

CLASS XII

ENGLISH

1) Holidays offer the best time and opportunity to develop friendship with books. Here are some suggestions for your reading time:-

(a)Gone with the wind (b)Doctor Zhivago (c)Les Miserables.

Note:-After reading the above, you will also watch the movie and note down in about 200 words what all you liked the best about the book and the movie.

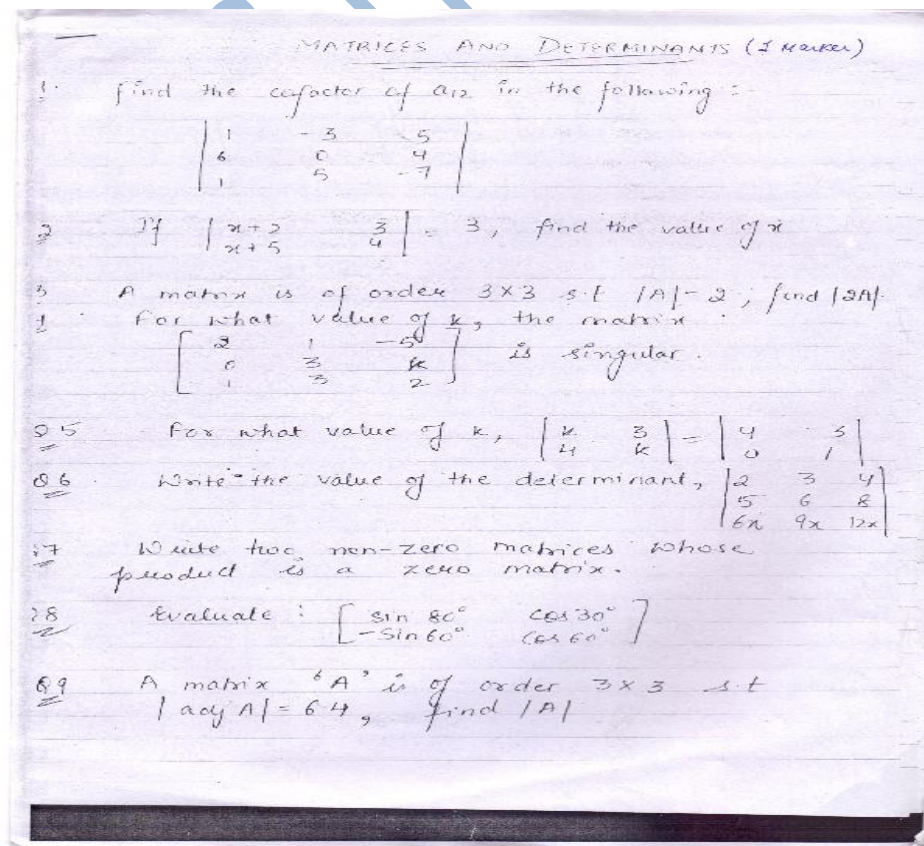
2)It is now also the best time to get closer to our elders and to take care of them while they share with you their exquisite experiences. Spend a week with someone aged in your family and write a diary entry expressing your feelings and experiences regularly for the week. Take relevant and interesting photographs and paste them along with your diary entries.

3)Read the daily newspaper, particularly the editorial page. Write an article/story/dialogue on any two issues of your choice giving an interesting title to the same and expressing your own views, comments and conclusions. Include effective quotations and slogans where ever suitable.

Note:-Do the above in loose(A-4 sized) sheets that are to be submitted in a file/folder.

MATHEMATICS

- Solve the following worksheet enclosed below in your mathematics notebook after revising the chapters done in the class.
- Revise continuity and differentiation.



