**Cycle Test – 1**

**Class   : XII**                                            **Date   :**
**Subject: Computer Science**                    **Marks:  40**

**SECTION A**                                                (1×9=9)

1.  What is the value of x?

    >>> x=int(8+3/5)

    a)  7.333                    b) 1                    c) 7                    d) 1.0

2.  What is the output of the following code?

    >>>print("Good", "Morning")

    a) GoodMorning                          b) Good Morning

    c) "GoodMorning"                        d) Good morning

3. What will be the output of following code?

    >>>a = [[[4,5],[1,0],9],[6,7]]

    >>>a[0][1][1]

    a) 1                    b) 4                    c) 0                    d) 7

4. Which of the following module functions generates an integer?

    a) randint()                b) uniform()                c) random()        d) all of these

5. Give the output of the following code:

   t = ('a','b','c','d')

   print(max(t))

   print(min(t))

    a) 'a'                    b) 'b'                    c) 'c'                    d) 'd'

6. Which topology is based on a central node which act as a hub?

   a) Star topology                b) Bus topology

   c) Tree topology                d) Hybrid topology

7. The function of a repeater is to take a weak and corrupted signal and _____it.

   a) Restore                b) Regenerate                c) Amplify                d) Reroute

8. Assertion (A) : Client-Server network is a dedicated network.

   Reason (R) : The server in client-server network perform no other tasks besides network services.

    a) Both A and R are true and R is the correct explanation for A.

b) Both A and R are true and R is not correct explanation for A.

c) A is true but R is false.

d) A is false but R is true.

9. Assertion (A): Bus topology is based on a central which acts as a hub.

Reason (R): Bus topology involves a low cost of installation time.

a) Both A and R are true and R is the correct explanation for A.

b) Both A and R are true and R is not correct explanation for A.

c) A is true but R is false.

d) A is false but R is true.

## SECTION B

**Answer the following:** (2 ×6=12)

10. What will be the output of following code?

x= 'ba'

y= 'na'

print ( x + y * 2 )

print ( ( y * 2 ) [ : 3 ] + x )

11. Rewrite the following code in python after removing all syntax error(s).

Underline each correction done in the code.

10=A

for S in range (0, A)

   if S%2=0:

     print (S*2)

  Else:

     print (S+3)

12. i. Rearrangethefollowingtermsinthedecreasingorderofdatatransferrates.Gbps,Mbps,

Tbps,Kbps,bps

  ii. Write the expanded form of CDMA.

13. i. WriteastatementinPythontodeclareadictionarywhosekeysare10,11,12 and values are

October,November and December respectively.

   ii. Give the output for the following:

    bts=”i like my book”

    print(bts[5:10])

14. i. Why switch is known as intelligent hub?

   ii. Define webserver

15. How radio wave signals are different from microwave signals?

<div align="center">

**SECTION C**          (3×3=9)

</div>

16. Find and write the output of following python code:

```
box={}

jars={}

crates={}

box['biscuit']=3

box['cake']=4

print (box)

jars['jam']=4

print (jars)

crates['box']=box

crates['jars']=jars

print(crates)
```

17. Xcelencia Edu Services Ltd. is an educational organization. It is planning to setup its India campus at Hyderabad with its head office at Delhi. The Hyderabad campus has 4 main buildings – ADMIN, SCIENCE, BUSINESS and ARTS. You as a network expert have to suggest the best network related solutions for their problems raised in (a) to (c), keeping in mind the distances between buildings and other given parameters.
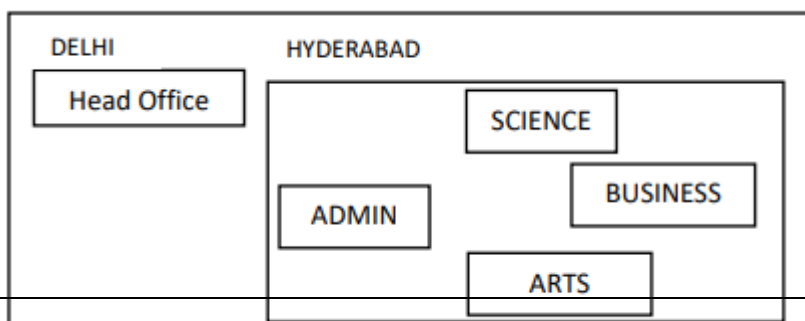
Distance between various buildings is given as:

| | |
|---|---|
| ADMIN to SCIENCE | 80m |
| ADMIN to BUSINESS | 180m |
| SCIENCE to BUSINESS | 100m |
| SCIENCE to ARTS | 150m |
| BUSINESS to ARTS | 100m |
| DELHI Head Office to Hyderabad Campus | 1600KM |

Number of Computers in the buildings:

| | |
|---|---|
| ADMIN | 100 |
| SCIENCE | 85 |
| BUSINESS | 40 |
| ARTS | 12 |
| DELHI Head Office | 20 |

(a) Suggest the most appropriate location of the server inside the Hyderabad Campus (out of 4 buildings) to get the best connectivity for maximum number of computers. Justify your answer.

(b) Suggest and draw the cable layout to efficiently connect various buildings within Hyderabad Campus for connecting the computers.

(c) Which hardware device will you suggest to be procured by the company to be installed to protect and control the internet uses within the campus.

18. Write  a function in Python,Push(student) and pop(student) to add a new student and delete a student  from a list of student, considering them to act as push and pop operations of the stack data structure.

<div align="center">OR</div>

Write  a function in Python,Push(emp) and pop(emp) to add a new student and delete a student  from a list of student, considering them to act as push and pop operations of the stack data structure.

<div align="center">

**SECTION D**                                                          (5×2=10)

</div>

19. Rovenza Communications International (RCI) is an online corporate training provider company for IT related courses. The company is setting up their new campus in Kolkata. You as a network expert have to study the physical locations of various blocks and the number of

computers to be installed. In the planning phase, provide the best possible answers for the queries (i) to (v) raised by them.



Physical Location of the building of RCI

Administrative     Finance     Faculty Studio
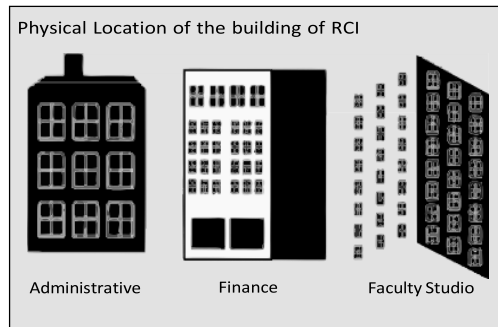
**Block to block distances (in Mtrs.)**

| From | To | Distance |
|---|---|---|
| Administrative Building | Finance Building | 60 |
| Administrative Building | Faculty Studio Building | 120 |
| Finance Building | Faculty Studio Building | 70 |

**Expected computers to be installed in each block**

| Buildings | Computers |
|---|---|
| Administrative Building | 20 |
| Finance Building | 40 |
| Faculty Studio Building | 120 |

   i.   Suggest the most appropriate block, where RCI should plan to install the server.
   ii.   Suggest the most appropriate block to block cable layout to connect all three blocks for efficient communication.
   iii.   Which type of a network out of the following is ormed by connecting the computers of these three blocks?(LAN,MAN,WAN,PAN)
   iv.   Which wireless channel out of the following should be opted by RCI to connect to students from all over the world? (Infrared,Microwave,Satelite)
   v.   What is the satellite connection?

20. i. What do you understand from the term iteration? (1)

    ii. Find and write the output of following python code: (2)

```python
def Total(Number=10):
    Sum=0
    for C in range(1,Number+1):
        if C%2==0:
            continue
        Sum+=C
        return Sum
print(Total(4))
print(Total())
```

iii. Differentiate between Syntax Error and Run time Error. Also write a suitable example in Python to illustrate both.                                      (2)