

DAV PUBLIC SCHOOLS, ODISHA
PRE-BOARD EXAMINATION
(2023-24)

SET-2

- Please check that this question paper contains 10 printed pages.
- Check that this question paper contains 35 questions.
- Write down the Serial Number of the question in the left side of the margin before attempting it.
- 15 minutes time has been allotted to read this question paper. The question paper will be distributed 15 minutes prior to the commencement of the examination. The students will read the question paper only and will not write any answer on the answer script during this period.

CLASS- XII

SUB: COMPUTER SCIENCE (083)

Time allowed: 3 Hours

Maximum Marks: 70

General Instructions:

- Please check this question paper contains 35 questions.
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
- Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.

Q No.	Section-A	Marks
1	State True or False. In a Python Code the comments are given by using * and ** operator.	1
2	Fill in the blank: DROP TABLE Employee; is a _____ type of statement. a. DDL b. DML c. DCL d. TCL	1
3	What will be the output of the following statement? <code>print(21.0 // 9 % 3 , 2 ** 2 ** 3)</code> a. 22 56 b. 2.0 256 c. 72 56 d. 2.0 64	1
4	Select the correct output of the code: <code>S ="Good Morning"</code> <code>print(S.capitalize(),S.title (),end = " ! ")</code> a. GOOD MORNING ! Good Morning b. Good Morning ! Good Morning c. Good morning ! Good Morning! d. Good morning Good Morning!	1

5	<p>A table Employee consists of 5 rows and 3 columns while the table Inventor consists of 7 rows and 5 columns. What will be the degrees and cardinality of Cartesian product of these tables?</p> <p>a. Degree 35 & cardinality 8 b. Degree 35 & cardinality 7 c. Degree 38 & cardinality 37 d. Degree 8 & cardinality 35</p>	2
6	<p>Which of the following is a communication protocol designed to transfer the files over Internet?</p> <p>a. VoIP b. SMTP c. FTP d. HTTP</p>	1
7	<p>What is the output of the following code fragment?</p> <pre>m = list({12:"red", 6:"black", 23:"blue",20:"green"}) for i in m: if i > 10: print(i,end=" ")</pre> <p>a. 12 23 20 b. 20 23 12 c. red blue green d. Error in the code</p>	1
8	<p>Find the output of the following code:</p> <pre>s=["slow", "and", "steady", "wins", "the", "race"] print(((s[0]+s[1][0])*2)[::-2])</pre> <p>a. aoswls b. aoswl c. asowl d. laosw</p>	1
9	<p>Which of the following statement (s) would give an error during execution of the following code:</p> <pre>T=(20,25,10,60,90) T=sorted(T) # Statement 1 T.append(40) # Statement 2 print(T[2]+70) # Statement 3</pre> <p>a. Statement 1 b. Statement 2 c. Statement 3 d. Statement 1 and Statement 3</p>	1
10	<p>What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code?</p> <pre>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 = '#')</pre> <p>a. 10#40#70# b. 30#40#50# c. 50#60#70# d. 40#50#70#</p>	1

11	The transmission medium requiring Line of Sight distance is _____. a. Microwave b. Radio wave c. WiFi d. Laser	1
12	Select the output for the given code: n=2 def fun(): global n n=3 return n*n print(n,fun(),sep="@") a. 3@9 b. 3@3 c. 2@9 d. 2@4	1
13	State whether the following statement is True or False. “The finally block can execute code, regardless of the result of the try- and except blocks.”	1
14	Which is/are incorrect statements about primary key of a table? a. Primary keys cannot contain NULL values b. Primary keys can contain NULL values. c. A Primary key can act as a Foreign Key in other table. d. A Primary key should contain unique values.	1
15	The _____ technique contains a fixed block size data signal. a. Message switching b. Circuit switching c. Parallel switching d. Packet switching	1
16	Which method of pickle module is used to write a Python object to a binary file? a. dump() b. read() c. reader() d. load()	1
	Q17 and 18 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	
17	Assertion: When one list is copied to another using copy(), changes made to one list is not reflected to the other list. Reasoning: copy() creates a shallow copy of a list.	1
18	Assertion (A):- If the arguments in function call statement match the number and order of arguments as defined in the function definition, such arguments are called positional arguments. Reasoning (R):- During a function call, the argument list first contains default argument(s) followed by positional argument(s).	1

