KENDRIYA VIDYALAYA SANGATHAN, AHMEDABAD REGION

प्री-बोर्ड परीक्षा:2024-25

PRE-BOARD EXAMINATION: 2024-25

SUBJECT : Computer Science (083) TIME : 3 HOURS
CLASS : XII MM : 70

सामान्यनिर्देश/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.

Q.NO	SECTION-A (21 X 1= 21 Marks)	MARKS
1	Which of the following modes in Python creates a new file, if file does not exist and overwrites the content, if the file exists? (a) r+ (b) r (c) w (d) a	1
2	Which of the following statements is false? (a) A try-except block can have more than one except statement (b) One block of except statement cannot handle multiple exceptions (c) The finally block is always executed (d) When 1 == "1" is executed, no exception is raised	1
3	Consider the following query : >Select * from employee order by salary _____, name _____; To display the salary from greater to smaller and name in alphabetical order which of the following options should be used? (a) ascending, descending (b) asc, desc (c) desc, asc (d) desce, asce	1
4	The condition is used with group by clause in SQL. (a) Where (b) Having (c) NULL (d) between	1
5	Fill in the blank: _____ command of SQL is used to add new column in a table. (a) UPDATE (b) INSERT (c) CREATE (d) None of the above	1
6	fetchone() method fetches only one row in a ResultSet and returns a _____. (a)Tuple (b)List (c)Dictionary (d)String	1

7	Telephone network is an example of a _____network (a) Packet switching (b) Circuit switching (c) Line switching (d) Message Switching	1
8	Rearrange the following terms in increasing order of speedy medium of data transfer. Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	1
9	Which of the following is not an example of unguided media? (a) Satellite (b)Bluetooth (c)Radio (d) Optical Fiber Cable	1
	Q10 and Q11 are Assertion(A) and Reason(R) 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	1
10	Assertion(A): readlines() reads all the lines from a text file and returns the lines along with new line as a list of strings. Reasoning(R):readline()can read the entire text file line by line without using any looping statements.	1
11	Assertion (A): Drop and delete both are DDL commands. Reasoning (R): Drop is used to delete table and delete is used to remove tuples.	1
12	State True or False. "Comments are not executed by interpreter."	1
13	What will the output be from the following code? print("Welcome" + 2 + "Ahmedabad"+ "Gujarat") (a) Welcome2AhmedabdadGujarat (b) TypeError (c) "Welcome2 AhmedabdadGujarat" (d) ValueError	1
14	Which of the following is valid logical operator in Python: (a) > (b) and (c) ** (d) OR	1
15	Find the output of the following:- x= "India is a largest democracy in the World" print (x[2:3],x[-3:-4])	1
16	Write the valid identifier in the following: (a) My.File (b) My-File (c) 2num (d) For	1
17	What is the output when following code is executed ? Mytuple = 10, 20 Mytuple*2 (a) (20, 40) (b) (10, 20, 10, 20) (c) (10,10,20,20) (d) Error	1
18	Given the following dictionary Day={1:"Monday",2:"Tuesday",3:"Wednesday"} Which statement will return"Tuesday". (a) Day.pop(2) (b) Day.pop() (c) Day.pop(1) (d) Day.pop("Tuesday")	1
19	What will the following expression be evaluated to in Python? print(6/3+4**3//8-4) (a) 6.5 (b) 4.0 (c) 6.0 (d) 4	1

20	Which operators perform pattern matching in SQL? (a) %, * (b) %, + (b) *, _ (d) _ , %	1
21	The readlines() method returns: (a) String (b) A list of integers (c) A list of single characters (d) A list of lines	1
Q.NO	**SECTION-B (7 X 2= 14 Marks)**	**MARKS**

22	What will be the output of the following code?
	L = [5,10,15,1]
	G = 4
	def Change(X):
	global G
	N=len(X)
	for i in range(N):
	X[i] += G
	
	Change(L)
	for i in L:
	print(i,end='$')
		2

23	Give two examples of each of the following: (i) Identity operator (ii) Membership operator	2
24	Write a suitable Python statement for each of the following tasks using built-in functions/methods only: (i) To delete an element Mumbai:50 from Dictionary D. (ii) To display words in a string S in the form of a list OR Write a Python Program/statements to display characters of a string from S. For example, if S="Computer Science" (i)The output should be 'Cmue cec' (alternate character) (ii) The output should be 'ecneicS retupmoC' (reverse order)	2
25	What will be the output of the following code? What is minimum and maximum value of x ? import random List=["Delhi","Mumbai","Chennai","Kolkata"] for y in range(4): x = random.randint(1,3) print(List[x],end="#") a. Delhi#Mumbai#Chennai#Kolkata# b. Mumbai#Chennai#Kolkata#Mumbai# c. Mumbai# Mumbai #Mumbai # Delhi# d. Mumbai# Mumbai #Chennai # Mumbai	2
26	Rewrite the following code in Python after removing all the syntax errors. Underline each correction done in the code. num1, num2 = 10, 45	2

