### Holiday Homework – 2013

**Class – XII**  
**Subject – English**

1. Design a poster for a Self Defence Workshop for girls (age group 12-18) being organized by Delhi Police in various schools during summer vacations.

2. Design a poster (commercial ad) for the launch of health topic for women by a pharmaceutical company. Highlight its benefits.


4. Write an article on the topic ‘God couldn’t be everywhere, so he made mothers’.

5. Search the CBSE site for HOTS questions in English. Look up value based questions also.

### Class – XII  
**Subject – Mathematics**

1. \( y = \frac{\sin^{-1} x}{\sqrt{1-x^2}} \) show \((1 - x^2)y_2 - 3xy1 - y = 0\)

2. Differentiate \( \tan^{-1} \left( \frac{\sqrt{1+x^2} + \sqrt{1-x^2}}{\sqrt{1+x^2} - \sqrt{1-x^2}} \right) \) w.r.t \( \cos^{-1} x^2 \)

3. \( x = a(\theta - \sin \theta), y = a(\theta - \cos \theta) \) Find \( \frac{dy}{dx} \) at \( \theta = \frac{\pi}{2} \)

4. If \( \cos y = x \cos(a + y) \), show that \( \frac{dy}{dx} = \frac{\cos^2(a+y)}{\sin a} \)

5. Show that \( \tan^{-1} \left( \frac{\sqrt{1+\cos x} + \sqrt{1-\cos x}}{\sqrt{1+\cos x} - \sqrt{1-\cos x}} \right) = \frac{\pi}{4} - \frac{x}{2} \)

6. Differentiate \( \sin^{-1} \left( \sqrt{\sqrt{1-x^2} - x\sqrt{1-x^2}} \right) \)

7. Differentiate \( x^{\sin x} + (\sin x)^x \) w.r.t \( x \)

8. \( y^x = e^{y-x} \) show that \( \frac{dy}{dx} = \frac{(1+\log y)^2}{\log y} \)

9. \( y\sqrt{1-x^2} + x\sqrt{1-y^2} = 1 \) show that \( \frac{dy}{dx} = -\frac{1-y^2}{1-x^2} \)

10. \( y = \sqrt{a + \sqrt{a + \sqrt{a + x^2}}} \) where \( a \) is a constant find \( \frac{dy}{dx} \)

11. Differentiate \( (\sin x)^{\tan x} + (\cos x)^{\sec x} \) w.r.t \( x \)

12. \( y = \log(1 + \cos x) \) show that \( \frac{d^3 y}{dx^3} + \frac{d^2 y}{dx^2} - \frac{dy}{dx} = 0 \)

13. \( y = \frac{x \sin^{-1} x}{\sqrt{1-x^2}} + \log \sqrt{1-x^2} \) Show \( \frac{dy}{dx} = \frac{\sin^{-1} x}{(1-x^2)^{3/2}} \)
14. If $x = \sqrt{a \sin^{-1} t}$, $y = \sqrt{a \cos^{-1} t}$ show that $\frac{dy}{dx} = -\frac{y}{x}$

15. If $(\cos x)^y = (\cos y)^x$ find $\frac{dy}{dx}$

16. $y = x^{\sin x - \cos x} + \frac{x^2 - 1}{x^2 + 1}$ find $\frac{dy}{dx}$

17. Integrate the following:

(a) $\int \cos x \cos 2x \cos 3x \, dx$

(b) $\int \sin^3 x \cos^2 x \, dx$

(c) $\int \sin^4 2x \, dx$

(d) $\int \frac{dx}{\cos(x+a)105(x+b)}$

(e) $\int x^2 \log x \, dx$

(f) $\int (\sin^{-1} x)^2 \, dx$

(g) $\int \frac{x \, dx}{\sqrt{8 + x - x^2}}$

(h) $y = (\cot^{-1} x)^2$ show that $(x^2 + 1)^2 \frac{d^2 x}{dx^2} + 2x(x^2 + 1)\frac{dy}{dx} = 2$

