

VISAKAN SCHOOL

Class: XII Session: 2023-24

Computer Science (083)

Revision Question Paper 2

Time Allowed: 3Hours

Maximum Marks: 70

General Instruction:

1. The question paper is divided into 5Sections – A to E
2. Section A consists of 18 Questions carrying 01 mark each
3. Section B consists of 07 Very short Type Questions carrying 2 marks each.
4. Section C consists of 05 Short Answer type Questions carrying 03 marks each.
5. Section D consists of 03 Long Answer type Questions carrying 05 marks.
6. Section E consists of 02 Questions carrying 4 marks each.
7. All programming questions are to be answered using Python Language only.
8. There will be no negative marking for the wrong answers

| | SECTION – A | |
|----|---|---|
| | Each question carries one mark | |
| 1. | Expand: a) PPP b) VoIP | 1 |
| 2. | Central computer which is powerful than other computers in the network are called | 1 |
| 3. | command is used to modify the attribute data type or size in a table structure. | 1 |
| 4. | What is the data type of the result set extracted from the database using the cursor object when we use the following methods? a) fetchone() b) fetchall() | 1 |

| | | |
|-----|---|---|
| 5. | To include integrity constraint in an existing relation, we should use statement. | 1 |
| 6. | The role of the statement cursor=db.cursor() is to i) Create an instance of a cursor ii) Move cursor row wise iii) Connect cursor to database iv) Prepare cursor to move. | 1 |
| 7. | Which of the following is not an aggregate function? a) avg () b) max () c)join() d) count() | 1 |
| 8. | protocol is used to send the email to another email user. | 1 |
| 9. | _____ command is used to remove primary key from the table in SQL. (a) update (b)remove (c) alter (d)drop | 1 |
| 10. | In case of Switching, before a communication starts, a dedicated path is identified between the sender and receiver. | 1 |
| 11. | command is used to remove data base in SQL. | 1 |
| 12. | Which of the following commands will delete the table from MYSQL database? (a) DELETE TABLE (b) DROP TABLE (c) REMOVE TABLE (d) ALTER TABLE | 1 |
| 13. | _____ is a non-key attribute, whose values are derived from the primary key of some other table. (a) Primary Key (b) Foreign Key (c) Candidate Key(d) Alternate key | 1 |
| 14. | The SELECT statement when combined with _____ clause, returns records without repetition. (a) DESCRIBE (b) UNIQUE (c) DISTINCT (d) NULL | 1 |
| 15. | _____ is a communication methodology designed to deliver both voice and multimedia communications over Internet protocol. (a) VoIP (b) SMTP (c) PPP (d)HTTP | 1 |
| 16. | Which function is used to display the total number of records from table in a database? (a) sum(*) (b) total(*) (c) count(*) (d) return(*) | 1 |

| | | |
|-----|---|---|
| | <p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>(a) Both A and R are true and R is the correct explanation for A</p> <p>(b) Both A and R are true and R is not the correct explanation for A</p> <p>(c) A is True but R is False</p> <p>(d) A is false but R is True</p> | |
| 17. | <p>Assertion: create, delete and alter commands are DDL commands</p> <p>Reasoning: Database schema is specified by a set of definitions which are expressed by DDL</p> | 1 |
| 18. | <p>Assertion: Aggregate functions take multiple values as input and product single output</p> <p>Reasoning: There are six types of aggregate functions</p> | 1 |

SECTION – B

| | | |
|-----|--|---|
| 19. | Write two points of difference between Circuit Switching and Packet Switching. | 2 |
| 20. | Write two points of difference between XML and HTML. | 2 |
| 21. | Explain the use of 'Foreign Key' in a Relational Database Management System. Give example to support your answer. | 2 |
| 22. | <p>(a) Write the full forms of the following:</p> <p>(i) SMTP (ii) PPP</p> <p>(b) What is the use of TELNET?</p> | 2 |
| 23. | Differentiate between count () and count (*) functions in SQL with appropriate example. | 2 |
| 24. | <p>Categorize the following commands as DDL or DML:</p> <p>INSERT, UPDATE, ALTER, DROP</p> | 2 |
| 25. | <p>A resultset is extracted from the database using the cursor object (that has been already created) by giving the following statement.</p> <p>Mydata=cursor.fetchone()</p> <p>(a) How many records will be returned by fetchone() method?</p> <p>(b) What will be the datatype of Mydata object after the given command is</p> | 2 |

