

CLASS XII
HOLIDAY HOMEWORK
(2026-27)

ENGLISH CORE

GENERAL INSTRUCTIONS

- The Holiday Homework must be done neatly in an A4 ruled file.
- Use blue/black ink only.
- Decorate the file creatively and maintain proper presentation.
- Each assignment must begin on a new page.
- Students are required to complete **ONLY TWO ASSIGNMENTS**:
- ONE from Assignment A (Current Affairs Research Project)
- ONE from Assignment B (Literature Research Questions)

FORMAT OF THE FILE

1. Cover Page

Include:

Title: English Project

Subject: English Core

Name of Student

Class & Section

Roll Number

Session: 2026–27

School Name

2. Index

S.No.

Content

Page No.

1. Acknowledgement
2. Certificate
3. Assignment A
4. Assignment B
5. Bibliography

TOPICS

1. Impact of Artificial Intelligence on Education

Discuss how Artificial Intelligence is changing the teaching-learning process, its advantages, disadvantages, and future possibilities.

2. Climate Change and Its Effect on Human Life. Research recent environmental challenges faced globally and suggest practical measures to protect the environment.

3. Social Media: A Boon or a Curse for Teenagers?

Analyse the positive and negative impact of social media on students and youth.

4. India's Achievements in Space Technology

Research India's recent space missions and explain how they have contributed to national pride and scientific advancement.

5. Mental Health Awareness Among Teenagers

Discuss the importance of mental health, causes of stress among students, and ways to maintain emotional well-being.

ASSIGNMENT B

LITERATURE RESEARCH QUESTIONS

(Attempt ANY ONE Question in about 1000 words)

Instructions:

Answers should be analytical and well-structured.

Support your ideas with examples from the text.

Include quotations wherever suitable.

The answer must reflect independent research and critical thinking.

QUESTIONS FROM FLAMINGO

1.. "The modern world often isolates individuals emotionally."

Discuss this statement with reference to:

The Last Lesson

Lost Spring

My Mother at Sixty-Six

2. "Human greed and selfishness are the root causes of suffering."

Elaborate with reference to:

The Tiger King

Journey to the End of the Earth

Aunt Jennifer's Tigers

3. "The spirit of determination enables human beings to overcome all barriers."

Discuss with reference to:

Deep Water

Indigo

Keeping Quiet

4. How do the writers in Flamingo highlight the contrast between appearance and reality? Discuss with suitable examples from different chapters and poems.

QUESTIONS FROM VISTAS

5. "The greatest battles are fought within the human mind."

Discuss with reference to:

The Third Level

On the Face of It

Evans Tries an O-Level

6. Fear, loneliness, and alienation are recurring themes in Vistas. Explain with examples from any three chapters.

7. "The desire for freedom is universal."

Discuss this statement with reference to:

The Enemy

Memories of Childhood

Journey to the End of the Earth

8. How do the characters in Vistas challenge social prejudice and stereotypes? Discuss with examples from the text.

BIBLIOGRAPHY

Students may refer to the following sources:

NCERT Textbook – Flamingo

NCERT Supplementary Reader – Vistas

Newspaper Articles

Educational Websites

Reference Books

CBSE Sample Papers

Magazines and Journals

SUBMISSION GUIDELINES

Homework must be submitted on the reopening day after summer vacation.

Late submission may affect internal assessment.

Creativity, originality, presentation, and language accuracy will be considered for evaluation.

PHYSICS

I. Prepare an Investigatory Project on any one of the following topics or any other topic of your choice based on the concept of Physics (as per CBSE guidelines). POINTERS FOR MAKING PROJECT REPORT

The material should be placed and bound in the following order:

1. Top Sheet of transparent plastic –The top page of your report should carry the following information in printed form or handwritten in neat block

letters: Title of Project: Name of Student: Roll Number:

2. Aim of Project

3. Apparatus Required

4. Principle/Theory

5. Construction with Labeled Diagram

6. Working

7. Observations

8. Calculations

9. Result/ Conclusions

11. Graph if any

12. References/Bibliography

13. Back cover of plastic: may be opaque or transparent.

II. Write all 8 experiments in the Practical file and 6 activities in your activity file.

CHEMISTRY

1. Journal

Complete all the experiments in the journal neatly, as discussed in class.

2. Investigatory Project

Complete your investigatory project which you have been already allotted (except the observation part if you haven't performed your project).

PROJECT FILE SHOULD CONTAIN PAGES IN THE FOLLOWING ORDER:

- a. CERTIFICATE
- b. ACKNOWLEDGEMENT
- c. AIM OF PROJECT
- d. INTRODUCTION
- e. THEORY
- f. APPARATUS REQUIRED
- g. PROCEDURE
- h. OBSERVATION
- i. CONCLUSION
- j. PRECAUTION
- k. BIBLIOGRAPHY

BIOLOGY

- Our world is built on biology and once we begin to understand it, it then becomes a technology....

