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DELHI PRIVATE SCHOOL L.L.C.
Affiliated to C.B.S.E., DELHI
(Approved & Recognized By Ministry of Education - United Arab Emirates)
DPS SHARJAH

HY/CSQP/1122/A **17-OCT-2022**

HALF YEARLY EXAMINATION 2022-23

Subject: COMPUTER SC (083) **Max. Marks: 70**

Grade: XI **Time: 3 Hrs**

General Instructions:

1. This question paper consists of five sections A, B, C, D and E. Each part is compulsory.
2. Section A – consists of 18 questions. Each question carries 1 mark.
3. Section B – consists of 7 questions . Each question carries 2 marks.
4. Section C – consists of 5 questions. Each question carries 3 marks.
5. Section D – consists of 3 questions. Each question carries 5 marks.
6. Section E – consists of 2 questions. Each question carries 4 marks.
7. The question paper has 6 printed pages.
8. All programming questions are to be answered using Python Language only.

SECTION A

Qno Mark

1. **1**

```
x=10
y=5
for i in range(x-y*2):
    print("%",i)
```

What will the above code print?

a. All numbers from 0 to 50 **b.** No output

c. All numbers from 0 to 49 **d.** error

2. What abandons the current iteration of the loop **1**

a. continue **b.** pass

c. break **d.** jump

3. Which line of code produces an error? **1**

a. “one”+’two’ **b.** 1+2

c. ‘’’one’’’+’2’ **d.** ‘1’+2

4. The default value of separator (sep parameter) in print statement in python is **1**

a. comma **b.** whitespace

c. tab space **d.** newline

5. In Python generally we do not specify data types in an expression, it is directly interpreted by the compiler, so consider the following operation to be performed. **1**

>>> x= 33 <operator> 4

What operator would you fill in place of in the above expression so that x has a float data type?

a. / **b.** //

c. % **d.** *

6. The process by which data and programs are defined with a representation similar in form to its meaning (semantics), while hiding away the implementation details is **1**

a. decomposition **b.** flowchart

c. pseudocode **d.** abstraction

7. The software that provides the basic functionality like maintenance and configuration of the computer system and to operate a computer by interacting directly with its constituent hardware is termed **1**

a. Application Software **b.** Operating System

c. Device Drivers **d.** System Software

8. The order of priority hierarchy of the logic gates or operators from highest to lowest: **1**

a. not, and, or **b.** or, not, and

c. and, or, not **d.** not, or, and

9. ASCII is a _____ bit code **1**

a. 8 **b.** 4

c. 7 **d.** 16

10. The code which is compiled machine code is: **1**

a. pseudocode **b.** source code

c. object code **d.** algorithm

11. What function in a flowchart does the following symbol of parallelogram represent? **1**

12. Fill in the blank: **1**

_____ are the non-graphical characters that does not represent itself when used inside a character or string literal but is translated into another character or a sequence of characters that may be difficult or impossible to represent directly.

13. Expand ISCII. **1**

14. State True or False: **1**

To construct truth table of m logical variables, the truth table will have 2^n rows where each row will represent a combination of values of each variable where n = total number of logical operators.

15. Fill in the blank: **1**

Each hexadecimal digit can be represented using _____ bit binary code.

16. List the invalid identifiers: **1**

a2 , elif , Break , _15 , 3min

17. What is the size of the following string literal? **1**

i. “Hello\tBye”

ii. '''Hi!\
There'''

18. Give an example of mutable data types. **1**

SECTION B

19. Rewrite the following code after removing the errors and underline the corrections: **2**

```
x=int("Enter the value of x:")
for y in range[0,10]:
    if x=y:
        print("They are equal")
    else x>y:
        print(x,"is greater")
```

else
print(y,"is greater")

20. What will be the output produced by the following code? **2**

i.
```
if str(0)=='zero':
    print("Zero")
elif int('0')=='zero':
    print("Yes its zero")
elif str(0)=='0':
    print(str(0))
else:
    print("none of the above")
```

ii.
```
a,b=bool(-1),bool(0)
if a==b:
    print(a==b,"Both are equal")
else:
    print(a==b,"Both are not equal")
print(-1 or 0)
```

