CLASS-XII (2022-23)

SAMPLE QUESTION PAPER - 4

Computer Science (083)

Maximum Marks: 70 **Time Allowed: 3 hours**

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Section A

1. Consider the following query **[1]**

SELECT name FROM class WHERE subject LIKE '_____Computer Science';

Which one of the following has to be added into the blank space to select the subject which has Computer Science as its ending string?

a) % b) $

c) II d) _

2. State true or false: **[1]**

A dictionary can contain keys of any valid Python types.

3. Carefully observe the code and give the answer. **[1]**

```
def function1(a):
a = a + '1'
a = a * 2
>>>function1("hello")
```

a) hello2 b) cannot perform mathematical operation on strings

c) hello2hello2 d) indentation error

4. The SQL statements to access and manipulate data in existing table is/are: **[1]**

a) System Control Statements b) Session Control Statements

c) DDL d) DML

5. Which type of transmission media is the least expensive to manufacture? **[1]**

a) Twisted pair cable b) CAT cable

c) Coaxial d) Fibre optic

6. To read the remaining lines of the file from a file object infi, we use [1]

a) nfi.read( ) b) infi.readlines( )

c) infi.read(all) d) infi.readline( )

7. A _____ is a property of the entire relation, which ensures through its value that each tuple is unique in a relation. [1]

a) Rows b) Attribute

c) Key d) Fields

8. A database _____ controls the connection to an actual database, established from within a Python program. [1]

a) fetch object b) database object

c) query object d) connection object

9. Which function is used to read single line from file? [1]

a) readlines( ) b) readline( )

c) readfullline( ) d) readstatement( )

10. LIFO stands for [1]

a) First in Last Out b) List of File Outputs

c) None of these d) Last in First Out

11. Which of the following functions will return the total number of characters in a string? [1]

a) count() b) all of these

c) index() d) len()

12. What is the output of the below program? [1]

```
x = 50
def func(x):
print('x is', x)
x = 2
print('Changed local x to', x)
func(x)
print('x is now', x)
```

a) x is now 100 b) x is now 50

c) none of these

d) x is now 2

13. Given the numeric variable Num1, which lines of code properly prints the value? **[1]**

a) print("%d")

b) print(Num1) properly prints the value

c) print("%d Num1")

d) print("%d", Num1)

14. Find ODD parity bit for 10010001 **[1]**

a) 2

b) 0

c) none of these

d) 1

15. Which of the following is the fastest media of data transfer? **[1]**

a) Fibre Optic

b) Untwisted Wire

c) Co-axial Cable

d) Telephone Lines

16. **Assertion (A):** Slice can be outside the range of positions. **[1]**
Reason (R): Slicing takes place position-wise and not index-wise in series objects.

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

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

17. Geometric arrangement of devices on the network is called **[1]**

a) media

b) LAN

c) protocols

d) topology

18. **Assertion (A):** pandas is defined as an open-source library that is built on top of the NumPy library. **[1]**
Reason (R): pandas provides fast analysis, data cleaning, and preparation of the data for the user.

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

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

Section B

19. Differentiate between a logical error and syntax error. Also, give suitable examples of each in Python. **[2]**

OR

Write a program that takes any two lists L and M of the same size and adds their elements together to form a new list N whose elements are sums of the corresponding

elements in L and M. For instance, if L = [3, 1, 4] and M = [1, 5, 9], then N should equal [4, 6, 13].

20. How is Coaxial cable different from Optical Fibre? **[2]**

21. Following table represents information on sales representatives For Premiere Products and contains the Following data Fields for sales representations. **[2]**

Sales representative's number	SLSRNUMB
Sales representative's name	SLSRNAME
Sales representative's address	SLSRADDR
total commission paid to the sales representative	TOTCOMM
Sales representative's commission rate	COMMRATE

Write Python code to create the above table.