	While num1 % num2 == 0 num1+= 20 num2+= 30 Else: print('hello')	
27	(i) A) What constraint should be applied on a table column so that duplicate values and NULL are not allowed in that column OR B) Write command to display list of databases. (ii) A) Write an SQL command to add gender column in emp table with "F" as default constraint OR B) Write an SQL command to make the column STD_ID as Primary Key of STUDENT table.	2
28	Write two advantages and two disadvantages of circuit switching. OR Differentiate between Web server and web browser. Write the names of any two web browsers.	2
Q.NO	**SECTION- C (3 X 3= 9 Marks)**	**MARKS**
29	A) Write a Python function COUNT() that displays all the words containing "KVS" from a text file "temp.txt". OR B)Write a Python function DISPLAY() that finds and displays all the words longer than 7 characters from a text file "book.txt".	3
30	Renu has created a dictionary containing names and marks as key value pairs of 6 students. Write a program, with separate user defined functions to perform the following operations: ● Push the keys (name of the student) of the dictionary into a stack, where the corresponding value (marks) is greater than 75. ● Pop and display the content of the stack. For example: If the sample content of the dictionary is as follows: R={"OM":76, "JAI":45, "ARYA":89, "ALI":65, "ANU":90,"TOM":82} The output from the program should be: TOM ANU ARYA OM OR Akshat has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list. ● Traverse the content of the list and push the even numbers into a stack. ● Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38]	

Sample Output of the code should be:

38 22 98 56 34 12

31 Predict the output of the code given below : 3

```
text="LearningCS"
L=len(text)
ntext=""
for i in range (0,L):
    if text[i].islower():
        ntext=ntext+text[i].upper()
    elif text [i].isalnum():
        ntext=ntext+text[i]
    else:
        ntext=ntext+'@@'
print(ntext)
```

OR

```
L = [5,10,15,1]
G = 4
def Change(X):
    global G
    N=len(X)
    for i in range(N):
        X[i] += G
Change(L)
for i in L:
    print(i,end='$')
```

(1 Mark of each correct three characters)

Q.NO	**SECTION- D (4 X 4= 16 Marks)**	**MARKS**

32 Given the Table TRAINER 4

TID	TNAME	CITY	HIREDATE	SALARY
101	SUNAINA	MUMBAI	1998-10-15	90000
102	ANAMIKA	DELHI	1994-12-24	80000
103	DEEPTI	CHANDIGARH	2001-12-21	82000
104	MEENAKSHI	DELHI	2002-12-25	78000
105	RICHA	MUMBAI	1996-01-12	95000
106	MANIPRABHA	CHENNAI	2001-12-12	69000

(a) Write the query to:

(i) Insert a record: (107,Bhoomi,Delhi,2001-12-15,90000)

(ii) Increase the salary by 1% for the trainers whose salary is

more than 80000

(iii) Delete the record of Richa

(iv) Add a new column remarks of VARCHAR type with 50 characters.

OR

(b)Write a output of following query :

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	Shiv Om	44	Computer Sc	25/02/2017	21000	M
8	Shalakha	33	Mathematics	31/07/2018	20000	F

e

(i) SELECT Department, count(*) FROM Teacher GROUP BY Department having department='Histroy';

(ii) SELECT Max(Date_of_Join),Min(Date_of_Join) FROM Teacher;

(iii) SELECT Name , age FROM Teacher where Name like '_a%';

(iv) SELECT Gender, COUNT(Gender) FROM Teacher GROUP BY Gender;

33 Explain the importance of CSV file in file handling. 4

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

a) ADDITION() – To accept and add data of an staff to a CSV file 'info.csv'. Each record consists of a list with field elements as empid, name and salary to store employee id, employee name and employee salary respectively.

b) COUNT() – To count the number of records present in the CSV file named 'info.csv'.

34 Name of the table - HRDATA 4

ECode	**EName**	**Desig**	**Remn**
80001	Lokesh	Programmer	50000
80004	Aradhana	Manager	65000
80007	Jeevan	Programmer	45000
80008	Arjun	Admin	55000
80012	Priya	Executive	35000

(i)Write command to insert following data in the table:
ECode = 80015, Ename = "Allen" Desig = 'Admin' Remn = 43000

(ii) Write SQL statement to delete the record of Jeevan from the table HRDATA.

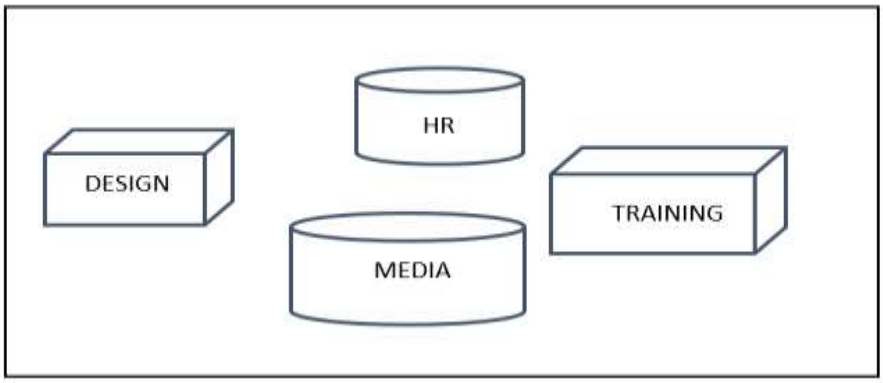
(iii) Write SQL statement to increase the Remn of all the employees

	by 10 percent. iv) (a) Add a column City in the table with datatype as varchar with 20 character OR (b) Delete column desig of table HRDATA.	
35	A table, named ITEM, in ITEMDB database, has the following structure: itemNo int(11), itemName varchar(15), price float, qty int(11) Write the following Python function to perform the specified operation: Display(): To input details of an item and store it in the table ITEM. The function should then retrieve and display all records from the ITEM table where the Price is greater than 75. Assume the following for Python-Database connectivity: Host: localhost, User: root, Password: kvs	
Q.NO	**SECTION- E (2 X 5= 10 Marks)**	**MARKS**
36	A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. (i). Write a user defined function CreateFile() to input data for a record and add to "Book.dat" . (ii). Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"	5
37	Karnavati Design and Training Institute is setting up its center in Jaipur with four specialized units for Design, Media, HR and Training in separate buildings. The physical distances between these units and the number of computers to be installed in these units are given as follows. You as a network expert, have to answer the queries as raised by the administrator as given in (i) to (v). Shortest distances between various locations in meters :	5

