

KENDRIYA VIDYALAYA SANGATHAN LUCKNOW REGION

Class: XII Session: 2022-23

Computer Science (083)

PREBOARD -1 (Theory)

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 has 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. Internal choice is given in Q34 for part c only.
8. All programming questions are to be answered using Python Language only.

SECTION A		
1.	Assign a tuple containing an Integer?	1
2.	Which of the following is valid identifier? a) Serial_no. b) total-Marks c) _Percentage d) Hundred\$	1
3.	Add a pair of parentheses to each expression so that it evaluates to True. a) 2+3==4+5==7 b) 0==1==2	1
4.	What will be the output of following expressions: a) 2**3**2 b) (2**3)**2	1
5.	Consider the following program and predict the output: num1 = input("Enter a number and I'll triple it:") #num1=8 num1 = num1 *3 print(num1)	1
6.	Which of the following is used to read n characters from a file object " f1" . a)f1.read(n) b)f1(2) c)f1(read,2) d)all of the above	1
7.	Name DDL command from following. a) drop b)select c)insert d)update	1
8.	What is the default date format of Mysql. a)' dd-mm-yy' b)' d-m-y' c)' yyyy-mm-dd' d)None	1
9.	Which of the following statement(s) would give an error after executing the following code?	1

	<p>S="Lucknow is the Capital of UP" # Statement 1</p> <p>print(S) # Statement 2</p> <p>S[4]='\$' # Statement 3</p> <p>S="Thank you" # Statement 4</p> <p>S=S+"Thank you" # Statement 5</p> <p>(a) Statement 3 (b) Statement 4 (c) Statement 5 (d) Statement 4 and 5</p>	
10.	<p>_____ is an attribute, whose values are Unique and not null.</p> <p>(a) Primary Key (b) Foreign Key (c) Candidate Key (d) Alternate Key</p>	1
11.	<p>Which of the following statements correctly explain the function of seek() method?</p> <p>a. tells the current position within the file.</p> <p>b. determines if you can move the file position or not.</p> <p>c. indicates that the next read or write occurs from that position in a file.</p> <p>d. moves the current file position to a given specified position.</p>	1
12.	<p>What is break statement in the context of flow of control in the python programming.</p>	1
13.	<p>SMTP stands for_____.</p>	1
14.	<p>What will be the output of this code</p> <pre>>>>L1=[8,11,20] >>>L1*3</pre>	1
15.	<p>Write command to view table structure.</p>	1
16.	<p>Name any two RDBMS software.</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>(a) Both A and R are true and R is the correct explanation for A</p> <p>(b) Both A and R are true and R is not the correct explanation for A</p> <p>(c) A is True but R is False</p> <p>(d) A is False but R is True</p>	
17.	<p>Assertion(A): Function is defined as a set of statements written under a specific name in the python code</p> <p>Reason(R): The complete block (set of statements) is used at different instances in the program as and when required, referring the function name. It is a common code to</p>	1

	execute for different values(arguments), provided to a function.	
18.	<p>Assertion(A): DBMS is an application package which arranges the data in orderly manner in a tabular form.</p> <p>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.</p>	1
	SECTION B	
19.	<p>Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.</p> <pre> 30=n for i in range(0,n) IF i%4==0: print (i*4) Else: print (i+4) </pre>	2
20.	<p>Write two points of difference between hub and switch.</p> <p style="text-align: center;">OR</p> <p>Differentiate Bus and Startopology</p>	2
21.	<p>(a) Given is a Python string declaration:</p> <pre>Str1 = "##NEET Examination 2023##"</pre> <p>Write the output of: <code>print(Str1[::-1])</code></p> <p>(b) Write the output of the code given below:</p> <pre> D1 = {"sname": "Aman", "age": 26} D1['age'] = 27 D1['address'] = "Delhi" print(D1.items()) </pre>	2
22.	Define Tuple and Attribute with appropriate example.	2
23.	Name two top level domain names with their area of application.	2
24.	What possible outputs(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO.	2

```
import random
AR=[20,30,40,50,60,70]
FROM=random.randint(1,3)
TO=random.randint(2,4)
for K in range(FROM,TO+1):
    print(AR[K],end=" #" )
```

