# BCM SCHOOL CHANDIGARH ROAD <br> (A SENIOR SECONDARY SCHOOL OF BCM FOUNDATION AFFILIATED TO CBSE, NEW DELHI) 

## SUMMER HOLIDAYS HOMEWORK CLASS X

## SOCIAL SCIENCE

## ART INTEGRATION PROJECT:

Write in about 150 words about the historical background of Punjab and Odisha Also paste the pictures of historical places and monuments of both the states and give their brief description (at least 5 )

LAST GROUP Roll Numbers: First 4 roll number will make file other 3 will make PPT and will send to the subject teacher

## PROJECT ON CONSUMER RIGHTS

1.Enlist Consumer Rights (Take help from chapter "Consumer Rights" (Economics)
2.Find out the system set up by our government for providing justice to the consumers
3.Prepare an advertisement for creating awareness among the consumers
4.Paste wrappers of at least 5 products which satisfy consumer rights

In each group 2 or 3 sts. Will make file ,2 students will make PPT and 2 will make chart or collage.

## Revise thoroughly

Lessons 5,6 of Geography
Lessons 1,2,3 of Economics
Lessons 1 of History

## MATHS

1. Two tankers contain 850 litres and 680 litres of petrol respectively. Find maximum capacity of container which can measure petrol of either tank in exact number of times.
2. The numbers 525 and 3000 are both divisible only by $3,5,15,25$ and 75 . What is the HCF $(525,3000)$ ? Justify.
3. In a seminar, the number of participants in Hindi, English and Mathematics are 60,84 and 108 respectively. Find the maximum number of rooms required if in each room the same number of participants are to be seated and all of them being in same subject.
4. Three sets of English, Hindi and Mathematics books are to be stacked in such a way that are the books are stored topic wise and height of each stack is same. The number of English books is 96, number of Hindi books is 240 and number of Mathematics books is 336 . Determine number of stacks of English, Hindi and Mathematics.
5. A circular field has a circumference of 360 km . three cyclists start together and can cycle 48,60 and 72 km in a day, around the field. When will they meet again?
6. What is the smallest number that when divided by 35,56 and 91 leave remainder 7 in each case.
7. Find the smallest number which when increased by 17 is exactly divisible by both 520 and 468 .
8. Determine the value of m and n so that prime factorization of 10500 is expressible as $2^{\mathrm{m}} \times 3 \times 5^{\mathrm{n}} \times$ 7.
9. Find total number of primes in the factorization of 27300.
10. Check whether 3 is a zero of polynomial $\mathrm{p}(\mathrm{x})=\sqrt{x^{2}-4 x+3}+\sqrt{x^{2}-9}-\sqrt{4 x^{2}-14 x+6}$
11. If one zero of the polynomial $f(x)=4 x^{2}-8 k x-9$ is equal in magnitude but opposite in sign of the other, find the value of k .
12. If $\alpha \& \beta$ are zeroes of polynomial $\mathrm{f}(\mathrm{x})=\mathrm{x}^{2}-5 \mathrm{x}+\mathrm{k}$ such that $\alpha-\beta=1$, find k .
13. How many zeroes can a polynomial of degree $n$ have?
14. If $\alpha \& \beta$ are zeroes of quadratic polynomial $\mathrm{ax}^{2}+\mathrm{bx}+\mathrm{c}$, find the value of $\alpha^{2} \beta+\alpha \beta^{2}$
15. If $\alpha \& \beta$ are zeroes of polynomial $f(y)=y^{2}-8 y+a$ and $\alpha^{2}+\beta^{2}=40$, find a.
16. If $\alpha \& \beta$ are zeroes of polynomial $\mathrm{f}(\mathrm{x})=3 \mathrm{x}^{2}-6 \mathrm{x}+4$, find $\frac{\alpha}{\beta}+\frac{\beta}{\alpha}+2\left(\frac{1}{\alpha}+\frac{1}{\beta}\right)+3 \alpha \beta$
17. If $\alpha \& \beta$ are zeroes of a quadratic polynomial $\mathrm{f}(\mathrm{x})=3 \mathrm{x}^{2}-4 \mathrm{x}+1$, find a quadratic polynomial whose zeroes are $\frac{\alpha^{2}}{\beta} \& \frac{\beta^{2}}{\alpha}$
18. If sum of zeroes of polynomial $p(x)=\left(k^{2}-14\right) x^{2}-2 x-4$ is 1 . Find the value of $k$.
19. If $\alpha$ and $\beta$ are zeroes of quadratic polynomial $\mathrm{f}(\mathrm{x})=2 \mathrm{x}^{2}-3 \mathrm{x}+7$. Evaluate
a) $\frac{1}{\alpha}+\frac{1}{\beta}$
b) $\alpha^{2}+\beta^{2}$
c) $\alpha^{3}+\beta^{3}$
20. If the sum of squares of zeroes of the polynomial $6 x^{2}+x+k$ is $25 / 36$, find the value of $k$
21. Find a quadratic polynomial sum and product of whose zeroes are 3 and -2 .
22. Write a polynomial whose zeroes are -2 and $1 / 3$
23. If $\alpha \& \beta$ are zeroes of quadratic polynomial $x^{2}-3 x+7$, find a quadratic polynomial whose zeroes are $\frac{1}{\alpha} \& \frac{1}{\beta}$.
24. If one zero of quadratic polynomial $2 x^{2}-(3 k+1) x-9$ is negative of the other, find the value of $k$.

