



**TEMPLETON ACADEMY INTERNATIONAL
NAUKUCHIYATAL
WINTER ACADEMIC ENRICHMENT ASSIGNMENTS**

GRADE XI SCIENCE – ACADEMIC YEAR 2016-17

Dear Parents,

Winter vacation has begun and it's time to have a new learning experience. We have compiled a set of assignments to keep our child engaged during these holidays. Creativity is a part of our makeup, as we all agree that without it the purpose of work seems to go nowhere. Children must buckle and exhibit their potential to uplift the academic performance. We expect from you to encourage your child in doing these assignments.

Students must take note of the following points before starting the work:

- Holiday homework is to be done in strip files or in separate notebook subject wise as instructed by the subject teachers.
- Homework has to be submitted on the first day of school after vacation.
- Make sure you complete the home work before coming back to school and submit the same to the subject teacher.
- Please take care of the neatness of the work.

Have a very happy and fruitful vacation!!!



'Creativity is when sights that everyone sees arouse thinking that nobody else has thought.'

-anonymous

Senior Section Educator



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GRADE- XI- ENGLISH- ACADEMIC YEAR - 2016-17

Prepare and revise the syllabus covered in the classroom and solve the assignment given below. Submit your solution on the first day of school after vacation.

Section A: Reading

Read the passage given below and then answer the questions which follow:

To make our life a meaningful one, we need to mind our thoughts, for our thoughts are the foundation, the inspiration, and the motivating power of our deeds. We create our entire world by the way we think. Thoughts are the causes and the conditions are the effects.

Our circumstances and conditions are not dictated by the world outside; it is the world inside us that creates the outside. Self-awareness comes from the mind, which means soul. Mind is the sum total of the states of consciousness grouped under thought, will and feeling. Besides self-consciousness we have the power to choose and think. Krishna says: *“no man resteth a moment inactive”*. Even when inactive on the bodily plane, we are all the time acting on the thought plane.

Therefore if we observe ourselves, we can easily mould our thoughts. If our thoughts are pure and noble, naturally actions follow the same. If our thoughts are filled with jealousy, hatred and greed, our actions will be the same.

Karmically, however, thought or intent is more responsible and dynamic than an act. One may perform a charitable act, but if he does not think charitably and is doing the act just for the sake of gain and glory, it is his thoughts that will determine the result. Theosophy teaches us that every thought, no matter how fleeting, leaves a seed in the mind of the thinker. These small seeds together go to make up a large thought seed and determine one's general character. Our thoughts affect the whole body. Each thought once generated and sent out becomes independent of the brain and mind and will live upon its own energy depending upon its intensity.

Trying to keep a thought from our mind can produce the very state we are trying to avoid. We can alter our environment to create the mood. When, for instance, we are depressed, if we sit by ourselves trying to think cheerful thoughts, we often do not succeed. But if we mix with people who are cheerful we can bring about a change in our mood and thoughts. Every thought we think, every act we perform, creates in us an impression, like everything else, is subject to cyclic law and becomes repetitive in our mind. So, we alone have the choice to create our thoughts and develop the kind of impressions that make our action more positive.

Let us choose the thought seeds of right ideas, noble and courageous aspirations that will be received by minds of the same nature. Right introspection will be required of us to determine what we really desire to effect. Everything in the universe is inter-related and inter-dependent, that we live in one another and



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by accepting the grand principle of universal brotherhood we shall be in a position to appreciate what a heavy responsibility is ever ours to think right. Let us reflect and send loving and helpful thoughts and lighten the load of the world's suffering.

Answer the following questions:

- a) How can we make our life meaningful?
- b) Why does Krishna say, "*No man resteth a moment inactive?*"
- c) How do our thoughts affect the whole body?
- d) How can we change our mood when we are depressed?
- e) How can we bring about the desired effect?

Find the words from the passage which mean the same as:

- a) Full of activity (Para 3)
- b) Happening in cycles (Para 4)
- c) to look into one's own thoughts and feelings (Para 5)

Q.2. Read the passage given below and answer the questions that follow:

The small village of Somnathpur contains an extraordinary temple, built around 1268 A.D. by the Hoyasalas of Karnataka-one of the most prolific temple builders.

