ST. XAVIER'S SCHOOL

DHARAHARA, BALLIA (U.P.)

SUMMER ASSIGNMENT 2025 – 2026

CLASS XII

SUBJECT	TOPIC/ ACTIVITY	
ENGLISH	Make a Project file on the topic:	
	→	Write 5 years Previous Years Board Questions from The Last Lesson, My Mother at Sixty-Six and Keeping Quiet
	→	Write the definition along with the examples from the text of different types of Figures of Speech/ Literary devices used.
		(Simile, Metaphor, Personification, Alliteration, Irony, Oxymoron, Repetition, Pun, Imagery)
	→	Cut and Paste News-paper Article (at least 5) on War and Peace.
	→	Write different types of notices: of 1. Lost and Found, 2. Summer Camp, 3. Event such as Annual Function, Independence Day, etc. 4. Competition, 5. Public Announcement
	→	Write **5 formal letters**: 1. **Letter to the editor** - complaining about air pollution and suggesting some solution or suggestions. 2. **Letter to municipal cooperation:** complaining about poor drainage facility in your locality. 3. **Letter to superintendent of police:** complaining about reckless driving which is causing in increase of the cases of traffic accidents causing trouble for citizens especially children and elderly. 4. **Inquiry letter:** inquiring about the course, duration, timing, fee, future prospects, etc. 5. **Letter for placing of orders:** to purchase sports equipment and items for school annual sports competition.
PHYSCIAL EDUCATION	Make a Project file on the topic:	PHYSICAL EDUCATION LAB NAMUAL (EVERGREEN)
	a)	SAI INDIA KHELO TEST
	b)	Procedure and asana for Obesity, Diabetes, Asthma, Hypertension, Back Pain.

	c)	About any (one) game. (Basketball, Cricket, Football, Volleyball, Handball, Hockey, Kho-Kho, Kabaddi) -Rules -Terminologies -Skills -Equipment -Diagram of Ground/ Court
BUSINESS STUDIES	Make a file on the topic:	
	→	Principles of Henry Fayol
		Features
		Importance
		Page limit (30 Pages)
ACCOUNTACNY	Make a Project file on the topic:	
	→	Journal, Ledger, Cashbook, Trial Balance
	→	Trading, P/L Account, Balance Sheet
	→	Comparing Balance Sheet and Accounting Ratio.
ECONOMICS	Make a Project file on the topic:	
	For 12 B1	
	→	Government Budget
	→	Micro and Small-Scale industry
	For 12 B2	
	→	Role of Reserve Bank of India in control of Credit money supply

	→	Organic farming / back to nature
	For 12 C1	
	→	Exchange Rate determination - Methods and Technique
	→	Cashless Economy
POLITICAL SCIENCE	Make a Project file on the topic:	
	→	NAAM - Jawahar Lal Nehru
	→	Disintegration of USSR
HISTORY	Make a Project file on the topic:	
	→	The Indus Valley Civilization - Archaeological Excavations and New Perspectives
	→	The History and Legacy of Mauryan Empire
	→	"Mahabharat" - The great epic of India
	→	The History and culture of Vedic period
	→	Buddha Charita
	→	Gold Legacy of Gandhian ideas
	→	The vision of Kabir
	→	An insight into the Indian Constitution
GEOGRAPHY	Make a Project file on the topic:	
	→	Data - its source and compilation

	→	Data Processing
	→	Graphical representation of Data
	→	Spatial information technology
	→	Practice the map of India and World Map
CHEMISTRY	Make a Project file on the topic:	
	→	Solve previous five years question paper of C.B.S.E. Board
	→	Prepare a project work on topic given in chemistry Lab Manual.
PHYSICS	Make a Project file on the topic:	
	→	Electric field & charge
	→	Solve previous ten years questions related to Electric field and Charge
	→	Solve NCERT numerical of Chapter - 1
	→	Solve the attached questions on Electric Field and Charges and complete it in your fair notebook.
BIOLOGY	Make a Project file on the topic:	
	→	**Activity**-To study the different parts of a flower by the **Hibiscus** flower.
	→	Name the pollinating agents of flowers like maize and wheat. Give any two characteristic Features of such a flower.
	→	Discuss the concept of pleiotropy with a suitable example.
	→	Give characteristics of insect pollinated flowers
	→	Draw and label a DNA molecule diagram.

