

Time : 3 Hours  
Maximum Marks : 70

# COMPUTER SCIENCE

CBSE

## Sample Question Paper

# Solution of Question Paper (2020)

### SECTION-A

Answer 1.

- (a) (i) random
- (ii) math
- (b) The loop does not terminate since i is never an even number.
- (c) NameError: name 'a' is not defined  
T=['a','b','c']
- (d) 52  
arjun.age = 50  
arjun.dict has 2 attributes so length of it is 2. So total = 52.
- (e) BACKRIGHT  
only (iv) is not possible.  
(i), (ii) and (iii) are possible  
Maximum value of NUM = 3  
Minimum value of NUM = 1.

#### Answering Tip

- Syntax of randint, randint(start, end)

- (f) (i) The given loop is infinite loop as the value of a is not changing. There can be lots of possible corrections, one is given below:

```
a = 10
while (a < 100):
    print (a)
    a += 10
    print ("Over!")
```

- (ii) The given code is wrong as value of x is not initialized. There can be lots of possible corrections, one is given below:

```
x=0
while x < 10:
    print (x)
    x = x+2
```

- (iii) for p in range (3):  
    for q in range (3):  
        print (p \*q)  
    else:  
        print ("Outer Loop Ends")

- (g) (i) `find()`  
 (ii) `index()`  
 (iii) `isalpha()`  
 (iv) `len()`

**Answer 2.**

- (a) We can use the lambda keyword to create small anonymous functions.
- (b) (i) `f1 = open("BOOK.TXT", 'r')`  
 (ii) `f2 = open("BOOK.TXT", 'w')`
- (c) While importing packages Python looks in the list of directories defined in `sys.path`. The search is in this order-
- Current directory
  - PYTHONPATH
  - The installation dependent default directory.
- (d) (i) `show()` is used to show the plotted chart on screen.  
 (ii) `title()` is used to give title to our chart.
- (e) (i) `legend()` is used to display legends for our chart.  
 (ii) `xlim()` is used to set the left and right limit for x axis.
- (f) An array is defined as a set of contiguous data of similar data type.  
 Python lists are actually arrays of variable length. The elements of a list are of heterogeneous types which means they are of different data types.

(g)

			/			
		4	4		+	
	8	8	8	2	2	
28	28	28	28	28	28	30

Result: 30

**OR**

Applications of queue in computer are

- (i) In a single processor multitasking computer, job(s) wait to be processed from a queue. Some happens when we share a printer with many computers.
- (ii) Compiling a HLL code.
- (iii) Using download manager, for multiple files also uses queue for ordering the files.
- (iv) In multiuser operating system – job scheduling is done through queue.
- (h) `x = int(input("Enter first number"))`  
`y = int(input("Enter second number"))`  
`if (x % y == 0):`  
`print(x, "is divisible by", y)`  
`else:`  
`print(x, "is not divisible by", y)`

**Output**

Enter first number 15  
 Enter second number 5  
 15 is divisible by 5

**OR**

```
def main():
    import math
    r = float(input("enter any radius: "))
```

## Solutions

```

a = math.pi*math.pow(r, 2)
print ("Area = ", a)
main ()
(i) def binfile():
    import pickle # line 1
    file=open('data.dat','wb') # line 2
    while true:
        x=int(raw_input("Enter number")) # line 3
        pickle.dump(x,file) # line 4
        ans=input('want to enter more data Y / N')
        if ans.upper() == 'N' : break
    file.close() # line 5
    print ("Reading from file")
    file = open('data.dat','rb') # line 6
    try:# line 7
        while True:# line 8
            y=pickle.load(file) # line 9
            print y # line 10
    except EOFError:# line 11
        pass
    file.close()
binfile()

```

OR

```

Code using for loop
for i in range (10, 52, 8) :
    print(i)
print("Thank you")

```

**Output**

```

10
18
26
34
42
50

```

Thank you

(j)

