**भाग-एक/PART ONE**

**सभी प्रश्नों के उत्तर दें (Answer all the questions)**

**Q.1. नीचे प्रत्येक प्रश्न के उत्तर के कई विकल्प दिये गये हैं। एक सबसे उपयुक्त विकल्प चुनें और उसे प्रश्न-पत्र के साथ उपलब्ध कराए गए "ओएमआर' उत्तर-पत्रक में, उसके दिए गए निर्देशों के अनुसार दर्जकरें।**

**Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein.**

**1.1** What is the output of the following code?

L = ['a','b','c','d']

print "".join (L)

(A) Error

**(B) abcd**

(C) None

(D) ['a','b','c','d']

**1.2** What is the output of the code print (9//2)

(A) 4.5

(B) 4.0

(C) Error

**(D) 4**

**1.3** What will be the output of the following code: Print type (type (int))

(A) type 'int'

(B) error

(C) 0

**(D) type 'type'**

**1.4** The…….. Symbol is used at the beginning of a flow chart.

(A) Circle

(B) Diamond

**(C) Rectangle**

(D) None of these

**1.5** What is the output of the following program?

i = 0

while i <= 3:

print i

i += 1

(A) 0 2 1 3 2 4

(B) 0 1 2 3 4 5
(C) Infinite loop
**(D) 0 1 2 3**
**1.6** np.eye() is used for creating:
**(A) Identity Matrix**
(B) Upper triangle Matrix
(C) Lower Triangle Matrix
(D) None of the above
**1.7** Debugging is used to:
**(A) Find errors from the program**
(B) Check the functionality of the program
(C) Black box testing
(D) All of the above
**1.8**……. is a procedure or step by step process for solving a problem.
**(A) Algorithm**
(B) Flowchart
(C) Pseudo code
(D) All of these
**1.9** The function which reads one line from standards input and returns it as a string (removing the trailing newline)
(A) input
(B) eva
**(C) raw input**
(D) accept
**1.10** The…… provides pictorial representation of given problem.
(A) Algorithm
(B) Pseudo code
**(C) Flowchart**
(D) All of these

**Q.2. नीचे दिया गया प्रत्येक विवरण या तो सही या गलत है। एक सबसे उपयुक्त विकल्प चुनें और अपना विकल्प प्रश्न-पत्र के साथ उपलब्ध कराए गए "ओएमआर" उत्तर-पत्रक में, उसमें दिए गए निर्देशों के अनुसार दर्ज करें।**

**Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.**

**2.1** The scope rule in Python is summarized as ELGB (enclosed, local, global, and built-in). **T**
**2.2** if list1= [10, 20, 30], then operation list1*2 returns [20, 40, 60]. **F**
**2.3** Strings in Python are mutable. **F**
**2.4** You cannot obtain a value in a dictionary using a key for a single element. **F**
**2.5** Class is a python's predefined data type? **F**
**2.6** Python allows you to assign a single value to multiple variables simultaneously. **T**
**2.7** Def keyword is used to define methods in Python? **T**
**2.8** The break statement is used for exiting from the loop to the statement following the close of the loop. **T**
**2.9** It is mandatory to have ……main function in python. **T**
**2.10** Numpy is a tool for data visualization. **T**

**Q.3. कालम 'X' में दिए गए शब्दों और वाक्यांशों को कालम 'Y' में दिए गए निकटतम जुड़े अर्थों/शब्दों/वाक्यांशों के साथ मिलाएं। प्रश्न पत्र के साथ संलग्न 'टीयर आफ' आंसर शीट पर दिए गए अनुदेशों के अनुसार अपने चयन किए गए उत्तर को लिखें।**

