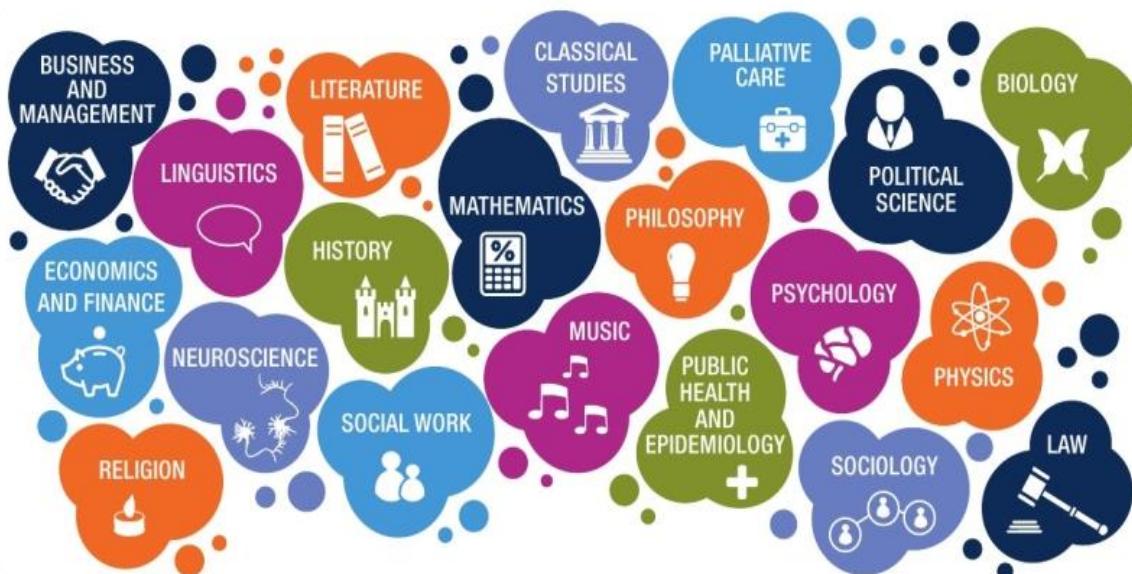


# The Millennium School HMEL

## Holiday Assignment Class - XI A Session - 2018-19



Dear Students,

At last the much awaited summer vacation has begun. It is a time for relaxation and enjoyment. As important as it is to rest & enjoy, it is also important to continue to learn.

Strike a balance between work and play and allow yourself to grow in the process. Let vacation time be a doorway to creativity, learning, growth and joy. We have planned some very interesting Holiday Assignments/Projects for you this vacation. These projects have been chosen with a lot of deliberation. Utmost care has been taken to ensure that you use your creativity, your innovative ideas and your imagination to shape your projects into beautiful, wonderful 'creations'.

We are giving you interesting activities and worksheets based on **Flip Learn Prime Modules**. Do them as instructed and submit your work after the vacation

**Important Note:**

It is mandatory to submit Holiday Assignments to all the subject teachers by 11<sup>th</sup> July 2018.

Marks are allotted for these Assignments and will be added in your Term-I subject enrichment activities/note book submission.

Relax, enjoy, have loads of fun and come back refreshed!!!

Warm Regards

## English

### Nothing worthwhile comes easy

1 It's all about individual responsibility and sincerity which brings a desired change. Keeping the same in mind, select two issues related to women empowerment and Environmental concern and design thought provoking posters on them in the most creative manner. Keep the format of poster making in mind while designing your poster.

2. Shoot your own video expressing your views on any one of these (Present Education system, Stress and Depression, examination system) to be utilized on a platform like TED TALKS. (Mandatory). Refer to You tube Videos for a better understanding.

## Physics

- (i) Prepare one small project to demonstrate one concept of Physics, necessarily from the syllabus of class XI. Submit its written project report also (not more than two pages). Take reference from Flip learn.

