REVISION SHEET

SUBJECT: COMPUTER SCIENCE   **CLASS-XII**   **TERM 1**

1. PYTHON REVISION TOUR

1. Which of these is a valid variable name in Python?
   a) 1var b) _var c) var@1 d) var-1
2. What is the output of print(type())?
   a) int b) list c) tuple d) dict
3. In Python, which operator is used for floor division?
   a) / b) // c) % d) **
4. A function without any explicit return statement returns:
   a) 0 b) null c) None d) empty string
5. What will print("2" + "3"*2) output?
   a) 25 b) 233 c) 2 33 d) 2+33
6. What will be the result of: print(len("CBSE"))?
   a) 5 b) 4 c) 3 d) 2
7. Which is immutable in Python?
   a) List b) Dictionary c) Tuple d) Set
8. What will be output for: print(10>5 and 10 < 20)?
   a) True b) False c) Error d) None
9. Which of these is NOT a keyword in Python?
   a) finally b) pass c) eval d) assert
10. What does the function ord('a') return?
    a) 'a' b) 65 c) 97 d) error
11. Write a program to convert a given string to uppercase.
    State two differences between Python list and tuple.
12. What is the output of:
    ```
    s = "hello world"
    print(s[:6:-2])
    ```
13. Write a statement to check if 'a' is present in the string "banana".
14. What is the difference between // and / operators?
15. What will be output of:
    ```
    a = [3,4,5]
    a.append(6)
    a.remove(3)
    print(a)
    ```
16. Write code to accept an integer and print if it is prime or not.
17. How is the break statement different from continue in loops?

18.   Write Python code to print whether a string is palindrome or not without using reverse slice or reverse function.
19.   Give output:
        lst = [1]*4
        print(lst)
20.   Write a program to count uppercase, lowercase letters, vowels and consonants in a string?
21.   Explain mutable and immutable data types in Python with examples.
22.   Write a code to input three numbers and print the largest.
23.   Write code to display all numbers between 20 and 30 except those
            divisible by 3.
24.   Explain the use of indentation in Python with an example.
25.   Write code using a for loop to print the below pattern
            1
            1 2
            1 2 3
            1 2 3 4
            1 2 3 4 5

2. FUNCTIONS

1. Which keyword is used to define a function?
    a) func b) define c) def d) function
2. Which of the following is not a valid parameter passing technique?
    a) by value b) by reference c) both a & b d) none
3. Which of the following can be used as a function argument in Python?
    a) string b) list c) function d) all of these
4. Default argument values must be provided from:
    a) left to right b) right to left c) anywhere d) not required
5. What is the output of:
        def f(x=5):
            return x*x
        print(f())
    a) 5 b) 10 c) 25 d) 0
6.   A function in Python can return:
a) Only one value b) Multiple values as tuple c) Only integer values d) Only string values
7.   What is the output of the function shown below?
        import math
        print(abs(math.ceil(-256.350)))
    a) 257   b) 256   c) -256   d) 250
8.   What is the output of:
        def a(x):
            return x+1
        print(a(4))
    a) Error b) 4 c) 5 d) None
9.   Which function allows a variable number of arguments?
a) def b) args c) *args d) list
10.   What is the output of the below program?
        x = 50
        def func(x):

```
        x = 2
func(x)
print('x is now', x)
a) x is now 2        b) x is now 70        c) x is now 50        d) x is now 100
```

11.   What is the purpose of the return statement in Python function?
12.   Explain the difference between actual and formal arguments.
13.   Trace the following code and predict output produced by it.

```
1. def power(b,p) :
2.   y = b ** p
3.   return y
4.
5. def calcSquare(x) :
6.   a = power(x,2)
7.   return a
8.
9. n = 5
10. result = calcSquare(n)+ power(3, 3)
11. print(result)
```

14.   Define a function that takes an integer as argument and returns its square root
15.   What is the scope of a variable defined inside a function?
16.   How do you call a function with keyword arguments? Illustrate.
17.   Differentiate between local and global variables.
18.   What is a default parameter value? Give a code example.
19.   What is the output of:

```
def fun(x, y=2):
    return x * y
print(fun(4))
```

20.   Write a function that takes a string and returns a string by capitalising every alternate character.
21.   Write a function to find the sum of digits of a number.
22.   Write a function search_replace() in Python which accepts a list L of numbers and a number to be searched. If the number exists, it is replaced by 0 and if the number does not exist, an appropriate message is displayed.
Example:
L = [10,20,30,10,40]
Number to be searched = 10
List after replacement :
L = [0,20,30,0,40]
23.   Write a function to check if a substring is a part of string.
24.   Write a function to count the number of digits and special characters in a string.
25.   Write a Python program to call a function 'avg(l) that takes a numerical list as argument and returns average of numbers in list.

