

CLASS XII
MID-TERM EXAMINATION (2023-2024)
SUBJECT: COMPUTER SCIENCE
SET B1

TIME ALLOWED : 3 HRS.

MAX. MARKS:70

General Instructions:

- Please check - the question paper contains 35 questions.
- The paper is divided into 4 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

Q1. In the statement, `F=open("MYFILE.txt")`, the name of the file is an example of _____ pathname. (1)

- (i) Absolute (ii) Relative (iii) Filename (iv) Reverse

Q2. Consider the code given below: (1)

```
b=100
def func(a):
    _____ # missing statement
    b=b+a
func (10)
print (b)
```

Which of the following statements should be given in the blank for #Missing Statement, if the output produced is 110?

- (i) `global a` (ii) `global b=100` (iii) `global b` (iv) `global a=100`

Q3. Suppose the contents of a text file is as follows : (1)

poem.txt

| |
|-----------------------------------|
| Jack and Jill went up the hill |
|-----------------------------------|

What will be the output of the following code :

```
F=open("poem.txt")
L=F.readlines()
for i in L:
```

```
S=i.split()  
print(len(S),end='#')
```

- (i) 2#4# (ii) 3#4# (iii) 2# (iv) 7#

Q4. Consider the expression **m=11>34.0 and 32<45**, what will be the data type of m?

(1)

- (i) list (ii) tuple (iii) dictionary (iv) bool

Q5. Which of the following is the function or method of the pickle module?

(1)

- (i) dumps()
(ii) reader()
(iii) writerow()
(iv) load()

Q6. What will be the output of the following code?

(1)

```
L1=[10,20,30,20,10]  
L2=[]  
for i in L1:  
    if i not in L2:  
        L2.append(i)  
print(L1,L2,sep='@')
```

- (i) [10, 20, 30, 20, 10]@[10, 20, 30]
(ii) [10, 20, 30, 20, 10][10, 20, 30]@
(iii) [10, 20, 30, 20, 10]@[30,20,10]@
(iv) Error Message

Q7. Which of the following components are part of a function header in Python?

(1)

- (i) Function Name
(ii) Return Statement
(iii) Parameter List
(iv) Both (i) and (iii)

Q8. Which of the following will delete the key-value pair for key "Cherry" from a dictionary Fruits?

(1)

- (i) delete Fruits("Cherry")
(ii) del Fruits["Cherry"]
(iii) del.Fruits["Cherry"]
(iv) Fruits.del["Cherry"]

Q9. Identify the output of the following Python statements.

(1)

```
x = [{1:'one',2:'two',3:'three'},[13.0, 14.0, 15.0]]  
y = x[0][2]*3  
print(y)
```

- (i) 12.0

- (ii) twotwotwo
- (iii) two3
- (iv) 15.0

Q10. _____ is the total number of rows/tuples in a table/relation (1)

- (i) Degree
- (ii) Key
- (iii) Attribute
- (iv) Cardinality

Q11. In MYSQL database, if a table, Student has degree 5 and cardinality 3, and another table, Teacher has degree 3 and cardinality 5, what will be the degree and cardinality of the Cartesian product of Student and Teacher? (1)

- (i) 5,3
- (ii) 8,15
- (iii) 3,5
- (iv) 15,8

Q12. The correct syntax for opening a csv file named 'DATA.CSV' for reading is: (1)

- (i) with open ('DATA.CSV','r') as F:
- (ii) open ('DATA.CSV') as F:
- (iii) with open 'DATA.CSV' as F:
- (iv) with 'DATA.CSV' as F open():

Q13. Choose the most appropriate option to fill in the blank space in the following code: (1)

```
import pickle  
with open("movie.dat","wb") as FB:  
    pickle.____([105,"New Mindset","John T"],FB)
```

- (i) writeline
- (ii) writerow
- (iii) dump
- (iv) write

Q14. If a user tries to remove an element from empty Stack, it is called_____ (1)

- (i) Empty Collection
- (ii) Overflow
- (iii) Underflow
- (iv) Garbage Collection

Q15. In Stack Insertion and deletion of an element is done at a single end called _____ (1)

- (i) Start
- (ii) Top
- (iii) Last
- (iv) Bottom

Q16. What will be the output of the following statement: (1)
`print(3-2**2**3+99/11)`

- (i) 244 (ii) 244.0 (iii) -244.0 (iv) Error

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

Q17.Assertion (A):- If the arguments in the 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)

Q18.Assertion (A):- CSV (Comma Separated Values) is a file format for data storage that looks like a text file.