(ii) Differentiate these for fun, or practice, whichever you need. The given answers are not simplified.

$$1. f(x) = 4x^5 - 5x^4$$

$$2. f(x) = e^x \sin x$$

$$3. f(x) = (x^4 + 3x)^{-1}$$

$$4. f(x) = 3x^2(x^3 + 1)^7$$

$$5. f(x) = \cos^4 x - 2x^2$$

$$6. f(x) = \frac{x}{1+x^2}$$

$$7. f(x) = \frac{x^2 - 1}{x}$$

$$8. f(x) = (3x^2)(x^{\frac{1}{2}})$$

$$9. f(x) = \ln(xe^{-x})$$

$$10. f(x) = \frac{2x^4 + 3x^2 - 1}{x^2}$$

$$11. f(x) = (x^3)\sqrt[5]{2-x}$$

$$12. f(x) = 2x - \frac{4}{\sqrt{x}}$$

$$13. f(x) = \frac{4(3x-1)^2}{x^2+7^x}$$

$$14. f(x) = \sqrt{x^2+8}$$

$$15. f(x) = \frac{x}{\sqrt{1-(\ln x)^2}}$$

$$16. f(x) = \frac{6}{(3x^2 - \pi)^4}$$

$$17. f(x) = \frac{(3x^2 - \pi x)^4}{6}$$

$$18. f(x) = \frac{x}{(x^2 + \sqrt{3x})^5}$$

**Answers:** Absolutely not simplified ... you should simplify more.

$$1. f'(x) = 20x^4 - 20x^3$$

$$2. f'(x) = e^x \cos x + (\sin x)e^x$$

$$3. f'(x) = -1(x^4 + 3x)^{-2}(4x^3 + 3)$$

$$4. f'(x) = 3x^2 \cdot 7(x^3 + 1)^6(3x^2) + (x^3 + 1)^7 \cdot 6x$$

$$5. f'(x) = 4(\cos x)^3(-\sin x) - 4x$$

$$6. f'(x) = \frac{(1+x^2)(1)-x(2x)}{(1+x^2)^2}$$

$$7. f'(x) = 1 + x^{-2} \text{ (Simplify } f \text{ first.)}$$

$$8. f'(x) = 3 \cdot \frac{5}{2} x^{\frac{3}{2}} \text{ (Simplify } f \text{ first.)}$$

$$9. f'(x) = \frac{1}{x} + 7 \text{ (Simplify } f \text{ first.)}$$

$$10. f'(x) = 4x + 0 + 2x^{-3} \text{ (Simplify } f \text{ first.)}$$

$$11. f'(x) = x^3 \cdot \frac{1}{5}(2-x)^{-\frac{4}{5}}(-1) + (2-x)^{\frac{1}{5}}(3x^2)$$

$$12. f'(x) = 2 + 2x^{-\frac{3}{2}}$$

$$13. f'(x) = \frac{(x^2+7^x)[4 \cdot 2(3x-1)(3)] - 4(3x-1)^2(2x+7^x \ln 7)}{(x^2+7^x)^2}$$

$$14. f'(x) = \frac{1}{2}(x^2+8)^{-\frac{1}{2}}(2x)$$

$$15. f'(x) = \frac{(1-(\ln x)^2)^{\frac{1}{2}}(1) - x \cdot \frac{1}{2}(1-(\ln x)^2)^{-\frac{1}{2}}(-2(\ln x) \cdot \frac{1}{x})}{1-(\ln x)^2}$$

$$16. f'(x) = -24(3x^2 - \pi)^{-5}(6x)$$

$$17. f'(x) = \frac{1}{\pi}[4(3x^2 - \pi x)^3(6x - \pi)]$$

$$18. f'(x) = \frac{(x^2 + \sqrt{3x})^5(1) - x[5(x^2 + \sqrt{3x})^4(2x + \frac{1}{2}(3x)^{-\frac{1}{2}} \cdot 3)]}{\pi}$$

# **Chemistry**

## **TASK 1:-**

### **CBSE Project**

As a part of CBSE curriculum, every student needs to do one project in context with the syllabus of the subject. You are required to collect information on the following projects or any other topic of your choice relevant to class XI as a part of your summer holiday homework.

#### **Aim of the Project**

1. To investigate foaming capacity of different soaps.
2. Study the quantity of casein present in different samples of milk.
3. Determination of different contents present in cold drink
4. To study the effect of insecticides and pesticides on the fruits and vegetables.
5. To study the presence of caffeine in different tea samples.

# Submit your Project through e-mail to me on July 1<sup>st</sup> 2018.

**It will be a part of your Half Yearly Assessment**, which carries 15 marks. Presentation will be conducted on the same on July 11<sup>th</sup> 2018.