25 . If $\sqrt{2}$ and $-\sqrt{2}$ are zeroes of the polynomial $x^{2}+a x+b$, find the value of $a$ and $b$.

## CASE STUDY 1

While playing in garden, Sahiba saw a honeycomb and asked her mother what is that. She replied that it's a honeycomb made by honey bees to store honey. also she told her about the shape. the mathematical representation of the honeycomb structure is shown in the graph.


Based on above information answer the following questions
a. Graph of a quadratic polynomial is $\qquad$ in shape
b. Write expression of the polynomial represented by the Graph?
c. Find The sum of the zeroes of the polynomial $x^{2}+2 x-3$.

2 Raj and Ajay are very close friends. Both the families decide to go to Ranikhet by their own cars. Raj's car travels at a speed of $x \mathrm{~km} / \mathrm{h}$ while Ajay's car travels $5 \mathrm{~km} / \mathrm{h}$ faster than Raj's car. Raj took 4 hours more than Ajay to complete the journey of 400 km .

a. What will be the distance covered by Ajay's car in two hours?
b. Write a quadratic equation which describe the speed of Raj's car?
c. What is the speed of Raj's car?
3. India is competitive manufacturing location due to the low cost of manpower and strong technical and engineering capabilities contributing to higher quality production runs. The production of TV sets in a factory increases uniformly by a fixed number every year. It produced 16000 sets in 6th year and 22600 in 9th year?

Based on the above information, answer the following questions:
a) Find the production during first year.
b) Find the production during 8th year.
c) Find the production during first 3 years.
d) In which year, the production is Rs 29,200.
e) Find the difference of the production during 7th year and 4th year.
4. CASE STUDY : Your friend Veer wants to participate in a 200 m race. He can currently run that Distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds .
a. What is the minimum number of days he needs to practice till his goal is achieved
b. If nth term of an AP is given by $a_{n}=2 n+3$ find $S_{n}$
c. The value of $x$, for which $2 x, x+10,3 x+2$ are three consecutive terms of an AP d.
5. Amit is planning to buy a house and the layout is given below. The design and the measurement has been made such that areas of two bedrooms and kitchen together is 95 sq.m


Based on the above information, answer the following questions:
a. Form the pair of linear equations in two variables from this situation.
b. Find the length of the outer boundary of the layout.
c. Find the area of each bedroom and kitchen in the layout.
d. Find the area of living room in the layout.
e. Find the cost of laying tiles in kitchen at the rate of Rs. 50 per sq.m
6. A test consists of 'True' or 'False' questions. One mark is awarded for every correct answer while $1 / 4$ mark is deducted for every wrong answer. A student knew answers to some of the questions. Rest of the questions he attempted by guessing. He answered 120 questions and got 90 marks