	→	Make a Project on **HIV Cycle/ Malarial Cycle / Drug Abuse and Addiction.**
	→	Note----Solve the PYQs from the completed chapters of Biology.
MATHEMATICS	→	SOLVE NCERT Exemplar questions in the School fair copy of Chapter Matrix, Determinants and Inverse Trigonometry.
	→	Solve previous years questions from year 2022 - 2025 related to chapter taught in the school fair copy.
HINDI	Make a Project file on the topic:	
	→	तुलसीदास, हरिवंश राय बच्चन तथा महादेवी वर्मा का जीवन परिचय देते हुए उनकी रचनाओं का वर्णन कीजिए।
	→	महादेवी वर्मा को कौन कौन सा पुरस्कार उनकी किन रचनाओं पर प्राप्त हुए। लिखिए - (1000 - 1200 शब्द)
INFORMATICS PRACTICES	→	Complete the Board Based questions from SQL (attached) in your note book.
COMPUTER SCIENCE	→	Complete the exercise attached in your notebook.

HOLIDAY H W -CLASS XII : PHYSICS

ASSIGNMENT -1 ELECTRIC CHARGES AND FIELDS

Q1 Define electric dipole moment . Is it a scalar or a vector ? Derive the expression for the electric field of a dipole at a point on the equatorial line of the dipole .

Q2. State Gauss theorem . Using Gauss's law deduce the expression for the electric field due to a uniformly charged spherical conducting shell of radius R at a point (i) outside & (ii) inside the shell . Plot a graph showing variation of electric field as a function of $r > R$ and $r < R$ (r being the distance from the centre of the shell) .

Q3 .(a)Define electric flux . Write its S.I . unit .
(b) Using Gauss's law ,prove that the electric field at a point due to a uniformly charged infinite plane sheet is independent of the distance from it .
(c) How is the field directed if (i) the sheet is positively charged (ii)negatively charged ?

Q4. (a) Derive an expression for the torque experienced by an electric dipole kept in a uniform electric field . When is this torque maximum.

Q5 .Sketch the electric lines of force of
(a) a point charge $q > 0$,
(b) a point charge $q < 0$,
(c) an electric dipole or two equal & opposite charges separated by a small distance ,
(d) two equal positive charges placed small distance apart in air ,

Q6. What is meant by quantisation of electric charge ?

Q7 .Define dielectric constant of a medium in terms of force between electric charges .

Q8. An infinite line charge produces a field of 9×10^4 N/C at a distance of 4cm. Calculate the linear charge density.

Q9. Two infinite parallel plane thin sheets have uniform charge densities of σ_1 and σ_2 . Determine the electric field at points

    (i)   to the left of the sheets
    (ii)   between them
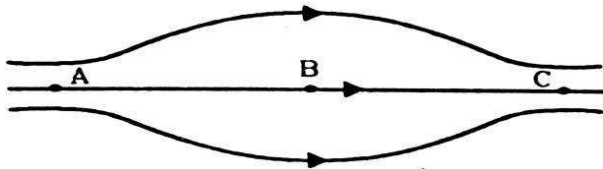   (iii)   to the right of the sheets.

Q10 .Is the force acting between two point electric charges q_1 and q_2 kept at some distance in air, attractive or repulsive when : (i) $q_1 q_2 > 0$ (ii) $q_1 q_2 < 0$

Q11.An electric dipole of dipole moment $20\mu C$ is enclosed by closed surface. What is the net electric flux coming out of this surface ?

Q12 . 1 C of charge is equal to charge of 'n' number of electrons in magnitude. What is the value of 'n'?

Q13.The distance of the field point , on the equatorial plane of a small electric dipole is halved . By what factor does the electric field due to the dipole change ?

