

Q -1 MCQ

Unit 1: Computer Systems and Organization

- 1.** Which of the following is the brain of a computer?
 - a) RAM
 - b) CPU
 - c) Hard Disk
 - d) Monitor

- 2.** CPU consists mainly of:
 - a) ALU, CU and Registers
 - b) RAM, ROM and Cache
 - c) Keyboard, Mouse and Monitor
 - d) Hard Disk, SSD and Pen Drive

- 3.** Which unit performs arithmetic and logical operations?
 - a) CU
 - b) ALU
 - c) RAM
 - d) ROM

- 4.** Which of the following is volatile memory?
 - a) ROM
 - b) RAM
 - c) Hard Disk
 - d) SSD

- 5.** Which memory retains its contents even when power is switched off?
 - a) RAM
 - b) Cache
 - c) ROM
 - d) Register

- 6.** Which of the following is an input device?
 - a) Printer
 - b) Monitor
 - c) Keyboard
 - d) Speaker

- 7.** Which of the following is an output device?
 - a) Mouse
 - b) Keyboard
 - c) Scanner
 - d) Monitor

8. 1 Byte is equal to:

- a) 4 bits
- b) 8 bits
- c) 16 bits
- d) 32 bits

9. Which number system uses only 0 and 1?

- a) Decimal
- b) Octal
- c) Binary
- d) Hexadecimal

10. The hexadecimal number system has a base of:

- a) 2
- b) 8
- c) 10
- d) 16

11. Which of the following is system software?

- a) MS Word
- b) Operating System
- c) Web Browser
- d) Calculator

12. Which software manages computer hardware and software resources?

- a) Compiler
- b) Operating System
- c) Spreadsheet
- d) Presentation software

13. Which of the following is an example of secondary storage?

- a) Register
- b) Cache
- c) RAM
- d) Hard Disk

14. Which device is used to connect a computer to a network?

- a) NIC
- b) ALU
- c) CPU
- d) RAM

15. Which type of software translates a high-level program into machine language?

- a) Compiler
 - b) Editor
 - c) Browser
 - d) Operating System
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Unit 2: Computational Thinking and Programming – I

Introduction to Problem-Solving & Python

16. Python is a:

- a) Low-level language
- b) High-level programming language
- c) Machine language
- d) Assembly language

17. Python was developed by:

- a) Dennis Ritchie
- b) James Gosling
- c) Guido van Rossum
- d) Charles Babbage

18. Which symbol is used for a single-line comment in Python?

- a) //
- b) /*
- c) #
- d) --

19. Which of the following is a valid Python identifier?

- a) 2value
- b) my_value
- c) my-value
- d) class

20. Which of the following is a Python keyword?

- a) value
- b) number
- c) if
- d) marks

21. Which of the following is NOT a Python token?

- a) Keyword
- b) Identifier
- c) Operator
- d) Paragraph

22. Which of the following is an integer literal?

- a) 25
- b) 25.5
- c) "25"
- d) 2+5j

23. Which data type is used to store decimal numbers?

- a) int
- b) float
- c) str
- d) bool

24. Which of the following represents a complex number in Python?

- a) 5+3j
- b) 5.3
- c) "5+3"
- d) 53

25. Which function is used to display output in Python?

- a) display()
- b) output()
- c) print()
- d) show()

26. Which function is used to take input from the user?

- a) scan()
- b) input()
- c) read()
- d) get()

27. What is the data type returned by the `input()` function by default?

- a) int
- b) float
- c) str
- d) bool

28. Which operator is used for exponentiation in Python?

- a) ^
- b) **
- c) //
- d) %%

29. What is the result of `10 // 3`?

- a) 3.33
- b) 3
- c) 1
- d) 4

30. What is the result of `10 % 3`?

- a) 0
- b) 1
- c) 3
- d) 3.33

31. Which operator is used for equality comparison?

- a) =
- b) ==
- c) !=
- d) ===

32. Which operator represents logical AND in Python?

- a) &
- b) and
- c) &&
- d) AND

33. Which operator represents logical OR in Python?

- a) |
- b) or
- c) ||
- d) OR

34. Which operator represents logical NOT?

- a) not
- b) !
- c) ~
- d) NOT

Sequence Data Types

35. Which of the following is a sequence data type in Python?

- a) String
- b) List
- c) Tuple
- d) All of the above

36. Which brackets are used to create a list?

- a) ()
- b) {}
- c) []
- d) <>

37. Which brackets are generally used to create a tuple?

- a) []
- b) ()
- c) {}
- d) //

38. Which of the following is a valid string?

- a) Hello
- b) "Hello"