Make an investigatory project on any of the following topics:

For selection of the topic for the project, read different chapters of your syllabus and also consult scientific literature, magazines, and newspapers, search engines of the internet, etc. Then select the topic of your interest.

1. Importance, usage and preparation of bio-insecticides and biopesticides.
2. Population Explosion and Control.
3. Study on infertility-its causes and treatment.
4. Human Genome project.
5. DNA fingerprinting-Its Applications.
6. Mendelian and Chromosomal Disorders-Causes and symptoms.
7. Human Diseases Any human disease from NCERT text book can be taken as a topic and collect the complete information with statistical data.
8. Genetically Modified Organisms - BT cotton, Antisense Technology.
9. Recombinant DNA technology in Today's Medicine-INSULIN, ELISA, PCR.
10. Study on Gene therapy-Methodology and case study.
11. Drug Addiction and Control. 12. Role of Microbes in Human welfare.

I.2 Following points should be kept in mind while writing the project work.

1. Compare your results with those available in the reference books.
2. Discuss your results in the light of available information about the project and draw out meaningful conclusions.
3. Make use of histograms, graphs, photographs, diagrams or models to support your observations and conclusions.

4. Give a list of books, magazines/journals and internet sites you have consulted during the course of your project.
5. Acknowledge the guidance, help and assistance rendered by your Principal, teachers, parents, and friends by expressing sincere gratitude and thanks to them in the beginning.

I.3 How to write an investigatory project:

- ✓ Students are required to get their project report written on bond paper sheets and to represent in the best possible manner.
- ✓ The project report should be written in the following sequence:
 - ❖ Title / Aim – Name of the project.
 - ❖ Introduction – Information collected from various sources related to the topic.
 - ❖ Observations – Record your observations / data in the form of tables, histograms, graphs, photographs, etc.
 - ❖ Conclusion – Give analysis of the data and compare your results with those available in the literature and draw conclusions.
 - ❖ References – Give the list of books, internet websites, magazines or journals you have consulted, for the project work.

MATHEMATICS

I. Art Integrated activity:

Sikkim, a northeastern state in India, is known for its rich cultural heritage, biodiversity, and unique architectural styles. Traditional and modern houses in Sikkim offer a fascinating comparison between old-world charm and contemporary innovations. Understanding this evolution is not only essential for appreciating the region's architectural history, but also for grasping how modernity and tradition coexist today. Taking inspiration from the vernacular houses, do the following activity:

- Design a house with the architectural methods that are suitable for building a house near the sea.
- Use proper geometrical tools and colours to draw the design of the house on a white pastel sheet.
- Write the scale used for measurement.
- Explain what makes your house durable and strong, and define the Mathematical concepts and principles used in it, on A4 size ruled sheets.

II. Experiments to be done in the Math Lab file.

1. To demonstrate a function which is not one - one but onto.
2. To verify that a given relation is equivalent.
3. To verify that a function can be symmetric but neither transitive nor reflexive.
4. To demonstrate a function that is onto but not one one.
5. To draw the graph of a^x and $\log_a x$, $a > 0$, $a \neq 1$ to examine that they are mirror images of each other.
6. To understand local maxima, local minima and point of reflection.
7. To verify that of all rectangles of the same perimeter the square has maximum area.
8. To measure the shortest distance between two skew lines and verify it analytically.

9. To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.

10. To understand the concepts of absolute maximum and minimum values of a function in a given closed interval through its graph.

COMPUTER SCIENCE

Part A: List of Practicals

(To be attempted in MySQL and Python Idle on your laptop/PC)

Instructions:

- i. Copy-paste in Word all the programs as well as screenshots of the program outputs).
- ii. Make a practical file according to the format discussed in class.

1. Queries Set 1 (Based on DDL commands & DML command INSERT)

Suppose your school management has decided to conduct cricket matches between students of Class XI and Class XII. Students of each class are asked to join any one of the four teams – Team Titan, Team Rockers, Team Magnet and Team Hurricane. During summer vacations, various matches will be conducted between these teams. Help your sports teacher to do the following:

- a) Create a database “Sports”.
- b) Create a table “TEAM” with following considerations:
 - a. It should have a column ‘TeamID’ for storing an integer value between 1 to 9, which refers to unique identification of a team.
 - b. Each ‘TeamID’ should have its associated name ‘TeamName’, which should be a string of length not less than 10 characters. Use the appropriate column- level constraint.
 - c. Using table level constraint, make ‘TeamID’ as the primary key.
- c) Show the structure of the table TEAM using a SQL statement.
- d) Add a new attribute ‘Team_Color’ of size 10 characters to the table TEAM.
- e) Insert these four rows in TEAM table:
 - a. Row 1: (1, Titan, Red)
 - b. Row 2: (2, Rockers, Blue)
 - c. Row 3: (3, Magnet, Yellow)
 - d. Row 3: (4, Hurricane, Green)
- f) Now create another table MATCH_DETAILS and insert data as shown below. Choose appropriate data types and constraints for each attribute. The attributes ‘FirstTeamID’ and ‘SecondTeamID’ should refer to the primary key ‘TeamID’ of the parent table TEAM.