Q14. . Fig . shows some of the electric field lines corresponding to an electric field .The electric field at which point is minimum.

Q15. An electrostatic field line is a continuous curve. That is a field line cannot have sudden breaks. Why not?

Q16. Explain why two Electric field lines never cross each other at any point.

Q17.Three equal charges, each having a magnitude of 2.0×10^{-6} C, are placed at the three corners of a right -angled triangle of sides 3cm,4cm and 5cm.Find the force on the charge at the right- angle corner.

Q18.Three charges ,each equal to q, are placed at the three corners of a square of side ' a' .Find the electric field at the fourth corner.

Q19. A glass rod when rubbed with silk cloth, acquires a charge of 1.6×10^{-13} C. What is the charge on silk cloth ?

Q20. Two charges q and -3q are placed fixed on x-axis separated by distance 'd' .Where should a third charge 2q be placed such that it will not experience any force?

Q21. A point charge causes an electric flux -3×10^{-14} Nm^2/ C to pass through a spherical Gaussian surface .

   (a) Calculate the value of the point charge .
   (b) If the radius of the Gaussian surface is double , how much flux would pass through the surface ?

Q22. Fill in the blanks:

(i) Two spheres of equal radii have charges q and 3q. The ratio of their surface charge densities is

_____.

(ii) Net electric field inside the charged spherical shell is_____.

(iii)Electric flux is a_____quantity and its SI unit is_____.

(iv) The force of repulsion between two positive charges of 1C each, kept 1m apart in vacuum , is

_____.

(v)In a uniform electric field, an electric dipole experiences no net_____but a non-zero

_____

.

Question 1

What is SQL ? What are the different categories of SQL commands ?

Question 2

What is a data type ? Name some data types available in MySQL.

Question 3

How would you calculate 13 * 15 in SQL ?

Question 4

Is NULL value the same as 0 (zero) ? Write the reason for your answer.

Question 5

Write the UPDATE command to increase the commission (Column name : COMM) by 500 of all the Salesmen who have achieved Sales (Column name : SALES) more than 200000. The table's name is COMPANY.

Question 6

While using SQL pattern matching, what is the difference between '_' (underscore) and '%' wildcard symbols ?

Question 7

Write one similarity and one difference between CHAR and VARCHAR data types.

Question 8

Write SQL statement to display

```
Today, the date is <current date>
```

Question 9

Write a command to add a NOT NULL constraint on FEES column of a student table.

Question 10

What is a constraint ? Name some constraints that you can apply to enhance database integrity.

Question 11

What is primary key ? What is PRIMARY KEY constraint ?

Question 12

Question 13

When a column's value is skipped in an INSERT command, which value is inserted in the database ?

Question 14

Write MySql command to display the list of existing databases.

Question 15

Write MySql command will be used to open an already existing database "CONTACTS".

Multiple Choice Questions

Question 1

What is the full form of SQL ?

1. Structured Query Language
2. Structured Query List
3. Simple Query Language
4. None of these

Question 2

What is the full form of DDL ?

1. Dynamic Data Language
2. Detailed Data Language
3. Data Definition Language
4. Data Derivation Language

Question 3

What does DML stand for ?

1. Different Mode Level
2. Data Model Language
3. Data Mode Lane
4. Data Manipulation language

Question 4

Which is the subset of SQL commands used to manipulate database structures, including tables ?

1. Data Definition Language (DDL)
2. Data Manipulation Language (DML)
3. Both (a) and (b)
4. None

Question 5

Which of the following sublanguages of SQL is used to define the structure of the relation, deleting relations and relating schemas ?

1. DML (Data Manipulation Language)
2. DDL (Data Definition Language)
3. Query

Question 6

Which of the following sublanguages of SQL is used to query information from the database and to insert tuples into, delete tuples from, and modify tuples in the database ?

1. DML (Data Manipulation Language)

2. DDL (Data Definition Language)

3. Query

4. Relational Schema

Question 7

With reference to SQL, identify the invalid data type.

1. Date

2. Integer

3. Year

4. Month

Question 8

Which of the following is a DDL command ?

