

Sample Question Paper, 2021-22

(Issued by CBSE Board on 14th January, 2022)

COMPUTER SCIENCE (TERM-II)

SOLVED

Time allowed : 90 Minutes

Max. Marks : 40

General Instructions:

1. The question paper is divided into 3 sections – A, B and C
2. Section A, consists of 7 questions (1-7). Each question carries 2 marks.
3. Section B, consists of 3 questions (8-10). Each question carries 3 marks.
4. Section C, consists of 3 questions (11-13). Each question carries 4 marks.
5. Internal choices have been given for question numbers 7, 8 and 12.

Section - A

[2 Marks Each]

1. Give any two characteristics of stacks.
2. (a) Expand the following:
SMTP , XML
(b) Out of the following, which is the fastest wired and wireless medium of transmission?
Infrared, coaxial cable, optical fibre, microwave, Ethernet cable
3. Differentiate between char(n) and varchar(n) data types with respect to databases.
4. A result set is extracted from the database using the cursor object (that has been already created) by giving the following statement.
Mydata=cursor.fetchone()
(a) How many records will be returned by fetchone() method?
(b) What will be the datatype of Mydata object after the given command is executed?
5. Write the output of the queries (a) to (d) based on the table, Furniture given below:

Table:

FURNITURE

FID	NAME	DATE OF PURCHASE	COST	DISCOUNT
B001	Double Bed	03-Jan-2018	45000	10
T010	Dining Table	10-Mar-2020	51000	5
B004	Single Bed	19-Jul-2021	22000	0
C003	Long Back Chair	30-Dec-2016	12000	3

T006	Console Table	17-Nov-2019	15000	12
B006	Bunk Bed	01-Jan-2021	28000	14

- (a) `SELECT SUM(DISCOUNT) FROM FURNITURE WHERE COST>15000;`
- (b) `SELECT MAX (DATEOFPURCHASE) FROM FURNITURE;`
- (c) `SELECT * FROM FURNITURE WHERE DISCOUNT>5 AND FID LIKE "T%";`
- (d) `SELECT DATEOFPURCHASE FROM FURNITURE WHERE NAME IN ("Dining Table", "Console Table");`
6. (a) Which command is used to view the list of tables in a database?
(b) Give one point of difference between an equi-join and a natural join.
7. Consider the table, MOVIEDETAILS given below:

Table: MOVIEDETAILS

MOVIEID	TITLE	LANGUAGE	RATING	PLATFORM
M001	Minari	Korean	5	Netflix
M004	MGR Magan	Tamil	4	Hotstar
M010	Kaagaz	Hindi	3	Zee5
M011	Harry Potter and the Chamber of Secrets	English	4	Prime Video
M015	Uri	Hindi	5	Zee5

M020	Avengers: End-game	English	4	Hotstar
------	--------------------	---------	---	---------

- (a) Identify the degree and cardinality of the table.
 (b) Which field should be made the primary key? Justify your answer.

OR

- (a) Identify the candidate key(s) from the table MOVIEDetails.
 (b) Consider the table SCHEDULE given below:

Table: SCHEDULE

SLOTID	MOVIEID	TIMESLOT
S001	M010	10 AM to 12 PM
S002	M020	2 PM to 5 PM
S003	M010	6 PM to 8 PM
S004	M011	9 PM to 11 PM

Which field will be considered as the foreign key if the tables

MOVIEDetails and SCHEDULE are related in a database?

Section - B [3 Marks Each]

8. Julie has created a dictionary containing names and marks as key value pairs of 6 students. Write a program, with separate user defined functions to perform the following operations:
- Push the keys (name of the student) of the dictionary into a stack, where the corresponding value (marks) is greater than 75.
 - Pop and display the content of the stack.

For example:

If the sample content of the dictionary is as follows:

```
R = {"OM":76, "JAI":45, "BOB":89, "ALI":65, "ANU":90, "TOM":82}
```

The output from the program should be:

```
TOM ANU BOB OM
```

OR

Alam has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list.

- Traverse the content of the list and push the even numbers into a stack.
- Pop and display the content of the stack.

For Example

If the sample Content of the list is as follows:

```
N=[12, 13, 34, 56, 21, 79, 98, 22, 35, 38]
```

Sample Output of the code should be:

```
38 22 98 56 34 12
```

9. (a) A table, ITEM has been created in a database with the following fields:
 ITEMCODE, ITEMNAME, QTY, PRICE
 Give the SQL command to add a new field, DISCOUNT (of type Integer) to the ITEM table.
 (b) Categorize following commands into DDL and

DML commands?

INSERT INTO, DROP TABLE, ALTER TABLE, UPDATE, SET

10. Charu has to create a database named MYEARTH in MYSQL.

She now needs to create a table named CITY in the database to store the records of various cities across the globe. The table CITY has the following structure:

Table: CITY

FIELD NAME	DATA TYPE	REMARKS
CITYCODE	CHAR(5)	Primary Key
CITYNAME	CHAR(30)	
SIZE	INTEGER	
AVGTEMP	INTEGER	
POLLUTIONRATE	INTEGER	
POPULATION	INTEGER	

Help her to complete the task by suggesting appropriate SQL commands.

Section - C [4 Marks Each]

11. Write queries (a) to (d) based on the tables EMPLOYEE and DEPARTMENT given below:

Table: EMPLOYEE

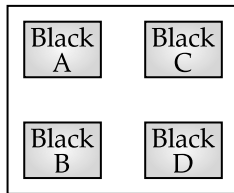
EMPID	NAME	DOB	DEPTID	DESIG	SALARY
120	Alisha	23-Jan-1978	D001	Manager	75000
123	Nitin	10-Oct-1977	D002	AO	59000
129	Navjot	12-Jul-1971	D003	Supervisor	40000
130	Jimmy	30-Dec-1980	D004	Sales Rep	
131	Faiz	06-Apr-1984	D001	Dep Manager	65000

Table: DEPARTMENT

DEPTID	DEPTNAME	FLOORNO
D001	Personal	4
D002	Admin	10
D003	Production	1
D004	Sales	3

- (a) To display the average salary of all employees, department wise.
 (b) To display name and respective department name of each employee whose salary is more than 50000.
 (c) To display the names of employees whose salary is not known, in alphabetical order.

