**UNIT V**

**PART A: MULTIPLE CHOICE QUESTIONS**

1. Symbols can now be manipulated using some of python operators using \_\_\_\_\_.(CLO5-L1)

A)+. B) && C) ? D$

Ans: A

2. Differentiate any SymPy expression using \_\_\_\_\_\_.(CLO5-L2)

A)diff(var, func) B)diff(func, var)C) sub(int, var) D).sub(var, int)

Ans:B

3.SymPy is able to solve algebraic equations, in one and several variables using(CLO5-L1)

A)solveset() B)series()C) limit() D)real()

Ans:A

4.What is the numerical types used in SymPy(CLO5-L1)

* 1. Complex B)Integer C)Factorial D)Decimal

Ans:B

5. Finite state machines are used for\_\_\_\_(CLO5-L1)

A)Pseudo random test patterns B)Deterministic test patterns

C)Random test patterns D)Algorithmic test patterns

Ans:D

6.Finite state machine will initially set to all zeroes.(CLO5-L2)

A)True B)False

Ans:A

7. Identify the latest version of wxPython that supports both Python 2 and Python 3.(CLO5-L3)

A)wxPython Phoenix B)Phoenix C) wxJython D)Sphinx

Ans: A

8. According to the given transitions, which among the following are the epsilon closures of q1 for the given NFA? (CLO5-L3)  
Δ (q1, ε) = {q2, q3, q4}  
Δ (q4, 1) =q1  
Δ (q1, ε) =q1

a) q4b) q2c) q1d) q1, q2, q3, q4

Ans:d

9. Identify the automaton which allows transformation to a new state without consuming any input symbols. (CLO5-L2)

a) NFA b) DFA c) NFA-l d) All of the mentioned

Ans:c

10. NFA, in its name has ’non-deterministic’ because of :(CLO5-L1)

a) The result is undetermined  
 b) The choice of path is non-deterministic  
 c) The state to be transited next is non-deterministic  
 d) All of the mentioned

Ans:b

11. Which primitive can be used to remove an element from List? (CLO5-L2)  
 a)delete

b)cons  
 c)cdr  
 d) write

Ans:a

12) .Write the output for the following code. (CLO5-L3)

X= Symbol(‘x’)

x.name  
 a) X b). x c) none d). Compiler error

Ans:a

13).PyGTK is a set of \_\_\_\_\_\_\_\_ . (CLO5-L1)

A)Python wrappers B)WxWidgets C) PyGobjects D)LGPL

Ans: A

14.\_\_\_\_\_\_\_\_\_ is a class attribute defined by its source state and destination state. .(CLO5-L1)

A) LGPL B)Scipy C)Transition D) state

Ans:C

15. \_\_\_\_\_\_\_\_\_\_ is a graph defining the behavior we want to achieve. .(CLO5-L1)

A) machine B) Automata C) State D) Transitions

Ans:A

16.Identify the single graph node which can be connected to it's execution counterpart. .(CLO5-L2)

A) machine B) Automata C) State D) Transitions

Ans:C

17. \_\_\_\_\_\_\_\_\_is a triplet consisting of two states and one command needed for the change of one state to the other. .(CLO5-L1)

A) machine B) Automata C) State D) Transitions

Ans:D

18. Identify the queue holding a list of commands waiting in line to be executed once called. .(CLO5-L2)

A) CommandQueue B)LIFO C)FIFO D)Priority queue

Ans:A

19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_is a mathematical [model of computation](https://en.wikipedia.org/wiki/Model_of_computation). .(CLO5-L1)

A)state machine B) Automata C) State D) Transitions

Ans:A

20.\_\_\_\_\_\_\_ is an infinite loop used to run the application. .(CLO5-L1)

A)loop() B) main() C) mainloop() D).Tk()

Ans:C

21.Identify the method that organizes the widgets in blocks before placing in the parent widget. .(CLO5-L2)

A)loop() B) Pack() C) mainloop() D).Tk()

Ans:B

22. Identify the method that organizes the widgets in grid (table-like structure) before placing in the parent widget. .(CLO5-L2)

A)loop() B) Pack() C) mainloop() D) grid()()

Ans:D

23. Identify the method that organizes by placing them on specific positions directed by the programmer.(CLO5-L2)

A)loop() B) Pack() C) place() D) grid()()

Ans:C

24. \_\_\_\_\_\_\_\_\_ is used to draw pictures and other complex layout like graphics, text and widgets(CLO5-L1)

A)Canvas B)Picture C) Entry D) Draw

Ans:A

25. \_\_\_\_\_\_\_ is used for grouping and organizing the widgets.(CLO5-L1)