22. A program having multiple functions is considered better designed than a program without any functions. Why? **[2]**

23. Answer: **[2]**

(i) What will be the generated query string?
query = "INSERT INTO books (title, isbn) VALUES!'{}', {})"•
format('Ushakiran','42568987036')

(ii) Which function do you use for connecting to a data from within Python?

24. Find the errors in following code and write the correct code. **[2]**

```
l = ['a', 'b', 'c', 'd']
v = '6'
for in l:
l[i] += v
v = v - 2
print("v= ", v, "l =", l)
```

i. Underline the corrections.

ii. Write the reason!error next to it in the comment form.

OR

What is the difference between a keyword and an identifier?

25. Consider a binary file Employee.dat containing details such as empno:ename:salary (separator ':'). Write a Python function to display details of those employees who are earning between 20000 and 40000. (Both values inclusive) **[2]**

OR

What are the advantages of saving data in binary form and text form?

Section C

26. What is the significance of the GROUP BY clause in a SQL query? **[3]**

OR

Mr. Mittal is using a table with following columns :
Name, Class, Streamed, Stream_name
He needs to display names of students who have not been assigned any stream or have been
assigned stream_name that ends with "computers
He wrote the following command, which did not give the desired result.

SELECT Name, Class FROM Students
WHERE Stream_name = NULL OR Stream_name = "%computers" ;

Help Mr. Mittal to run the query by removing the error and write correct query.

27. Answer: **[3]**

(i) Find the errors in following code and write the correct code.

```
s = [11, 13, 15]
for n in arange(len(s)):
tot = tot + s(n)
print(tot)
```

i. Underline the corrections.

ii. Write the reason! error next to it in the comment form.

(ii) Find the errors in following code and write the correct code.

```
x = True
y = False
z = false
if x, y, z :
print " yes "
else :
print " no "
```

i. Underline the corrections

ii. Write the reason!error next to it in comment form.

28. Trace the flow of execution for following programs: **[3]**

i.
```
1 def power(b., p):
2 r = b ** p
3 return r
4
5 def cpower(a):
6 a = a + 2
7 a = power(a, 0.5)
8 return a
9
10 n = 5
11 result = cpower(n)
12 print (result)
```

ii.
```
1. def increment(x)
2. x = x + 1
3.
4. # main program
5. x = 3
6. print(x)
7. increment(x)
8. print(x)
```

iii.
```
1. def increment(x):
2. z = 45
3. x = x + 1
4. return x
5.
6. # main
7. y = 3
8. print(y)
9. y = increment(y)
10. print(y)
11. q = 77
12. print(q)
13. increment(q)
14. print(q)
15. print(x)
16. print(z)
```

29. Write a function that receives two tuples and creates a third that contains all elements of the first followed by all elements of the second. **[3]**

OR

What will be the output of following programs?

i.
```
num = 1
def myfunc():
return num
print(num)
print(myfunc())
print(num)
```

ii.
```
num = 1
def myfunc():
num = 10
return num
print(num)
print(myfunc())
print(num)
```

iii.
```
num = 1
def myfunc():
global num
num = 10
```

```
return num
print(num)
print(myfunc())
print(num)
```

iv.
```
def display ():
print ("Hello", end = ' ')
display()
print("there!")
```

30. What is the use of tell() function? **[3]**

Section D

31. Answer (i) & (ii) OR (iii) & (iv) **[5]**

(i) Write a program that reads a text file and then creates a new file where each character's case is inverted.

(ii) Write a program to print the following type of statistics for the given file:
16824 lines in the file
483 empty lines
53.7 average characters per line
65.9 average characters per non-empty line.

(iii) What is the use of flush() function?

(iv) Read the code snippet.
```
file= open('textfile.txt','w')
word=''
while word.upper() != 'END':
word = raw_input('Enter a word use END to quit')
file.write(word + '\n')
file.close()
```
The above program is to create a file storing a list of words. What is the name of file on hard disk containing list of words?

