**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

**VADAPALANI CAMPUS**

**DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY**

**18CSC207J – ADVANCED PROGRAMMING PRACTICES**

**QUESTION BANK**

**PART A**

**UNIT 1**

1. \_\_\_\_\_\_\_ statement is considered harmful in structure programming paradigm
2. **Goto statement**
3. If statement
4. While statement
5. Recursive statement
6. \_\_\_\_\_\_\_\_\_ is a statement is executed by repeatedly calling itself until termination conditions are met.
   1. Selection
   2. Sequence
   3. Iteration
   4. **Recursion**
7. \_\_\_\_\_\_\_ are callable units which are used to allow a sequence to be referred to by a single statement.
   1. Blocks
   2. **Subroutines**
   3. Instruction
   4. Flowcharts
8. Nassi–Shneiderman diagrams have no representation for a \_\_\_\_\_\_\_\_\_\_statement.
   1. **Goto statement**
   2. If statement
   3. While statement
   4. Recursive statement
9. \_\_\_\_\_\_\_\_\_\_ is a technique that helps to keep procedures modular.
   1. Modularity
   2. **Scoping**
   3. Procedures
   4. Interfacing
10. \_\_\_\_\_\_\_\_\_\_\_\_programming is a programming paradigm that uses a linear or top-down approach.
    1. **Procedural**
    2. Declarative
    3. Logical
    4. Automata based
11. Which function can have any number of arguments but only one expression?
    1. Keyword
    2. **Lambda**
    3. Pass
    4. Global
12. How many numbers of asterixis are added before the parameter name in the function definition if, not sure about the number of keyword arguments that will be passed to a function?
    1. \*
    2. ***\*\****
    3. \*\*\*
    4. \*\*\*\*
13. Which symbol is added before the parameter name in the function definition if, not sure about the number of arguments that will be passed into the function?
    1. **\***
    2. \*\*
    3. &
    4. &&
14. A process of using details from a new class without modifying existing class is called\_\_\_\_
    1. Encapsulation
    2. **Inheritance**
    3. Polymorphism
    4. Constructor
15. Which function in python will make child class to call the method of immediate parent?
    1. Pass()
    2. Global()
    3. **Super()**
    4. Child()
16. Which of the following keyword Mark the beginning of the class definition?
    1. Def
    2. Return
    3. **Class**
    4. Method
17. Which of The Following Statements Can Be Used To Check, Whether An Object “Obj” Is An Instance Of Class A Or Not?
    1. Obj.isinstance(A)
    2. A.isinstance(obj)
    3. **Isinstance(obj,A)**
    4. Isinstance(A,obj)

**UNIT II**

1. Control flow in \_\_\_\_\_\_\_\_\_ programming is implicit.
   1. Procedural
   2. Logical
   3. **Declarative**
   4. Imperative
2. Which of the following language is declarative language?
   1. Algol
   2. Java
   3. C++
   4. **Prolog**
3. In which the programmer merely declares properties of the desired result, but not how to compute it.
   1. **Declarative programming paradigm**
   2. Imperative programming paradigm
   3. Procedural programming paradigm
   4. Object oriented programming paradigm
4. What is the name of the SQL database the comes distributed with Python?
   1. PySQL
   2. PostgreSQL
   3. MySQL
   4. **SQLite**
5. Which is non-imperative language?
   1. Python
   2. C++
   3. **LISP**
   4. JAVA
6. \_\_\_\_\_\_\_\_\_\_\_ programming paradigm which describes computation as statements that change a program state.
   1. Logical
   2. **Imperative**
   3. Functional
   4. Declarative
7. Which programming Language is designed for Scientific Applications?
   1. **FORTRAN**
   2. COBOL
   3. ALGOL 60
   4. Machine Language
8. Which programming Language is designed for Scientific problem Solving?
   1. COBAL
   2. **ALGOL 60**
   3. FORTRAN
   4. Assembly Language
9. Which programming paradigm used in Graphical user interfaces
   1. Declarative
   2. Logical
   3. **Event Driven**
   4. Symbolic
10. \_\_\_\_\_\_\_\_\_\_ can be seen as small blocks of procedural code that deal with a very specific occurrence.
    1. Data Handler
    2. Logic Handler
    3. **Event Handler**
    4. Record Handler
11. \_\_\_\_\_\_\_\_ the event handler to events, to call the correct functions, when the event takes place .
    1. Bound
    2. **Bind**
    3. Listen
    4. Record
12. Event driven languages are:
    1. FORTRAN based
    2. Used to write procedural languages
    3. OOP
    4. **Design to make the programming GUI easier.**