S.N.	run ( )	timeit ( )
1.	It belongs to cProfile module.	It belongs to timeit module.
2.	There is no need to do any setup since the module function uses the introspection to find the functions and variables to be used.	The timeit() function first executes the constructor's, second argument to set things up ie. test and the variables that are passed as input data.
3.	There is no explicit print() statement since by default the cProfile.run() function prints its output on the console.	After timing each function an explicit print statement is used to print the execution time on the console
4.	We must put the number of repeats inside the code we pass to the cProfile.run ( ) function.	By default the timeit() method repeats 10 Lakh times and returns the total seconds for all these executions.

5.	When using the cProfile module from the command line we cannot specify exactly what we want to be executed. It executes the given program or code and reports timing of everything.	In timeit(), we can specify a particular function to be times.
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OR

```
fname="C:\\Oswal\\Python3\\story.txt"
```

```
try:
```

```
    file = open(fname, 'r')
```

```
    lines = file.readlines()
```

```
    for line in lines:
```

```
        print line
```

```
file.close()
```

```
#Appending
```

```
file = open(fname, 'a')
```

```
line = raw_input("Enter line to be appended")
```

```
file.write('/n')
```

```
file.write(line)
```

```
file.close()
```

```
count = 0
```

```
file = open(fname, 'r')
```

```
lines = file.readlines()
```

```
for line in lines:
```

```
    count = count + 1
```

```
    print count, "\t", line
```

```
file.close()
```

```
file = open(fname, 'r')
```

```
lines = file.readlines()
```

```
num = len(lines)
```

```
count = 0
```

```
user = input("Enter line number to be displayed")
```

```
for line in lines:
```

```
    count = count + 1
```

```
    if count == 1:
```

```
        print "First line from 10th character is-", line[10:]
```

```
if count == num:
```

```
    print "Last line is", line
```

```
if count == user:
```

```
    print count, "\t", line
```

```
file.close()
```

```
except:
```

```
    print "File Not Found"
```

**SECTION-B****Answer 3.**

(a) Router

(b) Optical Fibre

(c) LAN (Local Area Network)

(d) Django



(ii) TEACHER  
Umesh  
Yashraj

(iv) TEACHER  
Ganan

(h) (i) SELECT \* FROM TRANSACTION WHERE TYPE = "Credit";

#### Answering Tip

- String value should be used in inverted comma " ".

(ii) SELECT CNO, AMOUNT FROM TRANSACTION WHERE DOT BETWEEN '2017-09-01' AND '2017-09-30';

(iii) SELECT MAX (DOT) FROM TRANSACTION WHERE CNO="103";

(iv) SELECT CNO, CNAME, DOT FROM CUSTOMER.C, TRANSACTION T WHERE C.CNO=T.CNO AND Sum(AMOUNT)>=2000 GROUP BY T.CNO;

### SECTION-D

Answer 5.

- (a) (i) Digital Rights Management  
(ii) General Public Licenses.
- (b) (i) Lack of privacy  
(ii) Depression
- (c) Government passed the first law on e-waste management in 2011, based on EPR which puts the producer responsible for the management of final stages of life of their product. This law was amended to set collection targets for the producer.
- (d) Cultural and social attributes are often unfavourable to women's participation in the field of science and technology, which limits their opportunities in the area of ICT.
- (e) Ferrous & Non-ferrous Metals, Plastics, Glass, Wood etc.

#### Affecting Environment

- (i) Air pollution due to burning e-waste.  
(ii) Heavy metals make the water toxic and unusable.  
(iii) When the soil is contaminated by heavy metals via e-waste the crops, and the food they provide, are also contaminated.
- (f) (i) Practice safe mail protocol like SMTPS.  
(ii) Do not provide personal information to any unsolicited requests for information.  
(iii) Use varied and complex passwords for all of your accounts.  
(iv) Continually check the accuracy of personal documents and deal with any discrepancies right away.