21. Convert the following $(346517)_8$ to equivalent binary and hexadecimal. **2**

22. Draw a circuit diagram for the following boolean expression: **2**
(A'+B).(A+B')

23. What are microcontrollers? Name any two devices which use microcontrollers. **2**

24. Distinguish between object code and source code. **2**

25. Construct logical statements in python for the following: **2**

i. x is greater than y and y is divisible by 5.

ii. String identifier Account is equal to "Savings" or identifier Balance is greater than 5000.

SECTION C

26. Write a python program which accepts the units of electricity consumed by a user in a month and display the calculated electricity bill amount that must be paid by the customer .DEWA calculates the electricity bill of each customer based on the following criteria. **3**

The basic charge mandatory per month is AED 200 and first 100 units are free.

Units of electricity consumed	Charge(in Dhs)
>100 units	2 Dhs/unit
Next 200 units	2.5 Dhs/unit
Next 100 units	3 Dhs/unit
After that	4 Dhs /unit

27. Find the output of the following code: **3**

```
x,y=45,50
for i in [6,8,9]:
   if i%3==0 and i>6:
      x+=15
      y*=10
else:
      x//=5
      y-=20
```

```
print("x=",x,"y=",y)
print(x or not y)
print(x//5*7%4+y)
```

28. Evaluate the boolean expression X+(YZ)' using truth table. **3**

29. Write a program to find the sum of the cosine series: **3**

$1 - x^2/2! + x^4/4! - \ldots\ldots x^n/n.$

30. Answer the following: **3**

i. Explain with example syntax and runtime error. (2)

ii. Differentiate between the = and = = operator. (1)

SECTION D

31. Do the following conversions: **5**

i. $590_{10} = ?_{16}$

ii. $1010111110_2 = ?_8$

iii. $1010110111_2 = ?_{10}$

iv. $725_8 = ?_{10}$

v. $72A_{16} = ?_{10}$

32. Write a program for the following: **5**

i. To check the number entered is a perfect number.
Hint: 6 is a perfect number the sum of the factors (excluding itself) is the number itself (1+2+3=6).

ii. To find GCD and LCM of two entered numbers.

33. Mukesh has made a python program using nested for printing a pattern. He used two functions chr( ) and ord( )to get the following output. **5**

```
K
L       M
N       O       P
Q       R       S       T
U       V       W       X       Y
```

He wrote the following code to get this pattern.

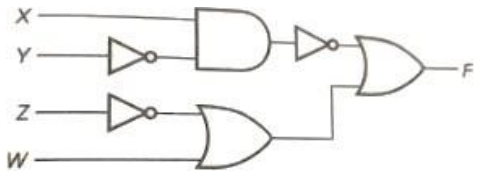
```
ch="___"                        #statement 1
for i in range(1,__):           #statement 2
    temp=ord(ch)
    for j in range(1,____):     #statement 3
        print(___,end="\t")     #statement 4
        temp+=1
        ch=____(temp)           #statement 5
print( )
```

Complete the suitable code for blank space from statement 1 to statement 5 after observing the output and code. Fill in the blank.

SECTION E

34. Based on Boolean Algebra answer the following: **4**

i. Find the Boolean Expression for the logic circuit shown below –



ii. Fill the missing term:

0 + X = ……..

1. X = ……

iii. State DeMorgan's Laws.

iv. Explain Nand gate with circuit and truth table.

34. The codes below illustrate the difference between the break and continue statement .Find the output of the following codes: **4**

i.

```
for i in range(1,10,2):
    print(i)
    if i%7==0:
        print("Divisible by 7")
        break
    print("$$")
print("See You Again")
```

ii.

```
for i in range(1,10,2):
    print(i)
    if i%7==0:
        print("Divisible by 7")
        continue
    print("$$")
print("See You Again")
```

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