Design Unit to Media Unit	60
Design Unit to HR Unit	40
Design Unit to Training Unit	60
Media Unit to Training Unit	100
Media Unit to HR Unit	50
Training Unit to HR Unit	60

Number of computers installed at various locations are as follows:

Design Unit	40
Media Unit	50
HR Unit	110
Training Unit	40



a)Suggest the most suitable place (i.e.,Unit/Building) to install the server of this Institute with justification.

b) Suggest an ideal layout for connecting these Unit/Building for a wired connectivity.

c) Suggest the devices to be installed in each of these buildings for connecting computers installed within each of the units out of the following :

Modem, Switch, Gateway, Router

d) Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable :

Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.

e) The institute is planning to connect its admission office in Bangalore, which is 1960km from institute. Which type of network out of LAN, MAN or WAN will be formed ? Justify your answer.

OR

e) Difference between PAN and LAN

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PRE-BOARD EXAMINATION: 2024-25

MARKING SCHEME

SUBJECT : Computer Science (083) TIME : 3 HOURS
CLASS :XII MM : 70

GENERAL INSTRUCTIONS:

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Q.NO	SECTION-A (21 X 1= 21 Marks)	MARKS
1	(c) w	1
2	(b) One block of except statement cannot handle multiple exceptions	1
3	(c) desc, asc	1
4	(b) Having	1
5	(d) None of the above	1
6	(a)Tuple	1
7	(b) Circuit switching	1
8	Telephone line, Twisted Pair Cable, Coaxial Cable, Fiber Optics	1
9	(d) Optical Fiber Cable	1
	Q10 and Q11 are Assertion(A) and Reason(R) 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	1

10	(C) A is True but R is False	1
11	(D)A is False but R is True	1
12	True	1
13	(b) TypeError	1
14	(b) and	1
15	D	1
16	(d) For	1
17	(b) (10, 20, 10, 20)	1
18	(a) Day.pop(2)	1
19	(c) 6.0	1
20	(d) _ , %	1
21	(d) A list of lines	1
20	(C) A is True but R is False	1
21	(D)A is False but R is True	1
Q.NO	**SECTION-B (7 X 2= 14 Marks)**	**MARKS**
22	9$14$19$5$ (1/2 mark for each two continuous character)	2
23	(i) Identity operator : is , is not (ii) Membership operator : in , not in (with suitable example : 1 mark for each)	2
24	i. del D['Mumbai'] ii. print(S.split()) (1 mark for each correct answer) OR S="Computer Science" print(S[::2]) print(S[::-1]) (1 mark for each correct answer)	2
25	b. Mumbai#Chennai#Kolkata#Mumbai# Minimum value : 1 Maximum value :3 (1 mark for correct option , ½ for each min and max value of x)	2
26	num1, num2 = 10, 45 while num1 % num2 == 0:	2

	num1+= 20 num2+= 30 else: print('hello') ½ mark for while ½ mark for : ½ mark for correct indentation (inside the block of while) ½ mark for else	
27	(i) A) Primary Key OR B) Show databases; (1 mark for correct answer) (ii) A) ALTER TABLE EMP ADD (GENDER CHAR(2) DEFAULT GENDER='F') OR B) ALTER TABLE STUDENT ADD PRIMARY KEY (STD_ID); (1 mark for correct answer)	2
28	Advantages: 1) A dedicated communication channel increases the quality of communication. 2) Suitable for long continuous communication. Disadvantages: 1) Resources are not utilized fully. 2) The time required to establish the physical link between the two stations is too long. (½ mark for each advantage and disadvantage) OR Web browser Purpose: Receives and displays web content. Function: Initiates requests to web servers, and receives and displays content for users. Web server Purpose: Delivers web content to clients. Function: Listens to incoming requests, processes them, and sends requested content to the client. Name of Web browsers: Google Chrome, Mozilla Firefox (1 mark for any one correct difference and 1/2 mark for each two correct examples)	2
Q.NO	**SECTION- C (3 X 3= 9 Marks)**	**MARKS**

29	(A)
	def COUNT():
	f=open("temp.txt",'r')
	d=f.read()
	w=d.split()
	for i in w:
	if 'KVS' in i:
	print(i, end=' ')
	f.close()
	(½ mark for correct function header)
	(½ mark for correctly opening the file)
	(½ mark for correctly reading from the file)
		3

	(½ mark for splitting the text into words)
	(1 mark for correctly displaying the desired words)
	OR
	(B)
	def DISPLAY():
	  with open("book.txt", 'r') as f:
	  d=f.read()
	  w=d.split()
	  for i in w:
	  if len(i)>7:
	  print(i, end=' ')
	(½ mark for correct function header)
	(½ mark for correctly opening the file)
	(½ mark for correctly reading from the file)
	(½ mark for splitting the text into words)
	(1 mark for correctly displaying the desired words)	