- (d) To display DEPTID from the table EMPLOYEE without repetition.
12. (a) Give two advantages and two disadvantages of star topology.
- OR**
- Define the following terms:
WWW, Web hosting
- (b) How is Packet Switching different from Circuit Switching?
13. BeHappy Corporation has set up its new centre at Noida, Uttar Pradesh for its office and web-based activities. It has 4 blocks of buildings.



Distance between the various blocks is as follows:

- A to B 40 m
B to C 120 m

- C to D 100m
A to D 170m
B to D 150m
A to C 70m

Numbers of computers in each block

- Block A 25
Block B 50
Block C 125
Block D 10

- (a) Suggest and draw the cable layout to efficiently connect various blocks of buildings within the Noida centre for connecting the digital devices.
- (b) Suggest the placement of the following device with justification:
(i) Repeater
(ii) Hub/Switch
- (c) Which kind of network (PAN/LAN/WAN) will be formed if the Noida office is connected to its head office in Mumbai?
- (d) Which fast and very effective wireless transmission medium should preferably be used to connect the head office at Mumbai with the centre at Noida?

□□□

SOLUTIONS

General Instructions:

1. The question paper is divided into 3 sections – A, B and C
2. Section A, consists of 7 questions (1-7). Each question carries 2 marks.
3. Section B, consists of 3 questions (8-10). Each question carries 3 marks.
4. Section C, consists of 3 questions (11-13). Each question carries 4 marks.
5. Internal choices have been given for question numbers 7, 8 and 12.

Section - A

1. **Characteristics of Stacks:**
- The insertion and deletion happens at one end i.e. from the top of the stack 1
 - Stack is a linear data structure based on LIFO (Last In First Out) order. 1
2. (i) **SMTP:** Simple Mail Transfer Protocol 1
XML: Extensible Mark Up Language 1
- (ii) **Wired:** Optical Fibre
Wireless: Microwave
3. **char(n):** 1
- Stores a fixed length string between 1 and 255 characters.
 - If the value is of smaller length, adds blank spaces.
 - Some space is wasted.
- varchar(n) :** 1
- Stores a variable length string.
 - No blanks are added even if value is of smaller length.
 - No wastage of space.
4. (a) One record 1
(b) Tuple 1
5. (a) 29 ½
(b) 19-Jul-2021 ½
(c)
- | | | | | |
|------|---------------|-------------|-------|----|
| T006 | Console Table | 17-Nov-2019 | 15000 | 12 |
|------|---------------|-------------|-------|----|
- (d) 10-Mar-2020
17-Nov-2019 ½

6. (a) SHOW TABLES; 1
 (b) **Equi- join:** 1
 • The join in which columns from two tables are compared for equality.
 • Duplicate columns are shown. 1
Natural Join:
 • The join in which only one of the identical columns existing in both tables is present.
 • No duplication of columns. 1
7. (a) Degree: 5 1
 Cardinality: 6 1
 (b) MOVIEID should be made the primary key as it uniquely identifies each record of the table. 1
OR
 (a) MOVIEID AND TITLE ½
 (b) MOVIEID 1

Section - B

8. # Question No 8 (first option)
 R={"OM":76, "JAI":45, "BOB":89,
 "ALI":65, "ANU":90, "TOM":82}
 def PUSH(S,N):
 S.append(N)
 def POP(S):
 if S!=[]:
 return S.pop()
 else:
 return None
 ST=[]
 for k in R:
 if R[k]>=75:
 PUSH(ST,k)
 while True:
 if ST!=[]:
 print(POP(ST),end=" ")
 else:
 break 3

OR

- N = [12, 13, 34, 56, 21, 79, 98, 22,
 35, 38]
 def PUSH(S,N):
 S.append(N)
 def POP(S):
 if S!=[]:
 return S.pop()
 else:
 return None
 ST=[]
 for k in N:
 if k%2==0:
 PUSH(ST,k)
 while True:

- if ST!=[]:
 print(POP(ST),end=" ")
 else:
 break
 9. (a) ALTER TABLE Item ADD (Discount INT); 1
 (b) DDL: DROP TABLE, ALTER TABLE
 DML: INSERT INTO, UPDATE...SET 2
 10. CREATE DATABASE MYEARTH;
 CREATE TABLE CITY
 (
 CITYCODE CHAR(5) PRIMARY KEY,
 CITYNAME CHAR(30),
 SIZE INT,
 AVGTEMP INT,
 POPULATIONRATE INT,
 POPULATION INT,
); 3

Section - C

11. (a) SELECT AVG(SALARY)
 FROM EMPLOYEE
 GROUP BY DEPTID; 1
 (b) SELECT NAME, DEPTNAME
 FROM EMPLOYEE, DEPARTMENT
 WHERE
 EMPLOYEE.DEPTID=
 DEPARTMENT.DEPTID
 AND SALARY>50000; 1
 (c) SELECT NAME FROM EMPLOYEE
 WHERE SALARY IS NULL
 ORDER BY NAME; 1
 (d) SELECT DISTINCT DEPTID FROM
 EMPLOYEE; 1
12. (a) Advantages
 • Ease of service.
 • Centralized control.
 • Easy to diagnose faults.
 • One device per connection.
Disadvantages
 • Long cable length.
 • Difficult to expand.
 • Central node dependency. 2

OR

WWW: A set of protocols that allow you to access any document on the internet through the naming systems based on URLs.

Web hosting: Web hosting is a service that allows organizations and individuals to post a website or web page onto the server, which can be viewed by everyone on the Internet. 2

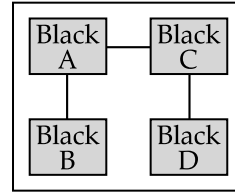
- (b) **Packet switching:**
 • Uses store and forward concept to send messages.

