

# COMMON PRE-BOARD EXAMINATION 2023-24

## COMPUTER SCIENCE (083)

Date:30/01/2024

Time Allowed:3 hours

Class: XII

Maximum Marks: 70

### General instructions:

- Please check that 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

SECTION –A		
Q. No.	Question	Marks
1.	State True or False “Dictionaries in Python are mutable but Strings are immutable.”	1
2.	_____ command is used to remove database from MySQL. a) update    b) remove    c) alter    d) drop	1
3.	Find the invalid identifier from the following a) deF    b) For    c) bonus    d) 2#Name	1
4.	Identify the output of the following Python statements, where L1 is a List. L1=[6,4,2,9,7] print(L1[3: ]= “89”) a) [6,4,2,9,7,89]    c) [6,4,2,8,9] b) [6,4,2,89]    d) [6,4,2, ‘8’, ‘9’]	1
5.	Which of the following is not a function/method of a file object in python? a) read( ) b) writelines( ) c) dump( ) d) readlines( )	1
6.	Given the following dictionary Day={1:”January”,2:”Feb”,3:”March”} Which statement will return “March”? a) Day.pop() b) Day.pop(2) c) Day.pop(3) d) Day.pop(“March”)	1
7.	For a function header as follows, def Calc (X, Y=20) : Which of the following function calls will give an error? a. Calc(15, 25)	1

	b. Calc(x=15, y=25) c. Calc(y=25) d. Calc( x=25)	
8.	Which of the following is an example of an identity operators in python? a) is      b) on      c) in      d) not in	1
9.	_____ protocol allows a user to log on to another user system and perform various functions such as accessing files from or sharing files to the remote system. a. POP b. TELNET c. SMTP d. HTTPS	1
10.	What will the following expression be evaluated to in Python? print(int(15.0 / 4 + 8 + 3.0// 2+10.0*6)) a) 72.75              b)72.0              c) 72              d) 73.0	1
11.	Identify the output of the following Python Statements. S="G#R#E#A#T#" L=list(S.split('#',2)) print(L)  a. ['G', 'R', 'E#A#T#'] b. ['G', 'R', 'E', 'A', 'T'] c. ['G#R', 'E#A#T#'] d. Error	1
12.	The aggregate functions can only be used in the select list or _____ clause of a select query. a. WHERE b. GROUP BY c. HAVING d. ORDER BY	1
13.	Which of the following statement(s) would give an error after executing the following code? S="Good morning"    # Statement 1 print(S)              # Statement 2 S="All the Best "    # Statement 3 S[0]='#'              # Statement 4 S=S + hello            # Statement 5  a) Statement 3    b) Statement 4    c) Statement 5    d) Statement 4 and 5	1
14.	If column "Salary" from emp contains the data set (15000,28000,17500, Null, 55000), what will be the output after the execution of the given query? SELECT AVG(Salary) FROM emp; a) ERROR b) NULL c) 26275 d) 23100	1
15.	_____ is a communication medium, classified as long-distance high speed unguided medium. a) Optical fiber      b) Microwave      c) Satellite Link      d)WIMAX	1
16.	fetchall() method fetches all the row in a ResultSet and returns a _____. a) List of Tuples                      b) Tuple of Lists c) Dictionary                              d) string	1