MatchID	MatchDate	FirstTeamID	SecondTeamID	FirstTeamScore	SecondTeamScore
M1	2021/12/20	1	2	107	93
M2	2021/12/21	3	4	156	158

M3	2021/12/22	1	3	86	81
M4	2021/12/23	2	4	65	67
M5	2021/12/24	1	4	52	88
M6	2021/12/25	2	3	97	68

- g) Rename the attributes 'FirstTeamScore' and 'SecondTeamScore' to 'FTscore' and 'STscore' respectively.
- h) Change the data type of 'FTscore' and 'STscore' to decimal.

2. Queries Set 2 (Fetching records using SELECT)

Consider the following table named 'Exam' with details of marks. Write SQL commands for (i) to (v) and outputs for (vi) to (viii).

Table: Exam

Adno	SName	Percentage	Class_section	Stream
R001	Sushant	90.2	12A	Science
R002	Vaidyanath	80.5	12B	Humanities
R003	Miara	68.9	12B	Science
R004	Niara	96.0	12A	Commerce
R005	Shinjini	88.9	12D	Commerce

- (i) To display all information of the students of science in descending order of percentage.
- (ii) To display Adno, Name, Percentage and Stream of those students whose name is less than 6 characters long.
- (iii) To display all students who have 'i' anywhere and 'a' at the last position in their names.
- (iv) To display names and streams of students whose have got between 85% and 95%.
- (v) To display all different class sections.
- (vi) SELECT COUNT(*) FROM EXAM;
- (vii) SELECT Sname, Percentage FROM EXAM WHERE Name LIKE "N%";
- (viii) SELECT ROUND(Percentage,0) FROM EXAM WHERE Adno="R005";

3. Queries Set 3 (Based on Aggregate Functions and GROUP BY clause)

Consider the following table 'Gym'. Write SQL commands for (i) to (viii).

Table : Gym

Mcode	Mname	Gender	Age	FeeGiven	Type	DtAdmit
1	Amit	Male	35	6000	Monthly	2016-01-23
2	Rashmi	Female	25	8000	Monthly	2016-09-23
3	George	Male	42	24000	Yearly	2011-06-27
4	Fawad	Male	27	12000	Quarterly	2012-10-16
5	Samit	Male	54	6000	Monthly	2015-09-20
6	Lakshmi	Female	43	4500	Monthly	2016-01-15
7	Samita	Female	22	500	Guest	2017-01-23
8	Michael	Male	51	24000	Yearly	2013-07-18
9	DayaChand	Male	44	100000	Life	2012-09-08
10	Ajit	Male	33	12000	Quarterly	2015-06-26

- (i) To count the number of members of each type for the Gym.
- (ii) To display the membership type along with the maximum and minimum fees of each type.

- (iii) To display types of memberships available. Duplicate values should not be displayed.
- (iv) To display total fee given by each gender in Gym.
- (v) To display the average age of each gender in Gym.
- (vi) To display sum of fee given in each membership type.
- (vii) To display maximum fees given by monthly type members.
- (viii) To display minimum fees given by each membership type.

4. Queries Set 4 (Based on DML commands)

Write SQL commands for the following table MOVIE:

Table: MOVIE

	NO	TITLE	TYPE	RATING	SEATSLEFT	PRICE
1	SANJU	BIOPIC	A	4	250	
2	RAID	ACTION	B	2	175	
3	RACE3	ACTION	C	7	245	
4	HUNGAMA	COMEDY	A	3	130	
5	BAHUBALI	DRAMA	A	3	300	
6	AVENGER	ACTION	A	2	320	
7	PARMANU	THRILLER	B	2	120	
8	INCREDIBLES	ANIMATION	B	2	350	
9	HITCHKI	SOCIAL	C	1	90	
10	TITANIC	ROMANTIC	A	5	280	

- (i) Insert records as shown in the above table.
- (ii) Display a report listing the movie number, current price, updated price for each movie in the above table if the price is increased by 15%.
- (iii) Delete all the movies from the table with rating 'C'.
- (iv) Increase the price of all action movies by 5%. and thriller movies by 1%.
- (v) Modify the price of the movie 'Titanic' to Rs 320.
- (vi) Change the seats left for all action movies to 4.