Reasoning (R):- The information is organized with one record on each line and a comma separates each field. (1)

SECTION-B

Q19.Taru wrote a code to find out the list of Fibonacci numbers till number n.He made some errors while coding, so help him in fixing errors in the following code : (2)

```
def fibonacci(n):  
    a=0  
    b=1  
    c=a+b  
    While c<=n:  
        print(c);  
        a==b  
        b=c  
        c=a+b
```

Q20.A list named Employee stores age of all employees in the company. Write the Python command to import the required module and (using built-in function) to display the most common age value from the given list. (2)

Q21. What are default arguments? Explain with an example. (2)

Q22. What do you understand by the terms local and global scope of objects? How can

you access a global object inside a function, if the function has an object with the same name. (2)

Q23. (i) Write the full form of : (a) RDBMS (b) LIFO (2)

(ii) What is a primary key? Explain with an example.

Q24. (i) Consider the following declaration and find the output : (2)

```
D1={10:"Goa",20:"Patna"}
D1[30]="Bangalore"
D1[10]="Kochi"
print(D1.popitem(),D1.pop(10),sep="#")
```

(ii) Given a string declaration:

```
midterm="@@CBSE eXAMINATION 2023@@"
```

Write the output of following code:

```
print(midterm[::-2].split(),len(midterm))
```

Q25. (i) Consider the following declaration and find the output : (2)

```
a=30
def find(M,P):
    global a
    a=2
    for i in range(len(M)):
        M[i]+=P
    print(M+[a])
L=[11,22,33,44]
find(L,50)
print(L,a)
```

(ii) Predict the output of the Python code given below:

```
code_m = ('100','201m','345','400','333-')
list1 =list(code_m)
new_list = []
for i in list1:
    if i.isdigit():
        new_list.append(i)
new_tuple = tuple(new_list)
print(new_tuple)
```

SECTION-C

Q26. Consider the following table :

(3)

| StoreId | StoreName | Location | NoOfEmployee | OpeningYear | OwnerId |
|---------|--------------|----------|--------------|-------------|---------|
| S101 | Libas | Delhi | 45 | 2007 | A145 |
| S102 | Life Style | Mumbai | 68 | 2000 | B178 |
| S103 | Vogue | Mumbai | 50 | 1999 | B178 |
| S104 | Pantaloon | Chennai | 78 | 2004 | D112 |
| S105 | Max Fashions | Delhi | 80 | 2020 | A145 |

(i) What is the degree and cardinality of the above table?

(ii) Identify the primary key and foreign key in the above table. Explain.

Q27. Write a function Splitup(D) where D is the dictionary containing Player and Color as the key-value pairs passed as an argument to the function. The function should return two lists - one containing player name and the second having non-repeated values of colors. (3)

For example: If the following code is executed after the function definition

```
D= {"Ravi" : "Red", "Ojaswi" : "Orange", "Rohan": "Red", "Gaurav" : "Green"}
L1, L2 = Splitup(D)
print(L1)
print(L2)
```

It should print the output as

```
[ "Ravi", "Ojaswi", "Rohan", "Gaurav" ]
[ "Red", "Orange", "Green" ]
```

Q28. Write a user-defined function that displays the number of lines ending with 'w' or 'W' in the file "paragraph.txt". (3)

Example :

If the file contains:

**Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow.**

Then the line count should be 2.

Q29. Write a program that uses a function Count_Freq(L) which takes in a list L and counts the frequency of even and odd elements separately and then creates a dictionary E as given below: (3)

Example :If list L contains [11,1,12,5,43,32,21]

Dictionary E should contain : {"Even":2,"Odd":5}

Q30. A list, NList contains following record as list elements: (3)

[City, Country, distance from Delhi]

Each of these records are nested together to form a nested list. Write the following user-defined functions to perform the specified operations on the stack named travel.

- (i) Push_element(NList): It takes the nested list as an argument and pushes a list object containing the name of the city and country, which are not in India and distance is less than 3500 km from Delhi.
- (ii) Pop_element(): It pops the objects from the stack and displays them. Also, the function should display "Stack Empty" when there are no elements in the stack.