32. Consider the following tables CARDEN and CUSTOMER and answer the following parts of this question : **[5]**

Table: CARDEN

Ccode	CarName	Make	Color	Capacity	Charges
501	A-Star	Suzuki	RED	3	14
503	Indigo	Tata	SILVER	3	12
502	Innova	Toyota	WHITE	7	15
509	SX4	Suzuki	SILVER	4	14
510	C Class	Mercedes	RED	4	35

Table: CUSTOMER

CCode	Cname	Ccode

1001	Hemant Sahu	501
1002	Raj Lai	509
1003	Feroza Shah	503
1004	Ketan Dhal	502

Give the output of the following SQL queries :

i. SELECT COUNT (DISTINCT Make) FROM CARDEN;

ii. SELECT MAX(Charges), MIN(Charges) FROM CARDEN;

iii. SELECT COUNT(*), Make FROM CARDEN;

iv. SELECT CarName FROM CARDEN WHERE Capadty = 4;

OR

Write queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables

Table: VEHICLE

VCODE	VEHICLETYPE	PERKM
V01	VOLVO BUS	150
V02	AC DELUXE BUS	125
V03	ORDINARY BUS	80
V05	SUV	30
V04	CAR	18

Table: TRAVEL

CNO	CNAME	TRAVELDATE	KM	VCODE	NOP
101	K. Niwal	2015-12-13	200	V01	32
103	Fredrick Sym	2016-03-21	120	V03	45
105	Hitesh Jain	2016-04-23	450	V02	42
102	Ravi Anish	2016-01-13	80	V02	40
107	John Malina	2015-02-10	65	V04	2
104	Sahanubhuti	2016-01-28	90	V05	4
106	Ramesh Jaya	2016-04-06	100	V01	25

Note:

- PERKM is Freight Charges per kilometre.
- Km is kilometres Travelled
- NOP is number of passengers travelled in vehicle.

i. To display CNO, CNAME, TRAVELDATE from the table TRAVEL in descending order of CNO

ii. To display the CNAME of all customers from the table TRAVEL who are travelling by vehicle with code V01 or V02

iii. To display the CNO and CNAME of those customers from the table TRAVEL who travelled between 2015-12- 31 and 2015-05-01

iv. To display all the details from table TRAVEL for the customers, who have travel distance more than 120 KM in ascending order of NOP

v. SELECT COUNT (*), VCODE FROM TRAVEL GROUP BY VCODE HAVING COUNT (*) > 1

vi. SELECT DISTINCT VCODE FROM TRAVEL

vii. SELECT A.VCODE, CNAME, VEHICLETYPE FROM TRAVEL A, VEHICLE B WHERE A. VCODE = B. VCODE and KM < 90

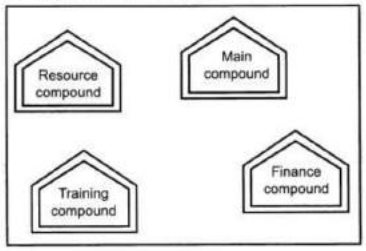
viii. SELECT CNAME, KM*PERKM FROM TRAVEL A, VEHICLE B WHERE A.VCODE = B.VCODE AND A. VCODE 'V05'

33. Write a function to push any student's information to stack. **[5]**

Section E

34. **Read the text carefully and answer the questions:** **[4]**

Learn Together is an educational NGO. It is setting up its new campus at Jabalpur for its web-based activities. The campus has 4 compounds as shown in the diagram below:



Center to center distances between various Compounds as per architectural drawings (in Metre) is as follows:

Main Compound to Resource Compound	110 m
Main Compound to Training Compound	115 m
Main Compound to Finance Compound	35 m
Resource Compound to Training Compound	25 m
Resource Compound to Finance Compound	135 m
Training Compound to Finance Compound	100 m

The Expected Number of Computers in each Compound is as follows:

Main Compound	5
Resource Compound	15
Training Compound	150
Accounts Compound	20

(i) Suggest the most suitable place (i.e., compound) to house the server for this NGO. Also, provide a suitable reason for your suggestion.