| | | |
|--|-----------|--|
| | executed? | |
|--|-----------|--|

SECTION – C

| 26. | <p>Charu has to create a database named MYEARTH in MYSQL. She now needs to create a table named CITY in the database to store the records of various cities across the globe. The table CITY has the following structure:</p> <p>Table: CITY</p> <table><tr><th>FIELD NAME</th><th>DATA TYPE</th><th>REMARKS</th></tr><tr><td>CITYCODE</td><td>CHAR (5)</td><td>PRIMARY KEY</td></tr><tr><td>CITYNAME</td><td>CHAR (30)</td><td></td></tr><tr><td>SIZE</td><td>INTEGER</td><td></td></tr><tr><td>AVGTEMP</td><td>INTEGER</td><td></td></tr><tr><td>POLLUTIONRATE</td><td>INTEGER</td><td></td></tr><tr><td>POPULATION</td><td>INTEGER</td><td></td></tr></table> <p>Help her to complete the task by suggesting appropriate SQL commands.</p> | FIELD NAME | DATA TYPE | REMARKS | CITYCODE | CHAR (5) | PRIMARY KEY | CITYNAME | CHAR (30) | | SIZE | INTEGER | | AVGTEMP | INTEGER | | POLLUTIONRATE | INTEGER | | POPULATION | INTEGER | | (3) |
|---------------|---|-------------|-----------|---------|----------|----------|-------------|----------|-----------|---------|------|---------|---------|---------|---------|-----|---------------|---------|--------|------------|---------|-----|-----|
| FIELD NAME | DATA TYPE | REMARKS | | | | | | | | | | | | | | | | | | | | | |
| CITYCODE | CHAR (5) | PRIMARY KEY | | | | | | | | | | | | | | | | | | | | | |
| CITYNAME | CHAR (30) | | | | | | | | | | | | | | | | | | | | | | |
| SIZE | INTEGER | | | | | | | | | | | | | | | | | | | | | | |
| AVGTEMP | INTEGER | | | | | | | | | | | | | | | | | | | | | | |
| POLLUTIONRATE | INTEGER | | | | | | | | | | | | | | | | | | | | | | |
| POPULATION | INTEGER | | | | | | | | | | | | | | | | | | | | | | |
| 27. | <p>(a) Consider the following tables – Bank_Account and Branch:</p> <p>Table: Bank_Account</p> <table><tr><th>ACode</th><th>Name</th><th>Type</th></tr><tr><td>A01</td><td>Amrita</td><td>Savings</td></tr><tr><td>A02</td><td>Parthodas</td><td>Current</td></tr><tr><td>A03</td><td>Miraben</td><td>Current</td></tr></table> <p>Table: Branch</p> <table><tr><th>Acode</th><th>City</th></tr><tr><td>A01</td><td>Delhi</td></tr><tr><td>A02</td><td>Mumbai</td></tr><tr><td>A01</td><td>Nagpur</td></tr></table> <p>What will be the output of the following statement?</p> | ACode | Name | Type | A01 | Amrita | Savings | A02 | Parthodas | Current | A03 | Miraben | Current | Acode | City | A01 | Delhi | A02 | Mumbai | A01 | Nagpur | 1+2 | |
| ACode | Name | Type | | | | | | | | | | | | | | | | | | | | | |
| A01 | Amrita | Savings | | | | | | | | | | | | | | | | | | | | | |
| A02 | Parthodas | Current | | | | | | | | | | | | | | | | | | | | | |
| A03 | Miraben | Current | | | | | | | | | | | | | | | | | | | | | |
| Acode | City | | | | | | | | | | | | | | | | | | | | | | |
| A01 | Delhi | | | | | | | | | | | | | | | | | | | | | | |
| A02 | Mumbai | | | | | | | | | | | | | | | | | | | | | | |
| A01 | Nagpur | | | | | | | | | | | | | | | | | | | | | | |

SELECT * FROM Bank_Account NATURAL JOIN Branch;

(b) Write the output of the queries (i) to (iv) based on the table, TECH_COURSE given below:

Table: TECH_COURSE

| CID | CNAME | FEES | STARTDATE | TID |
|------|--------------------------------|-------|------------|------|
| C201 | Animation and VFX | 12000 | 2022-07-02 | 101 |
| C202 | CADD | 15000 | 2021-11-15 | NULL |
| C203 | DCA | 10000 | 2020-10-01 | 102 |
| C204 | DDTP | 9000 | 2021-09-15 | 104 |
| C205 | Mobile Application Development | 18000 | 2022-11-01 | 101 |
| C206 | Digital marketing | 16000 | 2022-07-25 | 103 |

- i) SELECT DISTINCT TID FROM TECH_COURSE;
- ii) SELECT TID, COUNT (*), MIN(FEES) FROM TECH_COURSE GROUP BY TID HAVING COUNT(TID)>1;
- iii) SELECT CNAME FROM TECH_COURSE WHERE FEES>1500 ORDER BY CNAME;
- iv) SELECT AVG(FEES) FROM TECH_COURSE WHERE FEES BETWEEN 15000 AND 17000;

28.