5. Queries Set 5 (Based on Two Tables)

Write SQL queries for the two tables given below:

Table: FLIGHTS

FNO	SOURCE	DEST	NO_OF_FL	NO_OF_STOP
IC301	MUMBAI	BANGALORE	3	2
IC799	BANGALORE	KOLKATA	8	3
MC101	DELHI	VARANASI	6	0
IC302	MUMBAI	KOCHI	1	4
AM812	LUCKNOW	DELHI	4	0
MU499	DELHI	CHENNAI	3	3

Table: **FARES**

FNO	AIRLINES	FARE	TAX PERCENTAGE
IC301	Indian Airlines	9425	5
IC799	Spice Jet	8846	10
MC101	Deccan Airlines	4210	7
IC302	Jet Airways	13894	5
AM812	Indian Airlines	4500	6
MU499	Sahara	12000	4

- (i) Display flight number & number of flights from Mumbai from the table FLIGHTS.
- (ii) To display flight number, source, airlines of those flights where fare is less than Rs. 10000.
- (iii) Increase the tax by 2% for the flights starting from Delhi.
- (iv) Display the flight number and fare to be paid for the flights from Mumbai to Kochi using the tables, FLIGHTS & FARES, where the fare to be paid = fare+fare*tax/100.
- (v) Display total no of source stations(eliminate duplicate) present in the table.
- (vi) To count total no of Indian Airlines flights starting from various cities.
- (vii) Display the records of source stations starting with letter 'B'.
- (viii) Display total number of flights available for each Airlines.
- (ix) Display the fare for the flight for MUMBAI to BANGLORE.
- (x) Display flight number, number of flights and names of airlines that start from Delhi.

6. Queries Set 6 (Based on Two Tables)

The IT Company XYZ has asked their IT manager, Ms. Ankita to maintain the data of all the employees in two tables EMPLOYEE and DEPT. Ms. Ankita has created the two tables and has entered 6 rows in EMPLOYEE table and 5 rows in DEPT table.

Table: DEPT

D_CODE	D_NAME	CITY
D001	INFRASTRUCTURE	DELHI
D002	MARKETING	DELHI
D003	MEDIA	MUMBAI
D005	FINANCE	KOLKATA
D004	HUMAN RESOURCE	MUMBAI

Table: EMPLOYEE

E_NO	NAME	DOJ	DOB	GENDER	D_CODE	Salary
1001	Vinay	2013-09-02	1991-09-01	MALE	D001	250000
1002	Ruby	2012-12-11	1990-12-15	FEMALE	D003	270000
1003	Anuj	2013-02-03	1987-09-04	MALE	D005	240000
1007	Sunny	2014-01-17	1988-10-19	MALE	D004	250000
1004	Rohit	2012-12-09	1986-11-14	MALE	D001	270000
1005	Preeti	2013-11-18	1989-03-31	FEMALE	D002	NULL

Note: DOJ refers to date of joining and DOB refers to date of Birth of employees. Based on the above data, answer the following questions:

Write SQL queries for the following:

- 1) Insert two new rows in Employee table with following data:

1006	Rahul	2019-11-06	1992-01-04	MALE	D003	156000
1008	Sonam	2022-01-06	1991-04-06	FEMALE	D005	167000

- 2) To display the E_NO and NAME of those employees from the table EMPLOYEE who are born between '1987-01-01' and '1991-12-01'.
- 3) To display NAME and CITY of those employees whose DEPARTMENT is either 'MEDIA' or 'FINANCE'.
- 4) To display NAME of those employees whose name contains letter 'n'.
- 5) To display NAME of those employees whose name has exact 5 letters.
- 6) To display D_NAME and CITY from table DEPT where D_NAME ends with letter 'G' and CITY is 'DELHI'.
- 7) To display the maximum SALARY of EMPLOYEE table.
- 8) To set SALARY to 300000 of all those employees whose salary is NULL.
- 9) To display the average SALARY of EMPLOYEE table.
- 10) To display name of employees who have SALARY more than 200000 in ascending order of NAME.
- 11) To display department wise average salary of employees.
- 12) To display total number of departments in XYZ company.
- 13) To delete data of all the employees whose D_CODE is not 'D001'.
- 14) To display E_NO, NAME and SALARY of all those employees who don't live in 'DELHI'.
- 15) To change column name CITY to D_CITY in DEPT table.

7. Queries and Outputs based on Single-row functions

(A) Write SQL commands for the following operations:

- a) To display remainder of 175 and 5
- b) To display cube of 24.
- c) To display the number 563.854741 rounding off to the next hundred.
- d) To find the square root of 625.
- e) To convert 'welcome' into upper case and FRIENDS into lower case.
- f) To display 'DIA' from the word "MEDIA".
- g) To find the number of characters in Informatics Practices
- h) To display the current date and time
- i) To find the name of the weekday on 20th October, 2016.
- j) To display today's date into DD/MM/YYYY format.

(B) Write the output of the following SQL queries:

- (i) SELECT ROUND(6.5675, 2);
- (ii) SELECT ROUND(4563.778,-3);
- (iii) SELECT TRUNCATE(264.4367, -2);

- (iv) SELECT TRUNCATE(8.975,2);
- (v) SELECT SIGN(-25);
- (vi) SELECT MID('HONESTY WINS',3,4);
- (vii) SELECT LEFT('WELCOME',3);
- (viii) SELECT RIGHT(CONCAT('PYTHON','PROGRAM'),9);
- (ix) SELECT INSTR('UNICODE','CO');
- (x) SELECT DAYOFMONTH('2021-06-15');
- (xi) SELECT DAYOFYEAR('2021-06-15');
- (xii) SELECT DAY('2021-06-15');
- (xiii) SELECT MONTHNAME('2021-06-15');
- (xiv) SELECT CURDATE ();
- (xv) SELECT SYSDATE();

(C) Consider the following MOVIE table and write the SQL queries based on it.

