FIELD</th><th>TYPE</th><th>CONSTRAINT</th></tr><tr><td>WORKERID</td><td>NUMERIC</td><td>Primary Key</td></tr><tr><td>WORKER_NAME</td><td>STRING</td><td>---</td></tr><tr><td>DOJ</td><td>DATE</td><td>Not Null</td></tr><tr><td>RETIREMENT_DATE</td><td>DATE</td><td>Not Null, Unique</td></tr></table> (i) Write query to create database WORKER and open database to create table. (ii) Write query to create table WORKER_DETAIL with the description given in above table. (iii) Write query to view all the tables in database WORKER and write query to view schema of table WORKER_DETAIL. OR (a) Predict the output of the code given below: <pre>def Display(str): m="" for i in range(0,len(str)): if(str[i].isupper()): m=m+str[i].lower()</pre>	Table Name: WORKER_DETAIL			FIELD	TYPE	CONSTRAINT	WORKERID	NUMERIC	Primary Key	WORKER_NAME	STRING	---	DOJ	DATE	Not Null	RETIREMENT_DATE	DATE	Not Null, Unique	2+3
Table Name: WORKER_DETAIL																				
FIELD	TYPE	CONSTRAINT																		
WORKERID	NUMERIC	Primary Key																		
WORKER_NAME	STRING	---																		
DOJ	DATE	Not Null																		
RETIREMENT_DATE	DATE	Not Null, Unique																		

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elif str[i].islower():
    m=m+str[i].upper()
else:
    if i%2==0:
        m=m+str[i-1]
    else:
        m=m+'#'
print(m)
Display("T20 Worldcup@2022")

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(b) A School in Delhi uses database management system to store student details. The school maintains a database '**School_Record**' under which there is a table.

Table Name: STULIBRARY	
FIELD	TYPE
BOOKID	NUMERIC
STUID	NUMERIC
ISSUED_DATE	DATE
RETURN_DATE	DATE

- (i) Write query to create database **School_Record** and open database to create table.
- (ii) Write query to create table **STULIBRARY** with the description given in above table.
- (iii) Write query to view all the tables in database **School_Record** and write query to view schema of table **STULIBRARY**.

33.	A. What are the characteristics of CSV files? B. Write a Program in Python that defines and calls the following user defined functions: (i) SIGNUP() – To accept and add data of an employee to a CSV file 'password.csv'. Each record consists of a list with field elements as username and password to store employee's username and password. (ii) LOGIN() – Ask user to enter a user id and password, if combination matches it should print 'welcome' otherwise print 'data mismatch' from the file password.csv. OR A).Give any one point of difference between a binary file and a csv file. B).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 'myfile.csv'. Each record consists of a list with field elements as empid, empname and empsalary to store employee id, employee name and employee salary respectively. (ii) search()- To display the records of the employee whose salary is more than 10000.	5
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SECTION E

34.	Answer the following: i. What is Primary Key? Explain with example.	1+1+2
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	ii. Write a command to add new column marks in table 'student' data type int. iii. What are the advantages of using Database Management System? OR (Option for part iii only) iii. Explain following: Attribute, Relation, Tuple and Degree in respect of RDBMS.	
35.	Akshita is a Python programmer. He has written a code and created a binary file student.dat with rollno and marks. The file contains some records. She now has to update a record based on the roll no entered by the user and update the marks. The updated record is then to be written in the file student.dat. If the rollno is not found, an appropriate message should to be displayed. As a Python expert, help him to complete the following code based on the requirement given above: <pre> import #Statement-1 f = open('d://student.dat',.....) #Statement-2 reclst = [] r=int(input("enter roll no to be updated")) m=int(input("enter correct marks")) while True: try: rec = # Statement-3 reclst.append(rec) except EOFError: break f.close() for i in range (len(reclst)): if reclst[i]["Rollno"]==r: = m # Statement-4 f = open('d://student.dat','wb') for x in reclst: pickle.dump(x,f) f.close() </pre> (i) Which module should be imported in the program? (Statement 1) (ii) Write the correct mode required to open a binary file named student.dat (Statement 2) (iii) Which statement should Aman fill in Statement 3 to read the data from the binary file student.dat and in Statement 4 to update marks in list reclst?	1+1+2