A)Frame B)Window C)Menu D)ListBox

Ans:A

26.[Config() in Python Tkinter are used for](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=134&test_id=2)\_\_\_\_\_\_\_(CLO5-L1)

a.destroy the widget

b.place the widget

c.change property of the widget

d.configure the widget

Ans:c

## 27. [Correct way to draw a line in canvas tkinter ?](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=150&test_id=2) (CLO5-L1)

a.line() b.canvas.create\_line() c.create\_line(canvas)d. None of the above

Ans:b

## 28.  [Creating line are come in which type of thing ?](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=140&test_id=2) (CLO5-L1)

a.GUI b.Canvas c.Both of the above d.None of the above

Ans:b

## 29.  [Essential thing to create a window screen using tkinter python?](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=112&test_id=2) (CLO5-L1)

a.call tk() function b.create a button c.To define a geometry d.All of the above

Ans:a

## 30. fg in tkinter widget is stands for ? (CLO5-L1)

a.foreground b.background c.forgap d.None of the above

Ans:a

## 31.  [From which keyword we import the Tkinter in program?](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=108&test_id=2) (CLO5-L2)

a.call b.from c.import d.All of the above

Ans:c

## 32. [Minimum number of argument we pass in a function to create a rectangle using canvas tkinter ?](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=149&test_id=2)(CLO5-L1)

a.2 b.4 c.6 d.5

Ans:b

## 33.  [Tkinter tool in python provide the](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=102&test_id=2) \_\_\_\_ (CLO5-L1)

a.Database b.OS commands c.GUI d.All of the above

Ans:c

## 34.  [Which of the following is clickable in GUI programming ?](http://r4r.in/mcqs/mcqs-questions-answers.php?que_id=105&test_id=2) (CLO5-L2)

a.Buttonb.Checkbuttonc.Labled.1 and 2

Ans:a

## 35. Which widget are used to get the data from the user? (CLO5-L2)

a.Buttonb.Labelc.Entryd.None of the above

Ans:c

**PART:B (4MARKS)**

1. Write a program to factorize the following expression. (CLO5-L3)

x\*\*3 + 3\*x\*\*2\*y + 3\*x\*y\*\*2 + y\*\*3

1. What is SymPy?(CLO5-L1)
2. Display a “ADD” message in the label box in window and Add a button named “clicked” to perform addition operation. (CLO5-L3)
3. Design and implement a GUI program that consist of “compute”button to calculate factorial of n numbers. (CLO5-L3)
4. Compare wxpython and JPython? (CLO5-L2)
5. Discussthe features of PYQT5? (CLO5-L1)
6. Explain GTK briefly? (CLO5-L1)
7. Discuss SCXML briefly. (CLO5-L1)
8. Differentiate Finite state machine and Non deterministic Finite state machine. (CLO5-L2)
9. Compare the features of LISP and Wolfram. (CLO5-L2)
10. Write a program to simplify the following expression.(CLO5-L3)

x\*\*3 + 3\*x\*\*2\*y + 3\*x\*y\*\*2 + y\*\*3

1. Write a program to expand the following expression. (CLO5-L3)

(X+Y)3

1. Write the features of GUI programming. (CLO5-L1)
2. Explain briefly Automata based programming in python. (CLO5-L1)
3. Write the syntax for Expand and Factor command. Give example. (CLO5-L1)
4. Give example for DFA and explain. (CLO5-L2)
5. Compare Aurora and Lisp. (CLO5-L2)
6. Differentiate SCXML and XML. (CLO5-L2)
7. Differentiate Python and Jpython. (CLO5-L2)
8. Write the syntax for series and Integration command. Give example .(CLO5-L1)
9. Give example for NFA and explain. (CLO5-L1)
10. Design and implement a GUI program that consists of “CHECK” button to check prime numbers. (CLO5-L3)
11. How will u create a symbol in python? Give example. (CLO5-L2)
12. Design and implement a GUI program that consist of “Suject” , ” Faculty” List box and “SUBMIT” button .Subject and faculty for the corresponding subject should be selected by the student and it should be submitted with the help of submit button. (CLO5-L3)
13. Explain any four Tkinter widget with example. (CLO5-L1)

**PART-C (12 MARKS**)

1).Write a program to expand and factorize the following expression.(CLO5-L3)

(a).x3 + 3x2y + 3xy2 + y3 = (x + y)3

(b). x + y + x\*y

2).Consider the following series:

X+(X2/2) + (X3/3) + (X4/4) +……+(Xn/N)

Write a python program that will ask a user to input a number, n, and print this series for that number. In the series, x is a symbol and n is an integer input by the program’s user. The nth term in this series is given as (Xn/N).(CLO5-L3)

3. Design a calculator to perform addition, subtraction, division, multiplication and modulo operation.(CLO5-L3)

4.Design an alarm tool that should allow users to create, edit, and delete alarms. It should also have an interface that lists all the alarms, provided they have not being deleted by the user. (CLO5-L3)

5. Explain automata based programming paradigm. (CLO5-L1)

6) Compare the features of aurora, LISP and wolfram.(CLO5-L2)

7) Design go, slowdown and stop events according to the traffic scenario to cross the road using python code and also draw transition diagram and transition table for the same scenario. (CLO5-L3)

8) Write a example program to find limits, differentiation, Series and Integration. (CLO5-L1)

9) Compare the features of Forth, Ragel and SQML.(CLO5-L2)

10). Differentiate DFA and NFA. Explain NFA with example. (CLO5-L2)