4 or 6 Marks

Q11. Using properties of determinants, show that

$$(i) \begin{vmatrix} a^2+2a & 2a+1 & 1 \\ 2a+1 & a+2 & 1 \\ 3 & 3 & 1 \end{vmatrix} = (a-1)^3$$

$$(ii) \begin{vmatrix} 1 & 1+p & 1+p+q \\ 2 & 3+2p & 4+3p+2q \\ 3 & 6+3p & 10+6p+5q \end{vmatrix} = 1$$

$$(iii) \begin{vmatrix} (b+c)^2 & a^2 & bc \\ (c+a)^2 & b^2 & ca \\ (a+b)^2 & c^2 & ab \end{vmatrix} = (a^2+b^2+c^2)(a+b+c)(b-c)(c-a)(a-b)$$

$$(iv) \text{ If } x, y, z \text{ are in G.P., show } \begin{vmatrix} px+q & x & y \\ py+q & y & z \\ 0 & px+q & py+q \end{vmatrix} = 0$$

$$(v) \begin{vmatrix} a+b & b+c & c+a \\ b+c & c+a & a+b \\ c+a & a+b & b+c \end{vmatrix} = 2 \begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$$

(vi) If α, β, γ are in A.P., prove that:

$$\begin{vmatrix} x-\alpha & x-\beta & x-\gamma \\ x-\beta & x-\alpha & x-\gamma \\ x-\alpha & x-\beta & x-\gamma \end{vmatrix} = 0$$

$$(ii) \begin{vmatrix} 1+a & 1 & 1 \\ 1 & 1+b & 1 \\ 1 & 1 & 1+c \end{vmatrix} = ab+bc+ca+abc$$

Q129j $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3 \end{bmatrix}$, find A^{-1} using A^{-1} ,

solve the following system of equations:-

$$\begin{aligned} x+y+2z &= 6 \\ x+2y-z &= 9 \\ x-3y+3z &= -14 \end{aligned}$$

Q13 Given $A = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$,

find BA and use this to solve the system of equations:

$$\begin{aligned} x-y &= 3 \\ 2x+3y+4z &= 17 \\ y+2z &= 7 \end{aligned}$$

Q14 Find the matrix A s.t.

$$\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

Q15 Let $A = \begin{bmatrix} a & b \\ 0 & 1 \end{bmatrix}$ show that:

$$A^n = \begin{bmatrix} a^n & b(a^{n-1}-1)/(a-1) \\ 0 & 1 \end{bmatrix}$$

Q16 Let $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$, then show $A^2 - 4A + 7I = 0$.

Using this result calculate A^3 also.

Q17 If $f(x) = \begin{vmatrix} a & -1 & 0 \\ ax & a & -1 \\ ax^2 & ax & a \end{vmatrix}$, using properties of determinants find the value of $f(2x) - f(x)$.

Q18 Let $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$ and $f(x) = x^2 - 4x + 7$. Show that $f(A) = O$. Use this result to find A^5 .

Q19 Find the matrix A satisfying the eqⁿ:-
$$\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

Q20 Let $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, find x & y st
 $A^2 + xI - yA = O$.

Q21 To raise money for an orphanage, students of three schools A, B and C organised an exhibition in their locality, where they sold paper bags, scrap books & pastel sheets made by them using recycled paper at the rate of Rs 20, 15 & 5 per unit respectively. School A sold 25 paper bags, 12 scrap books & 34 pastel sheets. School B sold 22 paper bags, 15 scrap books & 28 pastel sheets while School C sold 26 paper bags, 18 scrap books & 36 pastel sheets. Using matrices, find the total amount raised by each school.
By such exhibition, which values are indicated in the students?

Q22 Two schools (A) and (B) decided to award prizes to their students for three values - honesty (x), punctuality (y) & obedience (z). School A decided to award a total of Rs 11000 for three values to 2, 4, 3 students resp. and school B decided to award a total of Rs 10700 for these values to 4, 3 and 5 students resp. If all together amounts to Rs 2700, then

- Represent this by matrix equation and form linear eqⁿ using Matrix multiplication.
- Is it possible to solve eqns using matrices?
- Which value you prefer to be rewarded?