30	R={"OM":76, "JAI":45, "ARYA":89,"ALI":65, "ANU":90, "TOM":82}
	def PUSH(S,N):
	  S.append(N)
	def POP(S):
	  if S!=[]:
	  return S.pop()
	  else:
	  return None
	ST=[]
	for k in R:
	  if R[k]>=75:
	  PUSH(ST,k)
	while True:
	  if ST!=[]:
	  print(POP(ST),end=" ")
	  else:
	  break
	OR
	N=[12, 13, 34, 56, 21, 79, 98, 22,35, 38]
	def PUSH(S,N):
	  S.append(N)
	def POP(S):
	  if S!=[]:
		3

	return S.pop()
	else:
	return None
	ST=[]
	for k in N:
	if k%2==0:
	PUSH(ST,k)
	while True:
	if ST!=[]:
	print(POP(ST),end=" ")
	else:
	break
	1 mark for correct PUSH operation, 1 mark for correct POP operation
	1 mark for correct function calls and displaying the output	

31	SEARNINGgC OR 9$14$19$5$	3
Q.NO	**SECTION- D (4 X 4= 16 Marks)**	**MARKS**
32	(a) (i) Insert into trainer values(107,'Bhoomi','Delhi','2001-12-15',90000); (ii) update trainer set salary =salary + salary*0.01 where salary>80000; (iii) Delete from trainer where TNAME='RICHA' (iv) Alter table trainer add remarks varchar(50); (4 x 1 mark for each correct query) OR (b) (i) History 3 (ii) 31/07/2018 05/09/2007 (iii) Sandeep 32 Sangeeta 35 Rakesh 42 (iv) M 5 F 3 (4 x 1 mark for each correct output)	4
33	import csv def ADDITION(): fout=open("info.csv","a",newline="\n") wr=csv.writer(fout) empid=int(input("Enter Employee id :: ")) name=input("Enter name :: ")	4

	salary=int(input("Enter salary :: ")) l1=[empid,name,salary] wr.writerow(l1) fout.close() def COUNT(): fin=open("info.csv","r",newline="\n") data=csv.reader(fin) d=list(data) print(len(d)) fin.close() ADDITION() COUNT() ½ mark for importing csv module 1 ½ marks each for correct definition of functions ½ mark for function call statements	

34	i) insert into HRDATA VALUES (80015, 'Allen','Admin',43000)
	ii) DELETE FROM HRDATA WHERE ENAME ="Jeevan";
	iii) UPDATE HRDATA SET REMN = REMN + REMN * 0.10;
	iv) (a) ALTER TABLE HRDATA ADD CITY VARCHAR(20);
	OR
	(b) Alter table HRDATA drop DESIG.
	(1 mark of each query)
		4

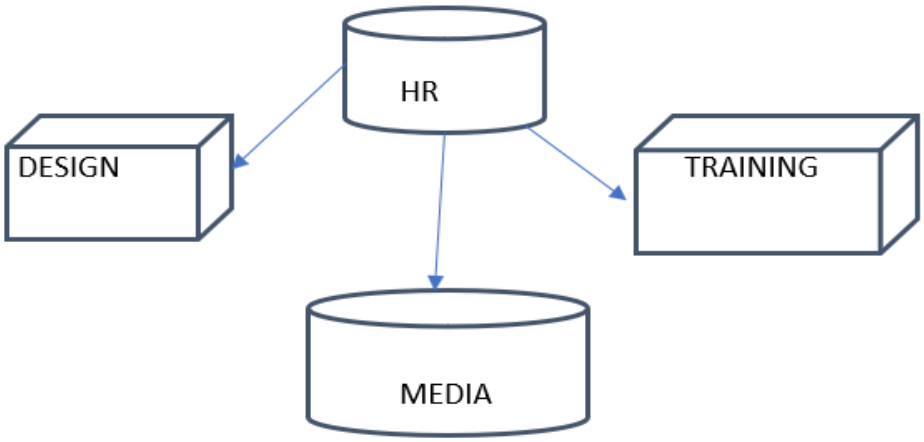
35	def Display():
	import mysql.connector as c
	db=c.connect(host="localhost",user="root",
	passwd="kvs",database="ITEMDB")
	c=db.cursor()
	no=int(input("Enter Item Number: "))
	nm=input("Enter Item Name: ")
	pr=float(input("Enter price: "))
	qty=int(input("Enter qty: "))
	query="INSERT INTO item VALUES ({},'{}',{},{})"
	query=query.format(no,nm,pr,qty)
	c.execute(query)
	db.commit()
	c.execute("select * from item where price>75")
	for rec in c:
	print(rec)
		4

	(½ mark for correctly importing the connector object) (½ mark for correctly creating the connection object) (½ mark for correctly creating the cursor object) (½ mark for correctly inputting the data) (½ mark for correct creation of first query) (½ mark for correctly executing the first query with commit) (½ mark for correctly executing the second query) (½ mark for correctly displaying the data)	
Q.NO	**SECTION- E (2 X 5= 10 Marks)**	**MARKS**

36	import pickle
	defcreateFile():
	fobj=open("Book.dat","ab")
	BookNo=int(input("Book Number : "))
	Book_name=input("Name :")
	Author = input("Author:")
	Price = int(input("Price : "))
	rec=[BookNo,Book_Name,Author,Price]
	pickle.dump(rec,fobj)
	fobj.close()
	
	defCountRec(Author):
	fobj=open("Book.dat","rb")
	num = 0
	try:
	while True:
	rec=pickle.load(fobj)
	if Author==rec[2]:
	num = num + 1
	except:
	fobj.close()
	return num
		5

37	a) Most suitable place to install the server is HR Unit as per 80:20 rule.	5

b)



c) Switch

d) Ethernet Cable

e) WAN as the given distance is more than range of LAN and MAN.

OR

e) any one difference of each.