- No physical path is actually establishes.
- Message is divided into smaller parts, known as packets and then sent forward.
- Tight upper limit on block size.
- Each data unit knows only the final receiver’s address.

Circuit switching

- Physical connection is established between sender and receiver.
- Each data unit knows the entire path from sender to receiver.
- It does not follow store and forward concept. 2

13. (a)



- (b) **Repeater** : between C and D as the distance between them is 100 mts.
Hub/ Switch : In each block as they help to share data packets within the devices of the network in each block. 1
 (c) WAN. 1
 (d) Satellite 1

□□□

Solved Paper, 2021

COMPUTER SCIENCE

Term-I, Set-4

Series : SSK/3

Question Paper
Code No. 091

Time allowed : 90 Minutes

Max. Marks : 40

General Instructions :

- (i) The question paper is divided into 3 Sections A, B and C.
- (ii) Section – A consists of 25 Questions (1-25). Attempt any 20 questions.
- (iii) Section – B consists of 24 Questions (26-49). Attempt any 20 questions.
- (iv) Section – C consists of 6 case study based Questions (50-55). Attempt any 5 questions.
- (v) All questions carry equal marks.

Section-A

- Find the invalid identifier from the following.
 - (a) name (b) break
 - (c) section (d) mark12
- Which of the following is a function/method of the pickle module?
 - (a) reader() (b) writer()
 - (c) load() (d) read()
- For a given dclaration in Python as = "WELCOME"
Which of the following will be the correct output of print (S [1 : :2])?
 - (a) WEL (b) COME
 - (c) WLOE (d) ECM
- Which of the following statement is not correct?
 - (a) We can write content into a text file opened using 'w' mode
 - (b) We can write content into a text file opened using 'w+' mode
 - (c) We can write content into a text file opened using 'r' mode
 - (d) We can write content into a text file opened using 'r+' mode
- Which of the following option is the correct Python statement to read and display the first 10 characters of a text file "Notes.txt"?
 - (a) F = open('Notes.txt'); print(F.load(10))
 - (b) F = open('Notes.txt'); print(F.dump(10))
 - (c) F = open('Notes.txt'); print(F.read(10))
 - (d) F = open('Notes.txt'); print(F.write(10))
- Which of the following is not a correct Python statement to open a text file "Notes.txt" to write content into it?
 - (a) F = open('Notes.txt', 'w')
 - (b) F = open('Notes.txt', 'a')
 - (c) F = open('Notes.txt', 'A')
 - (d) F = open('Notes.txt', 'w+')

7. A text file opened using the following statement:
`MyFile = open('Notes.txt')`
 Which of the following is the correct Python statement to close it?
- (a) `MyFile=close('Notes.txt')`
 (b) `MyFile=close('Notes.txt')`
 (c) `Close.MyFile()`
 (d) `MyFile.close()`
8. Which of the following option is the correct usage for the `tell()` of a file object?
- (a) It places the file pointer at a desired offset in a file
 (b) It returns the entire content of a file
 (c) It returns the byte position of the file pointer as an integer
 (d) It tells the details about the file
9. Which of the following is an incorrect logical operator in Python?
- (a) `not` (b) `in`
 (c) `or` (d) `and`
10. Given the Python declaration `S1 = "Hello"`. Which of the following statements will give an error?
- (a) `print(S1[4])` (b) `S2=S1`
 (c) `S1=S1[4]` (d) `S1[4]="Y"`
11. Which of the following statement is incorrect in the context of pickled binary files?
- (a) `csv` module is used for reading and writing objects in binary files.
 (b) `pickle` module is used for reading and writing objects in binary files.
 (c) `load()` of the `pickle` module is used to read objects
 (d) `dump()` of the `pickle` module is used to write objects
12. What is the signification of the `seek()` method?
- (a) It seeks the absolute path of the file.
 (b) It tells the current byte position of the file pointer within the file.
 (c) It places the file pointer at a desire offset within the file.
 (d) It seeks the entire content of the file.
13. Which of the following is the correct expansion of `csv`?
- (a) Comma Separated Values
 (b) Centrally Secured Values
 (c) Computerised Secured Values
 (d) Comma Secured Values
14. If the following statement is used to read the content of a textfile object `F`:
`X=F.readlines()`
 Which of the following is the correct data type of `x`?
- (a) string (b) list
 (c) tuple (d) dictionary
15. Which of the following is not correct in context of Positional and Default parameters in Python functions?
- (a) Default parameters must occur to the right of Positional parameters.
 (b) Positional parameters must occur to the right of Default parameters
 (c) Positional parameters must occur to the left of Default parameters
 (d) All parameters to the right of a Default parameter must also have Default values.
16. 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)`
 (b) `Calc(X=15, Y=25)`
 (c) `Calc(Y=25)`
 (d) `Calc(X=25)`
17. Which of the following is not correct in context of scope of variables?
- (a) `global` keyword is used to change value of a global variable in a local scope
 (b) `local` keyword is used to change value of a local variable in a global scope
 (c) global variable can be accessed without using `global` keyword in a local scope.
 (d) local variable cannot be used outside its scope
18. Which of the following is the default character for the newline parameter for a `csv` file object opened in write mode in Python IDLE ?
- (a) `\n` (b) `\t`
 (c) `,` (d) `;`
19. Which of the following is the correct output for the execution of the following Python statement?
`print(5 + 3 ** 2 / 2)`
- (a) 32 (b) 8.0
 (c) 9.5 (d) 32.0
20. Which of the following is not a tuple in Python?
- (a) `(1, 2, 3)`
 (b) `("One", "Two", "Three")`
 (c) `(10 ,)`
 (d) `("One")`
21. Which of the following is not a function/method of the `random` module in Python
- (a) `randfloat()` (b) `randint()`
 (c) `random()` (d) `randrange()`
22. Which of the following is not a valid Python string operation?
- (a) `'Welcome' + '10'`
 (b) `'Welcome' * 10`
 (c) `'Welcome' * 10.0`
 (d) `"10 " + 'Welcome'`
23. What will be the output for the following Python

statement?

```
T=[10, 20, [30,40,50], 60, 70]
```

```
T[2] [1] = 100
```

```
print (T)
```