1. SELECT

2. ALTER

3. INSERT

4. UPDATE

Question 9

Which of the following keywords will you use in the following query to display the unique values of the column dept_name?

```
SELECT .............. dept_name FROM Company;
```

1. All

2. From

3. Distinct

4. Name

Question 10

Which of the following keywords will you use in the following query to display all the values of the column dept_name ?

```
SELECT .............. dept_name FROM Company;
```

1. All

2. From

3. Distinct

4. Name

Question 11

The .... clause of SELECT query allows us to select only those rows in the result that satisfy a specified condition.

1. Where

2. from

3. having

4. like

Question 12

Consider the following query :

```
SELECT name FROM class WHERE subject .............. NULL;
```

Which comparison operator may be used to fill the blank space in above query ?

1. =

2. LIKE

3. IS

4. IS NOT

Question 13

In SQL, which command is used to SELECT only one copy of each set of duplicable rows ?

1. SELECT DISTINCT

2. SELECT UNIQUE

3. SELECT DIFFERENT

4. All of the above

Question 14

Which of the following types of table constraints will prevent the entry of duplicate rows ?

1. Unique

2. Distinct

3. Primary Key

4. NULL

Question 15

Ravisha has stored the records of all students of her class in a MYSQL table. Suggest a suitable SQL clause that she should use to display the names of students in alphabetical order.

1. SORT BY

2. ALIGN BY

3. GROUP BY

4. ORDER B

True/False Questions

Question 1

The condition in a WHERE clause in a SELECT query can refer to only one value.**Reason** — In SQL, the condition in a `WHERE` clause can refer to multiple values. We can use logical operators such as `AND, OR,` and `NOT` to combine multiple conditions. For example :

```
SELECT * FROM pet WHERE (species = 'cat' OR species = 'dog') AND sex = 'm';
```

Question 2

SQL provides the AS keyword, which can be used to assign meaningful column names to the results of queries using the SQL built-in functions.

Question 3

SQL is a programming language.

Question 4

SELECT DISTINCT is used if a user wishes to see duplicate columns in a query.

Question 5

Data manipulation language (DML) commands are used to define a database, including creating, altering, and dropping tables and establishing constraints.

Question 6

The keyword LIKE can be used in a WHERE clause to refer to a range of values.

Question 7

The keyword BETWEEN can be used in a WHERE clause to refer to a range of values.

Assertions and Reasons

Question 1

Assertion. The UNIQUE and PRIMARY KEY constraints are similar but not the same.

Reason. There can be only one column with PRIMARY KEY constraint, in a table.

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

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

3. A is true but R is false.

4. A is false but R is true.

Question 2

Assertion. In terms of values allowed in a column, both UNIQUE and PRIMARY KEY constraints are not the same.

Reason. UNIQUE allows NULL value once in the column, but PRIMARY KEY does not.

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

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

3. A is true but R is false.

4. A is false but R is true.

Question 3

Assertion. The INSERT INTO statement can skip some columns' values.

Reason. Only the columns allowing the NULL values or have default-value-defined, can be skipped in INSERT INTO statement of SQL.

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

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

3. A is true but R is false.

4. A is false but R is true.

Question 4

Assertion. The PRIMARY KEY can be defined only once in the CREATE TABLE command.

Reason. If the PRIMARY KEY is a composite key, then it is not defined with the individual columns but at the end of the table definition as a table constraint.

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

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

3. A is true but R is false.

4. A is false but R is true.

Question 5

Assertion. INSERT, UPDATE, DELETE, SELECT are the DML commands.

Reason. The DML commands manipulate the data stored in the database tables.

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

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

3. A is true but R is false.

4. A is false but R is true.

Question 6

Assertion. The PRIMARY KEY and FOREIGN KEY constraints are similar.

Reason. The FOREIGN KEY constraint links a column of a table with the PRIMARY KEY constraint of another table.

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

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

3. A is true but R is false.

4. A is false but R is true.

Question 7

Assertion. Data types varchar and char are the same as they both represent the string data.