Consider the Employee table structure

| Attribute | Datatype | Size | Keys |
|-------------|----------|------|-------------|
| Emp_id | Int | | Primary Key |
| Emp_name | varchar | 20 | |
| age | int | | |
| dob | date | | |
| aadhar | int | | |
| designation | varchar | 20 | |
| Salary | int | | |

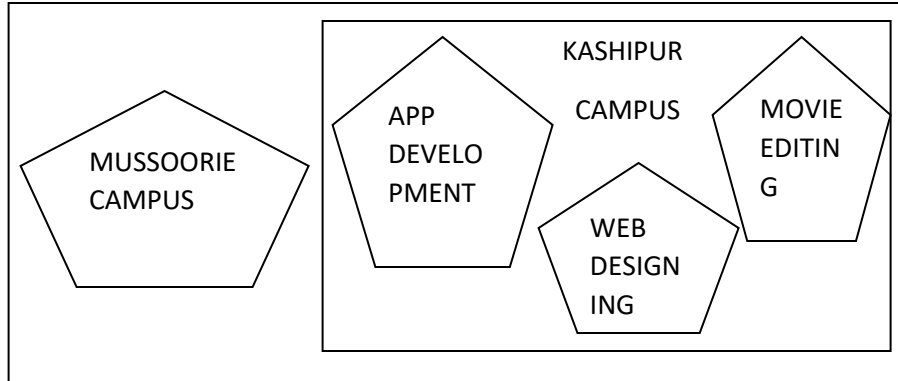
- a) Write sql statement for creating the table employee?
- b) Write the statement to display the structure of the table
- c) Suppose this table consists of 7 records, what is the cardinality and

3

| | degree? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---|----------------|------------|----------------|------|----------|---|--------|------|------|-------|---|----------|------|------|--------|---|-----|------|------|--------|---|-----|------|------|--------|---|-------|------|------|-------|---|--------|------|------|-------|---|
| 29. | Compare the following topology a) Bus b) Star c) Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30. | Consider the below table Movie write down the query (a) to (c) <table><tr><th>Movie_id</th><th>Movie_name</th><th>Collection(cr)</th><th>Year</th><th>Language</th></tr><tr><td>1</td><td>Dangal</td><td>2000</td><td>2016</td><td>Hindi</td></tr><tr><td>2</td><td>Bahubali</td><td>1800</td><td>2017</td><td>Telugu</td></tr><tr><td>3</td><td>RRR</td><td>1300</td><td>2022</td><td>Telugu</td></tr><tr><td>4</td><td>KGF</td><td>1250</td><td>2022</td><td>Kanada</td></tr><tr><td>5</td><td>Jawan</td><td>1100</td><td>2023</td><td>Hindi</td></tr><tr><td>6</td><td>Pathan</td><td>1050</td><td>2023</td><td>Hindi</td></tr></table> <p>a) Display the details of the movie which released on 2022 b) Display the name of the movie which name ends with 'n' c) Display the details of the Telugu movie which get maximum profit</p> | Movie_id | Movie_name | Collection(cr) | Year | Language | 1 | Dangal | 2000 | 2016 | Hindi | 2 | Bahubali | 1800 | 2017 | Telugu | 3 | RRR | 1300 | 2022 | Telugu | 4 | KGF | 1250 | 2022 | Kanada | 5 | Jawan | 1100 | 2023 | Hindi | 6 | Pathan | 1050 | 2023 | Hindi | 3 |
| Movie_id | Movie_name | Collection(cr) | Year | Language | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Dangal | 2000 | 2016 | Hindi | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Bahubali | 1800 | 2017 | Telugu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | RRR | 1300 | 2022 | Telugu | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | KGF | 1250 | 2022 | Kanada | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Jawan | 1100 | 2023 | Hindi | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Pathan | 1050 | 2023 | Hindi | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SECTION – D

| | | |
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| 31. | <p>MakeInIndia Corporation, an Uttarakhand based IT training company, is planning to set up training centres in various cities in next 2 years. Their first campus is coming up in Kashipur district. At Kashipur campus, they are planning to have 3 different blocks for App development, web designing and Movie editing. Each block has number of computers, which are required to be connected in a network for communication, data and resource sharing. As a network consultant of this company, you have to suggest the best network related solutions for them for issues/problems raised in question nos. (i) to (v), keeping in mind the distances between various blocks/locations and other given parameters.</p> | 5 |
|-----|--|---|