3. FILE HANDLING (Text, Binary, CSV)

1. Which mode opens a file for appending?
   a) r b) a c) w d) x
2. The readlines() method returns:
   a) All lines as string b) List of lines c) Only last line d) None
3. Which module is used for handling CSV files in Python?
   a) text b) csv c) file d) os
4. Which method is used to load data from a binary file?
   a) dump() b) load() c) reader() d) read()
5. What is the default mode when opening a text file?
   a) w b) r c) a d) x
6. Which function is used to write all lines to a file?
   a) write() b) writelines() c) append() d) put()
7. Name the function to move the file pointer to a specific location.
8. To read an entire file as string at one go, we use:
   a) read() b) readline() c) seek() d) get()
9. Which module is used for serializing Python objects for binary files?
   a) os b) file c) pickle d) csv
10. What happens if you open a file in read mode and it does not exist?
    a) File is created b) Error c) Nothing d) File is truncated
11. Write Python code to open "data.txt" in write mode and write 'Hello'
12. What is the difference between binary and text files?
13. What is the use of the seek() function?
14. Write a code to open a file readme.txt and print all its contents. Report an   error if the file doesn't exists.
15. What is the difference in the outputs produced by both the code fragments given below:

           1.my_file =open('poemBTH.txt', 'r')
             my_file.read()

           2. my_file = open('poemBTH.txt', 'r')
             my_file.read(10)
16. Write code to read and display content of a csv file 'student.csv'.
17. Write a program to create a csv file 'Employee.csv' that takes data from user and stores 5 records of employees with the below structure
        [Eid, Ename,Desig, Salary].
        Also open the file in read mode and display all records.
18. State the purpose of csv.writerows().
19. What error occurs if you try to read a non-existent file?
20. Write a Python program to read a text file named "poem.txt" and display only those lines that start with the letter 'Y'.
21. Write a function to count number of lines in a text file.
22. Write code to copy content of one text file to another.
23. Explain difference between readline() and readlines().
24. Write a python code to perform the following binary file operations with the help of two user defined functions :

a. AddStudents() : to create a binary file called STUDENT.DAT containing student information – roll number, name and marks (out of 100) of each student.

b. GetStudents() : to display the name and percentage of those students who have a percentage greater than 75.

25. Write a code to read records from a binary file using pickle.

4. EXCEPTION HANDLING

1. What is the purpose of try-except block? Write syntax.
2. Differentiate between ValueError and ZeroDivisionError.
3. Write code to raise an exception if a number is negative.Explain with example the use of finally block
4. Give one advantage of exception handling.
5. What is the output:

```
try:
    print(5/0)
except ZeroDivisionError:
    print("Error!")
```

6. DATA STRUCTURES

1. What is Stack? Write some application of Stack ?

2.Give any two characteristics of stacks?

3. What do you mean by push and pop operations on stack?

4. Name any two linear Data Structures? What do you understand by the term LIFO?

5. What do you mean by underflow in the context of stack?

6. What is difference between stack and queue?

7. Write a function push (student) and pop (student) to add a new student name and remove a student name from a list student, considering them to act as PUSH and POP operations of stack Data Structure in Python.

8. Ram has created a dictionary containing names and age as key value pairs of 5 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(age) is lesser than 40.
Pop and display the content of the stack.
For example: If the sample content of the dictionary is as follows:
R={"OM":35,"JAI":40,"BOB":53,"ALI":66,"ANU":19}
The output from the program should be : ANU OM

9. SHEELA has a list containing 5 integers. You need to help her create a program with separate user defined functions to perform the following operations based on this list.