Section-B

19	<p>(i) Expand the following terms: IMAP, EDGE</p> <p>(ii) Write two advantages of Ring Topology.</p> <p style="text-align: center;">(OR)</p> <p>(i) What is web Hosting?</p> <p>(ii) Write different parts of an URL with example</p>	1+1=2
20	<p>Rajesh has written a code to input a number and find out its square root. His code is having errors. Rewrite the correct code and underline all the corrections made.</p> <pre>def Check(): n = int(input("Enter a number ")) for k in range (1,n//2) if k*k = n: print("Square root = ",k) break if k == n/2-1: print("Not a perfect square ") Check()</pre>	2
21	<p>Write a function EndWithVowel(Flowers) in Python, that takes the dictionary named as Flowers as its argument and displays the names of the flowers which ends with a vowel (Consider both upper and lower case vowel).</p> <p>For example, Consider the following dictionary</p> <pre>Flowers={1:"Rose", 2:"Lily", 3:"Dahlia", 4:"Orchid", 5:"Daisy"}</pre> <p>Then the output should be:</p> <pre>Rose Dahlia</pre> <p style="text-align: center;">(OR)</p> <p>Write a function, LenWords(STRING), that takes a string as an argument and returns a tuple containing length of each word of a string.</p> <p>For example, if the string is "Come let us have some enjoyment",</p> <p>The tuple will have (4, 3, 2, 4, 4, 9)</p>	2
22	<p>Predict the output of the Python code given below:</p> <pre>d1 = {'a' : 10, 'b' :2, 'c' :3, 'd' :4}</pre>	2

	<pre> str1 = " " for i in d1 : str1 = str1 + str(d1[i]) + " " str2 = str1[:-1] for i in range(-1,-len(str2),-2): print(str2[i]) </pre>	
23	<p>Write a suitable Python statement for each of the following tasks using built-in functions/methods only:</p> <ul style="list-style-type: none"> i To remove an element Kolkata : 65 from Dictionary D. ii To sort and then reverse all the elements of a list L using one single command. <p style="text-align: center;">(OR)</p> <p>A string named STR stores the name of a city. Write a python program, to remove all the duplicate occurrences of alphabets from STR.</p> <p>If STR="Malayesia"</p> <p>Then resultant STR will be "Malyesi"</p>	2
24	<p>Mr. Ashok has just created a table named "Admission" containing columns AdmNo, Name, Class and Address. After creating the table, he realized that, the width of the column "Address" to be increased to 50. Help him in writing an SQL command to change the column width.</p> <p>Thereafter, write the command to view the new structure of the table.</p> <p style="text-align: center;">(OR)</p> <p>Mr. Rohit is working in a database named University, in which he has created a table named "College" containing columns CollegeId, CollegeName, No_of_seats, and Reservation. After creating the table, he realized that the attribute, Reservation has to be deleted from the table and a new attribute No_of_reservations of data type Integer has to be added. This attribute No_of_reservations cannot be left blank. Help Rohit in writing the commands to complete both the tasks.</p>	2
25	<p>Predict the output of the Python code given below:</p> <pre> def Change(tuple1): list1 =list(tuple1) M=max(list1) m=min(list1) for i in range(len(list1)): if list1[i]==m: k=i </pre>	2

