Dayawati Modi Public School
Half-Yearly Examination Session 2020-2021

Class: XII   **Sub : Comp.Sc(083)**
FM   : 80   **Time : 3 Hrs**

Language : Python (Section A)

1. Give output of the following:-

a) for x in range(0,10):   1
  if (x==5):
  break
  print(x)

b) for x in range(5)   1
  print(x,2**x)

c) C=100   1
  while C<5:
  while C:
  C=C+2

d) for d in range(-8,-5):   1
  print(d+1)

e) A=3 B=6   1
  print(A,B)
  A=A+B
  B=A-B
  A=A-B
  print(A,B)

f) va=input("")   1
  if va=='s':
  print("Sunday")
  elif va=='m':
  print("Monday")
  else:
  print("No Day")

g) Write the output of the following Python code: 2
x=5
def func2():
  global x
  x=3
  x=x+1
  print (x)

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```
   print (x)
func2()
```

h) Convert the following for loop into while loop: 2
```
for k in range (10, 20, 5):
   print (k)
```

i) Name the modules to which the following functions belong: 2
> 1) ceil( )   2) uniform( )

j) Which of the following is a valid relational operator in Python: 1
> 1) =>   2) =!   3) ==   4) >=

k) Write the type of tokens from the following:-   2
1) else   2) stu_no

l) Rewrite the following code in python after removing all syntax error(s).   2
Underline each correction done in the code.
```
marks={„hin‟-30,‟eng‟-40,‟math‟-50}
For key in Marks
    print(marks[key])
```

m) Find and write the output of the following python code: 2
```
def fun(s):
  k=len(s)
  m="
  for i in range(0,k):
    if s[i].isupper():
      m=m+s[i].lower()
    elif s[i].isdigit():
      m=m+'##'
    else:
      m=m+'&&'
    print(m)
fun('PREboaRd2020')
```

n) What possible output(s) is /are expected to be displayed on screen at the time of execution
of the program from the following code? Also specify the maximum values that can be
assigned to each of the variables start and end.   2
```
import random
DATA=[20,40,10,30,15]
Start=random.randint(0,2)
end=random.randint(1,4)
for c in range(start+1,end)
    print(DATA[c],"#",end="")
```

1)50#20#40#   2)40#30#10#   3)50#40#20#   4)10#10#40#

o) What do you understand by while..elseloop? Explain with an example.   2

p) Find the output:-   2
p=-6
def f():
    a=6
    print(a)
    a=a+2
    print(a)
print(a)
f()
print(a)

q) What do you understand by local and global scope of variable? How can you access a global variable inside the function, if function has a variable with same name.   3

2. Differentiate between break and continue statement with the help of an example. 3

Networking (Section B)
1. Answer the following question papers:-
a) FTP is based on Client/Server principle. Explain.   2

b) Write the expanded names for the following abbreviated terms used in Networking and Communications:
(i) GSM   (ii) NCP   (iii) IoT   (iv) VoIP   v) RFID   5

c) Name two open source software with their application.   1

d) Write two advantage and disadvantage of the Bus topologies in network.   2

e) What is the difference between virus and worms in the computers.   2

f) What is 80-20 rules of network design   1

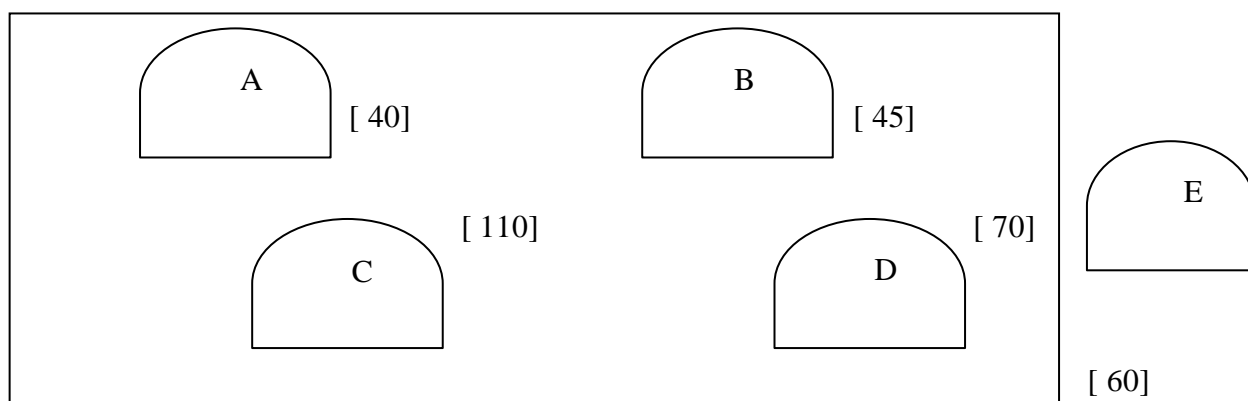g) Write one difference between coaxial and optical cable.   2

h) Define Packet Switching.   2

i) What is NFS ?   1

k) Mention two advantages of networking.   2

l) What is Firewall ?   2

m) How Trojan Horses are different from Worms? Mention any one difference. 2

n) ………………………………….. is an collision detection technique in wireless
transmission in which sender first send signal then data. 1

o) What is cloud? How Public Clod is different from private cloud. 2