- (a) (10, 20, 100, 60, 70)
- (b) (10, 20, [30,100,50], 60, 70)
- (c) (10, 20, [100,40,50], 60, 70)
- (d) Error

24. What will be the output for the following Python statements?

```
L =[10, 20, 30, 40, 50]
```

```
L = L + 5
```

```
print(L)
```

- (a) [10, 20, 30, 40, 50, 5]
- (b) [15, 25, 35, 45, 55]
- (c) [5, 10, 20, 30, 40, 50]
- (d) Error

25. What will be the output for the following Python statements?

```
D="AMIT":90, "RESHMA":96, "SUKHBIR":92, "JOHN":95)
```

```
print("JOHN" in D, 90 in D, sep = "#")
```

- (a) True#False
- (b) True#True
- (c) False#True
- (d) False#False

Section-B

This section consists of 24 Questions (26 to 49). Attempt any 20 questions.

26. Nitish has declared a tuple T in Python as following :

```
T = (10, 20, 30)
```

Now, he wants to insert an element 40 after these elements of T so that the tuple may contain (10, 20, 30).

Which of the following statements shall Nitish write to accomplish the above task?

- (a) T = T + 40
- (b) T = T + (40)
- (c) T = T + (40,)
- (d) Nitish cannot insert 40 into the tuple since Tuples are immutable

27. Suppose the content of a text file Notes.txt is :

```
"The way to get started is to quit talking and begin doing"
```

What will be the output of the following Python code?

```
F = open ("Notes.txt")
```

```
F.seek(29)
```

```
S = F.read()
```

```
print(S)
```

- (a) The way to get started is to
- (b) quit talking and begin doing
- (c) The way to get started is to quit talking and begin doing
- (d) gniod nigeB dna gniklat tiuq ot asi

```
detrats teg ot yaw ehT
```

28. Identify the output of the following Python statements

```
S = "GOOD MORNING"
```

```
print (S.capitalize( ), S.title ( ), end="!")
```

- (a) GOOD MORNING!Good morning
- (b) Good Morning!Good morning
- (c) Good morning!Good morning!
- (d) Good morning!Good Morning!

29. Identify the output of the following Python statements

```
L = []
```

```
for i in range (4):
```

```
should be intended towards right to get output. otherwise there is an exception being raised.
```

```
L.append(2*i+1)
```

```
print(L[::-1])
```

- (a) [7, 5, 3, 1]
- (b) [9, 7, 5, 3]
- (c) [4, 3, 2, 1]
- (d) [1, 2, 3, 4]

30. Identify the output of the following Python statements:

```
D={}
```

```
T=("ZEESHAN", "NISHANT", "GURMEET", "LISA")
```

```
for i in range (1, 5):
```

```
D[i]=T[i-1]
```

```
print (D)
```

- (a) {"ZEESHAN", "NISHANT", "GURMEET", "LISA"}
- (b) {"ZEESHAN", "NISHANT", "GURMEET", "4": "LISA"}
- (c) {[1, "ZEESHAN"], [2, "NISHANT"], [3, "GURMEET", 4; "LISA"]}
- (d) {1: "ZEESHAN", 2: "NISHANT", 3: "GURMEET", 4; "LISA"}

31. Identify the output of the following Python statements

```
L1, L2 = [10, 15, 20, 25], []
```

```
for i in range (len(L1)) :
```

```
L2.insert(i,L1.pop())
```

```
print (L1, L2, sep="&")
```

- (a) []&[25, 20, 15, 10]
- (b) [10, 15, 20, 25]&[25, 20, 15, 10]
- (c) [10, 15, 20, 25]&[10, 15, 20, 25]
- (d) [25, 20, 15, 10]&[]

32. Which of the following Python modules is imported to store and retrieve objects using the process of serialization and deserialization?

- (a) csv
- (b) binary
- (c) math
- (d) pickle

33. Which of the following function is used with the csv modules in Python to read the content of a csv file into an object?