For example: If the nested list contains the following data:

```
NList=[["New York", "U.S.A.", 11734],  
["Naypyidaw", "Myanmar", 3219],  
["Dubai", "UAE", 2194],  
["London", "England", 6693],  
["Gangtok", "India", 1580],  
["Columbo", "Sri Lanka", 3405]]
```

The stack should contain:

```
['Naypyidaw', 'Myanmar'],  
['Dubai', 'UAE'],  
['Columbo', 'Sri Lanka']
```

The output should be:

```
['Columbo', 'Sri Lanka']  
['Dubai', 'UAE']  
['Naypyidaw', 'Myanmar']  
Stack Empty
```

SECTION-D

Q31. Shambhavi has created a binary file "events.dat" that has structure (4)

(Event_id, Description, Venue, Guests, Cost)

- createevent() function is written to add more records of events in the existing file "events.dat".
- show() function is written that would read details of events from file "events.dat" and display the details of those events whose venue is "Mumbai".

```
import _____ # Statement 1  
def createevent():  
    f1=open(_____) # Statement 2  
    eid=input("Enter E. Id")  
    desc=input("Enter Description")  
    ven=input("Enter venue")
```

```

g=eval(input("Enter list of guests"))
l=[eid,desc,ven,g]
pickle._____ # Statement 3
f1.close()
def show():
    f2=open("events.dat","rb")
    try:
        while True:
            pickle._____ # Statement 4
            if (rec[2]=='Mumbai'):
                print(rec[0],rec[1], rec[2],rec[3])
    except:
        break
    f2.close()

```

Based on the above code answer the following questions:-

- i. Which module should be imported in the program? (Statement 1)
- ii. Write the correct statement required to open a file named "events.dat" and in which mode in the function createevent(). (Statement 2)
- iii. Which statement should she fill in Statement 3 to write the updated data in the file, "events.dat".
- iv. Which statement should she fill in Statement 4 to read the data from the binary file, "events.dat"?

- Q32. Disha has a list N of 10 numbers. Help her to write a program using user-defined functions to perform the following operations based on the stack: (4)
- A function PushNum() to push those numbers which are divisible by 5 from list N to a stack S
 - A function PopNum() to pop and display all the numbers from the stack S.
- For Example: If the sample Content of the list is as follows:
N=[11, 20, 15, 32, 90, 17, 14, 85, 45, 16]
Then PushNum() should store [20, 15, 90, 85, 45] in stack S
And the PopNum() should display 45 85 90 15 20

SECTION-E

- Q33. (i) Give one point of difference between text files and binary files. (5)
- (ii) Write a program that defines and calls the following user-defined functions:
- (a) CreateEmp() – To create and add data of employees to a binary file "emp.dat", that has a structure (EID, Ename, designation, salary).
 - (b) Display() – Display details of all employees whose salary is between 40000 and 60000.
- Q34. (i) What is the advantage of using a csv file for permanent storage? (5)
- (ii) Write a program that defines and calls the following user-defined functions:

- (a) ADD() – To accept and add data of a bank to a CSV file 'bankrecords.csv'. Each record consists of a list with field elements as bankid, bankname and bankaddress to store bankid, bankname and bank address respectively.
- (b) SEARCH() – To search for all records of "SBI" and "ICICI" banknames present in the CSV file named bankrecords.csv'.

Q35. Rohit, a student of class 12th, is learning CSV File Module in Python. During examination, he has been assigned an incomplete python code (shown below) to create a CSV File 'student.csv' (content shown below). Help him in completing the code which creates the desired CSV File. (5)

CSV File

1,AKSHAY,XII,A
2,ABHISHEK,XII,A
3,ARVIND,XII,A
4,RAVI,XII,A
5,ASHISH,XII,A

Incomplete Code

```
import _____ #Statement-1
fh = open("student.csv",____ , __) #Statement-2
stuwriter = csv._____ #Statement-3
data = [ ]
header = ['ROLL_NO', 'NAME', 'CLASS', 'SECTION']
data.append(header)
for i in range(5):
    roll_no = int(input("Enter Roll Number : "))
    name = input("Enter Name : ")
    Class = input("Enter Class : ")
    section = input("Enter Section : ")

    data.append([ _____ ]) #Statement-4
stuwriter. _____ #Statement-5
fh.close()
```

Based on the above code answer the following questions:-

- Which module should be imported in the program? (Statement 1)
- Write the correct statement required to open a CSV file named "student.csv" (Statement 2)
- Which statement should he fill in Statement 3 to create a writer object.
- Which statement should he fill in Statement 4 to store field values into the record.
- Which statement will he use to write all records onto the file "student.csv" in Statement 5.