(ii) Suggest the placement of Repeater with justification.

(iii) The NGO is planning to connect its International office situated in Mumbai, which out of the following wired communication link, you will suggest for very high-speed connectivity?

i. Telephone Analog Line

ii. Optical Fiber

iii. Ethernet Cable

OR

Suggest the placement of Hub/Switch with justification.

35. **Read the text carefully and answer the questions:** **[4]**

Consider the following tables ACTIVITY and COACH:

Table: ACTIVITY

ACode	ActivityName	Stadium	ParticipantsNum	PrizeMoney	ScheduleDate
1001	Relay 100 × 4	Star Annex	16	10000	23-Jan-2004
1002	High Jump	Star Annex	10	12000	12-Dec-2003
1003	Shot Put	Super Power	12	8000	14-Feb-2004
1005	Long Jump	Star Annex	12	9000	01-Jan-2004
1008	Discuss Throw	Super Power	10	15000	19-Mar-2004

Table: COACH

PCode	Name	ACode
1	Ahmad Hussain	1001
2	Ravinder	1008
3	Janila	1001
4	Naaz	1003

(i) Write SQL commands for the following statements:

i. To display the names of all activities with their Acodes in descending order.

ii. To display sum of PrizeMoney for the Activities played in each of the Stadium separately.

(ii) Write SQL commands for the following statements:

i. To display the coach's name and Acodes in ascending order of Acode from the table Coach.

ii. To display the content of the Activity table whose schedule date earlier than 01-01-2004 in ascending order of Participants Num.

(iii) Give the output of the following SQL queries:

i. SELECT COUNT (DISTINCT Participants Num) FROM ACTIVITY;

ii. SELECT MAX (Schedule Date), Min (Schedule Date) FROM ACTIVITY;

SOLUTION

Section A

1. **(a)** %
   Explanation: % character matches any sub-string.
2. **(b)** False
   Explanation: False, keys must be of an immutable data type such as strings, numbers, or tuples.
3. **(d)** indentation error
   Explanation: Function body i.e, code inside the function starts with indentation.
4. **(d)** DML
   Explanation: Data Manipulation Language is used to manipulate data in existing tables, for instance UPDATE, SELECT, DELETE, INSERT.
5. **(a)** Twisted pair cable
   Explanation: Twisted pair cable is the least expensive transmission media.
6. **(b)** infi.readlines( )
   Explanation: infi.readlines( )
7. **(c)** Key
   Explanation: Key, Key is the constraint which specifies uniqueness.
8. **(d)** connection object
   Explanation: connection object
9. **(b)** readline( )
   Explanation: readline() reads the file one line at a time and returns the line as a string.
10. **(d)** Last in First Out
    Explanation: Last in first-out (LIFO) is a method used to account for inventory that records the most recently produced items as sold first.
11. **(d)** len()
    Explanation: len()
12. **(b)** x is now 50
    Explanation: The first time that we print the value of the name x with the first line in the function's body, Python uses the value of the parameter declared in the main block, above the function definition.
    Next, we assign the value 2 to x. The name x is local to our function. So, when we change the value of x in the function, the x defined in the main block remains unaffected.
    With the last print function call, we display the value of x as defined in the main block, thereby confirming that it is actually unaffected by the local assignment within the previously called function.
13. **(b)** print(Num1) properly prints the value
    Explanation: print(Num1), no need to define the type
14. **(b)** 0
    Explanation: Parity refers to the number of bits set to 1 in the data item
    Even parity - an even number of bits are 1
    Odd parity - an odd number of bits are 1

A parity bit is an extra bit transmitted with a data item, chose to give the resulting bits even or odd parity
Even parity - data: 10010001, parity bit 1
Odd parity - data: 10010001, parity bit 0

15. **(a)** Fibre Optic
Explanation: Fibre Optic, In Fiber optics, data is transmitted through modulated light ray.
16. **(a)** Both A and R are true and R is the correct explanation of A.
Explanation: Slicing means extracting the part of the series. Position is a number, which pandas assigns to series internally, so we will use that position to find the series slice, not the index of the element.
17. **(d)** topology
Explanation: topology
18. **(b)** Both A and R are true but R is not the correct explanation of A.
Explanation: pandas is defined as an open-source library that is built on top of the NumPy library and it provides fast analysis, data cleaning, and preparation of the data for the user.