- (a) readrow() (b) readrows()
(c) reader() (d) load()
34. What will be the output of the following Python code?
- ```
S="WELCOME"
def Change(T):
 T="HELLO"
 print(T, end='@')
Change(S)
print(S)
```
- (a) WELCOME@HELLO  
(b) HELLO@HELLO  
(c) HELLO@WELCOME  
(d) WELCOME@WELCOME
35. Identify the correct possible output for the following Python code:
- ```
import random
for N in range (2,5,2) :
    print(random
    randrange (1,N),end="#"")
```
- (a) 1#3#5# (b) 2#3#
(c) 1#4# (d) 1#3#
36. What will be the output of the following Python code?
- ```
def Funstr(S) :
 T = ""
 for i in S:
 if i.isdigit() :

 T = T + i
 return T
X = "PYTHON 3.9"
Y = FunStr(x)
print [X, Y, sep="*"]
```
- (a) PYTHON 3.9  
(b) PYTHON 3.9\*3.9  
(c) PYTHON 3.9\*39 (d) Error
37. What will be the output of the following Python code?
- ```
v = 50
def Change (N):
    global V
    V, N = N, V
    print(V, N, sep="#" ,end="@")
Change (20)
print (V)
```
- (a) 20#50@20 (b) 50@20#50
(c) 50#50#50 (d) 20@50#20
38. Which of the following option can be the output for the following Python code?
- ```
L1 = [10, 20, 30, 20, 10]
L2 = []
for i in L1:
 if i not in L2:
 L2.append(i)
```
- ```
print (L1, L2, sep="&")
```
- (a) [10, 20, 30, 20, 10] & [10, 20, 30, 20, 10]
(b) [10, 20, 30, 20, 10] [10, 20, 30, 20, 10] &
(c) [10, 20, 30, 20, 10] & [30, 20, 10]
(d) [10, 20, 30, 20, 10] & [10, 20, 30]
39. What is the output of the following Python code?
- ```
def ListChange () :
 for i in range(len(L)):
 if L[i]%2 == 0:

 L[i]=L[i]*2
 if L[i]%3 == 0:

 L[i]=L [i]*3
 else:

 L[i]=L[i]*5
 L = [2,6,9,10]
 ListChange()
 for i in L:
 print(i,end="#"")
```
- (a) 4#12#27#20# (b) 6#18#27#50#  
(c) 20#36#27#100# (d) Error
40. Suppose the content of a text file "Rhymes.txt" is as follows:
- ```
Jack & Jill
went up the hill
```
- What will be the output of the following Python code?
- ```
F = open("Rhymes.txt")
L = F.readlines()
for i in L:
 S=i.split()
 print(len(S),end="#"")
```
- (a) 2#4# (b) 3#4#  
(c) 2# (d) 7#
41. Identify the output of the following Python code:
- ```
D={1:"One", 2:"Two", 3: "Three"}
L=[]
for K,V in D.items():
    if V[0]=="T":
        L.append(K)
print(L)
```
- (a) [1,2,3]
(b) ["one", "Two", "Three"]
(c) [2,3]
(d) ["Two", "Three"]
42. Suppose the content of "Rhymes.txt" is:
- ```
Baa baa black sheep,
have you any wool?
```
- What will be the output of the following Python code?
- ```
F = open("Rhymes.txt")
S = F.read()
```



```
L=S.split ()
for i in L :
    if len(i) %3 != 0 :
        print(i, end= " ")
```

- (a) Baa baa you any
 (b) black have wool?
 (c) black sheep, have wool?
 (d) Error

43. Suppose the content of "Rhymes.txt" is

One, Two, Three, Four, Five
 Once I caught a fish alive.

What will be the output of the following Python code?

```
F = open("Rhymes.txt")
S = F.read()
print(S.count('e',20))
```

- (a) 20 (b) 1
 (c) 3 (d) 6

44. What will be the output of the following Python code?

```
V = 25
def Fun(Ch):
    V=50
    print(V, end=Ch)
    V *= 2
    print(V, end=Ch)
print(V, end="**")
Fun("!")
print(V)
```

- (a) 25*50!100!25
 (b) 50*100!100!100
 (c) 25*50!100!100 (d) Error

45. Suppose the content of "Rhymes.txt" is

Good Morning Madam

What will be the output of the following Python code?

```
F = open ("Rhymaes.txt")
L = F.read ( ) .split ( )
for W in L:
    if W.lower()== W[::-1].lower():
        print(W)
```

- (a) Good (b) Morning
 (c) Madam (d) Error

46. Suppose the content of "Rhymes.txt" is

Hickory Dickory Dock

The mouse went up the clock

What will be the output of the following Python code?

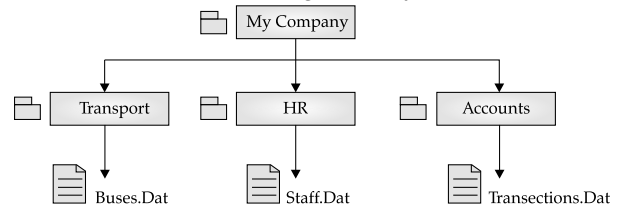
```
F = open("Rhymes.txt")
l = f.readlines()
x = ["the", "ock"]
for i in L:
    for w in i.split():
```

```
if w in x:
    print(W,end = "**")
```

- (a) the*

- (b) Dock*The*the*clock*
 (c) Dock*the*clock*
 (d) Error

47. Consider the following directory structure.



Suppose the present working directory is MyCompany. What will be the relative path of the file Transactions.Dat?

- (a) MyCompany/Transactions.Dat
 (b) MyCompany/Accounts/Transaction.Dat
 (c) Accounts/Transections.Dat
 (d) ../Transaction.Dat

48. What will be the output of the following Python code?

```
S="UVW";L=[10,20,30];D={}
N=len(S)
for I in range(N):
    D[L[I]] = S[I]
for K,V in D.items():
    print(K,V, sep="**",end=",")
```

- (a) U*10,V*20,W*30,
 (b) 10*U,20*V,30*W,
 (c) 10,20,30,U*V*W*
 (d) Error

49. What will be the output of the following Python code?

```
L = [10, 20]
L1 = [30, 40]
L2 = [50, 60]
L.append(L1)
L.extend(L2)
print(L)
```

- (a) [60, 50, 40, 30, 20, 10]
 (b) [10, 20, 30, 40, 50, 60]
 (c) [10, 20, 30, 40, [50, 60]]
 (d) [10, 20, [30, 40], 50, 60]

Section-C

Case Study based Questions

This section consists of 6 Questions (50-55). Attempt any 5 questions.

Nisha, an intern in ABC Pvt. Ltd, is developing a project using the cvs module in Python. She has partially developed the code as follows leaving out statements about which she is not very confident. The code also contains error in certain statements. Help her in completing the code to read the desired CSV File named "Employee.csv"

```
#CSV File Content
ENO,NAME,DEPARTMENT
E1,ROSHAN SHARMA,ACCOUNTS
E2,AASMA KHALID,PRODUCTION
E3,AMRIK GILL,MARKETING
E4,SARAH WILLIAMS,HUMAN RESOURCE

# incomplete Code With Errors
import CSV
#Statement-1
With open (___' ___' newline='')as
File: #Statement-2
    ER = csv._____
#Statement-3
    for R in range (ER) :
#Statement-4
        if _____ == 'ACCOUNTS' :
#Statement-5
            print (___' _____)
#Statement-6
```

