

Set - I

Half Yearly Examination (2025–26)

Subject: Computer Science (083)

Date: 16/08/2024

Time: 3 Hours

Max Marks: 70

Name: _____

Class: 12 Division: _____

Roll No: _____

Invigilator's Sign _____



General Instructions:-

Please check this question paper contains 35 questions.

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.

SECTION A

- 1 What will be the output of the following python expression?
`print(2**3**2)`
a. 64 b. 256 c. 512 d. 32 1
- 2 Which of the following statements is True? 1
a. There can be only one Foreign Key in a table
b. There can be only one Unique key in a table
c. There can be only one Primary Key in a Table
d. A table must have a Primary Key
- 3 What will be the output of the following Python Code? 1
`mydict = {'a': 1, 'b': 2}`
`print('c' not in mydict)`
a. True b. False c. Error d. None
- 4 What will be the output for the following expression? 1
`not ((False and True or True) and True)`
a. True b. False c. Null d. None
- 5 Given S = "INFORMATICS", what will `print(S[-4:-1])` display? 1
a. TIC b. FOR c. MAT d. ATI
- 6 Study the following program and select the possible output : 1
`import random`
`X=random.random()`
`Y=random.randint(0,4)`
`print(int(X),";",Y+int(X))`
a. -1:0 b. 1:6 c. 2:4 d. 0:3
- 7 The command `DELETE FROM student WHERE roll=10;` is an example of: 1
a. DDL b. DCL c. DML d. TCL
- 8 State True or False: The Python interpreter handles logical errors during code execution. 1
- 9 `def calc(a, b=10, c=20):` 1
`return a + b + c`
Which of the following will raise an error?
a. `calc(5)` b. `calc(5, 15)` c. `calc(c=30, a=10)` d. `calc(5, 15, 25, 35))`
- 10 What will be the output of the following expression? 1
`24//6%3, 24//4//2, 48//3//4`
a) (1,3,4)
b) (0,3,4)
c) (1,12,Error)
d) (1,3,#error)
- 11 Which operator should be used in SQL to check NULL values? 1
a. = b. LIKE c. IS d. IN

- 12 What will be the result of `L = [1,2,3]; print(L[5:10])`? 1
 a. Error b. [] c. [3] d. [5, 6, 7]
- 13 For `s = "PYTHON"`, what will `s[-3:]` return? 1
 a. YTH b. THO c. HON d. PTH
- 14 Which method will you use to add multiple elements at the end of a list? 1
 a. `append()` b. `extend()` c. `insert()` d. `push()`
- 15 In a table in MYSQL database, an attribute A of datatype `varchar(20)` has the value "Keshav". The attribute B of datatype `char(20)` has value "Meenakshi". How many characters are occupied by attribute A and attribute B? 1
 a. 20, 6 b. 6, 20 c. 9, 6 d. 6, 9
- 16 Consider the code: 1

```
x = "2020 Welcome"
x = x.split('0')
print(x)
```

 What will be the output?
 a. ['2', '2 Welcome'] b. ['202', ' Welcome'] c. ['2', '2', ' Welcome'] d. Error
- 17 When the `fetchone()` method is used, the cursor moves to _____ record immediately after getting the specified row. 1
 a. next record b. last record in the table (end of table)
 c. first record d. previous record
- 18 After completion of the work with interface of python with MySQL user need to clean up the work environment. Which function is used to perform this task? 1
 a. `clear()` b. `clean()` c. `close()` d. `destroy()`
- 19 The values being passed through function-call statement are called _____. 1
 a. Arguments b. Parameter c. Values d. None of these
- Q20 and 21 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
- 20 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. 1
 Reason (R): During a function call, the argument list first contains default argument(s) followed by positional argument(s) A function is a block of organized and reusable code that is used to perform a single, related action.
- 21 Assertion (A): A SELECT command in SQL can have both WHERE and HAVING clauses. 1
 Reasoning (R): WHERE and HAVING clauses are used to check conditions, therefore, these can be used interchangeably.
- SECTION B
- 22 Predict the output of the following code: 2

```
dt=["P",10,"Q",30,"R",50]
t=0
a=""
ad=0
for i in range(1,6,2):
    t = t + i
    a = a + dt [i-1] + "@"
    ad = ad + dt[i]
print (t, ad, a)
```
- 23 Predict the output – 2

```
s="ComputerScience23"
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)