Distance between various blocks/locations:

| Block | Distance |
|-------------------------------------|----------|
| App development to Web designing | 28m |
| App development to Movie editing | 55m |
| Web designing to Movie editing | 32m |
| Kashipur Campus to Mussoorie Campus | 232km |

Number of computers

| Block | Number of Computers |
|-----------------|---------------------|
| App development | 75 |
| Web designing | 50 |
| Movie editing | 80 |

- (i) Suggest the most appropriate block/location to house the SERVER in the Kashipur campus (out of the 3 blocks) to get the best and effective connectivity. Justify your answer.
- (ii) Suggest a device/software to be installed in the Kashipur Campus to take care of data security.
- (iii) Suggest the best wired medium and draw the cable layout (Block to Block) to economically connect various blocks within the Kashipur Campus.
- (iv) Suggest the placement of the following devices with appropriate reasons:
 - a. Switch / Hub
 - b. Repeater
- (v) Suggest a protocol that shall be needed to provide video

| | Conferencing solution between Kashirpur Campus and Mussoorie Campus. | | | | | | | | | | | | | | | | | | | | | | |
|-------------|---|------------|----------|----------|-------------|------|-------|-------------|--------|------|------|--------|------|-------------|-------|-------|-------------|-------------|-------|-------------|---------------|-------|---|
| 32. | <p>Sri Vijay Group of institution is planning to start their schools in four major cities in Tamil nadu to provide Education. The institution has planned to setup their head office in Dharmapuri in three location and have name their Dharmapuri office as “Main Office”, “Cbse” and “Matric”. The institutions other schools are loacated in “Hosur”, “Tiruppattur”, and “Thiruvanamalai”. A rough layout of the same is as follows.</p> <div data-bbox="310 571 1206 978" data-label="Diagram"> </div> <p>Approximate distance between these office as per network survey team is as follows:</p> <table border="1"> <thead> <tr> <th>Place From</th><th>Place To</th><th>Distance</th></tr> </thead> <tbody> <tr> <td>Main Office</td><td>Cbse</td><td>1.5km</td></tr> <tr> <td>Main Office</td><td>Matric</td><td>300m</td></tr> <tr> <td>Cbse</td><td>Matric</td><td>500m</td></tr> <tr> <td>Main Office</td><td>Hosur</td><td>200km</td></tr> <tr> <td>Main Office</td><td>Tiruppattur</td><td>100km</td></tr> <tr> <td>Main Office</td><td>Tiruvanamalai</td><td>120km</td></tr> </tbody> </table> <p>In continuation of the above, the company expert has planned to install the following number of computers in each of their offices:</p> | Place From | Place To | Distance | Main Office | Cbse | 1.5km | Main Office | Matric | 300m | Cbse | Matric | 500m | Main Office | Hosur | 200km | Main Office | Tiruppattur | 100km | Main Office | Tiruvanamalai | 120km | 5 |
| Place From | Place To | Distance | | | | | | | | | | | | | | | | | | | | | |
| Main Office | Cbse | 1.5km | | | | | | | | | | | | | | | | | | | | | |
| Main Office | Matric | 300m | | | | | | | | | | | | | | | | | | | | | |
| Cbse | Matric | 500m | | | | | | | | | | | | | | | | | | | | | |
| Main Office | Hosur | 200km | | | | | | | | | | | | | | | | | | | | | |
| Main Office | Tiruppattur | 100km | | | | | | | | | | | | | | | | | | | | | |
| Main Office | Tiruvanamalai | 120km | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---------------|---|----------------|---------------------|----------------|-----|---------|-----|--------|-----------|-------|-----|-------------|----|---------------|------------------|----|---|
| | <table><tr><td>Institutions</td><td>Number of computers</td></tr><tr><td>Main Office</td><td>25</td></tr><tr><td>Cbse</td><td>125</td></tr><tr><td>Matric</td><td>75</td></tr><tr><td>Hosur</td><td>70</td></tr><tr><td>Tiruppattur</td><td>40</td></tr><tr><td>Tiruvanamalai</td><td>30</td></tr></table> <p>a) Suggest network type for connecting each of the following set of their institutions: Head Office and Cbse Head Office and Hosur</p> <p>b) Which device you will suggest to be produced by the company for connecting all the computers with in each of their offices out of the following device? i) Switch/Hub ii) Modem iii) Telephone</p> <p>c) Which of the following communication media, you will suggest to be procured by the company for connecting their local institutions in Dharmapuri for very effective and fast communication? i) Telephone Cable ii) Optical fibre iii) Ethernet cable</p> <p>d) Suggest a Cable /Wiring layout for connecting the local institutes located in Dharmapuri. Also, suggest an effective method /technology for connecting the institution other campus at "Hosur"," Tiruppattur" and "Tiruvanamalai".</p> | Institutions | Number of computers | Main Office | 25 | Cbse | 125 | Matric | 75 | Hosur | 70 | Tiruppattur | 40 | Tiruvanamalai | 30 | | |
| Institutions | Number of computers | | | | | | | | | | | | | | | | |
| Main Office | 25 | | | | | | | | | | | | | | | | |
| Cbse | 125 | | | | | | | | | | | | | | | | |
| Matric | 75 | | | | | | | | | | | | | | | | |
| Hosur | 70 | | | | | | | | | | | | | | | | |
| Tiruppattur | 40 | | | | | | | | | | | | | | | | |
| Tiruvanamalai | 30 | | | | | | | | | | | | | | | | |
| 33. | <p>Consider the Department and Teachers tables, write down the query (a) to (e)</p> <p>Table: Department</p> <table><tr><td>Dept_id</td><td>Dept_name</td><td>No_of_students</td></tr><tr><td>101</td><td>Physics</td><td>45</td></tr><tr><td>102</td><td>chemistry</td><td>24</td></tr><tr><td>103</td><td>Mathematics</td><td>27</td></tr><tr><td>104</td><td>Computer Science</td><td>11</td></tr></table> | Dept_id | Dept_name | No_of_students | 101 | Physics | 45 | 102 | chemistry | 24 | 103 | Mathematics | 27 | 104 | Computer Science | 11 | 5 |
| Dept_id | Dept_name | No_of_students | | | | | | | | | | | | | | | |
| 101 | Physics | 45 | | | | | | | | | | | | | | | |
| 102 | chemistry | 24 | | | | | | | | | | | | | | | |
| 103 | Mathematics | 27 | | | | | | | | | | | | | | | |
| 104 | Computer Science | 11 | | | | | | | | | | | | | | | |

