Kendriya Vidyalaya Sangathan, Jaipur Region
PRACTICE PAPER-III

Class: XII **Subject**: Computer Science (083)
Maximum Marks: 70 **Period**: 3 Hours

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 the case of MCQ, the text of the correct answer should also be written.

Q.	Section-A (21 x 1 = 21 Marks)	Mark
1	State True or False: Exception is a compile time error.	1
2	Identify the output of the following code snippet text = “Comma(,) is a punctuator” text = text.split(‘,’) print(text) a) [‘Comma(,)’, ‘is’, ‘a’, ‘punctuator’] b) [‘Comma(’, ‘) is a punctuator’] c) [‘Comma(‘, ‘,’, ‘) is a punctuator’] d) Error	1
3	Which of the following expressions evaluates to True a) False or not False and False b) False and not False or False c) True or not True and False d) True and not True or not True	1
4	What is the output of the following code snippet? ‘CS’.join(‘IP’) a) 'ICSP' b) 'CIPS' c) 'IPCIPSIP' d) 'CSICSPCS'	1
5	What will be the output of the following code? msg = ‘Transcendental’ print(msg[10 : -10 : -2]) a) 'nde' b) 'ndesaTltenc' c) '' d) error	1

6	Which statement(s) will result in error?
	t1=(11,22,33)
	t2=(44,) #statement1
	t2+=t1 #statement2
	t4=t1*2+t2*2 #statement3
	t4[0]=45 #statement4
	a) statement 4 b) statement 2&4 c) statement 3&4 d) All
		1

7	Which statement will result in error item={‘Cake’:20, ‘Pastry’:30, ‘Burger’:15} a) item[‘Patties’]=30 b) item.update((‘Patties’,30)) c) item.update({‘Patties’:30}) d) item.setdefault(‘Patties’,30)	1
8	What does list.pop(x) method do in Python? a) removes and return element x b) removes first occurrence of element x c) removes and return element at index x d) only returns element at index x but does not remove it	1
9	If a table has 5 Candidate keys then it will have___ Primary keys and ___Alternate keys	1

	a) 1,5 b) 1,1 c) 1,4 d) 4,1	
10	Write the missing statement to complete the following code: file = open('story.txt', 'r+') data = file.read(5) _____# Move the file pointer to the end of the file file.write('End') file.close()	1
11	State whether the following statement is True or False: There can be more than one except blocks.	1
12	What will be the output of the following code? a=5 def fn( ): global a a=5 print(a, end = " ") fn() print(a) a) 5 error b) 5 5 c) error d) None of the above	1
13	Which SQL command can be used to set a default value to a column in table?	1
14	What will be the output of the query? SELECT * FROM employees WHERE employee_name LIKE '%aa%' ; a) Details of all employees with two a's only in the start of the name. b) Details of all employees with two a's only at the end of the name. c) Details of all employees with two a's anywhere in the name. d) Details of all employees with two a's together only in the name.	1
15	Literals of which SQL data type are enclosed in quotes? a) Char & Varchar b) Float c) Date d) (a) & (c)	1
16	What will be the output of following query for the given table named Sports: SELECT AVG(Price) FROM Sports; Item | Price Football | 1000 Volleyball | 900 BasketBall | 950 Tennis Ball | NULL a) 950 b) 712.5 c) NULL d) Error	1
17	Which protocol allows users to download emails from a server to a client? a) SMTP b) POP3 c) TELNET d) PPP	1
18	Which Network device is used to convert Digital signals to Analog signals at sender's end and convert Analog signals to Digital signals at receiver's end. a) Repeater b) Gateway c) Router d) Modem	1
19	Which switching technique ensures a continuous, reliable connection for the duration of the communication session, uses all the bandwidth of the transmission channel and doesn't share it unless the duration of communication session is over.	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	
20	Assertion (A) : The order of Actual Arguments must conform with order of Formal Parameters in case of Positional Arguments Reasoning (R): Default Parameters should be written in rightmost side of function declaration and no non-Default parameter should follow it.	1
21	Assertion (A) :In SELECT command of SQL order of WHERE and HAVING	1

	clause is interchangeable. Reasoning (R):WHERE clauseworks before aggregation of data and HAVING clause works after aggregation of data.	