Section B

19. Differences between logical error and syntax error are as follows:

Logical Error	Syntax Error
It occurs because of wrong implementation of logic.	It occurs when statements are wrongly written violating rules of the programming language.
With logical errors, the code is syntactically correct and compiler will not show any error message.	With syntax errors, the code is not syntactically correct and compiler will show the error messages.
It produces the output, but undesired.	It does not produce any output.
e.g. in place of (c = a*b); if by mistake (c = a + b); is written, it will be a logical error.	e.g. in place of (a == b); if by mistake (a == b); is written, it will be a syntax error.

OR

```
L = [3, 1, 4]
M = [1, 5, 9]
ln = len(L)
N = [ ]
for a in range(ln):
N.append(L[a] +M[a])
print(N)4
```

20. Coaxial Cables is the most commonly used transmission media for LANs. It consists of solid wire cores surrounded by one or more foil or wire shields, each separated by some kind of plastic insulator whereas optical fibres consist of thin strands of glass or glass-like materials.
Coaxial cables transmit electrical signals whereas Optical fibres transmit light signals or laser signals.

21. import MySQLdb
```
db = MySQLdb.connect ("localhost", "Admin", "Ad123", "SALES")
cursor= db.cursor()
cursor.execute("DROP TABLE IF EXISTS sales_Representative")
try:
sql= """CREATE TABLE SALES_Representative (slsrnumb integer, slsrname
char(25) not null, slsraddr char(100)
not null, totcomm double, commrate double)"""
cursor.execute (sql)
except:
db.close()
```
22. Program having functions is considered better, because:
    i. It makes program handling easier as only a small part of the program is dealt with at a time, thereby avoiding ambiguity.
    ii. It reduces program size.
    iii. It makes a program more readable and understandable to a programmer thereby making program management much easier.
23. Answer:
    (i) "INSERT INTO books (title, isbn) VALUES ('Ushakiran', '42568987036')"
    (ii) The connect( ) function can be used to connect with a database from within Python.

24.
```
l = ['a', 'b', 'c', 'd']
v = '6'
for i in range (len(l)): # (i) loop variable missing
# (ii) loop variable i is used as index of list l in
# the loop so i must get integer values from
# iterator, thus range ( Len(L) ) given here
l[i] + = v
v = v * 2 # cannot be used with string and integer, but * can be used
print ("v = ", v, "l =", l)
```

OR

Keyword is a special word that has a special meaning and a specific operation. They are reserved words that convey a special meaning to the compiler/interpreter. . For example, if, elif, else, etc. are keywords.

Identifier is the user-defined name given to a part of a program viz. variable, object, function etc. Identifiers are not reserved. These are defined by the user but they can have letters, digits and a symbol underscore. They must begin with either a letter or underscore. For instance, _chk, chess, trial etc., are identifiers in Python.

25.
```
def Readfile():
    i=open("Employee.dat", "rb+")
    x=i.readline()
    while(x):
        l=x.split(':')
        if (20000>=float(l[2])<=40000):
```

```
    print(x)
x=i.readline()
```

OR

i. The binary files store the data in pure binary bytes form and hence can be used on any machine/hardware with appropriate software. There are no internal conversions added to data such as newlines etc. Binary files require appropriate software in order to be read and decoded. The machine takes less time to process binary files.

ii. A text file is a computer file that is structured as a sequence of lines of electronic text. The text files store the data in human readable text format. These have some internal conversions like newlines(\n) etc. Text files are human readable but are not portable enough.