```
- 24 i. What is the output of the following code? 2
- ```

dnry={0: 'a', 1: 'b', 2: 'c'}
for x, y in dnry:
    print(x, y)

```
- ii. Write the corrected code for part (i) so that it prints keys and values both.
- OR
- Sameer has written a python function to compute the reverse of a number. He has however committed a few errors in his code. Rewrite the code after removing errors also underline the corrections made.
- ```

def reverse(num):
 rev = 0
 While num > 0:
 rem == num %10
 rev = rev*10 + rem
 num = num/10
 return rev
print(reverse(1234))

```
- 25 Write the Python statement for each of the following tasks: 2
- a. Remove the first element from list items
- b. Add elements of list L2 = [4, 5, 6] to list L1 = [1, 2, 3] individually (not as a sublist)
- 26 i) A) What constraint should be applied on a table column so that duplicate values are not allowed in that column, but NULL is allowed. 2
- OR
- B) What constraint should be applied on a table column so that NULL is not allowed in that column, but duplicate values are allowed.
- (ii) A) Write an SQL command to remove the Primary Key constraint from a table, named MOBILE. M\_ID is the primary key of the table.
- OR
- B) Write an SQL command to make the column M\_ID the Primary Key of an already existing table, named MOBILE.
- 27 Predict the output of the Python code given below: 2
- ```

def modifyList(x):
    x.append(sum(x))
    print(x, end= ' ')
    L = [1,2,3,4]
    print(L, end= ' ')
modifyList(L)
print(L)

```
- OR
- Predict the output of the Python code given below:
- ```

def updateList(L):
 L = L + [5]
 print("Inside:", L)
nums = [1, 2, 3]

```

- ```

        updateList(nums)
        print("Outside:", nums)
28 a) What will be the output of the following string operation?
    str="PYTHON@LANGUAGE"
    print(str[2:12:2])
    b) Write the output of the following code.
    data = [11,int(ord('a')),12,int(ord('b'))]
    for x in data:
        x = x + 10
        print(x,end=' ')

```

2

SECTION - C

- 29 The partial code is given to check whether the connection between the interface of python with MySQL is established or not. Fill in the blanks with appropriate functions/statements for given statements:

3

Note the following to establish connectivity between Python and MYSQL:

- Username is root
- Password is root
- Database name – Transport

V_ID	Name	Model	Price
integer	varchar	integer	Integer

```

import _____ as msq1 #Statement 1
cn=msq1._____(_____,_____,_____,_____) #Statement 2
if cn._____: # Statement 3
    print("Successfully Connected...")
else:
    print("Something went wrong...")

```

Write the missing statements as per the given instructions:

1. Write the module name required in #Statement 1
2. Complete the code with the name of a function and parameters in #Statement 2
3. Write a function to check whether the connection is established or not in #Statement 3

3

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

MID	MNAME	AGE	GENDER	GAME	PAY	DOAPP
5246	AMRITA	35	FEMALE	CHESS	900	2006-03-27
4687	SHYAM	37	MALE	CRICKET	1300	2004-04-15
1245	MEENA	23	FEMALE	VOLLEYBALL	1000	2007-06-18
1622	AMRIT	28	MALE	KARATE	1000	2007-09-05
1256	AMINA	36	FEMALE	CHESS	1100	2003-08-15
1720	MANJU	33	FEMALE	KARATE	1250	2004-04-10
2321	VIRAT	35	MALE	CRICKET	1050	2005-04-30

- i) SELECT COUNT(DISTINCT GAME) FROM MEMBER;
- ii) SELECT MNAME, GAME FROM MEMBER WHERE DOAPP<"2007-01-01" AND CNAME LIKE "AM%";
- iii) SELECT MNAME, AGE, PAY FROM MEMBER WHERE GENDER = "FEMALE" AND PAY BETWEEN 1000 AND 1200;

- 31 Predict the output of the Python code Given below:

3

```

def fun_para(x=5,y=10,z=1005):
    z=x/2
    res=y//x+z
    return res
a,b,c=20,10,1509