Q23 Three schools A, B & C organised a mela for collecting funds for helping the rehabilitation of flood victims. They sold hand-made fancy mats & plates from recycled material at a cost of Rs 25, Rs 100 & Rs 50 each. The nos. of articles sold are given below:

School	A	B	C
Hand Made fans	40	25	35
Mats	50	40	50
Plates	20	30	40

Find the funds collected by each school separately by selling the above articles. Also find the total funds collected for the purpose.
Write one value generated by the above situation.

Q21 A school wants to award its students for the values of Honesty, Regularity & Hard work with a total cash award of Rs 6000. Three times the award money for hard work added to that given for honesty amounts for Rs 11000. The award money given for honesty together is double the one given for regularity. Represent the above situation algebraically & find the award money for each value, using matrix method. Also suggest one more value which the school must include for awards.

ACCOUNTANCY

- 1: Make a comprehensive project on a sole proprietorship or partnership or partnership firm comprising of journal, ledger, trial balance, statement of profit and loss, balance sheet, ratio analysis and conclusion
- 2: Collect cash flow statement of any company study the changes in the cash flow from operating, investing and financing over two or more financial years

- 3: From the financial statement i.e. statement of profit and loss and balance sheet of a company, compute liquidity, solvency, profitability and turnover ratios
- 4: Complete scanner at the back of T.S Grewal for:
Chapter 5: cash flow statement
Chapter 4: accounting ratios
Chapter 3: comparative and common size statements
- 5: Revise the syllabus covered

BUSINESS STUDIES

1: Prepare a project on either of the two:

- a) Business environment e.g.-
 - 1) Changes in the ways of packaging
 - 2) Changing role of women and business environment
 - 3) Child labour and business environment
 - 4) Technology and business environment
 - 5) Inflation and business environment etc

OR

- b) Study the principles of henry fayol or taylor in different organisations like hotels, police station, school, big bazaar, fast food corners like pizza huts and dominoes, bata showrooms, airports, departmental stores etc

2: Revise the syllabus covered

Economics

(A) Read newspaper daily. Collect and maintain a file on the articles related to the following topics. Also explain its impact on the economy .

- a. MAT
- b. JAN DHAN YOGNA
- c. *PMJJBY* and *PMSBY*.
- d. INFLATION
- e. FII's ,CRUDE OIL PRICES and its impact on SENSEX.
- f. Crop Insurance

(B) Revise full syllabus done till date.

(C). Do all the Numericals from Unit 1(Introduction (PPC)), unit 2(Demand) and Supply from T.S WALIA.

(D).Give any 5 examples of each category of goods(Normal, inferior, luxurious substitute, complementary,elastic goods, inelastic goods.)

(E) There is a huge damage of the stock of crops in Haryana by untimely rains and hailstorm. How will it impact Indian economy?

(D) Solve the following numericals

NUMERICALS

Proportionate method

Q1. A consumer buys 200 units of good X at Rs. 8 per unit. The price elasticity of demand for the good is (-) 2. At what price will he be willing to buy 240 units of the good?

Q2. When the price of a commodity falls by Rs 10 per unit, its quantity demanded increases by 10 units. Its price elasticity of demand is (-) 1. Calculate the quantity demanded at the price before change which was Rs.50 per unit.

Q3. The quantity demanded of a commodity at a price of Rs. 28 per unit is 600 units. Its price falls by 25% and as a result its quantity demanded rises by 100 units. Calculate its price elasticity of demand.

Q4. The price of a commodity is Rs. 10.50 per unit and its quantity demanded is 500 units. If its price rises to Rs.10.60 per unit its quantity demanded falls by 90 units. Calculate its price elasticity of demand.

Q5. As a result of 10% fall in the price of a commodity, its demand rises from 5000 to 4500 units. Find the price elasticity of demand.

Total Expenditure method

Q1. When price of a commodity falls to Rs. 5 per unit, its quantity demanded increases to 80 units. Calculate price elasticity of demand if the original quantity demanded before change was Rs.50 per unit and original price was 6. Calculate price elasticity of demand.