	<pre> elif list1[i]==M: n=i list1[k], list1[n] = list1[n], list1[k] tuple1 = tuple(list1) print(tuple1) tuple1 = (70, 12, 50, 23, 49, 87) Change(tuple1) </pre>																					
Section-C																						
26	<p>Find and write the output of the following Python code :</p> <pre> Name="DOTFest@2023" R=" " for x in range(len(Name)): if Name[x].isupper(): R=R+Name[x].lower() elif Name[x].islower(): R=R+Name[x].upper() elif Name[x].isdigit(): R=R+Name[x-1] else: R=R + "#" print(R) </pre>	3																				
27	<p>Consider the table given below and write the output of the SQL queries that follow.</p> <p style="text-align: center;">TABLE: SPORTS</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>GCode</th> <th>GameName</th> <th>Number</th> <th>PrizeMoney</th> <th>ScheduleDate</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>CAROM BOARD</td> <td>2</td> <td>5000</td> <td>23-Jan-2004</td> </tr> <tr> <td>102</td> <td>BADMINTON</td> <td>3</td> <td>12000</td> <td>12-Dec-2003</td> </tr> <tr> <td>103</td> <td>TABLE TENNIS</td> <td>5</td> <td>8000</td> <td>14-Feb-2004</td> </tr> </tbody> </table> <p>(i) SELECT COUNT(DISTINCT Number) FROM SPORTS; (ii) SELECT GameName FROM SPORTS where GameName like '%T%'; (iii)SELECT SUM(PrizeMoney) FROM SPORTS WHERE Number between 2 and 4;</p>	GCode	GameName	Number	PrizeMoney	ScheduleDate	101	CAROM BOARD	2	5000	23-Jan-2004	102	BADMINTON	3	12000	12-Dec-2003	103	TABLE TENNIS	5	8000	14-Feb-2004	1x3=3
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28	<p>Write a function Filterlines() in python which read lines from a text file Comp.TXT and display those lines, which are having atleast 4 words.</p> <p>Eg: if the file contains the following data: Going stock mars public rubber pen yearly rest</p> <p>Then the output should be: mars rest</p>	3																				

(OR)

Write a function FindWords() to display those words from a file Words.txt which starts and ends with the same letter .

Eg: if the file contains the following data:

Going stock mars public rubber pen yearly rest

Then the output should be: **Going rubber yearly**

29

The table LIBRARY has the following structure:

Table: LIBRARY			
CDNO	NAME	QTY	PRICE
10001	Indian Patriotic	20	150
10004	Hanuman Chalisa	15	80
10005	Instrumental of Kishore	25	95
10003	Songs of Diwali	18	125
10006	Devotional Krishna Songs	14	75
10002	Best Birthday Songs	17	NULL

- (i) Increase the PRICE by 3% whose name begins with 'D'.
(ii) Delete the record of Library PRICE >100.
(iii) Add a column REMARKS in the table with datatype as VARCHAR with 50 characters.

1x3=3

30

A list contains following record of a STUDENT: **[name, Phone_number, City]** .

Write the following user defined functions to perform given operations on the stack named 'status':

- (i) Push_element(Stu) - To Push an object containing name and Phone number of STUDENT who live in BBSR to the stack. **Stu** is an argument of the function containing details of a student.
(ii) Pop_element() - To Pop the objects from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack.

For example: If the lists of STUDENT details are:

["Mohan", "1234555590", "BBSR"]

["Soumya", "9876543210", "RKL"]

["Tushar", "7654321901", "PURI"]

["Ashis", "1211889923", "BBSR"]

The stack should contain

["Mohan", "1234555590"] ["Ashis", "1211889923"]

The Output should be:

["Ashis", "1211889923"]

3

["Mohan", "1234555590"]

Stack Empty

Section-D

31 Consider the following table and write SQL statements.

1x4=4

Table: Watches

Watch_id	Qty_Sold	Quarter
W001	10	1
W003	5	1
W002	20	2
W003	10	2
W001	15	3
W002	20	3
W005	10	3
W003	15	4

Table: Sale

Watch_id	Watch_Name	Price	Type	Qty_Store
W001	HighTime	10000	Unisex	100
W002	LifeTime	15000	Ladies	150
W003	Wave	20000	Gents	200
W004	HighFashion	7000	Unisex	250
W005	GoldenTime	25000	Gents	100

- i) Display Quarter and sum of Qty_Sold for each Quarter.
- ii) Display Watch_Name, Price, Type and Qty_Sold for those watches whose Watch_id is not equal in both the tables.
- iii) List the watch details whose names are HighTime, Wave or GoldenTime.
- iv) Display watch name, quarter and price of watches whose price is more than 7000 and less than 15000.

32 Pratap is an IT employee in a multinational company. For upgradation of Employee Database in the Company, he has created a csv file named EMP.csv, to store the records of additional employees of different Departments. The structure of record of file EMP.csv is : [EMP_ID,EMP_NAME,SALARY]

4

Where, `

EMP_ID is the ID of each employee (integer)

EMP_NAME is the employee Name (string)

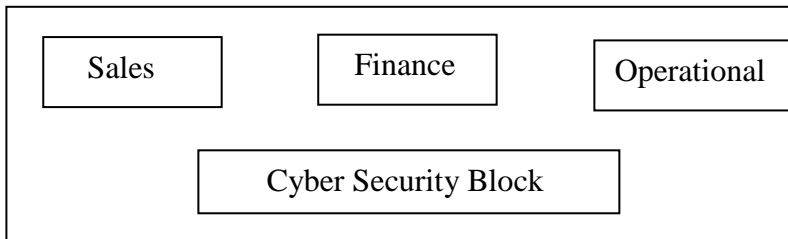
SALARY is the monthly salary of an employee (float).