Q	Section-B (7 x 2=14 Marks)	Mark
22	Which of the following statement will result in error and why? s = “God is almighty” s1 = s[0] + s[1] s[0] = ‘g’	2
23	Write following type of operators as per the order of Precedence Table for Python. (i) Arithmetic operators (ii) Logical operators	2
24	If A = [10,20,40,10,30,20] and B = [1,7,3,4,8,6,5,9] then answer the following using built-in methods/functions only (i) (A) Write a statement to count the occurrences of 10 in A. OR (B) Write a statement to arrange the elements of A in ascending order. (ii) (A) Write a statement to add all the elements of B at the end of A. OR (B) Write a statement to reverse the elements of B.	2
25	Identify the correct output(s) of the following code. Also write the minimum and the maximum possible values of the variable r. import random l=[10,20,30,40,50,60,70] p=random.randint(3,5) q=random.randint(5,6) r=p-2 s=q+1 for i in range(r,s): print(l[i],end="#") a) 30#40#50#60#70# b) 20#30#40#50# c) 30#40#50# d) 40#50#60#	2
26	The code provided below is intended to shift the elements to the left by n times of a tuple t. However, there are syntax and logical errors in the code. Rewrite it after removing all errors. Underline all the corrections made. deflshift(t,n): n=n%len(t) t=t[n:]+t[:n+1] return t newt=lshift((1,2,3,4,5,6),13) print(newt) Sample example : lshift((6,7,8,9),2) should give the output (8,9,6,7)	2
27	(i) (A) What constraint should be applied on a column of a table so that there cannot be NULL value except for only one row OR (B) What constraint should be applied on a column of a table so that a predefined value is assigned if no value is provided by the user. (ii) (A) Write an SQL command to remove the Primary Key constraint from a table, named STUDENT. Adm_No is the primary key of the table. OR	2

	(B) Write an SQL command to make the column Rno the Primary Key of an already existing table named STUDENT.	
28	A) List one advantage and one disadvantage of Tree topology. OR B) Expand the term TELNET. What is the use of TELNET?	2

Q	Section-C (3 x 3 = 9 Marks)	Mark
29	(A) Write a Python functiongovWeb() that displays all the words containing **gov.in** from a text file "URLs.txt" OR (B) Write a Python function atleast5() that finds and displays all the words having at least 5 characters from a text file "Story.txt".	3
30	(A) You have a stack named **StarStudents** that contains records of students. Each student record is represented as a dictionary {'name': ____, 'marks': ____}Write the following user-defined functions in Python to perform the specified operations on the stack StarStudents: (i) **push_star(StarStudent, AllStudents)**: This function takes two arguments the stack StarStudent and a list of dictionaries named AllStudents containing details of all students in the format [{'name': "Ajay", 'marks': 95},{'name': "Shambhu", 'marks': 100},…..]and pushes records of only those students who has scored more than 90. (ii) **pop_star(StarStudent)**: This function takes the stack StarStudent as argument and pops the topmost student record from the stack and returns it. If the stack is already empty, the function should display "Underflow". (iii) **peek_star(StarStudent)**: This function takes the stack StarStudent as argument and displays the topmost element of the stack without deleting it. If the stack is empty, the function should display "None". OR (B) Write the definition for the following user defined functions (i) **push_positive(N):** This function takes a list of integers as parameter 'N' and pushes all positive integers into a Stack named 'pos_int' defined in global scope. (ii) **pop_positive():** This function pops the topmost number from the stack 'pos_int' defined in global scope and returns it. If the stack is already empty, the function should display "Empty". (iii) **disp_positive():** This function displays all the elements of the stack 'pos_int' defined in global scope without deleting them. If the stack is empty, the function should display "None". For example: If the integers in the list N are: [-3, 7, -5, 9, 0] Then the stack pos_int should store: [7, 9, 0] and disp_positive() should display: 7 9 0 None	3
31	Predict the output of the following code: d = { 'Shoes' : 10, 'Gloves' : 20, 'Jackets' : 15 } s = "" for k in d: s = s + k + str(d[k]) + "#" + "\n" sn = s[:-1] print(sn) OR Predict the output of the following code: squares=[1,4,9,16,25,36]	3

```
for i in squares:
    for j in range(i%7,0,-1):
print(j,'#',end='  ')
    print()
```

Section-D (4 x 4 = 16 Marks)

32 (4 marks)

Consider the table EVENTS as given below

E_Id	E_name	Manager	Price	Capacity
1001	Birthday	Prateek	3000	30
1002	Anniversary	Manoj	15000	50
1003	Reception	Shivansh	25000	NULL
1004	Birthday	Prem	3500	35

A) Write the following queries:

i) To display the total Price for each event, excluding events with total Price less than 100000

ii) To display the EVENTS table sorted by Capacity in descending order.

iii) To display the distinct event names from the EVENTS table.

iv) Display the sum of Price of all the events for which the capacity is not known.

OR

B) Write the output

i) Select E_name, sum(price) as total_price from events group by e_name;

ii) Select Manager from events where manager like '%a%';

iii)Select e_id, Price from events where price between 1500 and 12000 ;

iv)Select max(price) from events;

33 (4 marks)

A csv file "Employment.csv" contains the data of a survey. Each record of the file contains the following data:

- Name of a state
- Population of the state
- Sample size (Number of persons who participated in the survey in that state)
- Employed (Number of persons employed)

For example, a sample record of the file may be:

['Rajasthan', 5674933, 10000, 5679]

Write the following Python functions to perform the specified operations on this file:

(i) Read all the data from the file in the form of a list and display all those records for which the population is more than 5000000.