	<p>Q.17 and 18 are Assertion (A) and Reasoning (R) based questions. Mark the correct choice as</p> <p>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.</p>	
17.	<p>Assertion (A) :- A default argument can be skipped in the function call statement.  Reasoning (R) :- The default values for parameters are considered only if no value is provided for that parameter in the function call statement.</p>	1
18.	<p>Assertion (A): CSV files are delimited files that store tabular data where comma delimits every value.  Reason (R): For writing onto a CSV file, user data is written on txt.writer object which converts the user data into delimited form and writes it on to the csv file.</p>	1
<b>SECTION – B</b>		
19.	<p>Write one advantage of star topology over bus topology and one advantage of bus topology over star topology</p> <p style="text-align: center;">OR</p> <p>Suzuka, a freelance web site developer, has been assigned a task to design few web pages for a book shop. Help Suzuka in deciding out of static web page and dynamic web page, what kind of web pages should be designed by clearly differentiating between static and dynamic web pages on at least two points.</p>	2
20.	<p>The following Python code is supposed to print the largest word in a sentence but there are few errors. Rewrite the code after removing errors and underline each correction made.</p> <pre>Str=input("Enter a sentence") word=split() print(word) maxlen=0 largest="" for i in word:     l=len(i)     if(l&gt;maxlen):         largest=l print(largest)</pre>	2
21.	<p>(a) A List is declared in Python as below:  mylist=[34,65,-77,12,0,113,31]  Find the output of the command.  mylist[:5]</p> <p>b) Suppose a Tuple is declared as follows:  mytup=(32,93,45,71,-89,111,100)  Guess the minimum value for K so, exception handling will print the IndexError Message.</p> <pre>try:     for i in range( K ):         print(mytup[i]) except IndexError:     print("It's out of range now so stop")</pre>	2



Snita created the following table named myschool. Consider the below given scenarios and write appropriate SQL queries for the same.

Field	Type	Null	Key	Default	Extra
admno	int(11)	YES		NULL	
name	char(30)	YES		NULL	

- (i) She forgot to make admno attribute as the Primary key. Write the SQL Query to make admno as the Primary key after the table has been created.  
(ii) She now wants to add a new column mark of integer data type with not null values. Write SQL query to do so.

25. Predict the output of the Python code given below:  

```
def runme(x=1, y=2):
    x = x+y
    y+=1
    print(x, '$', y)
    return x,y
a,b = runme()
print(a, '#', b)
runme(a,b)
print(a+b)
```

### SECTION C

26. What will be the output of the following code?  

```
value = 100
def display (N):
    global value
    value = 150
    if N%7 == 0:
        value = value + N
    else:
        value = value - N
print (value, end = '#')
display (50)
print (value)
```

27. Consider the table given below and write the output of the SQL queries that follow.

**SCHOOL**

**LOCATION**

roll	name	mark
1	Akash	90
2	Namit	95
3	Anit	87
4	Anuj	88

roll	city
1	Khairagarh
2	Durg
3	Rajnandgaon
4	Khairagarh

- (i) select distinct(city) from location;  
(ii) select s.name,l.city from school s, location l where s.roll=l.roll and l.city like "%h";  
(iii) select l.city,avg(s.mark) from school natural join location group by city ;

28. Write a function COUNTTEXT ( ), which reads a text file Book.txt and displays all the words of the file whose length is more than 3 or those which start with 'A' or 'a' in the form of a list.  
For example, if the Book.txt file contains:

“India is my country They are studying”  
 The output should be:  
 [ “India” , “country” , “They” , “are” , “studying” ]  
**OR**  
 Write a function COUNTWORD( ), which counts all the words from the text file Book.txt whose second last character is ‘r’.  
 For example, if the Book.txt file contains “India is my country. They are studying.”  
 Then the output should be: 2

29. Consider the table Personal given below: 3

**Table : ITEM**

SNo	Itemname	Type	Price	Stockdate
1	Chaises	Living	11500.58	2020-02-19
2	Accent Chairs	Living	31000.67	2021-02-15
3	Baker Racks	Kitchen	25000.623	2019-01-01
4	Sofa	Living	7000.3	2020-10-18
5	Nightstand	Bedroom	NULL	2021-07-23

Based on the given table, write SQL queries for the following:  
 (i) Delete the record of items whose price is not known.  
 (ii) Increase the price of all living products by 15%.  
 (iii) Add a column name city with datatype variable character of size 20.

30. Write a function in Python PUSH(Num), where Num is a list of n number of integers. 3

From this list push all positive even numbers into a stack implemented by using a list. Display the stack using POP(), if it has at least one element, otherwise display appropriate error message.