**Match words and phrases in column X with the closest related meaning of word(s)/phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein.**

| | X | | Y |
|---|---|---|---|
| 3.1 | The operator used to calculate remainder after division (A) | A. | % |
| 3.2 | The function that yields current position in the file (H) | B. | exp() |
| 3.3 | Function takes a list of lines to be written to file (C) | C. | writelines() |
| 3.4 | The operator used for concatenating two strings (G) | D. | Tuple |
| 3.5 | The function used to find power of a number (F) | E. | write() |
| 3.6 | Statement used for error checking (K) | F. | pow() |
| 3.7 | Immutable object (D) | G. | + |
| 3.8 | Array processing package (M) | H. | tell() |
| 3.9 | Data structure used in recursion (N) | I. | Queue |
| 3.10 | Key value pair (J) | J. | Dictionary |
| | | K. | Assert |

| | | | |
|---|---|---|---|
| | | **L.** | **//** |
| | | **M** | **Numpy** |
| | | **N** | **Stack** |

**Q.4. नीचे दिए गए प्रत्येक विवरण में नीचे दी गई सूची में दर्शाए गए शब्दों अथवा वाक्यांशों को खाली स्थानों पर भरें। चुने गए उत्तर को प्रश्न पत्र के साथ संलग्न टीयर ऑफ आंसर शीट पर दिए गए अनुदेशों के अनुसार प्रविष्ट करें।**

**Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choose the most appropriate option; enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.**

| | | | | | |
|---|---|---|---|---|---|
| **A** | **pass** | **B** | ***** | **C** | **Get** |
| **D** | **random** | **E** | **eval** | **F** | **Input** |
| **G** | **( )** | **H** | **@** | **I** | **{ }** |
| **J** | **Continue** | **K** | **Dictionary** | **L** | **[ ]** |
| **M** | **Module** | **N** | **Convert** | **O** | **Range** |
| **P** | **list** | **Q** | **int** | | |

**4.1** The…..**O**…..function generates a sequence of numbers from 1 to n.
**4.2** The …**F**….command is used to take input from the keyboard.
**4.3** The function used to evaluate the value of a string is……**E**……
**4.4** The…**A**…statement lets the program go through the piece of code without performing any action.
**4.5** The ….**Q**…function is used to convert a string value to int.
**4.6** List structure in python where elements are stored in….**L**….parenthesis.
**4.7** …**P**…..is a set of functions you want to include in your application.
**4.8** …**B**…..operator repeats a list for the given number of items.
**4.9** The structure having keys and values is called……**K**…..
**4.10** The…..**G**….function takes the parameter filename and the mode during file processing.

**भाग दो/PART TWO**

**5**.
(A). Write a recursive function to find the sum of digits of a number.
(B). Write a program that takes a sentence as input from the user and returns the

frequency of each letter .Use a variable of dictionary type to maintain the count.
(C). Program to see whether a string is palindrome or not.

**6**.(A). Make a flow chart to input any number and find its factorial and print.
(B). Explain the role of linker and loader in compilation.
(C). Write a flowchart that finds the sum of series:
s=1+x/1!+2x/2!+3x/3!+ Upto….n…terms.
(D). what is a NumPy array? How they are different from lists?

**7.**(A). Take an array of 2 rows and three columns, populate it and find the transpose.
(B).Explainthe following with example:
(I). LEGB rule
(II). Seek () function
(III). Tell ()
(IV). String slicing
(V). List comprehension

**8.**(A). Write a recursive function to count the sum of digits of a number
(B). Write a program that takes m as an input parameter and creates a list of m lists such that $X^{th}$ list contains first three multiples of X.
(C). Store the monthly earnings of a year of a store splitting up the earnings by quarter into a list of lists. Retrieve the earnings of every month in a loop and display the quarter with maximum earnings.

**9.**(A). Write a function that takes data to be stored in the file f1 as interactive input till user responds with nothing as input. Each character taken as input rom the user must be capitalized and stored in file f1.
(B). Write a function that reads the contents of the file myfile.txt and counts the number of alphabets, lowercase letters, uppercase letters, digits and no of words.
(C). Take two NumPy arrays having two dimensions. Concatenate the arrays on axis 1.