Movie_ID	MovieName	Type	ReleaseDate	ProductionCost	BusinessCost
M001	The Kashmir Files	Action	2022/01/26	1245000	1300000
M002	Attack	Action	2022/01/28	1120000	1250000
M003	Special 26	Thriller	2013/02/08	250000	300000
M004	Badhai ho	Drama	2018/10/18	720000	68000
M005	Shabaash Mithu	Biography	2022/02/04	110000	80000
M006	Spiderman	Thriller	2021/12/16	24550000	34580000

- (i) Write a query to display the movie name and movie type.
 - (ii) Write a query to display first four digits of production cost.
 - (iii) Write a query to display last four digits of business cost.
 - (iv) Write a query to display weekday of movie release dates.
 - (v) Write a query to display day name on which movies are going to be released.
8. Write a Python program to connect with a MySQL database and store records of 5 employees in a table 'employee' created in a database 'company'. Also, extract records from the database table and display them in a tabular format.
9. Write a MySQL connectivity program in Python to
- (i) create a database SCHOOL.
 - (ii) create a table STUDENTS with the specifications - ROLLNO integer, NAME varchar(20), GENDER character(1), PERCENTAGE decimal and perform the following operations:
 - a) insert records into the table
 - b) display the contents of the table
10. Write a program that integrates MySQL with Python to perform the following operations with reference to the table STUDENTS created above:
- (i) To sort the records according to names in ascending order.

- (ii) To search a student using roll number. If present in the table, update the record with new name, otherwise display an appropriate error message.
- (iii) To search a student using roll number. If present in the table, delete the record, otherwise display an appropriate error message.

Part B: Project Work

Students will identify a real-world problem by exploring the environment. e.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.

Software to be used: Python (front-end) and MySQL (back-end)

Suggested topics:

- 1) Library Management System
- 2) Hotel Management System
- 3) Restaurant Management System
- 4) Employee Management System
- 5) E-Pharmacy/Medical Store Management System
- 6) Railway Reservation System
- 7) Airline Reservation System
- 8) Movie Reservation System
- 9) Online Auction System
- 10) Online Examination System
- 11) Evaluation of academic performance of students
- 12) Student Attendance Management System
- 13) Time-table generator
- 14) GST Billing System
- 15) Alumni Information System
- 16) e-Authentication System
- 17) Search engine
- 18) Automobile Service Station System
- 19) Banking Management System
- 20) Vehicle Parking System

INFORMATICS PRACTICES

Part A: List of Practicals

(To be attempted in Python Idle on your laptop/PC)

Instructions:

- i. Copy-paste in Word all the programs as well as screenshots of the program outputs.**
- ii. Make a practical file according to the format discussed in class.**

1. Write a Python program to create a Pandas series from an ndarray ['a','b','c','d'] with defined index values[100,101,102,103] and print it.
2. Write a Python program to create a Pandas series using a list [10,20,30,40,50] with defined index values ['a','b','c','d','e'] and print it.
3. Write a Python program to create a Series object 'vowel' to store all vowels individually. Its index should be 1,2,3,4 & 5.

4. The number of students in Class 11 and Class 12 in three streams (science, commerce and humanities) are stored in two series objects 'class11' and 'class12' that are created using two dictionaries d1 and d2 respectively. Write a Python program to find the total number of students in both the classes stream wise.
5. Write a Python program to add, subtract, multiple and divide the following two Pandas series :
[2, 4, 6, 8, 10] and [1, 3, 5, 7, 9].
6. Write a Python program to accept percentages of 5 students and store them in a series. Print all the elements that are above 75%.
7. Write a Python program to create a series object 'temp' that stores temperature of seven days in it. Its index should be 'Sunday', 'Monday' The program should perform the following operations on the series object:
 - (i) Display temp of first 3 days.
 - (ii) Display temp of last 3 days.
 - (iii) Display all temp in reverse order like Saturday, Friday,....
 - (iv) Display temp from Tuesday to Friday.
 - (v) Display square of all temperature.
8. Write a Python program to show all the attributes of a series created using the dictionary given below:
{'ram':34000,'hari':42000,'suman':30000,'chandan':45000,'raghu':23000}
9. Write a Python program to create a dataframe 'person' from the dictionary:
{'name': ['Asha', 'Radha', 'Kamal', 'Divy', 'Anjali'], 'height': [5.5, 5, np.nan, 5.9, np.nan],
'age': [18, 15, 20, 17, 14] }

Perform the following operations on the dataframe :

- (i) Display the dataframe.
 - (ii) Display all the attributes of the dataframe.
 - (iii) Select the rows where the height is not known.
 - (iv) Select the name of persons whose age is between 15 and 19 (both values inclusive)
10. Write a Python program to create a Pandas data frame from a dictionary of lists, called exam_data and defined index values 'labels'.


```
exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael',
                    'Matthew', 'Laura', 'Kevin', 'Jonas'],
            'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],
            'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],
            'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']
```

 - (i) Display the data frame for examination results.
 - (ii) Display row labels.
 - (iii) Display column labels.
 - (iv) Display sum of all scores.
 11. Write a Python program to create a Pandas data frame from the following dictionary of three series and print it:
{'Name':pd.Series(['Kunal','Amit','Virendra','Rohit','Ajay']), 'Age':pd.Series([26,27,25,24,31]),
'Score':pd.Series([87,47,67,55,47])}.
Sort the data frame in descending order of score and then ascending order of age and print the contents of the sorted data frame.