- (i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#

OR

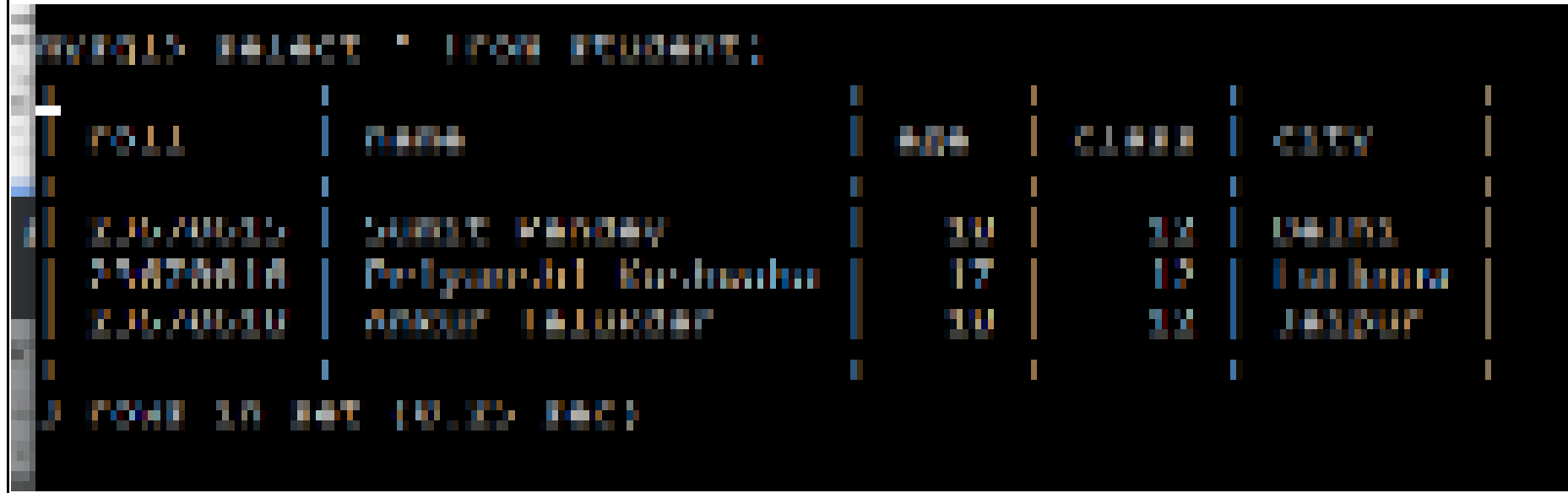
What will be the output of the following code?

```
def my_func(var1=100,var2=200):
    var1+=10
    var2 = var2-10
    return var1+var2
print(my_func(50),my_func())
```

25. Differentiate between char(n) and varchar(n) data types with respect to databases. 2

OR

Consider the table, student given below:



ROLL	NAME	AGE	CLASS	CITY
10	SUMIT PANDAY	18	12	DELHI
17	PANKAJA Palyani	17	12	Jaipur
18	ANSHU KHANDEL	18	12	JAIPUR

- (a) Identify the degree and cardinality of the table.
 (b) Which field should be made the primary key? Justify your answer.

SECTION C

26. Meera has to create a database named MYEARTH in MYSQL. She now needs to create a table named CITY in the database to store the records of various cities across the globe. The table CITY has the following structure:

Table: CITY

FIELD NAME	DATA TYPE	REMARKS

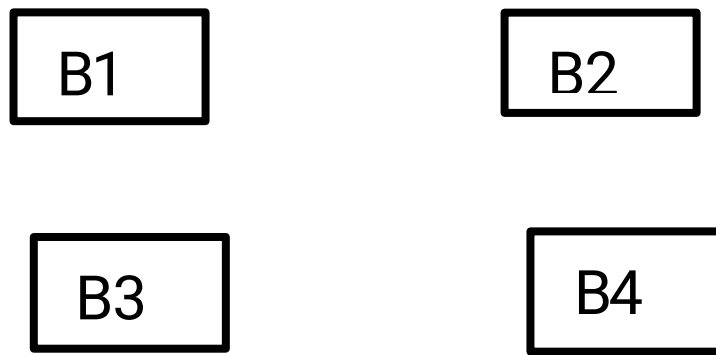
	<table border="1"> <tr> <td>CITYCODE</td> <td>CHAR(5)</td> <td>PrimaryKey</td> </tr> <tr> <td>CITYNAME</td> <td>CHAR(30)</td> <td></td> </tr> <tr> <td>SIZE</td> <td>INTEGER(3)</td> <td></td> </tr> <tr> <td>AVGTEMP</td> <td>INTEGER</td> <td></td> </tr> <tr> <td>POLLUTIONRATE</td> <td>INTEGER</td> <td></td> </tr> <tr> <td>POPULATION</td> <td>INTEGER</td> <td></td> </tr> </table> <p>Help her to complete the task by suggesting appropriate SQL commands.</p>	CITYCODE	CHAR(5)	PrimaryKey	CITYNAME	CHAR(30)		SIZE	INTEGER(3)		AVGTEMP	INTEGER		POLLUTIONRATE	INTEGER		POPULATION	INTEGER		
CITYCODE	CHAR(5)	PrimaryKey																		
CITYNAME	CHAR(30)																			
SIZE	INTEGER(3)																			
AVGTEMP	INTEGER																			
POLLUTIONRATE	INTEGER																			
POPULATION	INTEGER																			
27.	<p>Suppose content of 'Myfile.txt' is</p> <p>Humpty Dumpty sat on a wall</p> <p>Humpty Dumpty had a great fall</p> <p>All the king's horses and all the king's men</p> <p>Couldn't put Humpty together again</p> <p>Write a python function named RECORD to calculate total number of characters in ' Myfile.txt'</p> <p style="text-align: center;">OR</p> <p>Write a python function named CLRECORD to calculate total number of lines in ' Myfile.txt'</p>	3																		
28.	<p>Write SQL Command for the following.</p> <p>a) Command used to view the list of tables in a database?</p> <p>b) Command used to add column in a database?</p> <p>c) Command used to delete column from a database?</p>	3																		
29.	<p>Write a function in Python Convert() to replaces elements having even values with its half and elements having odd values with twice its value in a list.</p> <p>eg: if the list contains 3, 4, 5, 16, 9 then</p> <p>rearranged list as 6, 2, 10, 8, 18</p>	3																		
30.	<p>Write a function in Python PUSH_IN(L), where L is a list of numbers. From this list, push all numbers which are multiple of 3 into a stack which is implemented by using another list.</p> <p style="text-align: center;">OR</p> <p>Write a function in Python POP(Arr), where Arr is a stack implemented by a list of</p>	3																		

numbers. The function returns the value deleted from the stack.

SECTION D

31. A company ABC Enterprises has four blocks of buildings as shown:

5



Centre to center distance between various blocks:		Number of computers in each block:	
B3 TO B1	50M	B1	150
B1 TO B2	60M	B2	15
B2 TO B4	25M	B3	15
B4 TO B3	170M	B4	25
B3 TO B2	125M		
B1 TO B4	90M		

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ked but blocks are not networked. The company has now decided to connect the blocks also.

- (i) Suggest the most appropriate topology for the connections between the blocks.
- (ii) The company wants internet accessibility in all the blocks. The suitable and cost-effective technology for that would be?
- (iii) Which devices will you suggest for connecting all the computers within each of their blocks.
- (iv) The company is planning to link its head office situated in New Delhi with the offices in hilly areas. Suggest a way to connect it economically.
- (v) Suggest the most appropriate location of the server, to get the best connectivity for maximum number of computers.