p) What do you mean by modulation? Differentiate between amplitude and frequency
modulation by wave diagram. 3

q) Explain Benefits of e-Waste Recycling. 2

r) How many pair of wires are there in twisted pair cable(Ethernet)?What is the name of port
,which is used to connect Ethernet cable to a computer or a labtop? 2
s) Identify the type of cyber crime for the following situations: 3
(i) A person complains that Rs. 4.25 lacs have been fraudulently stolen from his/her account
online via some online transactions in two days using NET BANKING.
(ii) A person complaints that his/her debit/credit card is safe with him still some body has
done shopping/ATM transaction on this card.
(iii) A person complaints that somebody has created a fake profile on Facebook and defaming
his/her character with abusive comments and pictures.

t) Differentiate between RJ – 11 amd RJ – 45 connectors. 2

u) International Tour and Travels company has set up its new branch office in Jaipur where
different buildings are spanned over in the radius of 900 meter in Jaipur. Name the network
formed in the following situations : 2
(i) The branch office is connected with the regional office in New Delhi.
(ii) All the buildings of branch office are connected to each other.

2. a) A company has decided to network all its offices spread in 5 buildings as shown . 4

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Centre to centre distance [ ] indicates the number of computers contained by each block
Between various Blocks :-

Pcode	Amount
A and B	20m
B and C	150m
C and D	70m
C and E	5000km
A and D	165m
B and D	90 m
B and E	5000Km

1. Suggest a suitable Network connection with topology .

2. Where do you think repeaters and modem should be kept ?

3. Suggest an economic technology to provide internet accessibility to all wings .

4. Building C has to be used for critical operations . It wants its PC to get maximum

   bandwidth .   Which network device should be used for this ?
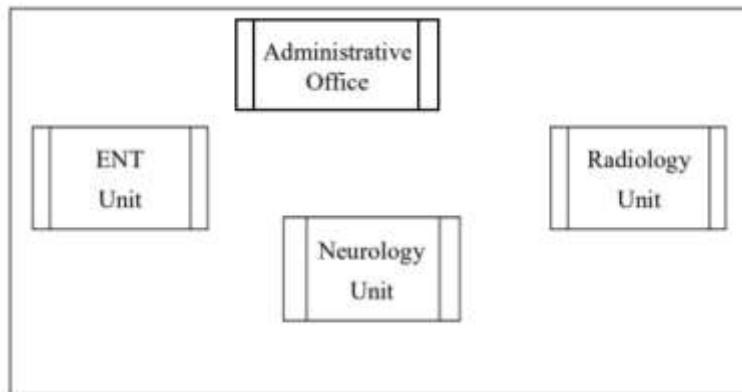
b) CASE STUDY BASED QUESTION

Medico Training Educational Institute is setting up its centre in Poona with four specialised units for Radiology, Neurology and ENT alongwith an administrative office in separate buildings. The physical distances between these units and the number of computers to be installed in these units and administrative office as given as follows. You as a network expert have to answer the queries as raised by them in (i) to (iv).

Shortest distances between various locations in metres :

Administrative Office to Radiology Unit	60
Neurology Unit to Administrative Office	40
Radiology Unit to Neurology Unit	80
ENT Unit to Neurology Unit	60
ENT Unit to Administrative Office	30
ENT Unit to Radiology Unit	120

Number of Computers installed at various locations are as follows :

ENT Unit	50
Radiology Unit	70
Administrative Office	120
Neurology	40

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(i) Suggest the most suitable location to install the main server of this institution to get efficient connectivity.   1

(ii) Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.   1

(iii) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following: 1
    • Modem • Switch • Gateway

(iv) Suggest the topology of the network and network cable for efficiently connecting each computer installed in each of the building out of the following :-   1
Topologies   : Star Topology, Bus Topology
Network Cable : Co-axial Cable, Ethernet Cable, Single Pair Telephone Cable.