1. Traverse the content of the list and push the odd numbers into a stack.

2. Pop and display the content of the stack.
For Example : If the sample Content of the list is as follows:
N=[79,98,22,35,38]
Sample Output of the code should be: 35,79

10. Write a function in Python PUSH_IN(L), where L is a list of numbers. From this list, push all even numbers into a stack which is implemented by using another list.

RELATIONAL DATABASES, SIMPLE QUERIES IN SQL

1. Define RDBMS.
2. State difference between primary and unique key.
3. Name any two DML commands.
4. Give an example to differentiate CHAR and VARCHAR.
5. What is referential integrity?
6. Name one advantage of RDBMS over file systems.
7. What is use of DISTINCT keyword?

Write queries to do the following
1. Create database name 'kv2'
2. Open the database 'kv2'
3. Create the following table:
        Student

Field name	Data type	Constraint
Rollno	Integer	Primary key
Name	Varchar of size 20	Not null
Age	Integer	It should be greater than 0
City	Varchar of size 15	
Phone	Integer	Unique
Marks	Integer	Default value should be 0

4. Add the following rows in the table student
Rollno Name Age City Phone Marks
1 Ram ,17 ,Delhi, 123456, 450
2 Priya ,18 ,Chennai ,345678, 400
3 Ajay ,17, NULL, 11111, 350
4 Kavita ,17 ,Kolkata ,22222, 380
5 Ramya ,18, Chennai ,33333, NULL

5. Write queries for the following:
i. Display the details of all students
ii Give the structure of the table student
ii Display the name and marks of all students
ivDisplay the details of all students whose name contains second letter as 'a'
v.Display the details of all students in descending order of their names
viDisplay the name of those students whose city is not found
vii. Display the name and city of those students who belongs to Chennai or delhi
viii. Display the name of those students whose age is 17 and belongs to delhi
ix. Display the details of all students whose marks is in the range of 400 to 450
x. Display the details of all students whose marks is not in the range of 400 to 450
xi. Display the name of those students who belongs to delhi,Chennai or Kolkata
a. (Use list)
xii. Display the details of all students whose name contains second last letter as 'a'
xiii. Display the names of all students whose name contains 5 letters
xiv. Display the names of all students whose name contains the last letter as ' a.

COMPUTER NETWORKS

1. What does LAN stand for?
   a) Local Area Network b) Large Area Network c) Line Area Network d) Long Area Network
2. Which device connects two different networks?
   a) Switch b) Router c) Hub d) Bridge
3. Which protocol is used for www?
   a) FTP b) HTTP c) SMTP d) POP
4. Which cable is most used in LAN?
   a) Twisted pair b) Fiber optic c) Coaxial d) USB
5. What is firewall?
6. A topology with a central hub is:
   a) Bus b) Star c) Mesh d) Tree
7. What is full form of ISP?
   a) Internet Service Provider b) International Standard Protocol c) Internal Server Provider d) Internal System Protocol
8. Which transmission medium uses light?
   a) Fiber optic b) Coaxial c) Twisted pair d) Microwave
9. Which is not a transmission medium?
   a) Coaxial b) Switch c) Fiber optic d) Microwave
10. Which protocol transfers email?
    a) SMTP b) FTP c) HTTP d) TCP
11. What is network topology?
12. State two differences between LAN and WAN.
13. What is purpose of firewall?
14. Name two transmission media.
15. What does modem do?
16. Define IP address.
17. State use of router.
18. Write two types of network devices.
19. What is WiFi?
20. Name one advantage of star topology.
21. Explain star and bus topology with diagrams.
22. Write differences between switch and hub.
23. Name and explain three transmission media.
24. What is network security? State any two techniques.
25. Explain functions of bridge,repeater, and gateways.

Case study based questions

1.

