

# MULTIPLE CHOICE QUESTIONS

B.Sc.Mathematics, Sixth Semester

MTS6 B14(E04): MATHEMATICAL PROGRAMMING WITH PYTHON  
AND LATEX

1. The output of the program

```
x = 3 + 4j  
print x, type(x)
```

- (a)  $3 + 4j$ , <type complex>
- (b)  $(3 + 4j)$  <type 'complex'>
- (c)  $3 + 4j$  <type complex>
- (d)  $(3 + 4j)$  <type 'complex'>

2. The output of the program

```
s = 'Hello '  
print s + s
```

- (a) 10

- (b) Hello Hello
  - (c) False
  - (d) True
3. Who developed the Python language?
- (a) Zim Den
  - (b) Guido van Rossum
  - (c) Niene Stom
  - (d) Wick van Rossum
4. In which year was the Python language developed?
- (a) 1995
  - (b) 1972
  - (c) 1981
  - (d) 1989
5. In which language is Python written?
- (a) English
  - (b) PHP
  - (c) C
  - (d) All of the above
6. Which one of the following is the correct extension of the Python file?
- (a) .py
  - (b) .python
  - (c) .p
  - (d) None of these
7. In which year was the Python 3.0 version developed?

- (a) 2008
  - (b) 2000
  - (c) 2010
  - (d) 2005
8. What do we use to define a block of code in Python language?
- (a) Key
  - (b) Brackets
  - (c) Indentation
  - (d) None of these
9. Which character is used in Python to make a single line comment?
- (a) /
  - (b) //
  - (c) #
  - (d) !
10. Which of the following is not a keyword in Python language?
- (a) val
  - (b) raise
  - (c) try
  - (d) with
11. Which of the following declarations is incorrect in python language?
- (a) `xyzp = 5,000,000`
  - (b) `x y z p = 5000 6000 7000 8000`
  - (c) `x,y,z,p = 5000, 6000, 7000, 8000`
  - (d) `x_y_z_p = 5,000,000`
12. Which of the following words cannot be a variable in python language?

- (a) `_val`
  - (b) `val`
  - (c) `try`
  - (d) `_try_`
13. Which of the following operators is the correct option for `power(ab)`?
- (a) `a ^ b`
  - (b) `a**b`
  - (c) `a ^^ b`
  - (d) `a^* b`
14. Which of the following precedence order is correct in Python?
- (a) Parentheses, Exponential, Multiplication, Division, Addition, Subtraction
  - (b) Multiplication, Division, Addition, Subtraction, Parentheses, Exponential
  - (c) Division, Multiplication, Addition, Subtraction, Parentheses, Exponential
  - (d) Exponential, Parentheses, Multiplication, Division, Addition, Subtraction
15. Which one of the following has the same precedence level?
- (a) Division, Power, Multiplication, Addition and Subtraction
  - (b) Division and Multiplication
  - (c) Subtraction and Division
  - (d) Power and Division
16. Output of the program

```
a='Hello'  
print a[0]
```

- (a) H

- (b) e
- (c) l
- (d) o

17. Output of the program

```
a = 'hello world'  
print a[3:5]
```

- (a) hel
- (b) lo
- (c) worl
- (d) rl

18. Which type of Programming does Python support?

- (a) object-oriented programming
- (b) structured programming
- (c) functional programming
- (d) all of the mentioned

19. Is Python case sensitive when dealing with identifiers?

- (a) no
- (b) yes
- (c) machine dependent
- (d) none of the mentioned

20. Is Python code compiled or interpreted?

- (a) Python code is both compiled and interpreted
- (b) Python code is neither compiled nor interpreted
- (c) Python code is only compiled

- (d) Python code is only interpreted
21. All keywords in Python are in ——
- (a) Capitalized
  - (b) lower case
  - (c) UPPER CASE
  - (d) None of the mentioned
22. What will be the value of the following Python expression?
- $4 + 3$
- (a) 7
  - (b) 2
  - (c) 4
  - (d) 1
23. Which keyword is used for function in Python language?
- (a) Function
  - (b) Def
  - (c) Fun
  - (d) Define
24. Python supports the creation of anonymous functions at runtime, using a construct called ——
- (a) pi
  - (b) anonymous
  - (c) lambda
  - (d) none of the mentioned
25. Which of the following is true for variable names in Python?