**UNIT 3**

1. Execution of a program by more than one task, with each task being able to execute the same or different statement at the same moment in time is called:
   1. Series Execution
   2. **Parallel Execution**
   3. Sequential Execution
   4. Fast Execution
2. Which Python Library runs a function as thread?
   1. Thread
   2. **Threading**
   3. \_threading
   4. \_Thread
3. Multiprocessing supports two types of communication channel. They are,
   1. **Queue() & Pipe()**
   2. Queue() & Pool()
   3. Queue() & Lock()
   4. Queue() & acquire()
4. Maximum number of parallel processes runs at a time is\_\_\_\_\_
   1. 5
   2. 10
   3. **Number of processors**
   4. Twice the number of processors
5. Which module provides a high-level interface for asynchronously executing callables.
   1. [**concurrent.futures**](https://docs.python.org/3/library/concurrent.futures.html#module-concurrent.futures)
   2. Concurrent.exec
   3. Concurrent.pool
   4. Concurrent.proc
6. Concurrent programming is not implemented in which of the forms?
   1. Multiprogramming
   2. Multiprocessing
   3. **Serial Processing**
   4. Distributed processing
7. Greenlets are provided as a \_\_\_\_\_extension module for the regular unmodified interpreter.
   1. Java
   2. **C**
   3. C++
   4. LISP
8. \_\_\_\_\_\_ is used for python web application implementation
   1. Greenlets
   2. **Celeary**
   3. Concurrent.Futures
   4. Gevent
9. \_\_\_\_\_\_\_\_\_\_\_ focuses on results and not the process
   1. Structure programming paradigm
   2. GUI programming Paradigm
   3. **Functional programming Paradigm**
   4. Automata based programming Paradigm
10. Functions are made of \_\_\_\_\_\_ parts
    1. 1
    2. 2
    3. 3
    4. **4**
11. \_\_\_\_\_\_\_method returns the single value
    1. Filter()
    2. Map()
    3. **Reduce()**
    4. Lambda()
12. Values = [1,2,3,4,5]

Add\_20 = list(map(lambda x:x+20,Values))

Output of the above code is

1. [120,220,320,420,520]
2. **[21, 22, 23,24,25]**
3. [11,12,13,14,15]
4. [201,202,203,204,205]

UNIT 4

1. consider the clause H: B1,…Bn. What is B1,…Bn?
   1. **Horn Clause**
   2. List clause
   3. Iterative clause
   4. Exception clause
2. \_\_\_\_\_\_\_\_\_\_\_\_\_combines concurrent logic programming and [constraint logic programming](https://en.wikipedia.org/wiki/Constraint_logic_programming), using constraints to control concurrency.
   1. Logic constraint concurrent programming
   2. **Concurrent constraint logic programming**
   3. Logic constraint concurrent programming
   4. Constraint logic concurrent programming
3. A first class function is an instance of \_\_\_\_\_ type
   1. Class
   2. Structure
   3. Union
   4. **Object**
4. The only result of calling a pure function is\_\_\_\_\_\_\_
   1. Modifying global variable
   2. **Return value**
   3. Modifying local variable
   4. Returns void
5. \_\_\_\_\_\_\_\_\_\_\_\_\_ programming is a way of connecting two nodes on a network to communicate with each other.
   1. Logic
   2. **Socket**
   3. Functional
   4. Symbolic
6. Which method used by the server to initiate the connection with the client?
   1. Listen()
   2. Close()
   3. Bind()
   4. **Accept()**
7. The \_\_\_\_\_\_\_ method assigns a local protocol address to a socket.
   1. Connection()
   2. Socket()
   3. **Bind()**
   4. Accept()
8. The return value is a pair of socket.recvfrom(bufsize[,flags]) is:
   1. **Bytes, address**
   2. Address, bytes
   3. Bufsize, bytes
   4. Bytes, bufsize
9. Which paradigm supports the type which depends on value?
   1. Logic Paradigm
   2. Automata Based Paradigm
   3. **Dependent Type Paradigm**
   4. Functional Paradigm
10. A symbol for universal quantifier is\_\_\_\_\_.
    1. [**∀**](https://en.wikipedia.org/wiki/%E2%88%80)
    2. [∃](https://en.wikipedia.org/wiki/%E2%88%83)
    3. ∞
    4. Α
11. A symbol for Existential quantifier is\_\_\_\_\_.
    1. [∀](https://en.wikipedia.org/wiki/%E2%88%80)
    2. [**∃**](https://en.wikipedia.org/wiki/%E2%88%83)
    3. ∞
    4. Α
12. Which among the programming language doesn’t support dependent type programming paradigm
    1. **Small Talk**
    2. Idris
    3. Agda
    4. coq