(i) $\int (\sqrt{\tan x} + \sqrt{\cot x}) \, dx$

(j) $\int \frac{1+x^2}{1+x^4} \, dx$

(k) $\int \frac{\sin x + \cos x}{\sqrt{\sin 2x}} \, dx$

(l) $\int \frac{x^2 \, dx}{(a+bx)^3}$

(m) $\int \frac{\sin(x-a)}{\sin(x+a)} \, dx$

(n) $\int e^{qx} \cos(bx + c) \, dx$

(o) $\int x (\tan^{-1} x)^2 \, dx$

(p) $\int \frac{x^2}{(x^2+1)(x^2+4)} \, dx$

(q) $\int \frac{\sin x \, dx}{\sin 3x}$

(r) $\int \frac{\cos x \, dx}{\cos 3x}$

(s) $\int \tan x \tan (2x) \tan 3x \, dx$
1. Derive an expression for the Electric field at a point on the (i) axial line and (ii) equatorial line of an electric dipole.
2. Describe the principle construction and working of Van de Graff Generator.
3. State Gauss’ theorem and apply it to find the electric field at a point due to
   (i) A point charge
   (ii) A line of charge
   (iii) A plane sheet of charge
   (iv) A charged spherical conducting shell
4. Derive expression for the potential energy of a system of point charges.
5. Derive expression for the torque on a dipole in a uniform electric field.
6. Derive expression for the work done in turning a dipole in a uniform electric field.
7. Derive an expression for the potential energy of a dipole in a uniform electric field.
8. Explain the principle of a parallel plate capacitor.
9. Derive an expression for the capacitance of a parallel plate capacitor.
10. Derive an expression for the effective capacitance when three capacitors are connected in (i) series (ii) parallel.
11. Derive an expression for the energy stored in a parallel plate capacitor.
12. Derive an expression for the loss of energy when two conductors at different potentials are brought into electrical contact. Account for this energy.
13. Derive and expression for the energy density of a parallel plate capacitor.
14. Derive $I = nAEV_d$
15. Define drift velocity and derive an expression for it.
16. Deduce Ohm’s law from elementary concepts.
17. State Biot Savart’s Law and apply it to find the magnetic field at a point due to long straight conductor carrying current.
18. State Ampere’s circuital theorem and apply it to find the magnetic field inside a (i) solenoid (ii) toroid.
19. State the Principle of a potentiometer and Explain how is it used (i) to determine the internal resistance of a primary cell (ii) to compare the emfs of two primary cells.
20. State Kirchhoff’s laws and apply it to derive Wheatstone’s bridge principle.
21. Explain how will you use a metre bridge to find the resistance of a given resistor wire?
22. Describe the elements of earth’s magnetic field.
23. Compare the properties of para dia and ferromagnetic substances.
24. Derive an expression for the effective resistance when three resistors are connected in (i) series (ii) parallel.
25. Describe the principle construction and working of CYCLOTRON. Derive an expression for cyclotron frequency. Why electrons cannot be accelerated in a cyclotron?
26. Derive an expression for the force between two straight long parallel conductors carrying constant current and hence define one ampere.
27. Describe the principle construction and working of Moving Coil Galvanometer.
28. Derive an expression for the torque on a current carrying loop kept in a uniform magnetic field.
29. Explain how will you convert a galvanometer into (i) an ammeter (ii) a voltmeter.
CLASS – XII
SUBJECT – GEOGRAPHY

Complete the assignments given:-
1) India Transport and Communication
2) International Trade

CLASS – XII
FA Assignment - POLITICAL SCIENCE

Chapter – 5
Contemporary South Asia
1. What is meant by South Asia?
   Mark these countries on Map.
   Mark the democratic countries on Map.
2. What is meant by SPA?
3. Write a brief note on various countries in South Asia who don’t have the same kind
   of political system.
4. Why has Pakistan not been able to setup a stable democratic government?
5. Write a note on Indo-Pak conflict

Chapter – 6
International Organisation
1. Name the 5 permanent members of security council. Why were they selected as
   permanent leaders?
2. Describe the various proposals for reforms of structure and processes of UN.
3. What is VETO power? What is its importance?
4. Name the steps taken to strengthen the UN.
5. Write a short note on:-
   1. World Bank
   2. WTO
   3. International Atomic Energy Agency
   4. Amnesty International
   5. Human Rights Watch

Chapter – 7
Security in Contemporary World
1. What is Security?
4. What is the importance of Co-operatives in the concept of International Security?
5. What is confidence building?
6. Write a note on global poverty.
7. Distinguish between refugees and migrants.
8. Write a note on India’s security strategy.
CLASS – XII
SUBJECT – HISTORY
PROJECT WORK

1. Collect the data on following topics
   (a) Town planning and artifacts of the Harappan civilization
   (b) Mahabharata through a Readers eye
   (c) Through the Traveler’s eyes
   (d) Understanding the Bhakti-Sufi movement in India

Guidelines: - Students can use primary sources available in city archives, newspaper cuttings, photographs, film footage and recorded written speeches.
Secondary sources can also be used after proper authentication.