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Q.NO	SECTION-A (21 X 1= 21 Marks)	MARKS
1	State True or False. "Comments are not executed by interpreter."	1
2	What will the output be from the following code? print("Welcome" + 2 + "Ahmedabad"+ "Gujarat") (a) Welcome2AhmedabdadGujarat (b) TypeError (c) "Welcome2 AhmedabdadGujarat" (d) ValueError	1
3	Which of the following is valid logical operator in Python: (a) > (b) and (c) ** (d) OR	1
4	Find the output of the following:- x= "India is a largest democracy in the World" print (x[2:3],x[-3:-4])	1
5	Write the valid identifier in the following: (a) My.File (b) My-File (c) 2num (d) For	1
6	What is the output when following code is executed ? Mytuple = 10, 20 Mytuple*2 (a) (20, 40) (b) (10, 20, 10, 20) (c) (10,10,20,20) (d) Error	1
7	Given the following dictionary Day={1:"Monday",2:"Tuesday",3:"Wednesday"} Which statement will	1

	return"Tuesday". (a) Day.pop(2) (b) Day.pop() (c) Day.pop(1) (d) Day.pop("Tuesday")	
8	What will the following expression be evaluated to in Python? print(6/3+4**3//8-4) (a) 6.5 (b) 4.0 (c) 6.0 (d) 4	1
9	Which operators perform pattern matching in SQL? (a) %, * (b) %, + (b) *, _ (d) _ , %	1
10	The readlines() method returns: (a) String (b) A list of integers (c) A list of single characters (d) A list of lines	1
11	Which of the following modes in Python creates a new file, if file does not exist and overwrites the content, if the file exists? (a) r+ (b) r (c) w (d) a	1
12	Which of the following statements is false? (a) A try-except block can have more than one except statement (b) One block of except statement cannot handle multiple exceptions (c) The finally block is always executed (d) When 1 == "1" is executed, no exception is raised	1
13	Consider the following query : >Select * from employee order by salary _____, name _____; To display the salary from greater to smaller and name in alphabetical order which of the following options should be used? (a) ascending, descending (b) asc, desc (c) desc, asc (d) desce, asce	1
14	The condition is used with group by clause in SQL. (a) Where (b) Having (c) NULL (d) between	1
15	Fill in the blank: _____ command of SQL is used to add new column in a table. (a) UPDATE (b) INSERT (c) CREATE (d) None of the above	1
16	fetchone() method fetches only one row in a ResultSet and returns a _____. (a)Tuple (b)List (c)Dictionary (d)String	1
17	Telephone network is an example of a _____network (a) Packet switching (b) Circuit switching (c) Line switching (d) Message Switching	1
18	Rearrange the following terms in increasing order of speedy medium of data transfer. Telephone line, Fiber Optics, Coaxial Cable, Twisted Paired Cable	1
19	Which of the following is not an example of unguided media? (a) Satellite (b)Bluetooth (c)Radio (d) Optical Fiber Cable	1
	Q20 and Q21 are Assertion(A) and Reason(R) 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	1
20	Assertion(A): readlines() reads all the lines from a text file and returns the lines along with new line as a list of strings. Reasoning(R):readline()can read the entire text file line by line without using any looping statements.	1

21	Assertion (A): Drop and delete both are DDL commands. Reasoning (R): Drop is used to delete table and delete is used to remove tuples.	1
Q.NO	**SECTION-B (7 X 2= 14 Marks)**	**MARKS**

22	What will be the output of the following code?
	L = [5,10,15,1]
	G = 4
	def Change(X):
	global G
	N=len(X)
	for i in range(N):
	X[i] += G
	
	Change(L)
	for i in L:
	print(i,end='$')
		2

23	Give two examples of each of the following: (i) Identity operator (ii) Membership operator	2
24	Write a suitable Python statement for each of the following tasks using built-in functions/methods only: (i) To delete an element Mumbai:50 from Dictionary D. (ii) To display words in a string S in the form of a list OR Write a Python Program/statements to display characters of a string from S. For example, if S="Computer Science" (i)The output should be 'Cmue cec' (alternate character) (ii) The output should be 'ecneicS retupmoC' (reverse order)	2
25	What will be the output of the following code? What is minimum and maximum value of x ? import random List=["Delhi","Mumbai","Chennai","Kolkata"] for y in range(4): x = random.randint(1,3) print(List[x],end="#") a. Delhi#Mumbai#Chennai#Kolkata# b. Mumbai#Chennai#Kolkata#Mumbai# c. Mumbai# Mumbai #Mumbai # Delhi# d. Mumbai# Mumbai #Chennai # Mumbai	2
26	Rewrite the following code in Python after removing all the syntax errors. Underline each correction done in the code. num1, num2 = 10, 45 While num1 % num2 == 0 num1+= 20	2

	num2+= 30 Else: print('hello')	
27	(i) A) What constraint should be applied on a table column so that duplicate values and NULL are not allowed in that column OR B) Write command to display list of databases. (ii) A) Write an SQL command to add gender column in emp table with "F" as default constraint OR B) Write an SQL command to make the column STD_ID as Primary Key of STUDENT table.	2
28	Write two advantages and two disadvantages of circuit switching. OR Differentiate between Web server and web browser. Write the names of any two web browsers.	2
Q.NO	**SECTION- C (3 X 3= 9 Marks)**	**MARKS**
29	A) Write a Python function COUNT() that displays all the words containing "KVS" from a text file "temp.txt". OR B)Write a Python function DISPLAY() that finds and displays all the words longer than 7 characters from a text file "book.txt".	3
30	Renu has created a dictionary containing names and marks as key value pairs of 6 students. Write a program, with separate user defined functions to perform the following operations: ● Push the keys (name of the student) of the dictionary into a stack, where the corresponding value (marks) is greater than 75. ● Pop and display the content of the stack. For example: If the sample content of the dictionary is as follows: R={"OM":76, "JAI":45, "ARYA":89, "ALI":65, "ANU":90,"TOM":82} The output from the program should be: TOM ANU ARYA OM OR Akshat has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list. ● Traverse the content of the list and push the even numbers into a stack. ● Pop and display the content of the stack. For Example: If the sample Content of the list is as follows: N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38] Sample Output of the code should be: 38 22 98 56 34 12	