Q2. Given price elasticity of demand is 1. If consumer buys 500 units at Rs 20 per unit. What will be the quantity he will buy if the price rises by 40%.

SUPPLY

Q1. A seller sells 80 Kg potatoes at a price of Rs.4 per Kg. The price elasticity of supply of potatoes is 2. How much quantity of potatoes will the seller supply when the price rises to Rs. 10 per Kg?

Q2. The price elasticity of supply of a good is 2.5. When price of a good falls from Rs.10 per unit to Rs. 8 per unit, its quantity supplied falls by 250 units. Calculate quantity supplied at the reduced price.

Q3. The coefficient of elasticity of supply of a commodity is 2. A seller supplies 200 units of the commodity at a price of Rs.50 per unit. How much quantity of this commodity will the seller supply when the price rises by Rs. 12 per unit?

Q4. The ratio of elasticity of supply of the two commodities A and B is 1:1.5. A 20 percent fall in the price of good A results in a 40 percent fall in its supply. Calculate the percentage increase in the supply of B if its price rises from Rs. 10 per unit to Rs.11 per unit.

Q5. The total revenue from a commodity increases from Rs. 800 to Rs. 1,200 when its price rises from Rs. 5 per unit to Rs. 6 per unit. Calculate its price elasticity of supply.

Q6. The quantity supplied of a commodity at a price of Rs. 50 per unit is 500 units. Its price elasticity of supply is 2. Calculate the price at which quantity supplied will be 240 units.

COMPUTER SCIENCE:

- Revise the full syllabus and solve the following assignments-

CLASSES AND OBJECTS

1. Define a class student with the following specification

Private members of class student

admno integer

sname 20 character

eng. math, science float

total float

ctotal() a function to calculate eng +

math + science with float return type.

Public member function of class student

Takedata(Function to accept values for admno, sname, eng, science and invoke ctotal() to calculate total.

Showdata() Function to display all the data members on the screen.

calcavg() Function to compute batavg

Public members:

readdata() Function to accept value from bcode, name, innings, notout and invoke the function calcavg()

displaydata() Function to display the data members on the screen.

3. Define a class in C++ with following description:

Private Members

A data member Flight number of type integer

A data member Destination of type string

A data member Distance of type float

2. Define a class batsman with the following specifications:

Private members:

bcode 4 digits code

number

bname 20 characters

innings, notout, runs integer type

batavg it is calculated

according to the formula –

batavg

=runs/(innings-notout)

A data member Fuel of type float

A member function CALFUEL() to calculate the value of Fuel as per the following criteria

Distance	Fuel
≤ 1000	500
more than 1000 and ≤ 2000	1100
more than 2000	2200

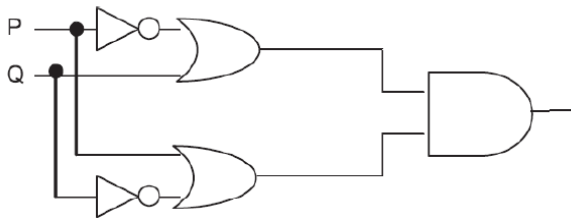
Public Members

A function FEEDINFO() to allow user to enter values for Flight Number, Destination, Distance & call function CALFUEL() to calculate the quantity of Fuel

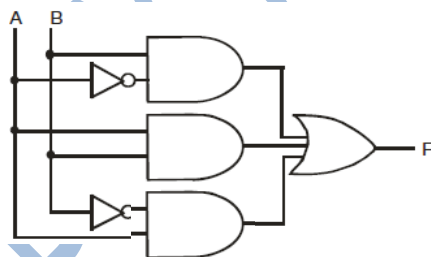
A function SHOWINFO() to allow user to view the content of all the data members