Section C

26. The GROUP BY statement in SQL is used to arrange identical data into groups with the help of some functions. This grouping results into one summary record per group if group-functions are used with it.

OR

The given query is erroneous because it involves pattern matching.
The correct operator to be used for pattern matching is **LIKE**. Also, there is NULL comparison and for it also incorrect operator is used. The correct operator for NULL comparison is IS. Thus, the correct SQL statement will be :
SELECT Name, class FROM students WHERE Stream-name IS NULL OR Stream-name LIKE "%computers" ;

27. Answer:

(i)
```
s = [11, 13, 15]
tot = 0 # tot must be defined before being used
for n in range(len(s)): # built-in function is range() not arange()
tot = tot + s[n] #incorrect indentation and
# s is a list; to access its elements
# square brackets are used
```

(ii)
```
x = True
y = False
z = False # either false must be a predefined variable or # use Boolean value False
if x or y and z: # Boolean values/expressions must be combined using
# or/and/not operators to form a condition
print ("yes") # () missing for print()
else :
print ("no") #( ) missing for print()
```

28. i. $1 \rightarrow 5 \rightarrow 10 \rightarrow 11 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 7 \rightarrow 8 \rightarrow 11 \rightarrow 12$

ii. $1 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 1 \rightarrow 2 \rightarrow 8$
[Control did not return to function call statement (7) as no value is being returned by increment()]

iii. $1 \rightarrow 7 \rightarrow 8 \rightarrow 9 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 9 \rightarrow 10 \rightarrow 11 \rightarrow 12 \rightarrow 13 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 14 \rightarrow 15 \rightarrow 16$

[Control did not return to function call statement (13) as its result is not being stored anywhere.]

29. def appendTuple(tuple1, tuple2):
    """This function will join two tuples into one"""
    tuple3 = tuple1 + tuple2
    return tuple3

OR

These are the outputs to the above code segments:

i. 1
   1
   1

ii. 1
    10
    1

iii. 1
     10
     10

iv. Hello there!

30. tell() method tells the current position of the file pointer in the file. The integer returned by tell() method specifies the number of bytes from the beginning of the file till the current position of file object. Next read and write operation takes place at the current position of file pointer.
    Syntax: fileobject.tell()

Section D

31. Answer (i) & (ii) OR (iii) & (iv)

(i)
```
file_pointer_in = open("Text.txt", r)
chars = file_pointer_in.read()
file_pointer_in.close()
file_pointer_out.open("reversecase.txt", w)
for char in chars:
if char.isupper():
char = char.lower()
elif ch.islower():
char = char.upper()
file_pointer_out.write(char)
file_pointer_out.close()
```

(ii)
```
filePointer = open("Read.txt", r)
lines = filePointer.readlines()
num_lines = len(lines)
blank_lines = 0
for i in range(0,len(lines)):
if lines[i] ==" ":
blank_lines + = 1
str = filePointer.read()
chars = len(str)
filePointer.close()
```

print (num_lines, “lines in the file”)
print (blank_lines, “empty lines”)
print float((chars/num_lines), "average characters per line")
print float ((chars/(num_lines - blank_lines)), "average characters per non-empty line”)

(iii) The flush() function forces the writing of data on disc still pending in output buffers.

(iv) In the open() function, the file name is specified as "textfile.txt" and the file is opened in write mode. The system creates the textfile.txt file on the hard disk.

32. i. 4

ii.

35	12

iii. Invalid query

iv. SX4
C Class

OR

i. SELECT CNO, CNAME, TRAVELDATE FROM TRAVEL ORDER BY CNO DESC;

ii. SELECT CNAME FROM TRAVEL WHERE VCODE = 'VO1' OR VCODE = 'V02'

iii. SELECT CNO, CNAME from TRAVEL WHERE TRAVELDATE BETWEEN '2015-05-01' AND '2015-12-31'
OR
SELECT CNO, CNAME from TRAVEL WHERE TRAVELDATE > = '2015-05-01' AND TRAVELDATE < = '2015-12-31'

iv. SELECT * FROM TRAVEL WHERE KM > 120 ORDER BY NOP;

v.