Table: Teachers

| T_id | Name | Salary | No_of_periods | DOB | Dept_id |
|------|--------|--------|---------------|------------|---------|
| 1 | Ajith | 34000 | 32 | 1985-11-07 | 104 |
| 2 | Vijay | 48000 | 35 | 1987-09-12 | 102 |
| 3 | Vishal | 30000 | 36 | 1989-12-31 | 101 |
| 4 | Surya | 49000 | 38 | 1987-07-08 | 103 |
| 5 | Jeeva | 25000 | 32 | 1988-11-02 | 102 |
| 6 | Arya | 26000 | 36 | 1990-03-25 | 103 |
| 7 | Siva | 38000 | 40 | 1991-07-07 | 101 |

- Display the name of the teachers who celebrate birthday in the month of November
- Display the details of the teacher who have maximum number of periods?
- Display department name and average salary of teachers in each department which have more than 3000 average salary
- Remove the details of teacher who get lowest salary?
- Increase the salary of the teachers who handling more than 33 periods?

SECTION – E

| | | | | | | | | | | | | | | |
|-------|--|---------|--------|-------------|--------|-------------|--------|-----|--------|---------|------|---------|-------|---|
| 34. | <p>Write queries (a) to (d) based on the tables EMPLOYEE and DEPARTMENT given below:</p> <p>Table: EMPLOYEE</p> <table><tr><td>EMPID</td><td>NAME</td><td>DOB</td><td>DEPTID</td><td>DESIGNATION</td><td>SALARY</td></tr><tr><td>120</td><td>Alisha</td><td>23-Jan-</td><td>D001</td><td>Manager</td><td>75000</td></tr></table> | EMPID | NAME | DOB | DEPTID | DESIGNATION | SALARY | 120 | Alisha | 23-Jan- | D001 | Manager | 75000 | 4 |
| EMPID | NAME | DOB | DEPTID | DESIGNATION | SALARY | | | | | | | | | |
| 120 | Alisha | 23-Jan- | D001 | Manager | 75000 | | | | | | | | | |