Great Studies University is setting up its Academic schools at sunder Nagar and planning to set up a network. The university has 3 academic schools and one administration center as shown in the diagram below:
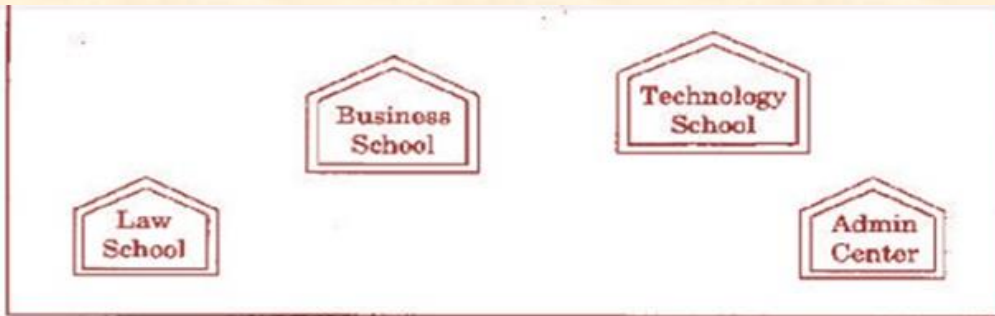
Center to center distance between various buildings is as follows:

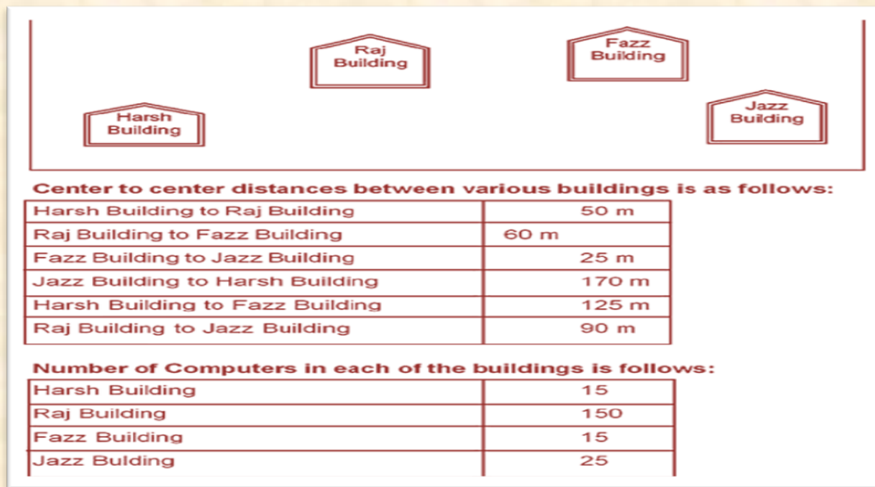|	
Law School to Business School	60m
Law School to Technology School	90m
Law School to Admin Center	115m
Business School to Technology School	40m
Business School to Admin Center	45m
Technology School to Admin Center	25m

Number of computers in each of the schools/Center is follows:

Law School	25
Technology School	50
Admin Center	125
Business School	35

(i)   Suggest the most suitable place (i.e. School/Center) to install the server of this university with suitable reason

(ii)   Suggest an ideal layout for connecting these school/center for a wired connectivity

(iii)   Which device will you suggest to be placed/installed in each of these school/center to efficiently connect all the computers within these school/center?

(iv)   The university is planning to connect its admission center in the closest big city, which is more than 350 KM from the University. Which type of network out of LAN, MAN, WAN will be formed? Justify your answer

2. Ravya industries has setup its new center at kakadeo nagar for its office and web based activities. The company compound has 4 buildings as shown in the diagram below:

Center to center distances between various buildings is as follows:

Harsh Building to Raj Building	50 m
Raj Building to Fazz Building	60 m
Fazz Building to Jazz Building	25 m
Jazz Building to Harsh Building	170 m
Harsh Building to Fazz Building	125 m
Raj Building to Jazz Building	90 m

Number of Computers in each of the buildings is follows:

Harsh Building	15
Raj Building	150
Fazz Building	15
Jazz Bulding	25

(i)   Suggest the most suitable place (i.e. School/Center) to install the server of this university with suitable reason

(ii)   Suggest an ideal layout for connecting these school/center for a wired connectivity
(iii)
(iv)   Suggest the placement of following devices with suitable reason:
    (a)   Internet Connecting Device/ Model
    (b)   Switch
(iv)   The organization is planning to link its sale counter situated in various parts of the same city, which type of network out of LAN, MAN or WAN will be formed? Justify your answer