12. Write a Python program to create and display a Pandas data frame 'cloth' as given below

	CName	Size	Price
C1	Jeans	L	1200
C2	Jeans	XL	1350
C3	Shirt	XL	900
C4	Trouser	L	1000
C5	T-Shirt	XL	600

Perform the following operations on the dataframe:

- Change the name of 'Trouser' to 'pant' and Jeans to 'Denim'
- Increase price of all cloth by 10%
- Rename all the indexes to [C001, C002, C003, C004, C005]
- Delete the data of C3 (C003) from the 'cloth'
- Delete size from 'cloth'

13. Write a Python program to create a Pandas data frame from a dictionary of lists:

```
{ 'RollNo': [10,11,12,13,14,15], 'Name': ['Deepti','Mohit','Nishant','Preeti','Shikha','Tarun' ],  
                                     'English':[87,78,94,79,82,94] , 'History':[67,78,94,69,98,74],  
Sociology':[87,68,99,64,82,92], 'Economics':[77,98,99,82,88,93], 'IP':[99,88,94,89,82,93] }
```

Export the data frame to a .CSV file. Read the data from the .CSV file and print only the first row and last two rows of the dataframe.

14. XYZ Automobiles Ltd. is an authorized dealer of different Bikes companies.

They record the entire sale of bikes month wise as given below:

	Jan	Feb	Mar	Apr	May	Jun
Honda	23	45	109	87	95	100
Suzuki	45	57	75	60	50	30
TVS	97	80	84	68	80	108

To get proper analysis of sale performance, write a Python program to create a multiple line chart on a common plot where all bikes sale data are plotted. Display appropriate x and y axis labels, legend and chart title.

15. A school's result data is given in terms of percentages in science, commerce and humanities streams:

Science: [98,92,87,76,72] Commerce: [93,91,89,83,75] Humanities: [97,92,77,69,56]. Analyse the performance of the students stream-wise using a bar chart.

Part B: Project Work

Students will identify a real-world problem by exploring the environment. e.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.

Software to be used: Python 3.12 or above with modules - pandas, numpy and matplotlib installed

Suggested topics:

- 1) Library Management System
- 2) Hotel Management System
- 3) Restaurant Management System
- 4) Employee Management System
- 5) E-Pharmacy/Medical Store Management System
- 6) Railway Reservation System
- 7) Airline Reservation System
- 8) Movie Reservation System
- 9) Online Auction System
- 10) Evaluation of academic performance of students
- 11) Student Attendance Management System
- 12) Alumni Information System
- 13) Automobile Service Station System
- 14) Banking Management System
- 15) Vehicle Parking System
- 16) Data Visualization of Covid Analysis with CSV file
- 17) Market Sale Analysis
- 18) IPL Analysis
- 19) Social Media Site User Management System
- 20) Literacy Rate of India

PHYSICAL EDUCATION

PRACTICAL FILE WORK

Total three practical to be done in practical file

1. Yoga as a preventive measure for lifestyle diseases.
(Any two asana to be written for EACH lifestyle disease, including their procedure, benefits and contraindication)
2. SAI Khelo India Fitness Administration Test for school going children.
3. Labelled diagram of field & equipment History, Rules, Terminologies & Skills of any ONE game recognised by IOC (International Olympic Committee).
(Football, Volleyball, Kabaddi, Wrestling, Judo, Badminton, Table tennis, Basketball, etc)

ALL THE PRACTICALS MUST BE DONE IN THE SPECIFIED FILE FOR PHYSICAL EDUCATION CLASS XII ONLY.

<https://drive.google.com/file/d/196dgGxfUfD9bXJqaeankYN-N02EVWu6W/view?usp=sharing>

FOR THE REFERENCE

ECONOMICS

Project work The objectives of the project work are to enable learners to:

- Probe deeper into theoretical concepts learnt in classes XI and XII
- Analyse and evaluate real world economic scenarios using theoretical constructs and arguments
- Demonstrate the learning of economic theory
- Follow up aspects of economics in which learners have interest
- Develop the communication skills to argue logically

The expectations of the project work are that:

- Learners will complete only ONE project in each academic session
- Project should be of 3,500-4,000 words (excluding diagrams & graphs), preferably hand-written
- It will be an independent, self-directed piece of study

Essentials: Project should be handwritten and it should be presented in a neat folder