1. If answer to all questions he attempted by guessing were wrong, then how many questions did he answer correctly?
2. How many questions did he guess?
3. If answer to all questions he attempted by guessing were wrong and answered 80 correctly, then how many marks he got?
4. If answer to all questions he attempted by guessing were wrong, then how many questions answered correctly to score 95 marks?
5. Breaking Distance: The distance that a car travels between the time the driver makes the decision to hit the brakes and the time the car actually stops is called the braking distance. For a certain car travelling with velocity v ,the braking distance D is given by $\mathrm{D}=\mathrm{v}+\frac{1}{30} \mathrm{v}^{2}$
i. Find the braking distance when ' $v$ ' is $30 \mathrm{~m} / \mathrm{sec}$
ii. if a driver decides to break 90 m from a stop sign, how fast can the car be going and still stop by the time it reaches the sign ?
iii find the breaking distance when v is $10 \mathrm{~m} / \mathrm{sec}$.

## PROJECT:

The Kalinga architectural style is a style of Hindu architecture which flourished in the ancient Kalinga, previously known as Utkal and in present eastern Indian state of Odisha. Sikh architecture is a style of architecture that was developed under the Sikh Confederacy and Sikh Empire during the 18th and 19th centuries in the Punjab region.Explore any two monuments of Odisha and Punjab each. Compare it's Architectural style and Mathematics used in it.Also paste their pictures and draw basic shapes used in the construction. (For example Sikh Architecture is depicting use of onion dome, frescoes, in-lay work, and multi-foil arches,chattris, oriel windows, bracket etc.)

NOTE: Do all the activities in the lab manual.PDF of activities will be shared in your class groups. Revise covered syllabus thoroughly.

## SCIENCE

CBSE PROJECT: Make a comparative study of climatic conditions and vegetation of Punjab and Odisha
a) Collage
b) scrap book
c) ppt (minimum slides 15 )
d) Chart
(The students will make project as per their group distributed Roll number wise)

## PHYSICS-

## 1) Complete Lab-manual (as instruction given in class)

## 2) Solve the below assignment.

## Note: solve assignment in fair note copy

1- A student holding a mirror in his hand, directed the reflecting surface of the mirror towards the Sun. He then directed the reflected light on to a sheet of paper held close to the mirror. (a) What should he do to burn the paper? (b) Which type of mirror does he have? (c) Will he be able to determine the approximate value of focal length of this mirror from this activity? Give reason and draw ray diagram to justify your answer in this case.
2-A 10 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 12 cm .
The distance of the object from the lens is 18 cm . Find the nature, position and size of the image formed.
3- A concave mirror has a focal length of 20 cm . At what distance from the mirror should a 4 cm tall object be placed so that it forms as image at a distance of 30 cm from the mirror? Also calculate the size of the image formed.
4-What is meant by power of a lens? Write its SI unit. A student uses a lens of focal length 40 cm and another of -20 cm . Write the nature and power of each lens.
5-(a) A security mirror used in a big showroom has radius of curvature 5 m . If a customer is standing at a distance of 20 m from the cash counter, find the position, nature and size of the image formed in the security mirror. (b) Neha visited a dentist in his clinic. She observed that the dentist was holding an instrument fitted with a mirror. State the nature of this mirror and reason for its use in the instrument used by dentist.
6- Rishi went to a palmist to show his palm. The palmist used a special lens for this purpose. (i) State the nature of the lens and reason for its use. (ii) Where should the palmist place/ hold the lens so as to have a real and magnified image of an object? (iii) If the focal length of this lens is 10 cm and the lens is held at a distance of 5 cm from the palm, use lens formula to find the position and size of the image
7- Draw a ray diagram in each of the following cases to show the formation of image, when the object is placed: (i) between optical centre and principal focus of a convex lens. (ii) anywhere in front of a concave lens. (iii)at 2 F of a convex lens. State the signs and values of magnifications in the above mentioned cases (i) and (ii).
8-An object 4.0 cm in size, is placed 25.0 cm infront of a concave mirror of focal length 15.0 cm .
(i) At what distance from the mirror should a screen be placed in order to obtain a sharp image?
(ii) Find the size of the image. (iii) Draw a ray diagram to show the formation of image in this case.