50. Nisha gets an Error for the module name used in Statement. 1. What should she write in place of CSV to import the correct module?
- (a) file (b) csv
(c) Csv (d) pickle

51. Identify the missing code for blank spaces in the line marked as Statement-2 to open the mentioned file.
- (a) "Employee.csv", "r"
(b) "Employee.csv", "w"
(c) "Employee.csv", "rb"
(d) "Employee.csv", "wb"
52. Choose the function name (with parameter) that should be used in the line marked as Statement-3.
- (a) reader (File)
(b) readrows (File)
(c) writer (File)
(d) writerows (File)
53. Nisha gets an Error in Statement-4. What should she write to correct the statement?
- (a) for R in ER:
(b) while R in range (ER) :
(c) for R = ER:
(d) while R == ER:
54. Identify the suitable code for blank space in Statement-5 to match every row's 3rd property with "ACCOUNTS".
- (a) ER[3] (b) R[2]
(c) ER[2] (d) R[3]
55. Identify the suitable code for blank space in Statement-6 to display every Employee's Name and corresponding Department ?
- (a) ER[1], R[2] (b) R[1], ER[2]
(c) R[1], R[2] (d) ER[1], ER[2]

SOLUTIONS

Section-A

1. (b) break

Explanation: As per identifier naming convention we can't use any keyword as an identifier break is a keyword. So, it is invalid.

2. (c) load()

Explanation: The load() method of Python pickle module reads the pickled byte stream of one or more python objects from a file object. When multiple objects are expected from the byte stream, the load() method should be called multiple times.

3. (d) ECM

Explanation: s="WELCOME"
s[1: :2] represents the slice on the string s from index 1 to last index(6) with a step value 2.
So, this slice will display all the alternate characters from string s starting from index 1.

4. (c) We can write content into a text file opened using r mode.

Explanation: r : Opens the file in read-only mode. So, we can't write any data on the file.

5. (c) F = open ('Notes.txt'); print(F.read(10))

Explanation: read() method in Python is used to read at most n bytes from the file associated with the given file descriptor. If the end of the file has been reached while reading bytes from the given file descriptor, os.read() method will return an empty bytes object for all bytes left to be read.

6. (c) F=open('Notes.txt','A')

Explanation: Option c is invalid because 'A' is an invalid mode in Python.
'w' Opens a file for write mode.
'a' Opens a file for append mode
'w+' Opens a file for both writing and reading

7. (d) MyFile.close()

Explanation: Python file method close() closes the opened file. Its syntax is <file object>.close()

8. (c) It returns the byte position of the file pointer as an integer

9. (b) in

Explanation: In Python, Logical operators are used on conditional statements (either True or False). Logical operators.

OPERATOR	DESCRIPTION	SYNTAX
and	Logical AND: True if both the operands are true	x and y
or	Logical OR: True if either of the operands is true	x or y
not	Logical NOT: True if operand is false	not x

in is membership operator.

10. (d) S1[4]="Y"

Explanation: String is an immutable data type so partial modification is not allowed.

11. (a) csv module is used for reading and writing objects in binary files.

Explanation: The csv module implements classes to read and write tabular data in CSV format. CSV files are text files so csv module can't be used to read and write objects to binary files.

12. (c) It places the file pointer at a desired offset within the file.

Explanation: In Python, seek() function is used to change the position of the File Handle to a given specific position. File handle is like a cursor, which defines from where the data has to be read or written in the file. Syntax: f.seek(offset, from_what), where f is file pointer.

13. (a) Comma Separated Values

Explanation: CSV (Comma Separated Values) is a simple file format used to store tabular data, such as a spreadsheet or database. A CSV file stores tabular data (numbers and text) in plain text. Each line of the file is a data record.

14. (b) list

Explanation: The readlines () method returns the entire contents of the file as a list of strings, where each item in the list is one line of the file. The readline () method reads one line from the file and returns it as a string.

15. (b) Default parameters must occur to the right of the positional parameters.

Explanation: python states that in a function call statement: an argument list must first contain positional arguments followed by any keyword argument.

16. (c) calc(Y=25)

Explanation: tell() method can be used to get the position of File Handle. tell() method returns current position of file object. This method takes no parameters and returns an integer value. Initially file pointer points to the beginning of the file(if not opened in append mode).

Explanation: This statement will produce a type error because the first argument will be considered as missing.

TypeError: calc() missing 1 required positional argument: 'x'

17. (b) local keyword is used to change value of a local variable in a global scope

Explanation: No such local keyword exists in python.

18. (a) \n

Explanation: If newline=" is not specified, newlines embedded inside quoted fields will not be interpreted correctly, and on platforms that use \r\n linendings on write an extra \r will be added. It should always be safe to specify newline="\n", since the csv module does its own (universal) newline handling.

19. (c) 9.5

Explanation: $5 + 3 \wedge 2/2 = 5 + 9/2 = 5 + 4.5 = 9.5$

20. (d) ("one")

Explanation:

```
>>> a=("one")
>>> a
'one'
>>> type(a)
<class 'str'>
```

this declaration creates a string data type.

21. (a) randfloat

Explanation: There is no such function is available in the random module.

22. (c) 'Welcome'*10.0

Explanation: To use * as a replication operator one operand must be string and other must be an integer. float values can't be used with * for string replication.

23. (b) (10,20,[30,100,50],60,70)

Explanation: t[2] returns the element present in the 2nd index which is a list [30,40,50].
t[2][1] returns the element present at index 1 from the above list which is 40,
Since list is a mutable type ,we can modify this element to 100.

24. (d) Error

Explanation: We can't add an integer with a list. So, L+5 will produce TypeError: can only concatenate list (not "int") to list.

25. (a) True#False

Explanation: Since "Jhon" is present in the dictionary as a key so 'JHON in D' return True, but 90 is not present as a key so the statement '90 in D' will return False and both will be separated by # .Since sep='#' is given.