Reason. The VARCHAR datatype stores variable string length while CHAR datatype stores the string always as fixed length strings.

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

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

3. A is true but R is false.

4. A is false but R is true.

Assignment

Question 1

How are SQL commands classified ?

Question 2

Differentiate between DDL and DML commands.

Question 3

Kabir has created the following table named exam :

RegNo	Name	Subject	Marks
1	Sanya	Computer Science	198
2	Sanchay	IP	100
3	Vinesh	CS	90
4	Sneha	IP	99
5	Akshita	IP	100

Help him in writing SQL queries to perform the following tasks :

(i) Insert a new record in the table having following values : [6, 'Khushi', 'CS', 85]

(ii) To change the value "IP" to "Informatics Practices" in Subject column.

(iii) To remove the records of those students whose marks are less than 30.

(iv) To add a new column Grade of suitable datatype.

(v) To display records of "Informatics Practices" subject.

Question 4(a)

What is the use of UPDATE statement in SQL ? How is it different from ALTER statement ?

Question 4(b)

Mr. Shankar created a table VEHICLE with 3 rows and 4 columns. He added 1 more row to it and deleted one column. What is the Cardinality and Degree of the Table VEHICLE ?

Question 4(c)

Consider the following table named "GYM" with details about fitness items being sold in the store. Write command of SQL for (i) to (iv).

Table : **GYM**

ICODE	INAME	PRICE	BRANDNAME
G101	Power Fit Exerciser	20000	Power Gymea
G102	Aquafit Hand Grip	1800	Reliable
G103	Cycle Bike	14000	Ecobike
G104	Protoner Extreme Gym	30000	Coscore

ICODE	INAME	PRICE	BRANDNAME
G105	Message Belt	5000	Message Expert
G106	Cross Trainer	13000	GTC Fitness

(i) To display the names of all the items whose name starts with "A".

(ii) To display ICODEs and INAMEs of all items, whose Brandname is Reliable or Coscore.

(iii) To change the Brandname to "Fit Trend India" of the item, whose ICODE as "G101".

(iv) Add a new row for new item in GYM with the details :

```
"G107", "Vibro exerciser", 21000, "GTCFitness"
```

Question 5(a)

Mr. James created a table CLIENT with 2 rows and 4 columns. He added 2 more rows to it and deleted one column. What is the Cardinality and Degree of the Table CLIENT ?

Answer

For the table CLIENT, the cardinality is 4 and degree is 3.

Explanation — Initially, the table CLIENT created by Mr. James had 2 rows and 4 columns, with a cardinality of 2 and a degree of 4. After modifying the table by adding 2 rows and deleting 1 column, the new cardinality of the table CLIENT is 4 and the degree is 3.

Question 5(b)

Consider the following table FITNESS with details about fitness products being sold in the store. Write command of SQL for (i) to (iv).

Table : **FITNESS**

PCODE	PNAME	PRICE	Manufacturer
P1	Treadmill	21000	Coscore
P2	Bike	20000	Aone
P3	Cross Trainer	14000	Reliable
P4	Multi Gym	34000	Coscore
P5	Massage Chair	5500	Regrosene
P6	Belly Vibrator Belt	6500	Ambawya

(i) To display the names of all the products with price more than 20000.

(ii) To display the names of all products by the manufacturer "Aone".

(iii) To change the price data of all the products by applying 25% discount reduction.

(iv) To add a new row for product with the details :

Question 6

Write SQL commands for the following on the basis of given table CLUB.

Table : **CLUB**

COACH_ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY	SEX
1	KUKREJA	35	KARATE	27/03/1996	1000	M
2	RAVINA	34	KARATE	20/01/1998	1200	F
3	KARAN	34	SQUASH	19/02/1998	2000	M
4	TARUN	33	BASKETBALL	01/01/1998	1500	M
5	ZUBIN	36	SWIMMING	12/01/1998	750	M
6	KETAKI	36	SWIMMING	24/02/1998	800	F
7	ANKITA	39	SQUASH	20/02/1998	2200	F
8	ZAREEN	37	KARATE	22/02/1998	1100	F
9	KUSH	41	SWIMMING	13/01/1998	900	M
10	SHAILYA	37	BASKETBALL	19/02/1998	1700	M

(a) To show all information about the swimming coaches in the club.