For efficiently maintaining data of the Employees, Pratap wants to write the following user defined functions.

- (a) GetData() – To accept and add data of employees to a CSV file ‘EMP.csv’. To enhance readability of the data, Pratap wants to add column heading before adding data to the file.
- (b) ShowData() – To read all content of “EMP.csv” and display records of only those employees whose Annual Salary is above 5,00,000.

Section-E

33 The Bharat Consultant is planning to start its Sales Office at Ahmedabad city to setup a network. The Consultant has 3 different blocks (Sales, Finance, Operational) and one Cyber Security Block, as shown in the diagram below: 1X5=5



The distances between various blocks are as follows:

FROM	TO	DISTANCE
Sales	Cyber Security Block	80 m
Sales	Operational	80 m
Finance	Cyber Security Block	45 m
Finance	Operational	30 m
Operational	Cyber Security Block	35 m
Sales	Finance	15 m

No. of computers installed in each of the following blocks are as follows:

Name of Block	No. of Computers
Sales	15
Finance	40
Operational	20
Cyber Security Block	80

- (a) Which block in Ahmedabad Campus should be made as Server. Justify your answer.
- (b) Draw the layout of Star Topology for the above organization.
- (c) Which hardware device will you suggest to be procured by the organization to enhance data security?
- (d) Suggest the placement of the following devices as per the ideal layout with justification. i) Switch ii) Repeater
- (e) The Office is planning to provide a high speed link with its head office situated in Anand City using a wired connection .Which of the following cable will be most suitable for this job.
- i) Optical Fibre ii) Coaxial Cable iii) Twisted Pair

34	<p>i. Mention any two differences between seek() and tell().</p> <p>ii. Consider a file DEPARTURE.DAT containing multiple records. The structure of each record is as : [Fno, FName, Fare, Source, Destination]</p> <p>Write a function COPY_RECORD() in Python that copies all those records from DEPARTURE.DAT where the source is BHUBANESWAR and the destination is CHENNAI, into a new file named RECORD.DAT .</p> <p style="text-align: center;">(OR)</p> <p>i. Mention any two differences between binary files and csv files?</p> <p>ii. Consider a Binary file MYBOOK.DAT containing a dictionary having multiple elements. Each element is in the form BNO:[BNAME,BTYPE,PRICE] as key:value pair where</p> <p style="padding-left: 40px;">BNO– Book Number BNAME– Book Name BTYPE- Book Type PRICE– Book price</p> <p>Write an user-defined function, ChangeBook(price), that accepts price as parameter and displays all those records from the binary file MYBOOK.DAT which has a book price more than or equal to the price value passed as a parameter.</p>	2+3=5
35	<p>i) Define Equi Join with appropriate example.</p> <p>ii) Write a program to insert a record to the table using MySQL connectivity.</p> <p style="padding-left: 40px;">Note the following to establish connectivity between Python and MYSQL:</p> <ul style="list-style-type: none"> • Username is SCHOOL • Password is ABC123 • Host is localhost. • The table EXAM exists in a MYSQL database named DAV. • The details (Tno, Tname, Tsddate, Tedate) are to be accepted from the user. <p style="text-align: center;">(OR)</p> <p>i) Write command to create a database EMPLOYEE.</p> <p>ii) Write a program to read those records using MySQL connectivity where the joining date is before 5 October 2022.</p> <p style="padding-left: 40px;">Note the following to establish connectivity between Python and MYSQL:</p> <ul style="list-style-type: none"> • Username is TCS • Password is TCS123 • Host is localhost. <p style="padding-left: 40px;">The table EMP_RECORD exists in a MYSQL database named EMPLOYEE.</p> <ul style="list-style-type: none"> • EMP_RECORD consist of attributes (EmpID, EmpName, Date_of_Join). <p style="padding-left: 40px;">Date_of_Join is in the format of YY-MM-DD.</p>	1+4=5