Section-B

26. (c) T=T+(40,)

Explanation: (40) is not a tuple and we can't add integer with a tuple. so, the correct statement will be t=t+(40,)

27. (b) quit talking and begin doing

Explanation: f.seek(29) will place the file pointer to the 29th index from the beginning and read operation will take place from that index.
So, the 'q' is the character present in the 29 index.
output:- quit talking and begin doing

28. (d) Good morning Good Morning!

Explanation: In Python, the capitalize() method returns a copy of the original string and converts the first character of the string to a capital (uppercase) letter while making all other characters in the string lowercase letters.
The title() function in python is the Python String Method which is used to convert the first character in each word to Uppercase and remaining characters to Lowercase in the string and returns a new string.

29. (a) [7, 5, 3, 1]

Explanation: Here the loop will run 4 times from 0 to 3
and expression - 2*i+1 will produce the output 1,3,5,7 and this numbers will be added in a list.
L[: :-1] will display all the elements in reversed order.

30. (d) {1: 'ZEESHAN', 2: 'NISHANT', 3: 'GURMEET', 4: 'LISA'}

Explanation: This code will create a blank dictionary D. now its keys are defined with range function and each of these keys are given value from the elements of the tuple T.

31. (a) [] & [25,20,15,10]

Explanation: For loop will iterate for the length of the list L1 . during each iteration the last element of list L1 is removed and returned by L1. pop(). Now L2. insert() will insert this element in list L2. Thus at the end of the loop L2 will have all the elements of L1 in reverse order and L1 will be empty.

32. (d) pickle

Explanation: The pickle module implements binary protocols for serializing and deserializing a Python object structure. Serialization is the process of converting an object in memory to a byte stream that can be stored on disk or sent over a network. Deserialization is the process of converting a byte stream to Python object.

33. (c) reader

Explanation: reader() is used to read the file, which returns an iterable reader object. The reader object is then iterated using a for loop to print the contents of each row.

34. (c) HELLO@WELCOME

Explanation: The function Change will display HELLO@
then print (S) will display WELCOME
Here S is declared outside any function so it is a global variable and can be accessed anywhere in the program. Now when it is passed as an argument to the function Change() its formal argument T also starts pointing to the same value as S, i.e. WELCOME. inside the function T is assigned a new value HELLO, but S continues to point to WELCOME. so Print (T, end=@) prints HELLO and Print(s) prints WELCOME.

35. (d) 1#3#

Explanation: For N in range (2, 5, 2) will generate numbers 2,4 as it will start from 2 and generate every alternate number upto 5 excluding 5. now randrange() will generate a number between 1 and the value of N for each iteration, which is 1 to 2 for first iteration and 1 to 4 for second iteration. hence possible output for first generation is only 1 and for second is either 1, 2 or 3.

36. (c) PYTHON 3.9*39

Explanation: The function FunStr() copies the contents of the passed argument string to the string T only if they are a digit and then returns the new string. When X="PYTHON 3.9" is passed to this function it returns 39. now print statement first prints X and the returned string i.e. 39 with a * in between.

37. (a) 20#50@20

Explanation: Using global keyword in a local namespace allows to change the value of the global variable. Now Change() function receives the value 20 in its local variable N and assigns its value to the global variable V. and the value of V is assigned to its local variable N. Print statement inside the function will print 20#50@ and print(V) will print 20.

38. (d) [10, 20, 30, 20, 10]&[10, 20, 30]

Explanation: This code appends each element of L1 to L2 only if it is not repeated. So L2 will contain all the unique occurrences of the elements of L1.

39. (c) 20#36#27#100#

Explanation: the function ListChange() will iterate over each element of list L. first element is 2 it is divisible by 2 so it will be replaced by 4. now it will be again checked for divisibility by 3 which is false so the control will go to else part and the statement $L[i] = L[i] * 5$ will be executed and this will be replaced by 20. similarly next element is 6. it is divisible by 2 so will be replaced by 12. now 12 is divisible by 3 so it will again be replaced by 36. next element is 9 it is divisible by 3 so will be replaced by $9*3$ i.e. 27. next element 10 is divisible by 2 so will be replaced by $20(10*2)$ first and as it is not divisible by 3 it will second time be replaced by $100(20*5)$. hence the output will be 20#36#27#100

40. (b) 3#4#

Explanation: Freadlines() will read the contents of the text file as a list, where each element of the list is a line of the file. Now for loop will iterate over each element of this list(each line of the text file) and split it into words and store as elements of list S(here each word of the line forms an element of the list S). print statement will print length of this list. So in first iteration length of first line i.e 3 will be printed and in second iteration length of second line 4 will be printed.

41. (c) [2,3]

Explanation: The items() method returns all the items in the dictionary as a sequence of (key,value) tuples. these values can be iterated using two variable loop, where first variable refers keys and second refers respective values. Now V[0] will check the first letter of each value and copy keys of those values that begin with "T" to the list L. So L will have keys 2 & 3.

42. (b) black have wool?

Explanation: read() will read the content of the file and stores them in the string S. Split() function will split the text word wise and store them in the list. at last all the words with the length not equals to 3 will be displayed.

43. (c) 3

Explanation: Fread() will read the entire contents of the text file into String S. and then count all the occurrences of 'e' after index 20.

44. (a) $25*50!100!25$

Explanation: The first statement to get executed in this code will be `print(V,end="*")`. here the value of V (global) will be printed. Now the function `fun("!)` is called and a new variable V is created in local namespace and assigned value 50, which is printed by the next print statement. now value of the same local variable is multiplied by 2 and assigned to V itself (100) which is printed by the next print statement. each of these print statements use the value of ch variable(i.e "!") passed in function call as end character. Now once the function execution is over the control returns back to the main program and the last print statement is executed which again prints the value of the global variable V.

45. (c) Madam

Explanation: The code here will read all the contents of the text file using `read()` and `split()` will split these contents word wise and store them in list L. Now the for loop will iterate over these words. if `W.lower() == W[::-1].lower()`: will check if that word is a palindrome and print it if it is.