Belur and Helebid are among their-better-known works. While these suffered during the invasions of the 14th century, the Somnathpur temple stands more or less intact in near-original condition. This small temple captivates with the beauty and vitality of its detailed sculpture, covering almost every inch of the walls, pillars, and even ceilings. It has three shikharas and stands on a star-shaped, raised platform with 24 edges. The outer walls have a profusion of detailed carvings: the entire surface run over by carved plaques of stone. There were vertical panels covered by exquisite figures of gods and goddesses with many incarnations being depicted. There were nymphs too, some carrying an ear of maize (a symbol of plenty and prosperity). The elaborate ornamentation, very characteristic of Hoyasala sculptures, was a remarkable feature. On closer look - and it is worth it - the series of friezes on the outer walls revealed intricately carved caparisoned elephants, charging horsemen, stylized flowers, warriors, musicians, crocodiles, and swans.

The temple was actually commissioned by Soma Dandanayaka or Somnath (he named the village after himself), the minister of the Hoyasala king, Narasimha theThird. The temple was built to house three versions of Krishna. The inner center of the temple was the kalyana mandapa. Leading from here were three corridors, each ending in a shrine, one for each kind of Krishna-Venugopala, Janardana and



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Prasanna Keshava, though only two remain in their original form. In the darkness of the sanctum sanctorum, I tried to discern the different images. The temple's sculptural perfection is amazing and it includes the doors of the temple and the three elegantly carved towers.

- a) Make notes of the above passage using an acceptable format including abbreviations, with suitable title.
- b) Make a summary of the above passage in not more than 80 words.

Section B: Advanced Writing Skills

Q.3. You are the President of your school theatre club. Your club is organizing a play *The Miser* to help the victims of earthquake. Design a poster informing the students about this play. Invent necessary details.

Or

The students' council of your school has organized an excursion to Goa for students of class XII during the Autumn Break. As President of the council, write a notice in not more than fifty words informing the students about this excursion. Sign yourself as Bhanupartap / Shivangi.

Q.4. You are Abhay, the Headboy of Creative Public School, Pune. Recently your school hosted the Regional Level CBSE Science Exhibition. Write a report of this event for your school newsletter in about 125 words.

Or

The International Book Fair was inaugurated by the Chairman of Children's Book Trust, Dr. Kumar. The theme this year was Illustrated Works of Children. You are Aman/Simran a class XII student of A.K. International School Delhi. You visited the exhibition and were impressed with the range of books on display. Write a factual description in about 125 words.

Q.5. You are Deepak/Kanika. Recently, you came across a newspaper report on the burning of a young woman as her parents could not meet the dowry demands. You feel that even after 60 years of independence we have not really progressed as a nation. Write a letter to the editor of a local newspaper expressing your views and also giving suggestions to improve the status of women in Indian Society.

Or



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You are Manpreet/Yesvika, the student prefect incharge of the school library. You have been asked to place an order for children's story books (Ages 10-13 yrs). Write a letter to M.S. Book Depot Indirapuram, Ghaziabad placing an order for the books. Invent the necessary details.

Q.6. India is a country with diverse cultures, traditions, religious and political beliefs. To keep such a country together, to bind the people and take the nation ahead on the path of progress, democracy is the most suitable form of government. Write an article in about 150-200 words. You are Akshay/Asha a class XII student at Gurukul Senior Secondary School. Vasundhara, Ghaziabad

Or

You are Amit/Amita a student of class XII at J.K.G Senior Secondary School Indirapuram. You recently visited a hill station alongwith your parents. It was an exhilarating, adventurous and joyful experience. Write an article for the school magazine sharing your experience in 150-200 words.

Q7 Answer the following questions briefly-

- (a) Why did the narrator decide to forget the address?
- (b) Why was Albert expelled from the School?
- (c) Why did a big crowd gather outside Ranga's house when he returned from the city?
- (d) Why did the doctor say that he had done something real at last? How was the new King selected?
- (e) What three things did the grandmother dislike about the City School?
- (f) Why was King Tut's body repeatedly scrutinized?
- (g) Why were classical stories told in chinese education?
- (h) Who is the World's most dangerous animal and why?
- (i) How did Professor Gaitonde reach the other world?
- (J) Why did Taplow go to Mr. Crocker Harris's house?

Q8 Answer the following questions in detail---

- (a) Differentiate between Chinese and European art?
- (b) What are the four Biological Systems of the Earth and how are they being depleted?
- (c) Describe Professor Gaitonde's experience in the other world?
- (d) Describe the life of the grandmother and the narrator when they were together in the village?
- (e) How did the narrator trick Ranga into marriage?



