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Class: XII Session: 2022-23

Computer Science (083)

PREBOARD-I QUESTION PAPER (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 have 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. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

SECTION A

(Each question carries one mark)

1. What will be the output of the following python statement? 1

```
L=[3,6,9,12]
```

```
L=L+15
```

```
print(L)
```

- (a) [3,6,9,12,15] (b) [18,21,24,27] (c) [5,3,6,9,12,15] (d) error

2. Identify the output of the following python statements 1

```
import random
```

```
for n in range(2,5,2):
```

```
    print(random.randrange(1,n,end='*'))
```

- (a) 1*3 (b) 2*3 (c) 1*3*4 (d) 1*4

3. Which of the following is an invalid identifier? 1

- (a) _123 (b) E_e12 (c) None (d) true

4. Consider the given expression: 1

7%5==2 and 4%2>0 or 15//2==7.5

Which of the following will be correct output if the given expression is evaluated?

- (a) True (b) False (c) None (d) Null

5. Select the correct output of the code: 1

```
s = "Question paper 2022-23"
```

```
s= s.split('2')
```

```
print(s)
```

- (a) ['Question paper ', '0', '', '- ', '3']
(b) ('Question paper ', '0', '', '- ', '3')
(c) ['Question paper ', '0', '2', '', '- ', '3']
(d) ('Question paper ', '0', '2', '', '- ', '3')

6. Which of the following mode in file opening statement does not results in Nor generates an error if the file does not exist? 1

- (a) r (b) r+ (c) w+ (d) None of the above

7. Which of the following commands is not a DDL command? 1

- (a) DROP (b) DELETE (c) CREATE (d) ALTER

8. Which of the following SQL statements is used to open a database named "SCHOOL"? 1

- (a) CREATE DATABASE SCHOOL;

- (b) USE DATABASE SCHOOL;
- (c) USE SCHOOL;
- (d) SHOW DATABASE SCHOOL;

9. Identify the output of the following python code: 1

```
D={1:"one",2:"two", 3:"three"}
L=[]
for k,v in D.items():
    if 'o' in v:
        L.append(k)
print(L)
```

- (a) [1,2] (b) [1,3] (c)[2,3] (d)[3,1]

10. A relation can have only one _____ key and one or more than one _____ keys. 1

- (a) PRIMARY, CANDIDATE
- (b) CANDIDATE, ALTERNATE
- (c) CANDIDATE ,PRIMARY
- (d) ALTERNATE, CANDIDATE

11. Which of the following is the correct usage for tell() of a file object? 1

- (a) It places the file pointer at the desired offset in a file.
- (b) It returns the byte position of the file pointer as an integer.
- (c) It returns the entire content of the file.
- (d) It tells the details about the file.

12. What are the minimum number of attributes required to create a table in MySQL? 1

- (a) 1 (b) 2 (c) 0 (d) 3

13. _____ is a standard mail protocol used to receive emails from a remote server to a local email client. 1

- (a) SMTP (b) POP (c) HTTP (d) FTP

14. Which of the following is not a tuple in python? 1

- (a) (10,20) (b) (10,) (c) (10) (d) All are tuples.

15. SUM(), AVG() and COUNT() are examples of _____ functions. 1

- (a) single row functions
- (b) multiple row functions
- (c) math function
- (d) date function

16. What are the mandatory arguments which are required to connect a MySQL database to python? 1

- (a) username, password, hostname, database name
- (b) username, password, hostname
- (c) username, password, hostname, port
- (d) username, password, hostname, database name

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: The default value of an argument will be used inside a function if we do not pass a value to that argument at the time of the function call. 1

Reason: the default arguments are optional during the function call. It overrides the default value if we provide a value to the default arguments during function calls.

18. Assertion: Pickling is the process by which a Python object is converted to a byte stream. 1

Reason: load() method is used to write the objects in a binary file. dump() method is used to read data from a binary file.

SECTION B
Each Question Carry 2 marks

19. Rewrite the following code in python after removing all syntax error(s). Underline each correction done in the code.

2

```
30=Value
for VAL in range(0,Value)
If val%4==0:
print (VAL*4)
Elseif val%5==0:
print (VAL+3)
else
print(VAL+10)
```

20. Write two points of difference between Bus Topology and Tree Topology.

2

OR

Write two points of difference between Packet Switching and Circuit Switching techniques?

21. (a) Given is a Python string declaration:

2

```
s="Up Above The World So High"
```

Write the output of:

```
print(s[::-4])
```

(b) Write the output of the code given below:

```
D= { 'month' : ' DECEMBER' , ' exam' : ' PREBOARD1' }
D[ 'month' ]= ' JANUARY'
D[ 'EXAM' ]= ' PRE2'
print(D.items())
```

22. Differentiate between CHAR(N) and VARCHAR(N).

2

23. (a) Expand the following abbreviations:

2

i) POP ii) HTTPS

(b) What is a URL?

