Total No. of Questions : 4] **SEAT No. :**

P6 **[Total No. of Pages : 2**

FE/INSEM/APR-6
F.E. (Semester - II)
110005 : PROGRAMMING AND PROBLEM SOLVING
(2019 Pattern)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates :

1) ***Solve Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be drawn wherever necessary.***

Q1) a) What is a problem? Explain six problem solving steps. **[4]**

b) List down types of operators in Python. Explain relational operators. **[5]**

c) Explain flow-chart and algorithm with example. **[6]**

OR

Q2) a) Explain following terms with suitable examples. **[4]**

i) Comment

ii) Reserve Words

b) Write a program to swap two numbers. **[5]**

c) Explain any six features of Python programming. **[6]**

Q3) a) Describe the following terms with examples (any two) : **[4]**

i) break

ii) continue

iii) pass

iv) range

b) Write a program to test whether a number entered by the user is positive, negative or zero. **[5]**

c) Explain following selection/decision making statements in Python **[6]**

i) if statement

ii) if....else statement

iii) if..else..else statement

P.T.O.

OR

Q4) a) Explain for loop with flow chart. **[4]**

b) What is a list? Explain any three operations of list. **[5]**

c) Write a program to generate a Fibonacci series of 'n' numbers. **[6]**

Total No. of Questions : 9]

SEAT No. : [ ]

P6995

[Total No. of Pages : 4

[5868]-107
F.E. (Semester - I & II)
110005 : PROGRAMMING AND PROBLEM SOLVING
(2019 Pattern) (Common)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Question one is compulsory.***
2) ***Solve Q2 or Q3, Q4 or Q5, Q6 or Q7, Q8 or Q9.***
3) ***Neat diagrams must be wherever necessary.***
4) ***Assume suitable data wherever necessary.***

Q1) i) Which one of the following is the correct way of calling a function?

a) f_name() b) call f_name()

c) return f_name() d) function f_name()

ii) What is the correct file extension for Python files?

a) .pt b) .pyt

c) .py d) .cpp

iii) Which function is used to convert a numeric value to a character.

a) ord() b) chr()

c) input() d) output()

iv) Which is the default access mode in the open () function for files in Python?

a) w b) r

c) a d) w+

v) Which method can be used to return a string in upper case letters?

a) toupper() b) upper()

c) uppercase() d) touppercase()

P.T.O.

vi) Which method is automatically executed when an object of a class is created?

a) _init_() b) _call_()

c) _repr_() d) _del_()

vii) You can use Python for

a) Application programming b) Web programming

c) Artificial intelligence d) All of these

viii) Which of the following keyword is used in user defined function header in Python?

a) define b) def

c) function d) fun

ix) What does open() function return?

a) function b) variable

c) file object d) none of these

x) Which of the following is the correct way of closing a file?

a) close(file) b) close("file")

c) file.closed() d) file.close()

Q2) a) Define a function. Explain function definition and function call with suitable example. **[6]**

b) What is a lambda function? Explain with a suitable example. **[5]**

c) What are the good Python programming practices? **[4]**

OR

Q3) a) Explain the following types of function arguments with examples: **[6]**

i) Required arguments

ii) Keyword arguments

b) What do you mean by local and global variables? Explain it with example. **[5]**

c) Write a program to swap two numbers using a function. **[4]**

Q4) a) Explain the following string operations with suitable example. **[6]**

i) Concatenation

ii) Appending

iii) String repetition

b) Explain indexing and slicing operation on string with suitable example. **[5]**

c) Write a program to count the number of characters and words in the given string. **[4]**

s = "Welcome to the world of python programming"

OR

Q5) a) Explain following string methods with example. **[6]**

i) strip()

ii) index()

iii) isdigit()

b) What is a string? Explain with example iterating strings. **[5]**

c) Explain ord() and chr() functions with suitable examples. **[4]**

Q6) a) Explain any three programming paradigms. **[6]**

b) Define a class in Python. Explain_init_() method with suitable example. **[5]**

c) Explain the concept of a class and an object in OOP. **[4]**

OR

Q7) a) Explain the following features of Object Oriented Programming. **[6]**

i) Data encapsulation

ii) Data abstration

iii) Polymorphism

b) Explain class variables and object variable with suitable example. **[5]**

c) Write a program to create a class 'Employee' with two attributes. Display the details of two employees. **[4]**

Q8) a) What is a file? Explain different access modes for opening files. **[6]**

b) What is a dictionary? How to create, access and modify dictionary elements. **[5]**

c) Explain relative and absolute path of a file. **[4]**

OR

Q9) a) Explain any three methods for reading and writing files. **[6]**

b) Explain different directory methods with suitable examples. **[5]**

c) Write a program to read first 10 characters from the file and display it. **[4]**