31 Predict the output of the code given below : 3

```
text="LearningCS"
L=len(text)
ntext=""
for i in range (0,L):
    if text[i].islower():
        ntext=ntext+text[i].upper()
    elif text [i].isalnum():
        ntext=ntext+text[i]
    else:
        ntext=ntext+'@@'
print(ntext)
```

OR

```
L = [5,10,15,1]
G = 4
def Change(X):
    global G
    N=len(X)
    for i in range(N):
        X[i] += G
Change(L)
for i in L:
    print(i,end='$')
```

(1 Mark of each correct three characters)

Q.NO	**SECTION- D (4 X 4= 16 Marks)**	**MARKS**

32 Given the Table TRAINER 4

TID	TNAME	CITY	HIREDATE	SALARY
101	SUNAINA	MUMBAI	1998-10-15	90000
102	ANAMIKA	DELHI	1994-12-24	80000
103	DEEPTI	CHANDIGARH	2001-12-21	82000
104	MEENAKSHI	DELHI	2002-12-25	78000
105	RICHA	MUMBAI	1996-01-12	95000
106	MANIPRABHA	CHENNAI	2001-12-12	69000

(a) Write the query to:

(i) Insert a record: (107,Bhoomi,Delhi,2001-12-15,90000)
(ii) Increase the salary by 1% for the trainers whose salary is more than 80000
(iii) Delete the record of Richa
(iv) Add a new column remarks of VARCHAR type with 50

characters.

OR

(b)Write a output of following query :

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	Shiv Om	44	Computer Sc	25/02/2017	21000	M
8	Shalakha	33	Mathematics	31/07/2018	20000	F

e

(i) SELECT Department, count(*) FROM Teacher GROUP BY Department having department='Histroy';

(ii) SELECT Max(Date_of_Join),Min(Date_of_Join) FROM Teacher;

(iii) SELECT Name , age FROM Teacher where Name like '_a%';

(iv) SELECT Gender, COUNT(Gender) FROM Teacher GROUP BY Gender;

33 Explain the importance of CSV file in file handling. 4

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

a) ADDITION() – To accept and add data of an staff to a CSV file 'info.csv'. Each record consists of a list with field elements as empid, name and salary to store employee id, employee name and employee salary respectively.

b) COUNT() – To count the number of records present in the CSV file named 'info.csv'.

34 Name of the table - HRDATA 4

ECode	**EName**	**Desig**	**Remn**
80001	Lokesh	Programmer	50000
80004	Aradhana	Manager	65000
80007	Jeevan	Programmer	45000
80008	Arjun	Admin	55000
80012	Priya	Executive	35000

(i)Write command to insert following data in the table:
ECode = 80015, Ename = "Allen" Desig = 'Admin' Remn = 43000

(ii) Write SQL statement to delete the record of Jeevan from the table HRDATA.

(iii) Write SQL statement to increase the Remn of all the employees by 10 percent.

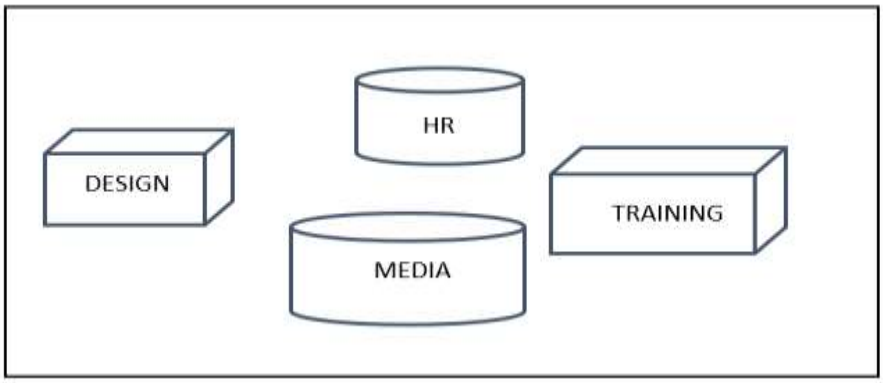
iv) (a) Add a column City in the table with datatype as varchar with 20

	character OR (b) Delete column desig of table HRDATA.	
35	A table, named ITEM, in ITEMDB database, has the following structure: itemNo int(11), itemName varchar(15), price float, qty int(11) Write the following Python function to perform the specified operation: Display(): To input details of an item and store it in the table ITEM. The function should then retrieve and display all records from the ITEM table where the Price is greater than 75. Assume the following for Python-Database connectivity: Host: localhost, User: root, Password: kvs	
Q.NO	**SECTION- E (2 X 5= 10 Marks)**	**MARKS**
36	A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. (i). Write a user defined function CreateFile() to input data for a record and add to "Book.dat" . (ii). Write a function CountRec(Author) in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"	5
37	Karnavati Design and Training Institute is setting up its center in Jaipur with four specialized units for Design, Media, HR and Training in separate buildings. The physical distances between these units and the number of computers to be installed in these units are given as follows. You as a network expert, have to answer the queries as raised by the administrator as given in (i) to (v). Shortest distances between various locations in meters :	5

