KENDRIYA VIDYALAYA SANGATHAN RANCHI REGION
HALF YEARLY EXAMINATION 2019-20
SUB: COMPUTER SCIENCE
CLASS - XI

Time : 3 Hours   Max. Marks: 70

General Instruction:
   i.   All the questions are compulsory.
   ii. Please write down the serial number of the question before attempting it.
   iii. Programming Language: PYTHON.

Q1. (A) Components that provide internal storage to the CPU is: **[1]**

    (i) Registers   (ii) Program Counters

    (iii) Controller   (iv) Internal Chips

(B) Which of the following is used to hold the running program instructions?   **[1]**

    (i) Primary Storage   (ii) Virtual Storage

    (iii) Internal Storage   (iv) Minor Device

(C) Boolean expression Y+YZ =?   **[1]**

    (i) Y   (ii) Z   (iii) 1   (iv) 0

(D) 2's compliment if 1010 is   **[1]**

    (i) 110   (ii) 1111   (iii) 1010   (iv) 0

(E) Which of the following are not valid string in Python?   **[1]**

    (i) "Hello"   (ii) 'Hello'

    (iii) "Hello'   (iv) {Hello}

(F) Which of the following is not a characteristics of a computer?   **[1]**

    (i) Diligence   (ii) I.Q
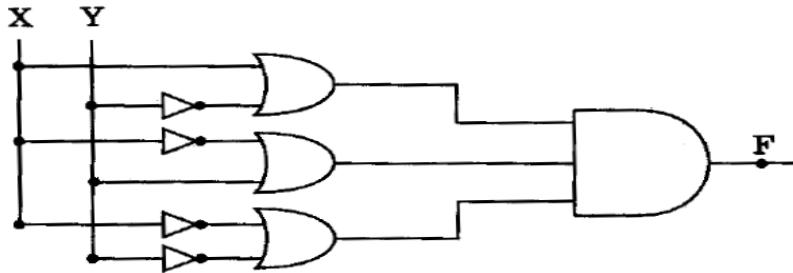
    (iii) Accuracy   (iv) Versatility

(G) Python was developed by ……………………………… in February 1991. **[1]**

(H) A……………….. is an elementary unit of the memory **[1]**

(I) A set of wires/cables to carry binary information to or from input/output devices and memory is called………….. **[1]**

(J) Microphone (Mic) is a …………...device. **[1]**

Q2. **(A)** Briefly explain the basic architecture of a computer with diagram? **[2]**

(B) What is the function of memory? What are its measuring units? **[2]**

(C) What do you mean by memory devices? Explain RAM and ROM. **[2]**

(D) What is SoC? How it is different from CPU? **[2]**

(E) What are the advantages of Python programming language? **[2]**

Q3. **(A)** Explain the following terms: **[3]**
   (i)   Assembler
   (ii)   Compiler
   (iii) Interpreter

(B) What is cloud computing and what are its types? **[2]**

(C) What is parallel computing? **[1]**

(D) What are the various category of software explain in brief? **[2]**

(E) What is Operating System? Give one example of each single user **[2]**

and multiuser Operating System

Q4. **(A)** Name the law shown below and verify it using a truth table. **[2]**

$$A + B.C = (A+B).(A+C)$$

(B) Write the equivalent Boolean expression for the following Logic Circuit : **[2]**

(C) Convert the following base of number system: **[1.5X4=6]**

(i) $(1010100.011)_2 = (....................)_{10}$

(ii) $(3674)_8 = (........................)_2$

(iii) $(72905)_{10} = (........................)_{16}$

(iv) $(B2F)_{16} = (.........................)_8$

Q5. **(A)** What is the difference between a keyword and an identifier? **[2]**

(B) Name the Primitive data types in python. Explain mutable and immutable data types in python. **[2]**

(C) Predict the output of following code snippet: **[2]**

(i)   **x, y=20,60**
       y, x, y=x, y-10, x+10
       print(x, y)

(ii)   **a, b=12,13**
      c, b=a*2,a/2
      print(a, b, c)

(D) What is Token? What are categories of Token exist in Python? **[2]**

(E) Find and write the output of the following Python program code : **[2]**

>>>print (3**2 + 18/9 - 3**4+1)

>>>print (12%5*3+(2*6) // 4)

Q6. **(A)** Write Python expressions equivalent to the following arithmetic/algebraic expression: **[2]**

    (i) $ut + \frac{1}{2} ft^2$ **(ii)** $\sqrt{a} + \frac{a+2}{b}$

    (iii) $3^2 + \frac{9^3}{5}$ **(iv)** $e^{|2x^2 - 4x|}$

(B) Find out the error(s) in following code fragments and rewrite corrected code? **[2]**

    (i)
```
max temp=30
print max temp
```
    (ii)
```
a=30
b= a+b
print(a And b)
```

    (iii)
```
a, b, c = 2, 8, 9
print (a ; b;  c)
```
    (iv)
```
name= "Hari"
print (name)
name[2] = 'R'
print( name)
```

(C) What is comment? Explain with help of example in python? **[2]**

(D) Explain the following with help of suitable example **[1.5+1.5+1=4]**

    (i)   Flow Chart

    (ii)   Decision Tree

    (iii)   Pseudo-code

Q7. **(A)** Write a Python program to calculate the compound interest. The principal, rate of interest and time must be entered by the user. (Formula: Compound Interest = Principal (1 + Rate/100)^{Time}) **[2]**

(B) Write a Python program to obtain length and breadth of a rectangle and calculate its area. **[2]**

(C) Write a program in python to accept a character from the user and display whether it is a vowel or consonant. **[3]**

(D) Write a python program to print Fibonacci series' first 20 elements. Some initial elements of a Fibonacci series are: **[3]**

       0 1 1 2 3 5 8…………………

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