COUNT(*)	**VCODE**
2	V01
2	V02

vi. **DISTINCT VCODE**
V01
V02
V03
V04
V05

vii.

VCODE	CNAME	VEHICLETYPE
V02	Ravi Anish	AC DELUXE BUS
V04	John Malina	CAR

viii.

CNAME	**KM*PERKM**
Sahanubhuti	2700

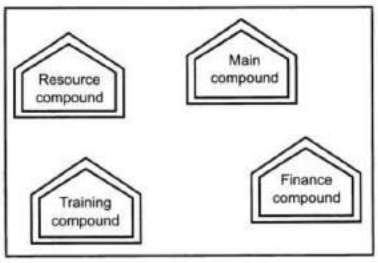
33. def push (stack):
s = [ ]
print "STACK BEFORE PUSH"

```
display(stack)
s.append(input("Enter student rollno?"))
s.append(raw_input("Enter student name"))
s.append(raw_input("Enter student grade"))
stack.append(s)
def display (stack):
l=len (stack)
print ("STACK CONTENTS")
for i in range(1-1,-1,-1):
print(stack[i])
stack = [ ]
print ("Creating Stack")
n=input("Enter the number of students")
for i in range (n)
student = [ ]
student.append (input("Enter student rollno?"))
student.append(raw_input("Enter student name"))
student. append(raw_input("Enter student grade"))
stack.append(student)
push(stack)
display(stack)
```

Section E

34. **Read the text carefully and answer the questions:**

Learn Together is an educational NGO. It is setting up its new campus at Jabalpur for its web-based activities. The campus has 4 compounds as shown in the diagram below:



Center to center distances between various Compounds as per architectural drawings (in Metre) is as follows:

Main Compound to Resource Compound	110 m
Main Compound to Training Compound	115 m
Main Compound to Finance Compound	35 m
Resource Compound to Training Compound	25 m
Resource Compound to Finance Compound	135 m
Training Compound to Finance Compound	100 m

The Expected Number of Computers in each Compound is as follows:

Main Compound	5
Resource Compound	15

Training Compound	150
Accounts Compound	20

(i) The most suitable place to house the server is Training Compound as it has a maximum number of computers.

(ii) Repeater: As per one layout, the repeater can be avoided as all distances between the compounds are <= 100 m.

(iii) Optical Fibre

OR

Hub/Switch: Training compound as it is hosting the server.

35. **Read the text carefully and answer the questions:**

Consider the following tables ACTIVITY and COACH:

Table: ACTIVITY

ACode	ActivityName	Stadium	ParticipantsNum	PrizeMoney	ScheduleDate
1001	Relay 100 × 4	Star Annex	16	10000	23-Jan-2004
1002	High Jump	Star Annex	10	12000	12-Dec-2003
1003	Shot Put	Super Power	12	8000	14-Feb-2004
1005	Long Jump	Star Annex	12	9000	01-Jan-2004
1008	Discuss Throw	Super Power	10	15000	19-Mar-2004

Table: COACH

PCode	Name	ACode
1	Ahmad Hussain	1001
2	Ravinder	1008
3	Janila	1001
4	Naaz	1003

(i) i. SELECT Acodes, ActivityName FROM ACTIVITY ORDER BY ACode DESC;

ii. SELECT SUM(PrizeMoney) FROM ACTIVITY GROUP BY Stadium;

(ii) i. SELECT Name, Acode FROM COACH ORDER BY Acode;

ii. SELECT * FROM ACTIVITY WHERE SchduleDate < '01-Jan-2004' ORDER BY ParticipantsNum;

(iii) i. 3

ii. 12-Dec-2003 19-Mar-2004