Design Unit to Media Unit	60
Design Unit to HR Unit	40
Design Unit to Training Unit	60
Media Unit to Training Unit	100
Media Unit to HR Unit	50
Training Unit to HR Unit	60

Number of computers installed at various locations are as follows:

Design Unit	40
Media Unit	50
HR Unit	110
Training Unit	40



a)Suggest the most suitable place (i.e.,Unit/Building) to install the server of this Institute with justification.

b) Suggest an ideal layout for connecting these Unit/Building for a wired connectivity.

c) Suggest the devices to be installed in each of these buildings for connecting computers installed within each of the units out of the following :

Modem, Switch, Gateway, Router

d) Suggest an efficient as well as economic wired medium to be used within each unit for connecting computer systems out of the following network cable :

Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.

e) The institute is planning to connect its admission office in Bangalore, which is 1960km from institute. Which type of network out of LAN, MAN or WAN will be formed ? Justify your answer.

OR

e) Difference between PAN and LAN

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KENDRIYA VIDYALAYA SANGATHAN, AHMEDABAD REGION

प्री–बोर्ड परीक्षा : 2024-25

PRE-BOARD EXAMINATION: 2024-25

MARKING SCHEME

SUBJECT : Computer Science (083) TIME : 3 HOURS
CLASS :XII MM : 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.

Q.NO	SECTION-A (21 X 1= 21 Marks)	MARKS
1	True	1
2	(b) TypeError	1
3	(b) and	1
4	D	1
5	(d) For	1
6	(b) (10, 20, 10, 20)	1
7	(a) Day.pop(2)	1
8	(c) 6.0	1
9	(d) _ , %	1
10	(d) A list of lines	1
11	(c) w	1
12	(b) One block of except statement cannot handle multiple exceptions	1
13	(c) desc, asc	1
14	(b) Having	1

15	(d) None of the above	1
16	(a)Tuple	1
17	(b) Circuit switching	1
18	Telephone line, Twisted Pair Cable, Coaxial Cable, Fiber Optics	1
19	(d) Optical Fiber Cable	1
	Q20 and Q21 are Assertion(A) and Reason(R) 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	1
20	(C) A is True but R is False	1
21	(D)A is False but R is True	1
Q.NO	**SECTION-B (7 X 2= 14 Marks)**	**MARKS**
22	9$14$19$5$ (1/2 mark for each two continuous character)	2
23	(i) Identity operator : is , is not (ii) Membership operator : in , not in (with suitable example : 1 mark for each)	2
24	i. del D['Mumbai'] ii. print(S.split()) (1 mark for each correct answer) OR S="Computer Science" print(S[::2]) print(S[::-1]) (1 mark for each correct answer)	2
25	b. Mumbai#Chennai#Kolkata#Mumbai# Minimum value : 1 Maximum value :3 (1 mark for correct option , ½ for each min and max value of x)	2

26	num1, num2 = 10, 45
	while num1 % num2 == 0:
	num1+= 20
	num2+= 30
	else:
		2

	print('hello') ½ mark for while ½ mark for : ½ mark for correct indentation (inside the block of while) ½ mark for else	
27	(i) A) Primary Key OR B) Show databases; (1 mark for correct answer) (ii) A) ALTER TABLE EMP ADD (GENDER CHAR(2) DEFAULT GENDER='F') OR B) ALTER TABLE STUDENT ADD PRIMARY KEY (STD_ID); (1 mark for correct answer)	2
28	Advantages: 1) A dedicated communication channel increases the quality of communication. 2) Suitable for long continuous communication. Disadvantages: 1) Resources are not utilized fully. 2) The time required to establish the physical link between the two stations is too long. (½ mark for each advantage and disadvantage) OR Web browser Purpose: Receives and displays web content. Function: Initiates requests to web servers, and receives and displays content for users. Web server Purpose: Delivers web content to clients. Function: Listens to incoming requests, processes them, and sends requested content to the client. Name of Web browsers: Google Chrome, Mozilla Firefox (1 mark for any one correct difference and 1/2 mark for each two correct examples)	2
Q.NO	**SECTION- C (3 X 3= 9 Marks)**	**MARKS**

29	(A)
	def COUNT():
	f=open("temp.txt",'r')
	d=f.read()
	w=d.split()
	for i in w:
	if 'KVS' in i:
	print(i, end=' ')
	f.close()
	(½ mark for correct function header)
	(½ mark for correctly opening the file)
	(½ mark for correctly reading from the file)
	(½ mark for splitting the text into words)
	(1 mark for correctly displaying the desired words)
	OR
		3

	(B)
	def DISPLAY():
	with open("book.txt", 'r') as f:
	d=f.read()
	w=d.split()
	for i in w:
	if len(i)>7:
	print(i, end=' ')
	(½ mark for correct function header)
	(½ mark for correctly opening the file)
	(½ mark for correctly reading from the file)
	(½ mark for splitting the text into words)
	(1 mark for correctly displaying the desired words)	

30	R={"OM":76, "JAI":45, "ARYA":89,"ALI":65, "ANU":90, "TOM":82}
	def PUSH(S,N):
	S.append(N)
	def POP(S):
	if S!=[]:
	return S.pop()
	else:
	return None
	ST=[]
	for k in R:
	if R[k]>=75:
	PUSH(ST,k)
	while True:
	if ST!=[]:
	print(POP(ST),end=" ")
	else:
	break
	OR
	N=[12, 13, 34, 56, 21, 79, 98, 22,35, 38]
	def PUSH(S,N):
	S.append(N)
	def POP(S):
	if S!=[]:
	return S.pop()
	else:
	return None
		3