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary policy committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarwa Siksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – a solution to water crises
• Vertical Farming – an alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• Any other newspaper article and its evaluation on basis of economic principles	• Any other topic

ACCOUNTS

PROJECT TOPIC: One specific project based on financial statement analysis of a company covering any two aspects from the following:

- (i) Comparative and common size financial statements
- (ii) Accounting ratios
- (iii) Segment reports
- (iv) Cash flow statements

General instructions to be followed for doing your project:

- 1 – Cover page (Title of the project, Subject code, Student's information, School information)
- 2 – Acknowledgements
- 3 – Certificate by guide
- 4 – Certificate by student
- 5 – List of Contents or Index
- 6 – Company profile
- 7 – Preface
- 8 – Introduction
- 9 – Planning and activities done during the project
- 10 – Observations and findings
- 11 – Conclusions
- 12 – Photographs, diagrams, schedules
- 13 – Bibliography

The total length of the project will be at least 30 to 35 pages. The project should be handwritten. The project should be presented in a neat folder

BUSINESS STUDIES

- **Students will learn and practice self assessment test-1 &2 of each ch-1 and 2 in business studies note book**
- **Also practice the worksheet attached from chapter-2.**
- **Presentation and Submission of Project Report**

Following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence
 - The cover page should include the title of the Project, student information, school and year.
 - List of contents.
 - Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
 - Introduction.
 - Topic with suitable heading.
 - Planning and activities done during the project, if any.
 - Observations and findings of the visit.
 - Conclusions (summarized suggestions or findings, future scope of study).
 - Photographs (if any).

- Appendix
- Teacher's observation.
- Signatures of the teachers.
- At the completion of the evaluation of the project, it should be punched in the centre so that the report may not be reused but is available for reference only.

Students can choose any one topic from the following, topic selected will be researched for a different firm/business :

Sr. no.	Project topic
1	Principles of management
2	Marketing management
3	Business environment
4	Stock market

Assessment criteria:

Max marks=20

Sr.no	Criteria	marks
1	Initiative, cooperativeness and participation	2
2	Creativity and presentation	2
3	Content, observation and research work	4
4	Analysis of situations	4
5	Viva	8
	total	20

POLITICAL SCIENCE

1. Project

Prepare a project according to CBSE guidelines on the given topics:-

1. NAM- 1961 to present times.
2. Division of Germany with special focus on the construction and dismantling of the Berlin Wall.
3. CIS-Central Asian Republics.
4. Disintegration of USSR with special focus on Gorbachev.
5. Arab Spring
6. Cover the negative as well as positive aspects of the relationship between India and the following countries.
Focus on any one of the following (current updates should be highlighted):

- a) Relationship between India and Russia
- b) Relationship between India and China
- c) Relationship between India and Pakistan
- d) Relationship between India and Bangladesh

7. ASEAN
8. European Union and BREXIT.
9. BRICS
10. SARC
11. India's Nuclear Policy
12. United Nations with focus on India's candidature in the Security Council.
13. UN Agencies – UNICEF, UNESCO, WHO.
14. Pandemics: Covid 19- Its global impact (focus on worldwide cooperation and preparedness along with controversies (please collect newspaper clippings for the same)
15. Partition of India-Theory behind it and its legacy.
16. Comparison between NITI AYOOG and Planning Commission and their contribution in India's Development.
17. Election 2019- Rise of BJP and Downfall of Congress (1989-2019).
18. Emergency – A blot on Indian Democracy.
19. NDA III and NDA IV – Social and Economic welfare programmes

INSTRUCTIONS:

- Each student will be assigned one topic.
- Each student will have a separate project file.
- The project should be of minimum 30-35 pages each.
- Use colorful sheets, paste relevant pictures, newspaper clippings if any for the work.
- The **cutting of pictures and decorative material should be clean, neat, and symmetrical.**
- Every picture, map or diagram must be **properly labelled with captions.** Avoid untidy pasting of the pictures.
- Cover the file using a chart paper, with name, class, session, roll number and topic written on it.
- The project should be totally research and survey based.
- The project must be neat and well presented and must be completely handwritten.
- The project should be done on A-4 sized sheets.
- Students have to cite the various sources as well as any research papers that they may have used for the assignment (To be attached at the end of the project- Bibliography)

Project Structure

Students should prepare the Project under the following headings:-

1. **Cover Page-** Design an attractive cover page with the title, your name, class, and date.
2. **Acknowledgement**
3. **Certificate**
4. **Index-** Include a table of contents with the sections of your project for easy navigation.
5. **Research Question**
6. **Data/Statistical Analysis/Map Work**
 - Provide relevant data, maps, or graphs to support your study.
7. **Analysis/Explanation and Interpretation**
 - Analyze your findings. Interpret the data and explain how it answers your research question.
 - Provide insights into the historical significance of your topic, highlighting key figures, events, and outcomes.
8. **Bibliography**
 - List all the sources you referred to while preparing the project, such as books, articles, websites, or **any places you have visited** etc.
 - Ensure the bibliography is well-organized.