For example: Num= [2,28,45,67, -32,12,3,52]

The stack should contain:  
 [2,28,12,52]  
 The output should be:  
 52  
 12  
 28  
 2  
 Stack Empty

**SECTION D**

31. Consider the tables SENDER and RECEPIENT given below: 4

Write SQL queries for the following:  
 (i) To display the names of all Senders from Mumbai.  
 (ii) To display the RecID, SenderName, SenderAddress, RecName, RecAddress for every Recipient.  
 (iii) To display Recipient details in ascending order of RecName.  
 (iv) To display number of Recipients from each City.

**Table : SENDER**

SenderID	SenderName	SenderAddress	SenderCity
ND01	R Jain	2, ABC Appts	New Delhi
MU02	H Sinha	12, Newtown	Mumbai
MU15	S Jha	27/A, Park Street	Mumbai
ND50	T Prasad	122-K, SDA	New Delhi

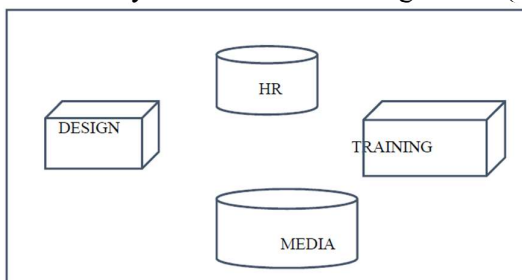
**Table : RECIPIENT**

RecID	SenderID	RecName	RecAddress	RecCity
KO05	ND01	R Bajpayee	5, Central Avenue	Kolkata
ND08	MU02	S Mahajan	116, A Vihar	New Delhi
MU19	ND01	H Singh	2A, Andheri East	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminus	Mumbai
ND48	ND50	S Tripathi	13, B1 D, Mayur Vihar	New Delhi

32. 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 'furdata.csv'. Each record consists of a list with field elements as [fid, fname, 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 70500.

**SECTION E**

33. Biyani 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:

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

	<p>a) Suggest the most suitable place (i.e., Unit/Building) to install the server of this Institute. Justify.</p> <p>b) Suggest an ideal layout for connecting these Unit/Building for a wired connectivity.</p> <p>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</p> <p>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.</p> <p>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.</p>	
34.	<p>i) What is the advantage of using 'with' clause in file handling for opening a file?</p> <p>ii) A binary file "STUDENT.DAT" has structure [admission_number, Name, Percentage]. Write a function countrec() in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%.</p> <p style="text-align: center;">OR</p> <p>i) What is the significance of 'r+' and 'a+' in file handling?</p> <p>ii) Mr. Pratham is a python programmer. He wants to write a code for searching a record from a binary file "student.dat" with Rollno and Name of the students. The file contains 05 records, as a python expert help him to write a code where name has to be searched from file based on Rollno entered by user, if not found then display "No data found".</p>	2+3
35.	<p>(i) Explain char () and varchar () with respect to RDBMS using an example.</p> <p>(ii) Samar wants to write a program in Python to insert the following record in the table named SPORTS in GAME database, CBSE:</p> <ul style="list-style-type: none"> <li>● spno (Sport_No)- integer</li> <li>● name (Name) - string</li> <li>● DOJ (Date of Join) – Date</li> </ul> <p>Note the following to establish connectivity between Python and MySQL:</p> <ul style="list-style-type: none"> <li>● Username - root</li> <li>● Password - mysql</li> <li>● Host - localhost</li> </ul> <p>The values of fields spno, name, DOJ to be accepted from the user. Help Samar to write the program in Python.</p> <p style="text-align: center;">OR</p> <p>(i) Give one difference between primary key and candidate key with an appropriate example.</p> <p>(ii) Shravan has created a table named Medicine in MySQL database Hospital:</p>	1+4=5



- Med\_id - integer
- Name - string
- M\_D - Date

Note the following to establish connectivity between Python and MySQL:

- Username - root
- Password - mysql
- Host - localhost

Now Shravan wants to display the records of those medicines whose M\_D is after 12<sup>th</sup> August 2002. Help Sartaj to write the program in Python.

*All the Best*