46. (a) the*

Explanation: the contents of the file will be read into the list L using `readlines()`, where each line of the file is an element of the list. now first for loop will iterate over this list and split each line into individual words using `i.split()`. each of these words iterated using W variable of the second for loop. W is now compared to the elements of the list X and if word in W exists in X it is printed. Hence the output will be the *.

47. (c) Accounts/Transactions.Dat

Explanation: The relative path of a file is specified from the current working directory.

48. (d) Error

Explanation: this program will produce syntax error. In the statement `D[L[i] = S[i]`, a closing bracket('}') is missing. It should be `D[L[i]]`.

49. (d) [10, 20, [30, 40], 50, 60]

Explanation: `L.append(L1)` will add list L1 as an item to list L. so L will become `[10, 20, [30, 40]]` `L.extend(L2)` will add all the elements of L2 after the elements of list L. i.e. L will become now `[10, 20,[30, 40], 50, 60]`

Section-C

50. (b) csv

Explanation: Python is a case sensitive language and treats Upper and lower case letters differently. SO CSV and csv are different. there exists NO CSV module in python.

51. (a) "Employee.csv","r"

Explanation: with statement is used execute two related functions as pair. open function takes name of file and file open mode as arguments.

52. (a) reader(File)

Explanation: reader() function is use to read the contents from a csv file.

53. (a) for r in ER:

Explanation: proper syntax will be for r in ER: range() generates values of sequence type. csv. reader generates an object of iterable type so can be iterated using for r in ER

54. (b) R[2]

Explanation: The iterable object R reads all the records and as department is the third field of the records it can be accessed using index 2. departments values will be available in R[2].

55. (c) R[1], R[2]

Explanation: print name and department , they are available in R[1] and R[2] name is the second field and department is the third filed of the records so can be accessed using index 1 and 2 respectively with the iterable object R.

○○○

Term – I

OMR SHEET

Booklet Series
A

Use English Numbers / Letters only. Use Blue / Black Ball Point Pen to write in box.

Booklet Series <input type="text"/> (A) (B) (C) (D)	Roll Number <table border="1" style="display: inline-table; width: 100px; height: 20px;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> (0) (0) (0) (0) (0) (0) (0) (0) (0) (0) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2) (3) (3) (3) (3) (3) (3) (3) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (5) (5) (5) (5) (5) (5) (5) (5) (5) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7) (8) (8) (8) (8) (8) (8) (8) (8) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9)											Name <input style="width: 100px;" type="text"/> <input style="width: 100px;" type="text"/> Test Date <input style="width: 50px;" type="text"/> <input style="width: 50px;" type="text"/> <input style="width: 50px;" type="text"/> <input style="width: 50px;" type="text"/> Student's Signature <input style="width: 100px; height: 40px;" type="text"/> Invigilator's Signature <input style="width: 100px; height: 60px;" type="text"/> Certified that all the entries in this section have been properly filled by the student.	Test Center Code (0) (0) (1) (1) (2) (2) (3) (3) (4) (4) (5) (5) (6) (6) (7) (7) (8) (8) (9) (9)
Subject <input style="width: 100px;" type="text"/>			Proper Marking The OMR Sheet will be computer checked. Fill the circles completely and dark enough for proper detection. Use ballpen (black or blue) for marking. (A) (B) (C) (D) Avoid Improper Marking Partially Filled Lightly Filled										

IMPORTANT

The candidate should check that the Test Book Series printed on the OMR Sheet is the same as printed on the Test Booklet. In case of discrepancy, the candidate should immediately report the matter to the invigilator for replacement of both the Test Booklet and the Answer Sheet.

Darken the circle for each question.

Q.No.	Response	Q.No.	Response	Q.No.	Response	Q.No.	Response
01	(A) (B) (C) (D)	16	(A) (B) (C) (D)	31	(A) (B) (C) (D)	46	(A) (B) (C) (D)
02	(A) (B) (C) (D)	17	(A) (B) (C) (D)	32	(A) (B) (C) (D)	47	(A) (B) (C) (D)
03	(A) (B) (C) (D)	18	(A) (B) (C) (D)	33	(A) (B) (C) (D)	48	(A) (B) (C) (D)
04	(A) (B) (C) (D)	19	(A) (B) (C) (D)	34	(A) (B) (C) (D)	49	(A) (B) (C) (D)
05	(A) (B) (C) (D)	20	(A) (B) (C) (D)	35	(A) (B) (C) (D)	50	(A) (B) (C) (D)
06	(A) (B) (C) (D)	21	(A) (B) (C) (D)	36	(A) (B) (C) (D)	51	(A) (B) (C) (D)
07	(A) (B) (C) (D)	22	(A) (B) (C) (D)	37	(A) (B) (C) (D)	52	(A) (B) (C) (D)
08	(A) (B) (C) (D)	23	(A) (B) (C) (D)	38	(A) (B) (C) (D)	53	(A) (B) (C) (D)
09	(A) (B) (C) (D)	24	(A) (B) (C) (D)	39	(A) (B) (C) (D)	54	(A) (B) (C) (D)
10	(A) (B) (C) (D)	25	(A) (B) (C) (D)	40	(A) (B) (C) (D)	55	(A) (B) (C) (D)
11	(A) (B) (C) (D)	26	(A) (B) (C) (D)	41	(A) (B) (C) (D)	56	(A) (B) (C) (D)
12	(A) (B) (C) (D)	27	(A) (B) (C) (D)	42	(A) (B) (C) (D)	57	(A) (B) (C) (D)
13	(A) (B) (C) (D)	28	(A) (B) (C) (D)	43	(A) (B) (C) (D)	58	(A) (B) (C) (D)
14	(A) (B) (C) (D)	29	(A) (B) (C) (D)	44	(A) (B) (C) (D)	59	(A) (B) (C) (D)
15	(A) (B) (C) (D)	30	(A) (B) (C) (D)	45	(A) (B) (C) (D)	60	(A) (B) (C) (D)