**UNIT 5**

1. Which library in python used for symbolic mathematics?
   1. **SymPy**
   2. PySym
   3. SyPym
   4. SyPy
2. SymPy is able to solve algebraic equations, in one and several variables using\_\_\_\_\_\_\_\_
   1. Differentiate()
   2. Integrate()
   3. **SolveSet()**
   4. Series()
3. Which function is used to solve the differential equations?
   1. **Dsolve()**
   2. Isolve()
   3. DFsolve()
   4. IFsolve()
4. evalf() function evaluates the expression to a \_\_\_\_\_\_\_\_\_\_\_\_\_.
   1. **Floating Point Number**
   2. Integer Point Number
   3. Double Point Number
   4. Character
5. \_\_\_\_\_\_\_\_\_\_\_ method organizes the widgets in blocks before placing in the parent widget.
   1. Grid()
   2. Place()
   3. **Pack()**
   4. Button()
6. \_\_\_\_\_\_\_\_\_\_\_\_\_ is a open source, cross platform GUI toolkit written in C++.
   1. TKinter
   2. Jpython
   3. **WxPython**
   4. JpythonX
7. Which of the following class is not supported by WxPython?
   1. wxBitmap
   2. wxFrame
   3. wxGauge
   4. **wxSock**
8. Which one of the following is an extension of compiled Jython program?
   1. .pyc
   2. **.class**
   3. .gil
   4. .obj
9. Automata based programming paradigm, treats section of the program as \_\_\_\_\_\_\_\_\_\_\_\_\_.
   1. Control Flow
   2. Classes and Objects
   3. Structure and Union
   4. **Finite Automata**
10. \_\_\_\_\_\_\_\_ variable in build() method is used for state transition.
    1. On\_enter
    2. On\_exit
    3. **Next\_states**
    4. Is\_terminal
11. Which of the following parameter is not supported by add\_transition().
    1. Start
    2. End
    3. **Move**
    4. Event
12. Which of the following is abstract machine doesn’t support “a state can have more than one transition for an input”
    1. **Deterministic Finite Automata**
    2. Non Deterministic Finite Automata
    3. Turing Machine
    4. Push Down Automata

**PART B**

**UNIT 1**

1. Differentiate Compilers and Interpreters
2. List the advantages of Structured programming paradigm
3. List the advantages of Object Oriented Programming Paradigm
4. Explain Local and Global Variables with suitable examples.
5. What is Call by Value and Call by reference?
6. Give the Nassi–Shneiderman diagram for iteration and branching condition.

**UNIT 2**

1. What does declarative programming paradigm emphasises on?
2. Differentiate Imperative and declarative programming paradigm with suitable example
3. Give the code for ordered and unordered list in HTML
4. Give The three main steps with respect to a button click
5. Give a code in python for printing values between 0 and 5 using declarative programming and imperative programming paradigm.
6. What are the advantages of event driven Programming?

**UNIT 3**

1. Give the difference between multi-processing and serial processing
2. Give the comparative study on parallel and concurrent programming
3. Where is map () and reduce () functions been used? Give suitable example.

**UNIT 4**

1. What is Predicate and Clause? Give suitable example
2. What is quantifiers in Logic? Explain with suitable example
3. Give short notes on Socket programming.

**UNIT 5**

1. What is Tkinter?Where is this used?
2. Give the syntax and example for differentiation and integration
3. Draw the transition diagram for traffic light automation

**PART C**

**UNIT 1**

1. Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.
2. Give suitable examples in python of implementing the subroutines.
3. Highlight the concepts of OOP paradigm
4. Show the various control structures supported by Python with suitable examples.
5. What is structured programming paradigm?
6. Write a program in Procedural paradigm that reads an integer and displays all its smallest factors, also known as prime factors. For example, if the input integer is 120, the output should be as follows: 2, 2, 2, 3, 5. Convert the same into OOP paradigm.

**UNIT 2**

1. Write a program to implement SQL in python which will do the following
   * 1. Create a table for student database.
     2. Insert 5 students’ information
     3. List only the Female student’s details
2. Write a program in Python which emphasises on Keypress events.
3. Write a HTML code which comprises of at least 12 different HTML tag
4. Justify on “Imperative programming emphasises on method” (Eg: Sorting can be implemented in many ways) with suitable examples.
5. Write the algorithm and program in Python to Get n number, print the same and find Sum of n numbers.
6. Write a program in Python which emphasises on Timer evets.

**UNIT 3**

1. Explain in detail about multiprocessing module in Python.
2. A prime number is called a Mersenne prime if it can be written in the form for some positive integer p. Write a program that finds all Mersenne primes with and displays the output as follows:

|  |  |
| --- | --- |
| **P** | **2^P-1** |
| **2** | **3** |
| **3** | **7** |
| **5** | **31** |

1. What is Parallel programming paradigm? Explain with suitable example.
2. Explain in detail about the problems in concurrent programming.
3. Explain in detail about the properties of concurrent programming
4. Explain in detail about the features of functional programming paradigm.

**UNIT 4**

1. Differentiate with suitable example between connection oriented and connectionless communication.
2. What is Logic Programming? Explain how it can be implemented in Python.
3. Write a program in Python to implement a chatting application using TCP protocol.
4. What is Dependent function? explain with suitable example
5. Which paradigm is used for building knowledgebase? Justify your answer
6. Explain in detail about the relation between data and its computation

**UNIT 5**

1. What are the various methods supported by Sympy for mathematical expression evaluation
2. Write a program for traffic light automation
3. Consider constructing a scientific calculator. Give the methods and expected outputs for the same.
4. Create a Graphical User Interface for Hospital management
5. What is Automata based programming paradigm? Explain in detail with suitable examples.
6. What are the widgets of Tkinter which is associated in getting text input from user and explain with suitable examples.