(ii) Count the number of records in the file.

34 (4 marks)

Manan has been entrusted with the management of ABC School database. He needs to access some information from STUDENT and CLUB tables for a survey analysis. Help him extract the following information by writing the desired SQL queries as mentioned below:

Table :**STUDENT**

Rno	**Name**	**DateOfBirth**	**Gender**	**Marks**	**ClubId**
1	Amit	15-11-2008	M	98	101
2	Divya	27-10-2008	F	78	102
3	Harsh	13-05-2009	M	90	101
4	Manjeet	16-07-2009	M	86	103
5	Aruna	07-08-2009	F	70	102
6	Dinesh	01-03-2009	M	67	103

Table :**CLUB**

ClubId	Cname	Fees
101	Eco	300
102	Cyber	500
103	Excursion	700

(i) To display complete details (from both the tables) of those whose marks is less than 80

(ii) To display the details of those clubs, fees of which is in the range of 400 to 700 (both values included).

(iii) To increase the fees of all clubs by 200 which have 'o' in their club name.

(iv) (a) To display Name and Marks of student in Cyber club.

OR

(b) To display the Cartesian Product of these two tables without repeating ClubId column.

35 A table, named INVENTORY, in SHOP database, has the following structure: **4**

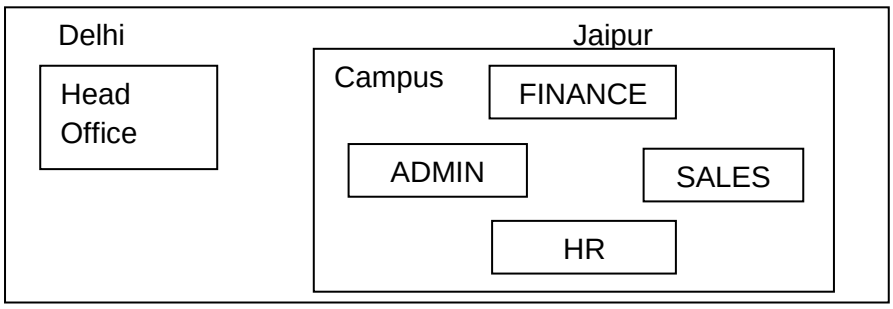
Field	Type
itemNo	int
itemName	varchar(15)
price	float
qty	int

Write the following Python function to perform the specified operation:

addRec(): To input details of an item and store it in the table INVENTORY. The function should then retrieve and display all records from the INVENTORY table where the price is greater than 150.

Assume the following for Python-Database connectivity:
Host: localhost, User: root, Password: Chetan

Q	Section-E (2 x 5 = 10 Marks)	Mark
36	Gyandev is manager in an educational institute. He needs to manage the records of various candidates. For this, he wants the following information of each candidate to be stored in a list: - Candidate_id – integer - Cadidate_name – string - Class – string - Status – string You, as a programmer of the institute, have been assigned to do this job for Gyandev. (i) Write a function addBin() to input the data of a candidate, create a list of it and append it in a binary file named "Students.dat". (ii) Write a function promoteBin() to change the status to "passed out" for those students whose class is "XII" (iii) Write a function activeBin() to read the data from the binary file and display the data of all those candidates who are not "passed out".	5
37	Advent Infotech is planning to set up it India campus in Jaipur with its head office in Delhi. The Jaipur campus will have four blocks/buildings – ADMIN, FINANCE, SALES and HR. You, as a network expert, need to suggest the best network-related solutions for them to resolve the issues/problems mention in points (i) to (v), keepin in mid the distances between various block/buildings and other given parameters.	5



Block to Block distances (in Mtrs)

From	To	Distance
ADMIN	FINANCE	35m
ADMIN	SALES	110m
ADMIN	HR	50m
FINANCE	SALES	65m
FINANCE	HR	85m
SALES	HR	70m
Delhi Head Office	Jaipur Campus	310 Km

Block	No of computers
ADMIN	120
FINANCE	10
SALES	50
HR	30

a) Draw the cable layout to efficiently connect various blocks of buildings within the Jaipur campus. Which cable would you suggest for the most efficient data transfer over the network?

b) Suggest the most appropriate location of the server inside the Jaipur campus. Justify your choice.

c) Suggest the placement of following devices:
   i) Switch/hub
   ii) Repeater

d) Which cost efficient wired medium should be used to connect the computers in Jaipur campus?

e) a)Which type of network is formed by connecting Delhi Head Office with Jaipur Campus?

OR

b) What would be your recommendation for enabling live visual communication between the Admin Office at the Jaipur Campurs and Delhi Head Office from the following options:
(i) Video Conferencing (ii) Email (iii) Telephony (iv) Instant Messaging