- (a) underscore and ampersand are the only two special characters allowed
  - (b) unlimited length
  - (c) all private members must have leading and trailing underscores
  - (d) none of the mentioned
26. Which of the following functions is a built-in function in python?
- (a) factorial()
  - (b) print()
  - (c) seed()
  - (d) sqrt()
27. Which of the following is the use of id() function in python?
- (a) Every object doesn't have a unique id
  - (b) Id returns the identity of the object
  - (c) All of the mentioned
  - (d) None of the mentioned
28. Which of these is the definition for packages in Python?
- (a) A set of main modules
  - (b) A folder of python modules
  - (c) A number of files containing Python definitions and statements
  - (d) A set of programs making use of Python modules
29. What will be the output of the following Python function?

```
len(["hello",2, 4, 6])
```

- (a) Error
- (b) 6

- (c) 4
  - (d) 3
30. Which one of the following is not a keyword in Python language?
- (a) pass
  - (b) eval
  - (c) assert
  - (d) nonlocal
31. What arithmetic operators cannot be used with strings in Python?
- (a) \*
  - (b) –
  - (c) +
  - (d) All of the mentioned
32. Which of the following statements is used to create an empty set in Python?
- (a) ( )
  - (b) [ ]
  - (c) { }
  - (d) set()
33. To add a new element to a list we use which Python command?
- (a) list1.addEnd(5)
  - (b) list1.addLast(5)
  - (c) list1.append(5)
  - (d) list1.add(5)
34. Which one of the following is the use of function in python?
- (a) Functions don't provide better modularity for your application



- (b) you can't also create your own functions
  - (c) Functions are reusable pieces of programs
  - (d) All of the mentioned
35. Which of the following is a Python tuple?
- (a) {1, 2, 3}
  - (b) {}
  - (c) [1, 2, 3]
  - (d) (1, 2, 3)
36. The process of pickling in Python includes ———-
- (a) conversion of a Python object hierarchy into byte stream
  - (b) conversion of a datatable into a list
  - (c) conversion of a byte stream into Python object hierarchy
  - (d) conversion of a list into a datatable
37. To terminate a loop we use the statement
- (a) stop
  - (b) break
  - (c) terminate
  - (d) end
38. To skip the rest of the block of a loop and go to the beginning again we use the statement
- (a) start
  - (b) skip
  - (c) restart
  - (d) continue
39. A Python module is a file with the \_\_\_\_\_ file extension that contains valid Python code.

- (a) .pymodule
  - (b) .pym
  - (c) .module
  - (d) .py
40. A package is a folder containing one or more Python modules. One of the modules in a package must be called—
- (a) \_\_package\_\_.py
  - (b) main.py
  - (c) \_\_init\_\_.py
  - (d) init.py
41. `f = open('test.dat' , 'w')`  
`f.write ('This is a test file')`  
`f.close()`
- (a) The above program delete existing file with the name 'test.dat'
  - (b) The above program only create a file named 'test.dat' and writes a string to it
  - (c) The above program only create a file named 'test.dat'
  - (d) The above program result error
42. Turtle module of python is
- (a) used to read a file
  - (b) used to write a file
  - (c) used to color words
  - (d) used to create graphical patterns
43. Which of the following is true
- (a) `arange(start, stop, step, dtype)`
  - (b) `arange(start, stop, dtype, step)`

- (c) `arange(start,stop,dtype)`
  - (d) `arange(start,step,dtype,stop)`
44. Which of the following function create an array
- (a) `arange()`
  - (b) `array()`
  - (c) `linspace()`
  - (d) All of the above
45. `zeros(shape, datatype)` gives
- (a) a list of zeros
  - (b) a set of zeros
  - (c) an array of zeros
  - (d) none of these
46. The function `linalg.inv(matrix)` computes
- (a) transpose of a square matrix
  - (b) inverse of a square matrix
  - (c) determinant of inverse of a square matrix
  - (d) adjoint of a square matrix
47. Output of the program

```
from pylab import *  
a = 2  
t = linspace(-2* a,2* a,101)  
x = a * cos(t)**3  
y = a * sin(t)**3  
plot(x,y)  
show()
```