2. Complete the notes of chapter 1 to 4.
3. Prepare for three hour test of Book 1 – THEMES IN INDIAN HISTORY

CLASS – XII
XII-CD-INFORMATION PRACTICES (TOPIC: HTML)

TOPIC: BASIC HTML ELEMENTS

1. Write the HTML code for the following to appear one after the other:
   A small heading with the words, “We are proud to be in APEEJAY”
   A horizontal rule across the page
   A large heading with the one word “PEACE”
   A medium sized heading with the words “ALL ARE INDIAN”
   Another horizontal rule.

2. Write HTML coding for the following:
   Special note:
   1. Title of page should be “To much cash bank”
   2. Background of colour of the page should be “SILVER”
   3. Font Face of the page should be “ARIAL”
4. Text colour of main heading should be “BLUE”
5. The message “Saving Offer ……..” should be displayed in “Maroon” colour.
6. Bottom Message should be with sizes as “2”
3. Write HTML coding for the following:

### PickLook Garment Industries

SALE! SALE!! SALE!!

1. **Shirts**
2. **Sahyur Suits**
3. **T-Shirt**
   - **Ladies**
   - **Gents**
4. **Trousers**
   - **Ladies**
   - **Gents**

Offer Closes on 23rd January 2003 [Contact us!](#)

### Special Note:
1. Title of page should be “Pickloo Garments”
2. Background colour of page should be “BLUE”
3. Font Face of the page should be “ARIAL”
4. Text colour of main heading should be “YELLOW”
5. “T-Shirt” and “Trousers” should be displayed in “WHITE” colour
6. Bottom Message should be with size as “2”

### TOPIC: LISTS, TABLES, FORMS

1. What type of lists are supported by HTML?
2. Differentiate in UL and OL.
3. What is a table? Which tag is used to create table in HTML?
4. What is the use of having SUMMARY attribute in TABLE tag?
5. How will you specify following in a table : background image, background color, table height, table row.
6. Name the attributes used for the following:
   - Setting the cell width, setting cell’s background image, setting cell’s background colour, changing the cell span, aligning cell contents vertically.
7. Explain : TH and TR tags.
8. What are forms? What do you understand by controls in forms?
9. Name the tags for the following:
   - A Text Box, A Text Area, A radio Button , A Check Box, A password Box, A pop up Box
   - Submit button, A label

10. Write code to produce the following HTML table:
11. Create a webpage that receives pizza orders through the form as below:

<table>
<thead>
<tr>
<th>A</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>C</td>
<td>F</td>
</tr>
</tbody>
</table>

### PIZZA FACTORY

**Pizza Order Form**

**SIZE**

- Cheese

**ADDRESS**

**Toppings**

- Cheese
  - Pepperoni

**PROCESS**

**CLEAR**

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**CLASS – 12 AB**

**COMPUTER SC.**

**Project Work**

Do the case study of the project of your given topic. It should include the following:

- **ANALYSIS OF THE EXISTING SYSTEM**
  Analysis of the manual system should also include the synopsis of the system

- **INITIATION OF THE COMPUTERIZATION**
  It should include the reason why and who initiates the computerization
- **NEED OF COMPUTERIZATION**
  It should include the purpose of automation of the system

- **MAIN MENU SCREEN**
  Design the main screen using C++.

- **MAIN MENU PROGRAM**
  Write the code to display the main menu of your project

- **DATA FILE NAME AND STRUCTURE**
  After going through the given topic of the project, design the database you plan to use in the project. It should include the following:

<table>
<thead>
<tr>
<th>Data variables</th>
<th>Data type</th>
<th>Size</th>
<th>Purpose</th>
</tr>
</thead>
</table>

- **INPUT / OUTPUT LAYOUTS**
  Design the forms (screens) for the input and output layouts

### CLASS – 12 AB
### COMPUTER SC.
### TOPIC: FILES IN C++

1. What do you mean by streams?
2. Explain the two ways of opening files.
3. Write different modes of opening files with their meanings.
4. What is the significance of `eof()`.
5. Explaning: `seekg()`, `tellg()`, `seekp()`, `tellp()`
6. Explain: `eofbit`, `failbit`, `badbit`
7. Write a program to create a text file to store strings of 20 chars. As long as user wants. Also display all the strings.
8. Write a program to create a text file to store strings in it. Copy the contents of this file in another file after converting the data into uppercase. Display the contents of both the files.
9. Write a program to do the following for the telephone billing system:
   A. Create file
   B. Append file
   C. Search record
   D. Display records
   E. Generate bills
10. Write a program to do the following for the payroll system:
   A. Create file
   B. Add records
   C. Modify records
   D. Delete records
   E. Search records
   F. Generate payslips
11. Write a program to create two identical files to store customer details, merge the files and display the merged files.