BOOLEAN ALGEBRA

- 4 Prove $x'.y'+y.z = x'yz+x'yz'+xyz+x'yz$ algebraically.
- 5 Prove that $(a'+b')(a'+b)(a+b')=a'b'$.
6. Prove that $XY+YZ+YZ'=Y$ algebraically
7. Write the equivalent Boolean Expression for the following Logic Circuit



8. Write the equivalent Boolean Expression F for the following circuit diagram :



9. Convert the following Boolean expression into its equivalent Canonical Sum of Product Form (SOP)
 $(X'+Y+Z')(X'+Y+Z).(X'+Y'+Z).(X'+Y'+Z')$
10. Convert the following Boolean expression into its equivalent Canonical Product of Sum form (POS):
 $A.B'.C + A'.B.C + A'.B.C'$
11. If $F(a,b,c,d)=\sum(0,2,4,5,7,8,10,12,13,15)$, obtain the simplified form using K-Map.
12. If $F(a,b,c,d)=\sum(0,3,4,5,7,8,9,11,12,13,15)$, obtain the simplified form using KMap
13. Obtain a simplified form for a boolean expression
 $F(U,V,W,Z)=\pi(0,1,3,5,6,7,10,14,15)$

Database and SQL

14. What is relation? What is the difference between a tuple and an attribute?
15. Define the following terminologies used in Relational Algebra:
(i) selection (ii) projection (iii) union (iv) Cartesian product

16. Differentiate between DDL and DML. Mention the 2 commands for each category.

17. Write SQL command for (i) to (vii) on the basis of the table SPORTS

Table: SPORTS

Student NO	Class	Name	Game1	Grade	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Atheletics	C

- Display the names of the students who have grade 'C' in either Game1 or Game2 or both.
- Display the number of students getting grade 'A' in Cricket.
- Display the names of the students who have same game for both Game1 and Game2.
- Display the games taken up by the students, whose name starts with 'A'.
- Assign a value 200 for Marks for all those who are getting grade 'B' or grade 'A' in both Game1 and Game2.
- Arrange the whole table in the alphabetical order of Name.
- Add a new column named 'Marks'.

18. Write SQL command for (i) to (vii) on the basis of the table Employees & EmpSalary

Table: Employees

Empid	Firstname	Lastname	Address	City
010	Ravi	Kumar	Raj nagar	GZB
105	Harry	Waltor	Gandhi nagar	GZB
152	Sam	Tones	33 Elm St.	Paris
215	Sarah	Ackerman	440 U.S. 110	Upton
244	Manila	Sengupta	24 Friends street	New Delhi
300	Robert	Samuel	9 Fifth Cross	Washington
335	Ritu	Tondon	Shastri Nagar	GZB
400	Rachel	Lee	121 Harrison St.	New York
441	Peter	Thompson	11 Red Road	Paris

Table: EmpSalary

Empid	Salary	Benefits	Designation
010	75000	15000	Manager
105	65000	15000	Manager
152	80000	25000	Director
215	75000	12500	Manager
244	50000	12000	Clerk
300	45000	10000	Clerk
335	40000	10000	Clerk
400	32000	7500	Salesman
441	28000	7500	salesman

Write the **SQL commands** for the following :

- (i) To show firstname,lastname,address and city of all employees living in paris
- (ii) To display the content of Employees table in descending order of Firstname.
- (iii) To display the firstname,lastname and total salary of all managers from the tables Employee and empsalary , where total salary is calculated as salary+benefits.
- (iv) To display the maximum salary among managers and clerks from the table Empsalary.

Give the **Output** of following SQL commands:

- (i) Select firstname,salary from employees ,empsalary where designation = 'Salesman' and Employees.empid=Empsalary.empid;
- (ii) Select count(distinct designation) from empsalary;
- (iii) Select designation, sum(salary) from empsalary group by designation having count(*) >2;
- (iv) Select sum(benefits) from empsalary where designation ='Clerk';

Note: During the holidays, parents must also help their wards to become familiar with the game of chess & handling of the Rubik's cube effortlessly and with intelligence.