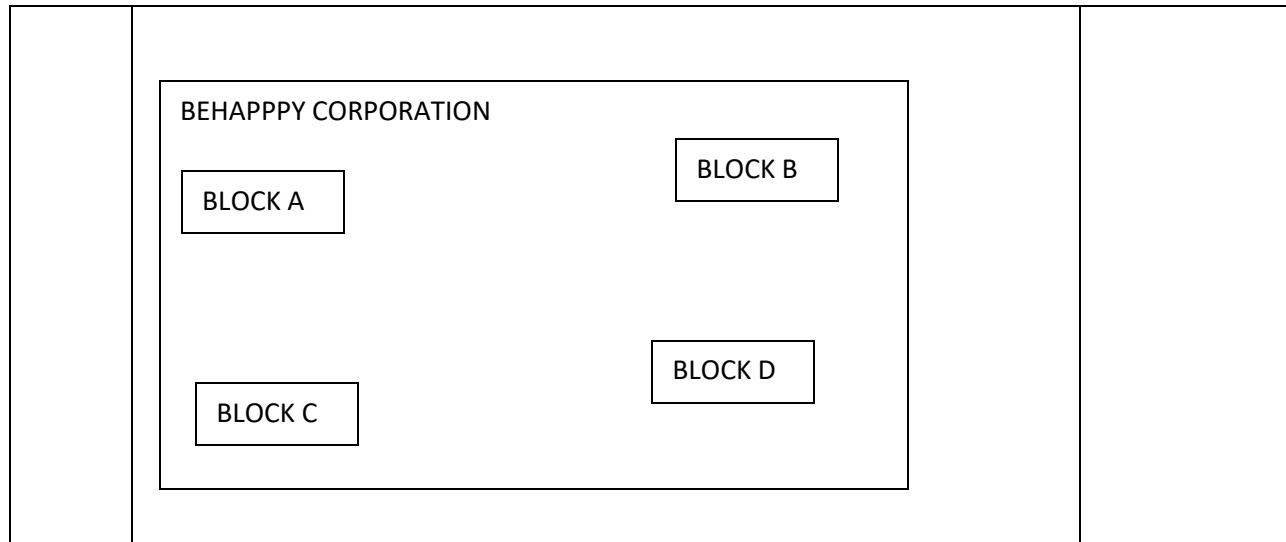
| | | | | | |
|-----|--------|-------------|------|-------------|-------|
| | | 1978 | | | |
| 123 | Nitin | 10-oct-1977 | D002 | AO | 59000 |
| 129 | Navjot | 12-jul-1971 | D003 | Supervisor | 40000 |
| 130 | Jimmy | 30-Dec-1980 | D004 | Sales Rep | |
| 131 | Faiz | 06-Apr-1984 | D001 | Dep Manager | 65000 |

Table: DEPARTMENT

| DEPTID | DEPTNAME | FLOORNO |
|--------|------------|---------|
| D001 | Personal | 4 |
| D002 | Admin | 10 |
| D003 | Production | 1 |
| D004 | Sales | 3 |

- (a) To display the average salary of all employees, department wise.
- (b) To display name and respective department name of each employee whose salary is more than 50000.
- (c) To display the names of employees whose salary is not known, in alphabetical order.
- (d) To display DEPTID from the table EMPLOYEE without repetition.

| | | |
|-----|--|---|
| 35. | BeHappy Corporation has set up its new centre at Noida, Uttar Pradesh for its office and web-based activities. It has 4 blocks of buildings. | 4 |
|-----|--|---|



Distance between the various blocks is as follows:

A to B 40 m

B to C 120m

C to D 100m

A to D 170m

B to D 150m

A to C 70m

Numbers of computers in each block

Block A - 25

Block B - 50

Block C - 125

Block D - 10

(a) Suggest and draw the cable layout to efficiently connect various blocks of buildings within the Noida center for connecting the digital devices.

(b) Suggest the placement of the following device with justification

i. Repeater

ii. Hub/Switch

(c) Which kind of network (PAN/LAN/WAN) will be formed if the Noida office is connected to its head office in Mumbai?

(d) Which fast and very effective wireless transmission medium should preferably be used to connect the head office at Mumbai with the center at Noida?

*****ALL THE BEST*****