9- An object 6 cm in size is placed at 50 cm in front of a convex lens of focal length 30 cm . At what distance from the lens should a screen be placed in order to obtain a sharp image of the object? Find the nature and size of the image. Also draw labelled ray diagram to show the image formation in this case 10- A concave lens of focal length 60 cm is used to form an image of an object of length 9 cm kept at a distance of 30 cm from it. Use lens formula to determine the nature, position and length of the image formed. Also draw labelled ray diagram to show the image formation in the above case.

## CHEMISTRY

1-Assertion (A) : Decomposition of vegetable matter into compost is an example of exothermic reactions. Reason (R) : Exothermic reaction are those reactions in which heat is evolved.

2-Assertion (A) : Brown fumes are produced when lead nitrate is heated.
Reason (R) : Nitrogen dioxide gas is produced as a by product due to the decomposition of lead nitrate.

3-Assertion (A) : White silver chloride turns grey in sunlight.
Reason (R) : Decomposition of silver chloride in presence of sunlight takes place to form silver metal and chlorine gas.
4-Assertion (A): Pungent smelling gas is produced when sulphur burns in air.
Reason (R) : Sulphur trioxide is formed on reaction of sulphur with oxygen.

5-Assertion (A) : In electrolysis of water, the volume of hydrogen liberated is twice the volume of oxygen formed.
Reason (R) : Water $(\mathrm{H}, 0)$ has hydrogen and oxygen in the ratio of 1:2 by volume.

## CASE-STUDY

Corrosion is the phenomenon of deterioration of surface of metal in presence of air and moisture. It is a natural process and in the presence of a moist atmosphere, chemically active metals get corroded. This is an oxidation reaction. Rusting is the process where iron corrodes due to exposure to the atmosphere. The main circumstance of corrosion occurs with iron because it is a structural material in construction, bridges, buildings, rail transport, ships, etc. Aluminium is also an important structural metal, but even aluminium undergoes oxidation reactions. However, aluminium doesn't corrode or oxidize as rapidly as its reactivity suggests. Copper $(\mathrm{Cu})$ corrodes and forms a basic green carbonate.
(i) What is rusting?
(ii) Which two metals do not corrode easily?
(iii) Write the chemical name of the compound formed on corrosion of silver.

## BIOLOGY

1) Complete lab manual ((as instruction given in class)
2) Draw all NCERT diagrams of LIFE PROCESSES, CONTROL AND COORDINATION and HOW DO ORGANISMS REPRODUCE in fair notebooks

## PUNJABI



3 टे वग्तमी़ां (यूवी वा्यी हिँच वठे)