- (a) astroid
  - (b) spiral
  - (c) ellipse
  - (d) helix
48. Choose the following which is not a document class provided by Latex
- (a) book
  - (b) letter
  - (c) page
  - (d) report
49. Which is correct syntax for Latex
- (a) `\begin{...}\stop{}`
  - (b) `\begin{...}\end{}`
  - (c) `\start{...}\stop{}`
  - (d) `\start{...}\end{}`
50. Which is correct syntax for Latex Table
- (a) `\begin{tables}`
  - (b) `\start{tables}`
  - (c) `\begin{tabular}`
  - (d) `\start{tabular}`
51. syntax for Latex text color
- (a) `\begin{color}{text}`
  - (b) `\setcolor{text}`
  - (c) `\textcolor{red}{text}`
  - (d) `\bgcolor{text}`
52. Syntax for inline formula

- (a)  $f(x)=x^2$
- (b)  $\{f(x)=x^2\}$
- (c)  $[f(x)=x^2]$
- (d)  $(f(x)=x^2)$

53. Latex code for getting  $A \neq B$  is

- (a)  $\$A\backslash\mathrm{notequal} B\$$
- (b)  $\$A!=B\$$
- (c)  $\$A\backslash\mathrm{neq} B\$$
- (d)  $\$A\backslash\mathrm{not} B\$$

54. To include a picture which package is required in Latex

- (a) figure
- (b) graphicx
- (c) graphix
- (d) graphix

55. Latex code for  $\sin^2 x + \cos^2 x = 1$

- (a)  $\$\sin^2 x + \cos^2 x = 1\$$
- (b)  $\$\sin\mathrm{ast}^2 x + \cos\mathrm{ast}^2 x = 1\$$
- (c)  $\$\sin^{**2} x + \cos^{**2} x = 1\$$
- (d)  $\$\sin^2 x + \cos^2 x = 1\$$

56. Latex code for  $\left(\sqrt{x^2 + y^2}\right)^2 = x^2 + y^2$

- (a)  $\$(\sqrt{x^2+y^2})^2=x^2+y^2\$$
- (b)  $\$\left(\sqrt{x^{**2}+y^{**2}}\right)^2=x^{**2}+y^{**2}\$$
- (c)  $\$\left(\sqrt{x^2+y^2}\right)^2=x^2+y^2\$$
- (d)  $\$[(\sqrt{x^2+y^2})^2=x^2+y^2]\$$

57. Latex code for  $\frac{\partial A}{\partial x} = A$

- (a)  $\frac{\partial A}{\partial x}=A$
- (b)  $\frac{\partial A}{\partial x}=A$
- (c)  $\frac{\partial A}{\partial x}=A$
- (d)  $\frac{\partial A}{\partial x}=A$

58. Latex code for  $\int_0^* \cos x . dx$

- (a)  $\int_0^* \cos x . dx$
- (b)  $\int_0^* \cos x . dx$
- (c)  $\int(0,*) \cos x . dx$
- (d)  $\int_0^* \cos x . dx$

59. Output of

$\frac{\partial A}{\partial x}=A$

- (a)  $\frac{\partial A}{\partial x} = A$
- (b)  $\frac{A}{\partial x} = A$
- (c)  $\frac{\partial A}{x} = A$
- (d) Error

60.  $\text{\LaTeX}$  was created by

- (a) Alexia Gaudeul
- (b) Edward
- (c) Leslie Lamport
- (d) Donald E.Knuth

# ANSWER KEY

1b	21d	41a
2a	22a	42d
3b	23b	43a
4d	24c	44d
5c	25b	45c
6a	26b	46b
7a	27b	47a
8c	28b	48c
9c	29c	49b
10a	30b	50c
11b	31b	51c
12c	32d	52a
13b	33c	53c
14a	34c	54b
15b	35d	55a
16a	36a	56c
17b	37b	57b
18d	38d	58d
19a	39d	59d
20b	40c	60c

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