#### **Guidelines:**

- Prepare a Project with Cover page with School logo as shared via mail, Index, Content, acknowledgement page , Aim of the experiment, Observations , conclusions/Results, pictures and Bibliography.
- Last date of submitting the Project is July 1<sup>st</sup> , 2018
- Your Project must be hand written with pictures and illustrations and in proper format.

#### **Assessment Criteria:**

- (i) Content : 5 marks
- (ii) Research work: 5 marks
- (iii) Aesthetic sense/ presentation: 5 marks

#### **Refer:-**

**icbse.com or chemistry lab manual for the relevant topics of project.**

**Apart from this you can search other sites too!**

## **TASK 2:-**

Refer to the following Fliplearn prime modules to prepare PPT's as allotted below and enhance your learning experience:

“Chemistry 11Module”: Book 1-Part-I

Module3:- 3.1&3.2 :- Laiba Ahsan &Tripti Bedwal

3.3- Kabeer Thakral & Zil Pavdighada , 3.4- Anugreh koul & Khyati Sonthalia

3.5-Indrani Singh & Aqdas Rao ,3.6- Apoorv kamboj

Book2-Part-II

Module:-7: Environmental Chemistry

7.1-Utkarsh Mathur & Eshita Mishra, 7.2- Deep Yadav & Bibaswan purkayastha

## **TASK 3.**

**Practice all NCERT Exercise questions of Ch-1&2 in your Assignment notebook.**

## **Maths**

### **CHAPTER -1 (SETS)**

1. Write the following sets in the roaster from

(i)  $A = \{x : x \in R, 2x + 11 = 15\}$

(ii)  $B = \{x | x^2 = x, x \in R\}$

(iii)  $C = \{x | x \text{ is a positive factor of a prime number } p\}$

2. Given  $L = \{1, 2, 3, 4\}$ ,  $M = \{3, 4, 5, 6\}$  and  $N = \{1, 3, 5\}$

Verify that

$$L - (M \cup N) = (L - M) \cap (L - N)$$

3. If  $X = \{1, 2, 3\}$ , if  $n$  represents any member of  $X$ , write the following sets containing all numbers represented by

(i)  $4n$       (ii)  $n + 6$       (iii)  $2 n$  (iv)  $n - 1$

4. If  $Y = \{1, 2, 3, \dots, 10\}$ , and  $a$  represents any element of  $Y$ , write the following sets, containing all the elements satisfying the given conditions.

(i)  $a \in Y$  but  $a^2 \notin Y$  (ii)  $a + 1 = 6$ ,  $a \in Y$  (iii)  $a$  is less than 6 and  $a \in Y$

5. A, B and C are subsets of Universal Set U. If  $A = \{2, 4, 6, 8, 12, 20\}$

$B = \{3, 6, 9, 12, 15\}$ ,  $C = \{5, 10, 15, 20\}$  and U is the set of all whole numbers, draw a Venn diagram showing the relation of U, A, B and C.

6. Let U be the set of all boys and girls in a school, G be the set of all girls in the school, B be the set of all boys in the school, and S be the set of all students in the school who take swimming. Some, but not all, students in the school take swimming. Draw a Venn diagram showing one of the possible interrelationships among sets U, G, B and S.

7. Out of 100 students; 15 passed in English, 12 passed in Mathematics, 8 in Science, 6 in English and Mathematics, 7 in Mathematics and Science; 4 in English and Science; 4 in all the three. Find how many passed

- (i) in English and Mathematics but not in Science
- (ii) in Mathematics and Science but not in English
- (iii) in Mathematics only
- (iv) in more than one subject only

8. In a class of 60 students, 25 students play cricket and 20 students play tennis, and 10 students play both the games. Find the number of students who play neither?

9. In a survey of 200 students of a school, it was found that 120 study Mathematics, 90 study Physics and 70 study Chemistry, 40 study Mathematics and Physics, 30 study Physics and Chemistry, 50 study Chemistry and Mathematics and 20 none of these subjects. Find the number of students who study all the three subjects.

10. In a town of 10,000 families it was found that 40% families buy newspaper A, 20% families buy newspaper B, 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C. If 2% families buy all the three newspapers. Find

- (a) The number of families which buy newspaper A only.
- (b) The number of families which buy none of A, B and C

## **CHAPTER – 2 (RELATIONS & FUNCTIONS)**

1. If  $P = \{x : x < 3, x \in \mathbf{N}\}$ ,  $Q = \{x : x \leq 2, x \in \mathbf{W}\}$ . Find  $(P \cup Q) \times (P \cap Q)$ , where  $\mathbf{W}$  is the set of whole numbers.