HISTORY

Prepare the given History Project.

Some suggested topics for project work are:

1. BRICKS, BEADS AND BONES: The Harappan Civilization

- Urban Planning of Mohenjo Daro
- Harappan Economy: Trade and Agriculture
- Harappan Seals and Their Role
- Decline of the Harappan Civilization

2. KINGS, FARMERS AND TOWNS: Early States and Economies (c.600 BCE-600 CE)

- Rise of Early States: The Mauryas and Guptas
- Sources to know about the Mauryas and Guptas
- Trade and Townships in Ancient India
- Decline of the Mauryan Empire

3. THINKERS, BELIEFS AND BUILDINGS: Cultural Developments (c.600 BCE-600 CE)

- Contributions of Early Indian Thinkers: Buddha, Mahavira
- Architecture in Early India: Stupas, Temples
- Spread of Buddhism and Jainism in India

4. THROUGH THE EYES OF TRAVELLERS: Perceptions of Society (c. 10th-17th centuries)

- Accounts by Foreign Travelers (Al-Biruni, Ibn Battuta, Marco Polo)
- Impact of Travelers on Indian Society

5. BHAKTI-SUFI TRADITIONS: Changes in Religious Beliefs and Devotional Texts (c.8th-18th centuries)

- The Bhakti Movement: Key Saints and their Teachings
- Sufism in India and key sufi saints
- Social Impact of Bhakti and Sufi Movements

6. AN IMPERIAL CAPITAL: VIJAYANAGARA (c.14th-16th centuries)

- Rise and Fall of Vijayanagara Empire
- Architecture of Hampi- special reference to its temples.
- Economy, religion and Culture of the Vijayanagara Empire

7. REBELS AND THE RAJ: 1857 Revolt and its Representations

- Causes of the 1857 Revolt
- Vision of unity behind the first war of Independence (Revolt of 1857)
- Key Figures: Rani Lakshmibai, Bahadur Shah Zafar
- Impact of the Revolt on India's freedom struggle and British policies

8. MAHATMA GANDHI AND THE NATIONALIST MOVEMENT: Civil Disobedience and Beyond

- Gandhi's Role in Indian Freedom Struggle
- The major movements- Non- cooperation Movement, The Civil Disobedience Movement, Quit India
- Women's Role in the National Movement
- Role of various social classes in Indian independence

9. FRAMING THE CONSTITUTION: The Beginning of a New Era

- Dr. B.R. Ambedkar's Role in Framing the Constitution
- Discussions in the Constituent Assembly
- Features of the Indian Constitution
- The Preamble of the Indian Constitution

Project Structure

Students should prepare the History Project under the following headings:-

1. **Cover Page-** Design an attractive cover page with the title, your name, class, and date.
2. **Acknowledgement**
3. **Certificate**
4. **Index-** Include a table of contents with the sections of your project for easy navigation.¹
5. **Research Question-** Define the research question or objective of your project. Example: *“How did the architecture of Vijayanagara reflect the culture and politics of the empire?”*
6. **Data/Statistical Analysis/Map Work**
 - Provide relevant data, maps, or graphs to support your study.
 - For example, if your topic involves historical battles or geographical locations, include maps of places like Mohenjodaro or Hampi, or graphs comparing timelines or political shifts.
7. **Analysis/Explanation and Interpretation**
 - Analyze your findings. Interpret the data and explain how it answers your research question.
 - Provide insights into the historical significance of your topic, highlighting key figures, events, and outcomes.
8. **Bibliography**
 - List all the sources you referred to while preparing the project, such as books, articles, websites, or any places you have visited etc.
 - Ensure the bibliography is well-organized

INSTRUCTIONS:

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- The project should be totally research and survey based.
- The project must be neat and well presented and must be completely handwritten.
- The project should be done on A-4 sized sheets.
- Students have to cite the various sources as well as any research papers that they may have used for the assignment (To be attached at the end of the project- Bibliography)

SOCIOLOGY

Students will prepare a questionnaire on the following topics and will do a survey among 30 samples.

- Vote Chori
- AI in modern Education
- E20 Petrol
- Impact of social media on teenagers
- Problems of Workers in Unorganised Sector
- Gender inequality at work place
- Dowry as a social evil

General instructions:

- a) The questionnaire will include 30 questions in total
- b) Number of close ended questions – 15
- c) Number of open ended questions – 5
- d) Option based questions – 10

Students will do the survey based on the questionnaire and will collect the data.

The Project file will include:

Introduction

Research Question

Research Purpose

Methodology

Demographic Profile

Research Analysis

Conclusion

Limitations and suggestions

Bibliography

NOTE- Please find the attached link for the worksheets of different subjects to be done during the Summer Holidays for regular practice and revision. Kindly complete all the work neatly and sincerely.

https://docs.google.com/document/d/1DXeOli_V_RpWL-tOeRelIszShqIKvZjcmo0BuxpsbYU/edit?usp=sharing

Happy Holidays and Happy Learning!