

D.A.V. GROUP OF SCHOOLS, CHENNAI.
QUARTERLY EXAMINATION (2019 – 2020)

COMPUTER SCIENCE

CLASS –XI

TIME : 3 Hrs

DATE : 12.9.19

Max. Marks: 70

ANSWER ALL THE QUESTIONS: (Programming Language PYTHON)

- 1) a) Convert the following as directed: (5)
- i) $(577.2)_8 - (?)_{10}$
 - ii) $(767.25)_8 - (?)_2$
 - iii) $(37.75)_{10} - (?)_8$
 - iv) $(703.71)_8 - (?)_{16}$
 - v) $(214.25)_{10} - (?)_{16}$
- b) What is the use of a Language Processor? Name the language processor you use. (1)
- c) Give two differences between RAM and ROM (1)
- d) Arrange the following in ascending order of memory capacity: (1)
TB, Byte, KB, PB, MB, GB
- 2) a) Name the function and the Library file required for the following (2)
- (i) The function which returns the absolute value of num passed to the function
 - (ii) The function which returns a random numbers from range start.....stop with step value.
- b) Rewrite the following Python program after removing all the syntactical errors (if any), underlining each correction. (2)

```
x = input("Enter a number")
if x % 2 = 0:
    print x,"is even"
else if x<0:
    print x,"should be positive"
else ;
    print x,"is odd"
```

- c) Rewrite the following Python program after removing all the syntactical errors (if any), underlining each correction.: (2)

```
n=int(input("enter a no"))
for p in range(1,n)
    for q in range(1,p,0.5)
        print(sqrt(p*p))
    else:
        print("outer loop ends")
```

- d) List one similarity and one difference between List and String data type. Give an example specifying the difference. (2)
- e) Write the difference between continue and break. Give examples to illustrate their use along with the expected output(s). (2)
- f) i) What is the difference between == and = operator? Explain with an example (1)
ii) Explain Type casting along with a code and the output. (1)
- g) i) Which arithmetic operator(s) can be used with strings? (1)
ii) What are endless / infinite loops? Why do such loops occur? (1)

3) Write the outputs:

- a) for p in range(4): (2)

```
    for q in range(1,p+1):
        if p%2==0:
            break
        print(p*p,end=' ')
    else:
        print("inner loop ends")
else:
    print(p,"outer loop over")
```

- b) x=0 (3)

```
for i in range(0,5):
    for j in range(0,i):
        k=i+j-1
        if k%2==0:
            x+=k**2+3
        elif k%3==0:
            x+=k-2
        else:
            x+=(int)(k/2)
    print(x,end=' ')
print("\n",x)
```

c) # Assume the input string as "TeStStRing20-20"

(3)

```
s = input("Input a string")
e=d=l=0
b=" "
for c in s:
    if e%2!=0:
        b+=str(e)
    elif c.isdigit():
        d=d+1
    elif c.isalpha():
        l=l+1
    if c.islower():
        b=b+c.upper()
    else:
        b=b+c.lower()
    else:
        pass
    e+=1
    print(c.capitalize(),'- ',end=',')
print("\nLetters", l)
print("Digits", d)
print("New string=",b)
print("Capitalizing",s.capitalize())
print(s+b,b*3,sep="")
```

d) i) v=10

(1)

```
for k in range(20,24):
    if v-k//2:
        v=v-1
        print(v,k)
    else:
        break
    v+=k
print(v,k)
```

ii) Also write the output for the above code (i) if "break" is replaced with a "continue" statement. (1)

e) What are the possible outcome(s) expected from the following python code? Justify your option. Also specify maximum and minimum value for the variable 's'. (2)

```

import random
p = 'MY PROGRAM'      # words are separated by single space
i = 0
while p[i] != 'R':
    s = random.randint(0,3) + 5
    print(p[s], '-', end=' ')
    i += 1

```

i) R - P - O - R - ii) A - G - G - O - iii) O - R - A - G - iv) A - G - R - M -

4) a) Write a program to accept Employee number, name, age, experience, graduation ('y' / 'n') and salary. Print all details of employee including the net salary (salary+bonus) and bonus. Compute the bonus based on the following slab:

If graduate and experience more than 10 yrs then bonus - 8% of salary
 If graduate and experience 1-10 yrs then bonus - 7% of salary
 If graduate and no experience then bonus - 6% of salary
 If non-graduate and experience more than 10 yrs then bonus - 5% of salary
 If non-graduate and experience 1-10 yrs then bonus - 4% of salary
 If non-graduate and no experience then bonus - 3% of salary (3)

b) Write a program to accept 2 numbers, find the largest of the two, and print the sum of the individual digits of the largest number.