	ST=[]
	for k in N:
	  if k%2==0:
	  PUSH(ST,k)
	while True:
	  if ST!=[]:
	  print(POP(ST),end=" ")
	  else:
	  break
	1 mark for correct PUSH operation, 1 mark for correct POP operation
	1 mark for correct function calls and displaying the output	

31	SEARNINGgC OR 9$14$19$5$	3
Q.NO	**SECTION- D (4 X 4= 16 Marks)**	**MARKS**
32	(a) (i) Insert into trainer values(107,'Bhoomi','Delhi','2001-12-15',90000); (ii) update trainer set salary =salary + salary*0.01 where salary>80000; (iii) Delete from trainer where TNAME='RICHA' (iv) Alter table trainer add remarks varchar(50); (4 x 1 mark for each correct query) OR (b) (i) History 3 (ii) 31/07/2018 05/09/2007 (iii) Sandeep 32 Sangeeta 35 Rakesh 42 (iv) M 5 F 3 (4 x 1 mark for each correct output)	4

33	import csv
	def ADDITION():
	  fout=open("info.csv","a",newline="\n")
	  wr=csv.writer(fout)
	  empid=int(input("Enter Employee id :: "))
	  name=input("Enter name :: ")
	  salary=int(input("Enter salary :: "))
	  l1=[empid,name,salary]
	  wr.writerow(l1)
		4

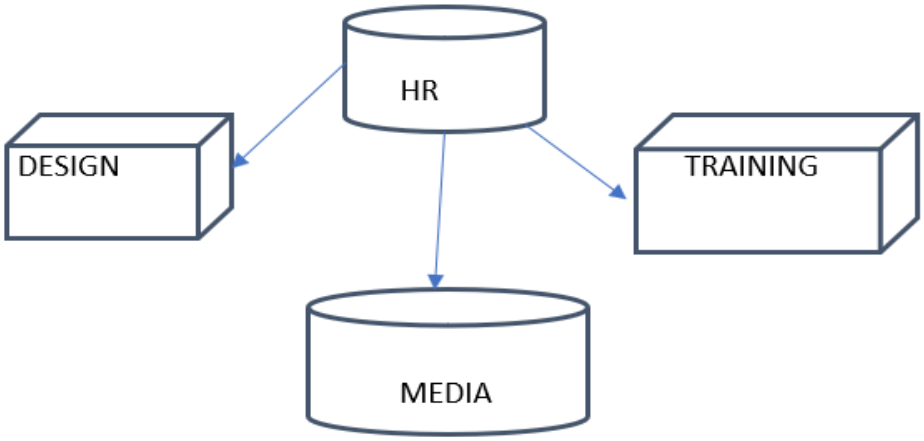
	fout.close() def COUNT(): fin=open("info.csv","r",newline="\n") data=csv.reader(fin) d=list(data) print(len(d)) fin.close() ADDITION() COUNT() ½ mark for importing csv module 1 ½ marks each for correct definition of functions ½ mark for function call statements	

34	i) insert into HRDATA VALUES (80015, 'Allen','Admin',43000)
	ii) DELETE FROM HRDATA WHERE ENAME ="Jeevan";
	iii) UPDATE HRDATA SET REMN = REMN + REMN * 0.10;
	iv) (a) ALTER TABLE HRDATA ADD CITY VARCHAR(20);
	OR
	(b) Alter table HRDATA drop DESIG.
	(1 mark of each query)
		4

35	def Display():
	import mysql.connector as c
	db=c.connect(host="localhost",user="root",
	passwd="kvs",database="ITEMDB")
	c=db.cursor()
	no=int(input("Enter Item Number: "))
	nm=input("Enter Item Name: ")
	pr=float(input("Enter price: "))
	qty=int(input("Enter qty: "))
	query="INSERT INTO item VALUES ({},'{}',{},{})"
	query=query.format(no,nm,pr,qty)
	c.execute(query)
	db.commit()
	c.execute("select * from item where price>75")
	for rec in c:
	print(rec)
	(½ mark for correctly importing the connector object)
	(½ mark for correctly creating the connection object)
	(½ mark for correctly creating the cursor object)
		4

	(½ mark for correctly inputting the data) (½ mark for correct creation of first query) (½ mark for correctly executing the first query with commit) (½ mark for correctly executing the second query) (½ mark for correctly displaying the data)	
Q.NO	**SECTION- E (2 X 5= 10 Marks)**	**MARKS**

36	import pickle
	defcreateFile():
	fobj=open("Book.dat","ab")
	BookNo=int(input("Book Number : "))
	Book_name=input("Name :")
	Author = input("Author:")
	Price = int(input("Price : "))
	rec=[BookNo,Book_Name,Author,Price]
	pickle.dump(rec,fobj)
	fobj.close()
	
	defCountRec(Author):
	fobj=open("Book.dat","rb")
	num = 0
	try:
	while True:
	rec=pickle.load(fobj)
	if Author==rec[2]:
	num = num + 1
	except:
	fobj.close()
	return num
		5

37	a) Most suitable place to install the server is HR Unit as per 80:20 rule. b)  c) Switch d) Ethernet Cable e) WAN as the given distance is more than range of LAN and MAN. OR e) any one difference of each.	5

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