## तैवट नभ'ड टमहीं

थंत्ताघ भडे छुर्रीमा टा ड्रूतनउमव भयिभैठ

## दिम्ना- भंत्ताघ भडे छिरीमा टा मगठड भडे हेव पेखां




4 थंत्तम छुर्रीमा टीभr हेव पेड्ञा डे टिथव वेल्ग डिभाठ वठे।

## HINDI

1. किन्हीं दो विषयों पर A 4 शीट पर विज्ञापन बनाएँ|
2. आपका नाम अनामिका/ राहुल है । आपने अपना खराब लैपटॉप ठीक होने के लिए दिया लेकिन एक सप्ताह बीत जाने पर भी वापिस नहीं मिला उसे जल्दी प्राप्त करने के लिए कंपनी के मैनेजर को ई-मेल 80 शब्दों में लिखें।
3. वाक्य-भेद, वाच्य, अलंकार और पद-परिचय के लिए दिया गया निर्धारित कार्य (असाइनमेंट ) हल करें।
4. ‘पर्यावरण सरंक्षण -हमारा नैतिक उत्तरदायित्व’ विषय पर एक अनुच्छेद लिखें।
5. नवरात्रि के पावन अवसर पर शुभकामना देते हुए अपनी बड़ी दीदी को सन्देश लिखें।
6. आपकी दीदी ने पांच-छह वर्ष पहले आम के कुछ पौधे लगाये थे तथा दीदी के विवाह के उपरांत आपने उनकी देखभाल की है |इन पेड़ों पर इस बार आम लगें हैं | अपनी पर्यावरण प्रेमी दीदी को यह खुशखबरी देते हुए 100 शब्दों में एक पत्र लिखें।
7. पंजाब और उड़ीसा के तुलनात्मक अध्ययन पर परियोजना कार्य (केवल हिंदी विषय के लिए चयनित विद्यार्थियों के लिए )

## परियोजना: पंजाब और उड़ीसा का तुलनात्मक अध्ययन (Group no-2)

## विषय- पंजाब और उड़ीसा की संस्कृति

1. पंजाब और उड़ीसा के पर्यटन और धार्मिक स्थलों पर एक पीपीटी बनाएं।
2. पंजाब और उड़ीसा के धार्मिक और पर्यटन स्थलों का कोलाज बनाएं।
3. पंजाब और उड़ीसा के व्यंजनों का वर्णन 150 शब्दों में उनके चित्र चिपका कर करें।
4. पंजाब और उड़ीसा के त्योहारों की सचित्र प्रस्तुति 150 शब्दों में करें ।
5. पंजाब और उड़ीसा के परिधानों (वस्त्र) के चित्र चिपकाते हुए 150 शब्दों में वर्णन करें ।
6. पंजाब और उड़ीसा के नृत्यों का वर्णन सचित्र प्रस्तुति के साथ 150 शब्दों में करें।
(नोट- उपरोक्त कार्यों को फाइल में सूचीबद्ध करें )

## ENGLISH

## GENERAL INSTRUCTIONS:

Holidays' Homework must be done in a very neat and presentable manner.
Homework will be assessed on the basis of creativity, presentation and completion of all the questions \& indexing of work.

- Avoid cutting and overwriting.
- Creativity and Originality of work will be appreciated.


## A. ART INTEGRATED PROJECT:

## GUIDELINES:

(i) The entire project has to be compiled in one Project file in the following sequence :

1. The cover of Project file must comprise of-
a. School's name:
b. CBSE Art integrated project
c. Name of student:
d. Class/Section:
e. Session: 2023-24
2.The first page of the Project file - Index,

3 The Second page-Acknowledgment,
4. Bibliography
5.Details of project

## PROJECT: COMPARATIVE STUDY OF PUNJAB AND ODISHA

1. Make a collage of cuisines of Punjab and Odisha
2. Describe(40-50 words) dance forms of both the states pasting pictures of it.
3.Write about ( $40-50$ words)traditional attires and costumes of both the states pasting pictures of it.
4.Describe (40-50 words) tourists attractions of both the states with pictorial presentation
(Prepare a file with A4 size sheets)

## B.MOVIE REVIEW: -

5. Watch the movie "Inside Out".
6. Write the synopsis of the movie.
7. Describe all the five emotions shown in the movie-joy, sadness, anger, disgust and fear.
8. Name of the characters \& Physical appearance.
9. Role by character in the movie.
10. Which is your favourite character and why?

## C. PORTFOLIO:

## PREPARE A PORTFOLIO WITH THE FOLLOWING -

3 Introduction
4 My strengths
5 I need to improve on...
6 My achievements
7 I have participated in...
8 The books I have read
9 The book I wish to read

## D.POSTER MAKING

Make a poster portraying your thoughts and point of view on:
"Love for freedom is the natural instinct of every living being."
You may read Leslie Norris's A Tiger in the Zoo for your reference.