Example: If the given numbers are X=365, Y=682

Output should be - Sum of individual digits of Y=16 (3)

(OR)

Write a program to accept 'n' numbers from the user and print the minimum and the maximum value from the given n numbers.

(eg) if n = 5, and the 5 numbers are 18,78,90,-4,7

Output should be :- Minimum value = -4
Maximum value = 90

c) Write a program to print the following pattern for 'n' lines. (use only nested for loop)

1 @ 1

3 2 @ 3

5 4 3 @ 5

7 6 5 4 @ 7

9 8 7 6 5 @ 9

. . n lines.

(4)

(OR)

Write a program to print the following pattern for 'n' lines. (use only nested for loop)

```
A # 1
A C E # 2
A C E G # 3
A C E G I # 4
```

n lines.

5) a) Write a program to display all the odd composite numbers within a given range (Both limits are inclusive). (Use only nested while loop) (4)

b) Write a program to print the sum of the series.

$(1+X) - (1+X)^2 / (3!) + (1+X)^3 / (5!) - (1+X)^4 / (7!) \dots \dots \dots N \text{ terms}$ (3)

(OR)

$X/2! - X^3/4! + X^5/6! - \dots \dots \dots N \text{ terms}$

c) Write a program to accept a string and display the count of number of uppercase vowels, lower case vowels, upper case consonants, lower case consonants and check for digits, if digits is there, then compute the sum of the digits of a given string. (4)

Example :- If given string is "Quartely-Examination-2019"

Output should be :- No. of uppercase vowels = 1

No. of Lowercase vowels= 7

No. of Upper case consonants =1

No. of Lower case consonants = 10

Sum of digits in a given string = 12

(OR)

Write a Python program that reads a string and check whether it is a palindrome or not , if it's a palindrome ,then print the string in opposite case of the original string, otherwise print the message as "Given string is not a Palindrome".

Example: If given string is "LEVEL"

Output should be : level

d) Write a program to convert the given Binary number to its Decimal equivalent. (3)

6) a) Rewrite the following code segment using nested- while loop (2)

```
T=0
for a in range(1,6):
    S=0
    for b in range(1,a+1):
        S+=b
    T+=S
```

b) Rewrite the following code segment using nested if -else / if.....elif (2)

```
if Class==11 and total>=480:
    print("Eligible for 80% Scholarship")
if Class==11 and total>400 and total<480:
    print("Eligible for 40% Scholarship")
if Class==11 and total<=400:
    print("No scholarship")
if Class==12 and total>=480:
    print("Eligible for 80% Scholarship")
if Class==12 and total>400 and total<480:
    print("Eligible for 40% Scholarship")
if Class==12 and total<=400:
    print("No scholarship")
```

c) i) Write the corresponding python expressions for the following mathematical expressions: $| (x-y)^2 - 3(x+y)^3 |$ (1)

ii) How many times will the loop be executed? (1)

```
i = 1
while False:
    if i%2 == 0:
        break
    print(i)
    i += 2
```

d) Identify the following as keywords, identifiers, neither keyword nor identifier. (2)

(i) break (ii) Elif (iii) \$123bc (iv) _12abc

e) Fill in the blanks appropriately: (2)

To count characters at same position in a given string (lower and uppercase characters) as in English alphabet.

Example: If the given string is "apple", the count characters should be 2, as 'a' and 'E' appears in the same position as their order in alphabets.

```
str1 = input("Input a string: ")
count_chars = _____
for i in range(len(str1)):
```

```
    _____
    count_chars += 1
```

```
    print("Number of characters of the said string at same position as in English
alphabet:")
    print(_____)
```


f) Evaluate the following expressions:

(2)

- i) `"abc"=="Abc"` and not `(2==3 or 3==4)`
- ii) `"hello" or 50 / (5 - (3 + 2))`
- iii) `"madam" < "maDam"`
- iv) `"exam" not in "quarterly Examination"`