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Total No. of Questions : 8]

SEAT No. : ____

P-3664

[Total No. of Pages : 3

[6001]-4008
F.E. (Semester - II)
PROGRAMMING AND PROBLEM SOLVING
(2019 Pattern) (110005)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Question one is compulsory.***
2) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 and Q.7 or Q.8.***
3) ***Neat diagrams must be wherever necessary.***
4) ***Assume suitable data wherever necessary.***

Q1) a) Explain in-built and user defined functions with syntax and suitable example. **[6]**

b) Explain the following terms with suitable examples. **[6]**

i) local variable

ii) global variable

c) Write a program to check whether a number is prime or not using function. **[5]**

OR

Q2) a) Explain the following types of function arguments with examples: **[6]**

i) positional arguments

ii) variable length arguments

b) Explain different ways of importing an in-built module in python with suitable example. **[6]**

c) Write a program to find cube of a number using lambda function. **[5]**

Q3) a) Justify strings are immutable with example. **[6]**

b) Explain the following with suitable example. **[6]**

i) ord() and chr() function

ii) in and not in operators on string

P.T.O.

c) What is the output of the following statement for the given string? **[5]**

S = “Programming and Problem Solving”

i) print(S[:11])

ii) print(S[::-1])

iii) print("And" not in S)

iv) print(S[4])

v) print (S[0:10])

OR

Q4) a) Explain string format operator with suitable example. **[6]**

b) Explain following string methods with example. **[6]**

i) title()

ii) startswith()

iii) zfill()

c) Write a program to display a string and count characters in the string using a loop. **[5]**

Q5) a) Explain the following Programming Paradigms in detail. **[6]**

i) Monolithic Programming

ii) Structured Programming

iii) Object Oriented Programming

b) Explain the following concepts with example. **[6]**

i) public members

ii) private members

c) Write a python program to create a class Student with the attributes Name, roll no and age and display data of 4 students. **[6]**

OR

Q6) a) Explain any three object oriented features in brief. **[6]**

b) Explain class method and class variable with suitable example. **[6]**

c) Write a program to calculate area of triangle using a class. **[6]**

Q7) a) What is a file? Explain relative and absolute path of a file. **[6]**

b) Explain the following file handling methods. **[6]**

i) write()

ii) writelines()

ii) close()

c) Explain file access modes in brief. **[6]**

OR

Q8) a) Explain different directory methods with example. **[6]**

b) Differentiate between text and binary files. **[6]**

c) Explain the following dictionary methods. **[6]**

i) update()

ii) keys()

iii) pop()

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Total No. of Questions : 8]

SEAT No. :

P4937

[Total No. of Pages : 3

[5667]-1008
F.E. (Semester - I)
PROGRAMMING & PROBLEM SOLVING
(2019 Pattern)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data wherever necessary.***

Q1) a) What is function? Explain code reuse. Explain with example Docstring. **[6]**

b) Explain Lambda function with example. **[6]**

c) Write python program using function to find greatest of three numbers by passing numbers as argument. **[6]**

OR

Q2) a) Differentiate between Local & Global variable. Write a python program to demonstrate difference between local and global variable. **[6]**

b) Explain keyword arguments in python. Write a python program to demonstrate keyword arguments. **[6]**

c) Write python program using function to find whether number is odd or even. **[6]**

Q3) a) Explain following string methods with example. **[6]**

i) Rindex

ii) Z fill

iii) Split

b) Write a python program to display tables from 1 to 10 using formatting character. **[6]**

P.T.O.

c) What will be the output of following statement S = “Welcome to Python”. **[5]**

i) Print (s[1:9])

ii) Print (s[:6])

iii) Print (s[4:])

iv) Print (s[1: –1])

v) Print (“Come” not in str)

OR

Q4) a) Explain following string methods with example : **[6]**

i) Join

ii) Enumerate

iii) 1 strip

b) Write python, program to find whether a given character is present in a string or not. In case it is present print the index at which it is present. Do not use built in string method. **[6]**

c) Write a python program to check whether a given string starts with specified character. **[5]**

Q5) a) Define programming paradigm. List programming paradigms. Explain any one. **[6]**

b) Justify the statement “Inheritance helps to make reusable code”. **[6]**

c) Write a python program that uses class to store exam number and marks of four subjects. Use list to store the marks of four subjects. **[6]**

OR

Q6) a) Explain following Terms : **[6]**

i) Data Abstraction & Encapsulation

ii) Polymorphism

b) With the help of an example explain the significance of the inif ( ) method. **[6]**

c) Write a python program to create class car with two attributes name & cost. Create two objects and display information. **[6]**

Q7) a) Write a python program that reads data from one file and write into another file and line by line. **[6]**

b) What is directory? List any four directory methods and explain any two of them. **[6]**

c) Why do we need files? Explain relative and absolute path in files. **[5]**

OR

Q8) a) Write a python program that counts the number of tabs and new line characters in a file. **[6]**

b) Write a python program to display current directory, create directory and remove created directory. **[6]**

c) Differentiate between text and binary files. Explain any 4 access modes used in python. **[5]**

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Total No. of Questions : 4]

SEAT No. : ____

P-5373

[Total No. of Pages : 2

[6185]-56

F.E. (Insem.)