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GRADE- XI- CHEMISTRY- ACADEMIC YEAR - 2016-17

1. Prepare a **handwritten** Project Report on Some basic concepts of organic chemistry. Project must include following headings:

- (a) Index
- (b) Certificate of excellence
- (c) Acknowledgement
- (d) Project topics
- (e) Bibliography
- (f) Thank you page

The project must include following content:

- (i) Classification of organic compounds.
- (ii) Nomenclature of organic compounds.
- (iii) Isomerism
- (iv) Reaction mechanism:- Fission of covalent bond:- homolytic and heterolytic fission, Nucleophiles, Electrophiles, Electron movement in organic reactions.
- (v) Factors affecting organic reactions:- Inductive effect, Resonance effect, Electromeric effect, Hyperconjugation.
- (vi) Types of organic reactions and mechanism:-
 - (a) Substitution reactions
 - (b) Addition reactions
 - (c) Elimination reactions
 - (d) Rearrangement reactions

2. Do the following questions from NCERT from Thermodynamics and Equilibrium.

Questions: 6.14,6.15,6.17,6.21,6.22,7.4,7.5,7.8,7.9,7.13,7.14,7.15,7.18,7.21,7.26.



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GRADE- XI- BIOLOGY - ACADEMIC YEAR - 2016-17

NOTE: Please solve all the questions in a separate notebook and submit your answers on the first day of school after the vacation.

CHAPTER – 10 (CELL CYCLE AND CELL DIVISION)

M.M.20

1. What is cell cycle? [1]
2. What is the average cell cycle span for a mammalian cell? [1]
3. Describe the events taking place during Interphase. [1]
4. What is G₀ phase of cell cycle? [1]
5. Why mitosis is also called as equational division? [1]
6. In which phase of interphase duplication of DNA will occur? [1]
7. Differentiate [2]
 - (i) Metaphase I of meiosis from Metaphase of mitosis
 - (ii) Anaphase I of meiosis from Anaphase of mitosis.
8. How does cytokinesis differ in plant cell from an animal cell? [3]
9. Write the significance of Mitosis. [3]
10. Draw neat diagrams of various stages of prophase I. [3]
11. Draw neat diagrams of various stages of mitosis. [3]

CHAPTER – 16 (DIGESTION AND ABSORPTION)

M.M.20

1. Define digestion. [1]
2. What is deglutition? [1]
3. Write the dental formula of human. [1]
4. State the role of pancreatic juice in digestion of proteins. [1]
5. Describe the various terms used for dentition in human beings-
Thecodont and Diphyodont. [2]
6. Write any two functions of dil. HCl in stomach. [2]
7. Bile juice contains no digestive enzymes, yet it is important for digestion. Why? [2]
8. Write a note on various digestive glands in human. [3]
9. Draw a well labeled diagram of human digestive system. [3]
10. Explain in brief any four disorders of digestive system. [4]



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CHAPTER – 19 (EXCRETORY PRODUCTS AND THEIR ELIMINATION)

M.M.20

1. Define glomerular filtration rate. [1]
2. Explain micturition. [1]
3. What is meant by the term osmoregulation? [1]
4. What is uremia? [1]
5. Terrestrial animals are either ureotelic or uricotelic, not ammonotelic. Why? [2]
6. What is the significance of JGA in kidney function? [2]
7. Describe the role of liver, lungs and skin in excretion. [3]
8. Differentiate between Ammonotelism, Ureotelism & Uricotelism . [3]
9. Explain the various parts of nephron with neat labeled diagram. [3]
10. Explain the mechanism of urine formation. [3]



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GRADE- XI- PHYSICAL EDUCATION- ACADEMIC YEAR - 2016-17

1. Complete the lab manual of physical Education.
2. Prepare a project report on the sports assigned to you in the classroom as per the following guidelines:
 - a. Select at least four games/ sports.
 - b. Project report must be handwritten.
 - c. Project report must contain detailed information regarding games/ sports you chose.

GRADE- XI- PHYSICS- ACADEMIC YEAR - 2016-17

Prepare a detailed report on the project topics assigned to you in the classroom as per the guidelines given and submit the same on the first day of school after vacation.

Details related to your individual project have already being e-mailed to you. Please go through it.

Project report must contain following pages:

Certificate of excellence

Acknowledgement

Project topic

Introduction

Theory

Observation

Conclusion

Bibliography



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GRADE- XI- MATHEMATICS- ACADEMIC YEAR - 2016-17

NOTE: Please solve all the questions in a separate notebook and submit your answers on the first day of school after the vacation.