2. If  $A = \{x : x \in \mathbf{W}, x < 2\}$      $B = \{x : x \in \mathbf{N}, 1 < x < 5\}$      $C = \{3, 5\}$  find

$$(i) A \times (B \cap C)$$

$$(ii) A \times (B \cup C)$$

3. Given  $A = \{1, 2, 3, 4, 5\}$ ,  $S = \{(x, y) : x \in A, y \in A\}$ . Find the ordered pairs which satisfy the conditions given below:

$$(i) x + y = 5 \quad (ii) x + y < 5 \quad (iii) x + y > 8$$

4. Given  $R = \{(x, y) : x, y \in \mathbf{W}, x^2 + y^2 = 25\}$ . Find the domain and Range of  $R$ .

5. If  $R_1 = \{(x, y) | y = 2x + 7\}$ , where  $x \in \mathbf{R}$  and  $-5 \leq x \leq 5$  is a relation. Then find the domain and Range of  $R_1$ .

6. If  $R_2 = \{(x, y) | x \text{ and } y \text{ are integers and } x^2 + y^2 = 64\}$  is a relation. Then find  $R_2$ .

7. If  $R_3 = \{(x, x) | x \text{ is a real number}\}$  is a relation. Then find domain and range of  $R_3$ .

8. Is the given relation a function? Give reasons for your answer.

$$(i) h = \{(4, 6), (3, 9), (-11, 6), (3, 11)\}$$

$$(ii) f = \{(x, x) | x \text{ is a real number}\}$$

9. Let  $f$  and  $g$  be real functions defined by  $f(x) = 2x + 1$  and  $g(x) = 4x - 7$ .

(a) For what real numbers  $x$ ,  $f(x) = g(x)$ ?

(b) For what real numbers  $x$ ,  $f(x) < g(x)$ ?

10. If  $f$  and  $g$  are two real valued functions defined as  $f(x) = 2x + 1$ ,  $g(x) = x^2 + 1$ , then find.

$f$

$$(i) f + g$$

$$(ii) f - g$$

$$(iii) fg$$

$$(iv) \frac{f}{g}$$

11. Express the following functions as set of ordered pairs and determine their range.  $f: X \rightarrow \mathbf{R}$ ,  $f(x) = x^3 + 1$ , where  $X = \{-1, 0, 3, 9, 7\}$

12. If  $A = \{2, 4, 6, 9\}$  and  $B = \{4, 6, 18, 27, 54\}$ ,  $a \in A, b \in B$ , find the set of ordered pairs such that ' $a$ ' is factor of ' $b$ ' and  $a < b$ .

13. Find the values of  $x$  for which the functions

$$f(x) = 3x^2 - 1 \text{ and } g(x) = 3 + x \text{ are equal}$$

14. Find  $x$  and  $y$  if:

$$(i) \quad (4x + 3, y) = (3x + 5, -2) \quad (ii) \quad (x - y, x + y) = (6, 10)$$

15. Is the following relation a function? Justify your answer

$$(i) \quad R_1 = \{(2, 3), (-2, 0), (2, 7), (-4, 6)\}$$
$$(j) \quad (ii) \quad R_2 = \{(x, |x|) \mid x \text{ is a real number}\}$$

16. Find the domain for which the functions

$$f(x) = 2x^2 - 1 \text{ and } g(x) = 1 - 3x \text{ are equal.}$$

17. Let  $f$  and  $g$  be two functions given by

$$f = \{(2, 4), (5, 6), (8, -1), (10, -3)\}$$

$$g = \{(2, 5), (7, 1), (8, 4), (10, 13), (11, -5)\}$$

then. Domain of  $f + g$  is \_\_\_\_\_

## Physical Education

- Practice Suryanamaskar daily, early in the morning. (3 rounds)
- Practice Vajarasana daily ( after meals)
- Prepare a P.P.T & show your photograph in every slide performing Suryanamaskar (one photo of each step total 12 photographs).

### Following point should be included:

- Benefits of Suryanamaskar & Vajasana.
- Presentation should have 8- 10 slides.
- Lessons learn should be explained.
- The complete presentation to be mailed to the me on my mail id.
- Date of submission-July 12<sup>th</sup> 2018.