32.	<p>a) What will be the output of following code:</p> <pre> def ChangeVal(M,N): for i in range(N): if M[i]%5 == 0: M[i]//=5 if M[i]%3 == 0: M[i]//=3 L = [25,8,75,12] ChangeVal(L,4) for i in L: print(i,end="#") </pre> <p>b) Differentiate between Selection and Projection operations in context of a Relational Database. Also, illustrate the difference with one supporting example of each.</p> <p style="text-align: center;">OR</p> <p>a) Find and write the output of the following Python code:</p> <pre> def Call(P=40,Q=20): P=P+Q Q=P- Q print(P,'@',Q) return P R=200 S=100 R=Call(R,S) print(R,'@',S) S=Call(S) print(R,'@',S) </pre> <p>b) Differentiate domain and attribute? Explain with appropriate example?</p>	2+3
33.	What is the full form of csv? Which applications are used to read/edit these files?	5

Write a Program in Python that defines and calls the following user defined functions:
 (i) ADDR() – To accept and add data of a student to a CSV file ' record.csv' . Each record consists of a list with field elements as rollno, name and mobile to store roll number name and mobilenno of student respectively.

(ii) COUNTR() – To count the number of records present in the CSV file named ' record.csv' .

OR

Give any one point of difference between a text file and a csv file.

Write a Program in Python that defines and calls the following user defined functions:

(i) add() – To accept and add data of an employee' s furniture detail to a CSV file ' abc.csv' . Each record consists of a list with field elements as fid, fname and fprice to store furniture id, furniture name and furniture price respectively.

(ii) search()- To display the records of the furniture whose price is more than 5000.

Section E

34. Write SQL commands for the following questions (i) to (iv) based on the relations Teacher and Posting given below (assume no constraint is added to the table):

1+1
+2

Table: Teacher

T_ID	Name	Age	Department	Date_of_join	Salary	Gender
1	Jugal	34	Computer Sc	10/01/2017	12000	M
2	Sharmila	31	History	24/03/2008	20000	F
3	Sandeep	32	Mathematics	12/12/2016	30000	M
4	Sangeeta	35	History	01/07/2015	40000	F
5	Rakesh	42	Mathematics	05/09/2007	25000	M
6	Shyam	50	History	27/06/2008	30000	M
7	ShivOm	44	Computer Sc	25/02/2017	21000	M
8	Shalakra	33	Mathematics	31/07/2018	20000	F

Table: Posting

P_ID	Department	Place
1	History	Agra

2	Mathematics	Raipur
3	Computer Science	Delhi

a) To add primary key in Teacher(T_ID)

b) To add new attribute named P_ID to Teacher table.

c) To add foreign key to newly created column P_ID in Teacher Table assuming that whose values are referred from P_ID column of posting table.

OR(option for part c) only)

c) To change data type of place column of posting table from char to varchar.

35. Sumit is a Python programmer. He has written a code and created a binary file record.dat with employeeid, ename and salary. The file contains 10 records. He now has to update a record based on the employee id entered by the user and update the salary. The updated record is then to be written in the file temp.dat. The records which are not to be updated also have to be written to the file temp.dat. If the employee id 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:

```
import _____ #Statement 1

def update_data():

    rec={}

    fin=open("record.dat","rb")

    fout=open("_____") #Statement 2

    found=False

    eid=int(input("Enter employee id to update their 14 salary::"))

    while True:

        try:

            rec=_____ #Statement 3

            if rec["Employee id"]==eid:

                found=True

                rec["Salary"]=int(input("Enter new salary::"))

            pickle._____ #Statement 4
```

1+1
+2

else:

 pickle.dump(rec,fout)

except:

 break

if found==True:

 print("The salary of employee id ",eid," has been updated.")

else:

 print("No employee with such id is not found")

fin.close()

fout.close()

(i) Which module should be imported in the program? (Statement 1)

(ii) Write the correct statement required to open a temporary file named temp.dat.
(Statement 2)

(iii) Which statement should Aman fill in Statement 3 to read the data from the
binary file, record.dat and in Statement 4 to write the updated data in the file,
temp.dat?