### CLASS – 12 CD INFORMATION PRACTICES (TOPIC : SQL
### TOPIC : MYSQL REVISION TOUR

1. What is datatype? Name the data types possible in Mysql.
2. What do you mean by NULL value in Mysql?
3. Which keyword eliminates the redundant data from a query result?
4. How would you display system date as the result of the query?
5. Define: concat(), lcase(), ucase(), min(), max(), round(), truncate()
6. What is a constraint? Name some constraints.
7. What is the role of UNIQUE constraints? How is Primary Key constraint different from UNIQUE constraint?
8. What do you mean by NOT NULL constraint?
9. What is Primary key?
10. What is foreign key? How is it different from Primary key?
11. Explain: delete, drop, alter table
12. Practical: CLUB Table, STUDENT Table, Result Table

**TOPIC: DATABASE TRANSACTIONS**

1. Define a transaction.
2. What do you mean by committing a transaction?
3. What does transaction ROLLBACK indicates?
4. Define: Atomicity, Consistency, Isolation, Durability
5. Name ACID properties.
6. What do you understand by All-or-none concept in context of transaction handling?
7. What do you mean by SAVEPOINT?
8. Explain Autocommit on/off.
9. What happens to the current transaction if a START TRANSACTION command is executed?
10. Practical: Pg. 482: 3,4

**TOPIC: GROUPING RECORDS AND TABLE JOINS**

1. What do you mean by single row function and multiple row function?
2. What is Cartesian product?
3. What is a join?
4. Define an equi-join.
5. How is natural join different from an equi-join?
6. Define: left join, right join, cross join.
7. What is the difference between ON and USING join clauses?
8. PRACTICAL: Table- STUDENT, TABLE- LIBRARY, TABLES-PRODUCT, CLIENT

**TOPIC: TABLES AND INTEGRITY CONSTRAINTS**

1. What is a constraints?
2. Can we have multiple primary keys in table?
3. What is NOT NULL constant? What is DEFAULT constraint?
4. What is foreign key? How is related to Primary key?
5. Write commands:
   - Modify table Emp, add another column called Grade of varchar type, size 1 into it.
   - Add a constraint (New_Grade) in table Emp that declares column Grade NOT NULL.
   - Modify the definition of column Grade, increase its size to 2.
   - Drop the table Emp.
   - Add one column email of data tye varchar and size 30 to the table customer
   - Drop the column incomegroup from the table customer
   - View the constraints of all tables created by you
CLASS – XII
SUBJECT – HOME SCIENCE

1. Chapter 11 – All the questions
2. Collect the following forms from a nearby bank
   (i) A/C opening form – 1
   (ii) Pay in slips – 4
   (iii) Cheques – 4
   (iv) Withdrawal forms – 2
3. Prepare the nutritional requirement charts and plan a day’s diet for the following:
   (i) Infants (0 – 1 year)
   (ii) Pre-Child (1 – 3 years)
   (iii) A school going child (4 – 12 years)
   (iv) Adolescents (13 – 18 years)
   (v) A pregnant lady
   (vi) A --------- mother
4. Prepare a chart through which you can show that good nutrition is important for girls also and how
   malnutrition affect a girl child
5. Write minimum 20 recipes under the following heads: Main dishes, Supplementary dishes, soups, salads, -
   -----desserts--------

CLASS XII
SUBJECT – ACCOUNTS & BUSINESS STUDIES

ACCOUNTS:

- Solve the exercise from NCERT book of the following chapters
  - Ratio Analysis
  - Cash flow statement
  - Comparative and common size income statements and Balance Sheet
  - Partnership - Fundamentals

- Prepare the PROJECT strictly as per the instructions given in the class. The project comprises of three parts:
  - Comprehensive Problem
  - Specific Project I - Ratio Analysis
  - Specific Project II - Cash Flow Statement

The Balance Sheet used for Specific Project I & II should be taken from News Paper only.

(Compulsory to prepare as required for the BOARD examinations)

BUSINESS STUDIES:

Prepare the PROJECT strictly as per the instructions given in the class. Further information is available on www.cbse.nic.in.

In the above URL click on option ‘Academies’. Further click on ‘CIRCULARS’ and choose the option ‘Archieve’ and then choose ‘2012-Academic circulars’ given on the home page. Refer to circular number ‘Acad-09/2012’ Kindly note that ‘ONLY FOLLOW PROJECT THREE: MARKETING MANAGEMENT

(Compulsory to prepare as required for the BOARD examinations and carries a weightage of 10 marks)

LAST DATE OF SUBMITTING BOTH THE ABOVE PROJECTS IS 20TH JULY 2013.
CLASS – XII
SUBJECT – ECONOMICS

Revise the following topics for class test to be held in first week of July
- Numericals on elasticity of demand, elasticity of supply
- Production function and returns to factor, Supply