```

```
print(fun_para(),fun_para(b),sep='#')
res=fun_para(10,20,6015)
print(res,"@")
print(fun_para(z=999,y=b,x=5), end="#@")
```

SECTION D

- 32 a. Predict output for the following code:

```
def check(data):
    for word in data.split():
        if word.isalpha():
            print("Word")
        elif word.isdigit():
            print("Number")
        else:
            print("Mixed")
    check("Python 123 abc123 Hello")
```

- b. x = 10
y = 5

```
def multiply(a, b):
    global x
    x = a * b
    print("Inside:", x)
multiply(2, 3)
print("Outside:", x)
```

- 33 a. Sejal wants to create a table patient. Help her to do the following:
(i) She is confused about how the dates are stored in MySQL? Suggest the date format.
(ii) She want to display all records from the table and she wrote the following command:
show * from patient;
She is not getting the output. Rewrite the correct statement.
b. Write the code to create a table Product in database Inventory with following fields:

Fields	PID
Datatype	[2]
varchar(5)PName	Price
Rank	char(30)
float	varchar(2)

TABLE - GRADUATE

34

S.NO	NAME	STIPEND	SUBJECT	AVERAGE	DIV.
1	KARAN	400	PHYSICS	68	I
2	DIWAKAR	450	COMP. Sc.	68	I
3	DIVYA	300	CHEMISTRY	62	I
4	REKHA	350	PHYSICS	63	I
5	ARJUN	500	MATHS	70	I
6	SABINA	400	CEHMISTRY	55	II
7	JOHN	250	PHYSICS	64	I
8	ROBERT	450	MATHS	68	I
9	RUBINA	500	COMP. Sc.	62	I
10	VIKAS	400	MATHS	57	II

- i) List the names of those students who have obtained DIV I sorted by NAME.
ii) Display a report, listing NAME, STIPEND, SUBJECT and amount of stipend received in a year assuming that the STIPEND is paid every month.

- iii) To count the number of students who are either PHYSICS or COMPUTER SC graduates.
- iv) To insert a new row in the GRADUATE table 11,"KAPIL", 300, "COMP. SC.", 75, I
- 35 a) Find the errors in the following code and write the correct code. 2
- ```

Def s(x):
 a = 'k'
 print(a * x)
 print(a * str(x))
 for in [1, 2, 10:
 s(n)

```
- i. Underline the corrections
- ii. Write the reason! error next to it in comment form.
- b) What will be the output of the following Python Code: 2
- ```

def change(num):
    for x in range(0,len(num),2):
        num[x], num[x+1]=num[x+1], num[x]
data=[10,20,30,40,50,60]
change(data)
print(data)

```

SECTION E

- 36 Book = {1: 'Sci-Fi', 2: 'Romance', 3: 'Biography'} 5
 Library = {'5': 'The Guide', '6': 'God of Small Things'}
 Answer the following:
- a. Write the correct statement to change the value 'Romance' to 'Romantic Fiction'.
- b. Merge Library into Book.
- c. What does print(list(Library)) display?
- d. Why does 2 in Book return True, but 'God of Small Things' in Library returns False? Provide a corrected command.
- e. Predict the output:
- 37 Write the SQL query commands based on following table 5

Table : Book

Book_id	Book name	Author_name	Publisher	Price	Type	Quantity
C0001	Fast Cook	Lata Kapoor	EPB	355	Cookery	5
F0001	The Tears	William Hopkins	First Publi.	650	Fiction	20
T0001	My First c++	Brain & Brooke	FPB	350	Text	10
T0002	C++ Brain works	A.W. Rossaine	TDH	350	Text	15
F0002	Thunderbolts	Anna Roberts	First Publ.	750	Fiction	50

Table : issued

Book_Id	Quantity Issued
T0001	4
C0001	5
F0001	2

Write SQL query for (a) to (e)

- To show book name, Author name and price of books of First Pub. Publisher
- To list the names from books of text type
- To Display the names and price from books in ascending order of their prices.
- To increase the price of all books of EPB publishers by 50.
- Give the output of the following
 - Select Count(*) from Books
 - Select Max(Price) from books where quantity >=15
 - Select book_name, author_name from books where publishers='first publ'
 - Select count(distinct publishers) from books where Price >=400