PROGRAMMING AND PROBLEM SOLVING

(2019 Pattern) (Semester - I) (110005)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates :

1) ***Solve Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be drawn wherever necessary.***

Q1) a) Explain different symbols used to represent a flow-chart. **[3]**

b) Explain single line and multiline comment statements in python with example. **[4]**

c) What is indentation in python? Explain with example. **[3]**

d) Write and explain different problem solving steps. **[5]**

OR

Q2) a) Write a pseudo code for swapping of two numbers. **[3]**

b) Explain input and output operations in python with example. **[4]**

c) Explain the following data types **[3]**

i) list

ii) tuple

iii) string

d) Explain different logical and membership operators in python. **[5]**

P.T.O.

Q3) a) Explain break and continue statement with suitable example. **[3]**

b) Explain the following operations of list. **[4]**

i) Creating a list

ii) Display list

iii) Appending

iv) Accessing an element.

c) Explain if..elif..else statement in python. **[3]**

d) Write a program to find factorial of a number. **[5]**

OR

Q4) a) Explain while loop with example. **[3]**

b) What is dictionary data type? Explain any 3 operations of dictionary data type. **[4]**

c) Explain use of range() function in for loop with suitable example. **[3]**

d) Write a program to check whether a number entered by user is positive, negative or zero. **[5]**

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Total No. of Questions : 4] **SEAT No. :**

P1274 **[Total No. of Pages : 2**

OCT/FE/Insem-7
F.E. (Semester - I)
PROGRAMMING AND PROBLEM SOLVING
(2019 Pattern)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates:

1) ***Solve Q1 or Q2, Q3 or Q4.***
2) ***Neat Diagrams must be drawn wherever necessary.***

Q1) a) What are identifiers? List the rules to name an identifier. **[3]**

b) Explain different data types supported by Python. **[5]**

c) What is a problem? List down steps in problem solving. **[4]**

d) Write an Algorithm to find sum of 'n' natural numbers. **[3]**

OR

Q2) a) Explain the use of Indentation in Python. **[3]**

b) What is an operator? Enlist various types of operators. **[5]**

c) What is modularization? Explain top down design approach. **[4]**

d) Write an algorithm to swap two numbers. **[3]**

Q3) a) Explain selection/conditional statements in Python. **[4]**

b) Explain while loop with flowchart. **[3]**

c) Write a program in Python to find whether gives is even or odd. **[3]**

d) What is difference between 'break' and 'continue' statement in Python? Explain with example. **[5]**

OR

P.T.O.

Q4) a) What is dictionary? How to add and remove elements in dictionary? **[4]**

b) What is a list? Explain accessing and removing of elements from list with example. **[3]**

c) Explain for loop with flowchart. **[3]**

d) Write a program to print the following pattern. **[5]**

Total No. of Questions : 4]

SEAT No. : [ ]

PA-1684

[Total No. of Pages : 2

[5931]-1007
F.E. (Semester - I)
PROGRAMMING AND PROBLEM SOLVING
(2019 Pattern) (110005)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be wherever necessary.***

Q1) a) List different program design tools? Explain an algorithm with example. **[3]**

b) What are the characteristics of an algorithm? **[4]**

c) Explain brief history of python programming language and list different software developed in Python. **[3]**

d) Explain any five features of python programming language. **[5]**

OR

Q2) a) Write a pseudo code for factorial of a number. **[3]**

b) What are the different collection literals in Python? **[4]**

c) What do you mean by flow-chart? Explain different flowchart symbols. **[3]**

d) Explain any five categories of operators in python with examples. **[5]**

Q3) a) Explain the following conditional branching statements with examples. **[3]**

i) If ii) if else iii) if elif else

b) Explain different dictionary methods. **[4]**

c) What do you mean by nested loops? Explain with example. **[3]**

d) Write a program for prime number. **[5]**

OR

P.T.O.

Q4) a) Explain for loop with syntax, flow-chart and example. **[3]**

b) Explain else statement with for loop with flowchart and example. **[4]**

c) Explain following terms with examples. **[3]**

i) break ii) continue iii) pass

d) Write a program for multiplication tables of numbers from 1 to 10. **[5]**

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