(b) To list names of all coaches with their date of appointment (DATOFAPP) in descending order.

(c) To display a report, showing coachname, pay, age and bonus (15% of pay) for all the

Question 7

Write SQL commands for the following on the basis of given table STUDENT1.

Table : **STUDENT1**

No.	Name	Stipend	Stream	AvgMark	Grade	Class
1	Karan	400.00	Medical	78.5	B	12B
2	Divakar	450.00	Commerce	89.2	A	11C
3	Divya	300.00	Commerce	68.6	C	12C
4	Arun	350.00	Humanities	73.1	B	12C
5	Sabina	500.00	Nonmedical	90.6	A	11A
6	John	400.00	Medical	75.4	B	12B

No.	Name	Stipend	Stream	AvgMark	Grade	Class
7	Robert	250.00	Humanities	64.4	C	11A
8	Rubina	450.00	Nonmedical	88.5	A	12A
9	Vikas	500.00	Nonmedical	92.0	A	12A
10	Mohan	300.00	Commerce	67.5	C	12C

(a) Select all the Nonmedical stream students from STUDENT1.

(b) List the names of those students who are in class 12 sorted by Stipend.

(c) List all students sorted by AvgMark in descending order.

Question 8

What is foreign key ? How do you define a foreign key in your table ?

column(s) in the child table (or related table) should have a foreign key constraint referencing the primary or unique key in the parent table.

Question 9

How is FOREIGN KEY commands different from PRIMARY KEY command ?

Question 10

How is FOREIGN KEY commands related to the PRIMARY KEY ?

Question 11

What are table constraints ? What are column constraints ? How are these two different ?

Question 12

Insert all those records of table Accounts into table Pending where amt_outstanding is more than 10000.

Question 13

Increase salary of employee records by 10% (table employee).

Table employee

ID	First_Name	Last_Name	User_ID	Salary
1	Dim	Joseph	Jdim	5000
2	Jaganath	Mishra	jnmishra	4000
3	Siddharth	Mishra	smishra	8000
4	Shankar	Giri	sgiri	7000
5	Gautam	Buddha	bgautam	2000

Question 14

Add a constraint (NN-Grade) in table Empl (given before assignment) that declares column Grade not null.

Question 15

Drop the table Empl.

Question 16(i)

Differentiate between DROP TABLE, DROP DATABASE.

Question 16(ii)

Differentiate between DROP TABLE, DROP clause of ALTER TABLE.

Question 17

Mr. Mittal is using a table with following columns :

```
Name, Class, Stream_Id, 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.

Question 18

The Doc_name Column of a table Hospital is given below :

Doc_name
Avinash
Hariharan
Vinayak
Deepak
Sanjeev

Based on the information, find the output of the following queries :

(i) SELECT doc_name FROM HOSPITAL WHERE Doc_name like "%v";

(ii) SELECT doc_name FROM HOSPITAL WHERE doc_name like "%e%";

The query `SELECT doc_name FROM HOSPITAL WHERE Doc_name like "%v";` selects the `doc_name` from the `HOSPITAL` table where the `Doc_name` column ends with the letter "v" using the `LIKE` operator with the "%" wildcard. This pattern matches any string where "v" is the last character, and any characters can precede it.

Question 19

Sarthak, a student of class XII, created a table "Class". Grade is one of the columns of this table. To find the details of students whose Grades have not been entered, he wrote the following MySql query, which did not give the desired result:

```
SELECT * FROM Class WHERE Grade = "Null";
```

Help Sarthak to run the query by removing the errors from the query and write the correct query.

Question 20

What is the purpose of ALTER TABLE command ? Can you add new columns with constraints such as NOT NULL ? Give example to justify your answer.

Question 21

What is the purpose of DROP TABLE command in MySql ? How is it different from DELETE command ?