- c) [Hello]
- d) {Hello}

39. Strings in Python are:

- a) Mutable
- b) Immutable
- c) Both mutable and immutable
- d) None of these

40. Lists in Python are:

- a) Immutable
- b) Mutable
- c) Constant
- d) None of these

41. Tuples in Python are:

- a) Mutable
- b) Immutable
- c) Always empty
- d) Changeable

42. Which of the following is an immutable data type?

- a) List
- b) String
- c) Dictionary
- d) Set

43. What is the index of the first element of a Python sequence?

- a) 0
- b) 1
- c) -1
- d) 2

44. What is the output of `len("Python")`?

- a) 5
- b) 6
- c) 7
- d) 8

45. What is the output of `"Python"[0]`?

- a) P
- b) y
- c) n
- d) Python

46. What is the output of `"Python"[-1]`?

- a) P
- b) o

- c) n
- d) -1

47. Which operator is used to concatenate two strings?

- a) *
- b) +
- c) &
- d) /

48. What is the result of "Hello" + "World"?

- a) Hello World
- b) HelloWorld
- c) Hello+World
- d) Error

Conditional Statements

49. Which statement is used for decision-making in Python?

- a) if
- b) print
- c) input
- d) import

50. Which keyword is used when the `if` condition is false and an alternative condition needs to be checked?

- a) otherwise
- b) elseif
- c) elif
- d) else if

51. Which keyword executes a block when all previous conditions are false?

- a) elif
- b) if
- c) else
- d) otherwise

52. Which of the following is the correct syntax?

- a) `if x > 5`
- b) `if (x > 5)`
- c) `if x > 5:`
- d) `if: x > 5`

53. Python uses _____ to define blocks of code.

- a) Brackets
- b) Indentation
- c) Semicolon
- d) Comma

54 Which unit of a computer performs arithmetic and logical operations?

- a) CU b) ALU c) RAM d) ROM

55 Which of the following is an example of an input device?

- a) Monitor b) Printer c) Keyboard d) Speaker

56 Which memory is volatile?

- a) ROM b) RAM c) Hard Disk d) SSD

57 What is the full form of CPU?

- a) Central Processing Unit b) Computer Processing Unit
c) Central Program Utility d) Computer Program Unit

58 Which of the following is a feature of Python?

- a) Difficult syntax b) Platform dependent
c) Easy to learn d) Only suitable for calculations

59 Which symbol is used to begin a comment in Python?

- a) // b) # c) /* d) --

60 Which of the following is a valid Python identifier?

- a) 2marks b) student-name c) student_name d) class

61 Which of the following is a Python keyword?

- a) number b) value c) if d) student

62 What is the data type of 25?

- a) float b) int c) str d) bool

63 What is the data type of "Computer"?

- a) int b) float c) string d) list

64 Which of the following is a sequence data type?

- a) Integer b) Boolean c) String d) Float

65 Which Python data type is mutable?

- a) Tuple b) String c) List d) Integer

66 Which operator is used for exponentiation in Python?

- a) ^ b) ** c) // d) %

Imp questions

- 1 Differentiate between RAM and ROM. Write any two differences.
- 2 What are tokens in Python? Name any four types of Python tokens.
- 3 Differentiate between mutable and immutable data types with one example of each.
- 4 Write the output of the following Python code:
a = 17
b = 5
print(a // b)
print(a % b)
OR
x = 2
y = 3
print(x ** y)
print(x + y * 2)
- 5 What is a Python character set? Mention any four characters/symbols included in the Python character set.
- 6 Write Python statements to input the name and age of a student and display them.

7 What is the difference between the following operators? (a) / and // (b) = and ==

8 Explain any three features of Python.

9 Write a Python program to input a number and check whether it is positive, negative or zero.

OR

Write a Python program to input a number and check whether it is even or odd.

10 Consider the following string:

S = "COMPUTER".

Answer the following:

(a) index of C and R,

(b) output of S[0:4],

(c) output of S[-3:]

11 Explain the following types of operators in Python with one example each:

(a) Arithmetic (b) Relational (c) Logical (d) Assignment.

12 Write a Python program to input the marks of a student and display the grade:

Marks	Marks
90 and above	
75–89	B
60–74	C
40–59	D
Below 40	E

OR

Write a Python program to input three numbers and display the **largest number** using conditional statements.

13 Answer the following questions related to Python sequences:

a) What is a string?

b) What is a list?

c) What is a tuple?

d) State whether string, list and tuple are mutable or immutable.

14 Write a Python program to input the **length and breadth of a rectangle** and calculate:

a) Area

b) Perimeter

15 CASE STUDY – STUDENT MARKS

A school wants to develop a Python program to calculate the result of a student. The program accepts marks in five subjects. It calculates total and percentage. If percentage is 40 or above, the student is declared **PASS**, otherwise **FAIL**.

(a) Which Python function is used to accept marks? (1)

(b) Which data type should normally be used for decimal marks? (1)

(c) Write the percentage formula. (1)

(d) Write a Python program to accept five marks and display total, percentage and result. (2)

OR

Write a Python program to input the purchase amount of a customer and calculate discount according to the following conditions:

- Amount $\geq$ ₹10,000 $\rightarrow$ 20% discount
- Amount $\geq$ ₹5,000 $\rightarrow$ 10% discount
- Amount $\geq$ ₹2,000 $\rightarrow$ 5% discount
- Below ₹2,000 $\rightarrow$ No discount

16 CASE STUDY – STRING AND LIST

A teacher wants to use Python to store and process information about students. Consider the following code:

```
name = "COMPUTER"  
subjects = ["Python", "Maths", "Science"]  
marks = (85, 78, 92)
```

Answer the following:

- a) What is the data type of `name`?
- b) What is the data type of `subjects`?
- c) What is the data type of `marks`?
- d) Which of the above data types are mutable and which are immutable?
- e) Write Python statements to display the first character of `name` and the second element of `subjects`.

OR

Consider:

```
text = "PYTHON"
```

Write Python statements to:

- a) Display the first character.
- b) Display the last character.
- c) Display "PYT".
- d) Display the length of the string.
- e) Display the string in reverse order.