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

2

```
L=[4,6,7,1,6,9,4]
def fun(L):
    for i in range(len(L)):
        if(L[i]%3==0 and L[i]%2==0):
            L[i]=L[i]+1
    print(L)
    return(L)
print(L)
k=fun()
print(k)
```

OR

Predict the output of the Python code given below:

```
T = (9,18,27,36,45,54)
L=list(T)
L1 = []
for i in L:
    if i%6==0:
        L1.append(i)
T1 = tuple(L1)
print(T1)
```

25. Differentiate between WHERE and HAVING with appropriate examples. 2
 OR
 Differentiate between COUNT() AND COUNT(*) with appropriate examples.

SECTION C
Each Question Carry 3 Marks

26.(a) Write SQL query to add a column total price with datatype numeric and size 10, 2 in a table product. 1+2

(b) Consider the following tables SCHOOL and ADMIN. Give the output the following SQL queries:

TABLE: SCHOOL

CODE	TEACHER	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/3/2000	24	10
1009	PRIYA RAI	PHYSICS	03/09/1998	26	12
1203	LIS ANAND	ENGLISH	09/04/2000	27	5
1045	YASHRAJ	MATHS	24/8/2000	24	15
1123	GANAN	PHYSICS	16/7/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
1215	UMESH	PHYSICS	11/05/1998	22	16

TABLE: ADMIN

CODE	GENDER	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

- i. SELECT Designation COUNT (*) FROM Admin GROUP BY Designation HAVING COUNT (*) <2;
- ii. SELECT max (EXPERIENCE) FROM SCHOOL;
- iii. SELECT TEACHER FROM SCHOOL WHERE EXPERIENCE >12 ORDER BY TEACHER;
- iv. SELECT COUNT (*), GENDER FROM ADMIN GROUP BY GENDER;

27. Write a program to count the words “to” and “the” present in a text file “python.txt”. 3
 OR

A text file “PYTHON.TXT” contains alphanumeric text. Write a program that reads this text file and writes to another file “PYTHON1.TXT” entire file except the numbers or digits in the file.

28. (a) Sonal needs to display name of teachers, who have “0” as the third character in their name. She wrote the following query. 1+2

SELECT NAME FROM TEACHER WHERE NAME = “\$0?”;

But the query is’nt producing the result. Identify the problem.

(b) Write output for (i) & (iv) based on table COMPANY and CUSTOMER.

COMPANY

CID	NAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	MADRAS	MOBILE
666	DELL	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	ROHAN SHARMA	70,000	20	222
102	DEEPAK KUMAR	50,000	10	666
103	MOHAN KUMAR	30,000	5	111
104	SAHIL BANSAL	35,000	3	333
105	NEHA SONI	25,000	7	444
106	SONAL AGGARWAL	20,000	5	333
107	ARUN SINGH	50,000	15	666

- i. SELECT COUNT(*) , CITY FROM COMPANY GROUP BY CITY;
- ii. SELECT MIN(PRICE), MAX(PRICE) FROM CUSTOMER WHERE QTY>10;
- iii. SELECT AVG(QTY) FROM CUSTOMER WHERE NAME LIKE “%t%”;
- iv. SELECT PRODUCTNAME, CITY, PRICE FROM COMPANY, CUSTOMER WHERE COMPANY.CID=CUSTOMER.CID AND PRODUCTNAME=“MOBILE”;

29. Write a function EVEN_LIST(L), where L is the list of elements passed as argument to the function. 3
 The function returns another list named ‘evenList’ that stores the indices of all even numbers of L.

For example:
 If L contains [12,4,3,11,13,56]
 The evenList will have - [12,4,5]

30. Alfred has created a list, L containing marks of 10 students. Write a program, with separate user defined function to perform the following operation: 3

PUSH()- Traverse the content of the List,L and push all the odd marks into the stack,S.
 POP()- Pop and display the content of the stack.
 Example: If the content of the list is as follows:
 L=[87, 98, 65, 21, 54, 78, 59, 64, 32, 49]
 Then the output of the code should be: 49 59 21 65 87

OR

Write a function in Python, Push(BItem) where , BItem is a dictionary containing the details of bakery items– {Bname:price}.
 The function should push the names of those items in the stack,S who have price less than 50.
 For example:
 If the dictionary contains the following data:
 Bitem={"Bread":40,"Cake":250,"Muffins":80,"Biscuits":25}

The stack should contain
 Bread
 Biscuits

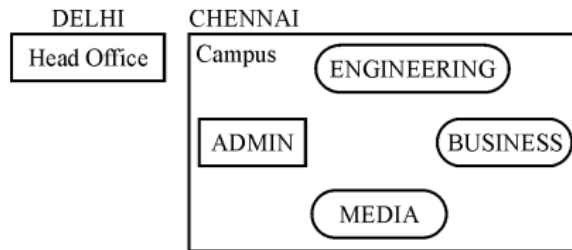
SECTION D
Each Question Carry 5 Marks

31. Perfect Edu Services Ltd. is an educational organization. It is planning to setup its India campus at Chennai with its head office at Delhi. The Chennai campus has 4 main buildings – ADMIN, ENGINEERING, BUSINESS and MEDIA. 5

You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (v), keeping in mind the distances between the buildings and other given parameters.

