

Bhavan's Tripura Vidyamandir
1st Terminal Examination 2024-25

Class:-11

Time:- 3 Hours

Subject:- Computer Science

Total :- 70 Marks

Name of the Student :

Roll :

Stream:

Section:

General instructions:

- This question paper contains five sections, Section A to E.
- All questions are compulsory.
- Section A have 18 questions carrying 01 mark each.
- Section B has 07 Very Short Answer type questions carrying 02 marks each.
- Section C has 05 Short Answer type questions carrying 03 marks each.
- Section D has 03 Long Answer type questions carrying 05 marks each.
- Section E has 02 questions carrying 04 marks each.
- All programming questions are to be answered using **Python** Language only.
- Using of calculator & smart watch are strictly prohibited.

SECTION-A

[1X18=18]

- 1) Python is a/ an _____ language.
a) high level b) procedural c) difficult d) None of these
- 2) Which of the following activities is algorithmic in nature?
a) Assemble a bicycle b) Describe a bicycle
c) Label the parts of a bicycle d) Explain how a bicycle works
- 3) Python programs are typed in-
a) Interactive mode b) Script mode
c) A combination of interactive and script mode d) All of these
- 4) Name given to different parts of a python program are ____
a) Identifiers b) Functions c) Keywords d) Literals
- 5) To convert input value through input into integer type _____ () is used.
a) floating b) float c) int d) integer
- 6) Value 17.25 is equivalent to
a) 0.1725E-2 b) 0.1725E2 c) 1725E2 d) None of these
- 7) Which of the following can be used to create comments?
a) // b) # c) “ ” d) /*
- 8) In python, a variable once assigned a value of one type, can be assigned a value of a different type later. This concept is known as _____.
a) mutability b) Immutability c) Static typing d) Dynamic typing
- 9) Which of the following operators as the lowest precedence?
a) not b) % c) and d) +

- 10) Select the reserved keyword in python ____
 a) else b) import c) print d) All of these
- 11) Which of the following is an escape sequence for a tab character?
 a) \a b) \t c) \n d) \b
- 12) In python, statement $x = a+5-b$: a and b are _____.
 a) Operands b) Expression c) Operators d) Equation
- 13) Which python inbuilt function returns the unique number assigned to an object?
 a) Identity() b) id() c) refnum() d) ref()
- 14) What is the value of the expression $10+3**3*2$?
 a) 28 b) 739 c) 829 d) 64
- 15) What is the result of the expression 15 and 10?
 a) 5 b) 1 c) 10 d) 0
- 16) What will be the result of the expression 10 or 0?
 a) 0 b) 1 c) 10 d) 1.0

Directions : Each of these questions contain two statements, Assertion and Reason. Each of these questions also has four alternative choices, only one of which is the correct answer. You have to select one of the codes (a), (b), (c) and (d) given below.

- (a) Assertion is correct, reason is correct; reason is a correct explanation for assertion.
 (b) Assertion is correct, reason is correct; reason is not a correct explanation for assertion
 (c) Assertion is correct, reason is incorrect
 (d) Assertion is incorrect, reason is correct.

17) **Assertion:** If python program can contain executable and non executable items.

Reason: The comments are the non executable parts of a program.

18) **Assertion :** The runtime errors occur during the execution of a program.

Reason : The runtime errors mainly occur due to unavailability of a resource required for program execution.

SECTION-B

[2X7=14]

- 19) What are various categories of software?
 20) Write down the difference between an interactive mode a script mode.

OR

Name the input or output device used to do the following: [0.5X4=2]

- a) To output audio b) To enter textual data
 c) To built 3D model d) To enter audio based command.
- 21) Convert the following Binary numbers to decimal: i) 10010 ii) 101010

OR

Design a logic circuit diagram for the Boolean expression i) $(A+B)(A+\bar{B})$ ii) $P\bar{Q} + \bar{P}R$

Predict the output of the following:

[2X4=8]

22) `a=5-4-3`
`b=3**2**3`
`print(a)`
`print(b)`

23) `a=12`
`b=7.4`
`c=1`
`a-=b`
`print(a,b)`
`a*=2+c`
`print(a)`

24) `i=10`
`j=i+5`
`k=i+j/5`
`l=k+1`
`m=l+1-i`
`print(i,j,k,l,m)`

25) `x=2`
`y=3`
`x=x+10**y`
`y=x+10//y`
`print("the value of x is",x)`
`print("the value of y is",y)`

SECTION-C

[3X5=15]

26) How many ways are there in Python to represent an integer literals.

OR

a. $(111101)_8 = (?)_{16}$

b. $(AD2F)_{16} = (?)_8$

[1.5+1.5]

27) Name the law shown below & verify it using a truth table:

$$\overline{X.Y} = \overline{X} + \overline{Y}$$

[1+2]

OR

What are datatypes? What are python's built-in data types?

[1+2]

28) What is an algorithm? Draw a flowchart to find area and perimeter of rectangle. [1+2]

29) Write a program to read base/ length(l), width(w) and height(h) of a parallelogram and calculate its area and perimeter.

OR

What is multi-line string in python? How can you create multi-line string?

[1+2]

30) What will be the output produced by these?

a) `12/4` b) `14//14` c) `14%4` d) `14.0/4` e) `14.0//4` f) `14.0%4`

[0.5X6]

SECTION-D

[5X3=15]

31) a. What do you mean by Truth table?

b. Write the Distributive laws (both).

c. Verify the Distributive laws (both).

[1+1+3]

OR

a. What is expression?

b. Write the difference between expression and statement?

c. Write a program to obtain temperature in Celsius and convert it into Fahrenheit using formula: $^{\circ}\text{C} \times \frac{9}{5} + 32 = ^{\circ}\text{F}$

[1+2+2]

32) **Read the following text and answer the following questions on the basis of the same.**

Data types are the classification or categorization of data items. It represents the kind of value that tells what operations can be performed on a particular data. Since everything is an object in python programming, data types are actually classes and variables are instances (objects) of these classes.

[1+1+1+1+1]

i) Which statement is correct?

- a) List is immutable and tuple is mutable
- b) List is mutable and tuple is immutable
- c) Both are mutable
- d) Both are immutable

ii) Which of the following is not a core data type?

- a) Lists
- b) dictionary
- c) Tuples
- d) Class

iii) Can tuple be used as dictionary key in python?

- a) True
- b) False
- c) tuples is not used in python
- d) None of these

iv) Which one of the following is immutable data type?

- a) List
- b) set
- c) int
- d) dictionary

v) In order to store values in terms of key and value we use what core data type?

- a) List
- b) tuple
- c) class
- d) dictionary

33) [1+2+2]

a. What do you mean by the term “mutable” and “immutable”?

b. What will be the size of the following constants with justification?

- i) 'Bhavan\'s'
- ii) "It's"

c. What is the difference between keyword and identifier?

OR

a. What is testing and debugging?

b. Find the complement of expression $A + \overline{BC}$

c. Give duals for the following

- i) $ABC + A\overline{B}C + \overline{A}B\overline{C}$
- ii) $\overline{A}\overline{B} + \overline{A} + AB = 0$

SECTION-E

[4X2=8]

34)

a. Explain the ceil() and fabs() functions in math module.

b. What is Exception? Why logical error is harder to locate? [2+2]

35) What will be the output of the following code? Explain with reason(s). 4

- i) `a=7+5/8`
 - ii) `b=int(7+5/8)`
 - iii) `c=7+float(5/8)`
 - iv) `d=7+5.0/8`
- `print(a, b, c, d)`

OR

Write any four characteristics of a good algorithm.

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