Shortest distances between various buildings :	
ADMIN to ENGINEERING	55 m
ADMIN to BUSINESS	90 m
ADMIN to MEDIA	50 m
ENGINEERING to BUSINESS	55 m
ENGINEERING to MEDIA	50 m
BUSINESS to MEDIA	45 m
DELHI Head Office to CHENNAI Campus	2175 km

Number of Computers installed at various buildings are as follows :	
ADMIN	110
ENGINEERING	75
BUSINESS	40
MEDIA	12
DELHI Head Office	20



- (i) Suggest the most appropriate location of the server inside the CHENNAI campus (out of the 4 buildings), to get the best connectivity for maximum no. of computers. Justify your answer.
- (ii) Suggest and draw the cable layout to efficiently connect various buildings within the CHENNAI campus for connecting the computers.
- (iii) Which hardware device will you suggest to be procured by the company to be installed to protect and control the internet uses within the campus ?
- (iv) Which of the following will you suggest to establish the online face-to-face communication between the people in the Admin Office of CHENNAI campus and DELHI Head Office ?
 - (a) Cable TV
 - (b) Email
 - (c) Video Conferencing
 - (d) Text Chat
- (v) Name protocols used to send and receive emails between CHENNAI and DELHI office?

32.(a) Suppose the contents of text file quotes.txt is: 2+3

"Believe you can and you will!"

What will be the output of the following python code?

```
F=open("quotes.txt")
F.seek(17)
S=F.read()
print(S.split('o'))
```

(b) Pikato wrote a program which he wants to use to connect with MySQL and show the name of the all the record from the table "Student" from the database "School". You are required to complete the statements so that the code can be executed properly.

```
import ____ .connector ____ pymysql # statement 1
dbcon=pymysql.__(host="localhost",user="root",__="sia@1928",__)# statement 2
if dbcon.isconnected()==False:
    print("Error in establishing connection:")
cur=dbcon._____( ) # statement 3
query="select * from stmaster"
cur.execute(_____) # statement 4
resultset=cur.fetchmany(3)
for row in resultset:
    print(row)
dbcon._____( ) # statement 5
```

OR

(a) Predict the output of the following python code snippet:

```
s="Hello2everyone"
n = len(s)
m=""
for i in range(0, n):
    if (s[i] >= 'a' and s[i] <= 'm'):
        m = m +s[i].upper()
    elif (s[i] >= 'n' and s[i] <= 'z'):
        m = m +s[i-1]
    elif (s[i].isupper()):
        m = m + s[i].lower()
    else:
        m = m + '&'
print(m)
```

(b) Preety has written the code given below to read the following record from the table named employee and displays only those records who have salary greater than 53500:

Empcode – integer
EmpName – string
EmpSalary – integer

Note the following to establish connectivity between Python and MYSQL:

- Username is root
- Password is root@123
- The table exists in a MYSQL database named management.

Write the following missing statements to complete the code:

Statement 1 – to form the cursor object

Statement 2 – to execute the query that extracts records of those employees whose salary are greater than 53500.

Statement 3- to read the complete result of the query (records whose salary are greater than 53500) into the object named data, from the table employee in the database.

```
import mysql.connector as mysql
def sql_data():
    con1=mysql.connect(host="localhost",user="root", password="root@123",
database="management")
    mycursor=_____ #Statement 1
    print("Employees with salary greater than 53500 are : ")
    _____ #Statement2
    data=_____ #Statement 3
    for i in data:
        print(i)
    print()
```

33. What is the advantage of using a csv file for permanent storage?

1+4

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

- a) ADD() – To accept and add data of an employee to a CSV file ‘record.csv’. Each record consists of a list with field elements as empid, name and mobile to store employee id, employee name and employee salary respectively.
- b) COUNTR() – To count the number of records present in the CSV file named ‘record.csv’.

OR

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

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

- a) 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 and fprice to store furniture id, furniture name and furniture price respectively.
- b) search()- To display the records of the furniture whose price is more than 10000.

SECTION E

Each question carries 4 marks

34. Write a python program to create a csv file dvd.csv and write 10 records in it Dvdid, dvd name, qty, price. Display those dvd details whose dvd price is more than 25. 4

35. Consider the table in Q26(b), write SQL Queries for the following: 4

- To display TEACHERNAME, PERIODS of all teachers whose periods are more than 25.
- To display all the information from the table SCHOOL in descending order of experience.
- To display DESIGNATION without duplicate entries from the table ADMIN.
- To display TEACHERNAME, CODE and corresponding DESIGNATION from tables SCHOOL and ADMIN of Male teachers.