1. Find the value of the trigonometric function: $\cot\left(-\frac{15\pi}{4}\right)$.
2. A function f is defined by $f(x) = 2x - 5$. Find $f(-3)$.
3. Find the coefficient of $x^6 y^3$ in the expansion of $(x + 2y)^9$.
4. Find n , if ${}^{n-1}P_3 : {}^n P_4 = 1 : 9$.
5. Solve: $\frac{x}{4} < \frac{5x - 2}{3} - \frac{7x - 3}{5}$.
6. Find the equation of the parabola with vertex at $(0, 0)$ and focus at $(0, 2)$.
7. Express the complex number $z = \frac{2+i}{(1+i)(1-i)}$ in $(x+iy)$ form.
8. Find the 12th term of a G.P. whose 8th term is 192 and the common ratio is 2.
9. Using Binomial Theorem, prove that: $2^{4n} - 15n - 1$
10. Find the point on the z -axis which is equidistant from the points A (1,5,7) and B (5,1,-4)
11. Prove the following by using the Principle of Mathematical Induction $(1+1/3) \dots (1+1/n) = (n+1)$ $(1+1)(1+1/2)$
12. In how many ways can 5 persons travel in a car, 2 including driver in the front seat and 3 in the back seat, if 2 particular persons out of the 5 do not know driving?
13. Prove by PMI that $n(n+1)(n+5)$ is always a multiple of 3 for every natural number $n \in N$ \square .
14. Find the equation of the hyperbola with vertices at $(\pm 2, 0)$ and the foci at $(\pm 3, 0)$.



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15. Find the coordinates of the point which divides the line segment joining the points P(5,4,2) and Q (-1,-2,4) in the ratio 2:3.
16. Find the equation of the line making equal intercepts on the axes and making an angle 135° with X axis.
17. Find the coordinates of the foci, the vertices, the length of major axis and eccentricity of the ellipse $4x^2 + 9y^2 = 144$.
20. Find the term in the expansion $(2x - \frac{1}{x})^{10}$ independent of x.
21. If a, b, c are in A.P. ; b, c, d are in G.P. and are in A.P. , prove that a, c, e are in G.P.
22. Find the area of the triangle formed by the midpoints of sides of the triangle whose vertices are (1,5,-1) (0,4,-2) and (2,3,4)
23. Find the equation of the line through the intersection of lines $4x+7y-3=0$ and $2x-3y+1=0$ and whose slope is 5.
24. Prove that $\frac{\sin 8x \cos x - \sin 6x \cos 3x}{\cos 2x \cos x - \sin 4x \sin 3x} = \tan 2x$
25. Find the sum to n terms of the series whose nth term is $(2n-1)^2$



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GRADE- XI- COMPUTER SCIENCE - ACADEMIC YEAR - 2016-17

NOTE: Please solve all the questions in a separate notebook and submit your answers on the first day of school after the vacation

1. Define a function shift() to shift all odd elements towards left and even to right without changing order of numbers.
Example: If input: 1,5,7,8,9,2,10
Output: 1,5,7,9,8,2,10.
2. Given two arrays A and B. Array 'A' contains all the elements of 'B' but one more element extra. Write a c++ function which accepts array A and B and its size as arguments/ parameters and find out the extra element in Array A. (Restriction: array elements are not in order)
Example : - If Array A is {14, 21, 5, 19, 8, 4, 23, 11} and Array B is {23, 8, 19, 4, 14, 11, 5 }
Then output will be 21 (extra element in Array A)
3. Write C++ function to Arrange(int [],int) to arrange all the negative and positive numbers from left to right.
Example : - If an array of 10 elements initially contains { 4,5,6,-7,8,-2,-10,1,13,-20} . Then the function rearrange them in following manner { -20,-10,-7,-2 1,4,5,6,8,13}
4. Write a user defined function in C++ to find and display the row sums of a two dimensional array.
5. Write a user defined function in C++ to find and display the column sums of a two dimensional array.
6. Write a function in C++ to print the product of each row of a two dimensional array passed as the arguments of the function
7. Write a function in C++ which accepts a 2D array of integers and its size as arguments and displays the elements which lie on diagonals. [Assuming the 2D Array to be a square matrix with odd dimension i.e. 3×3, 5×5, 7×7 etc.] Example, if the array content is

5 4 3

6 7 8

1 2 9

Output through the function should be: Diagonal 1 : 5 7 9 Diagonal 2 : 3 7 1



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8. Write a user defined function in C++ which accepts a squared integer matrix with odd dimensions (3*3, 5*5 ...) & display the square of the elements which lie on both diagonals. For

ex. :

2 5 7

3 7 2

5 6 9

The output should be :

Diagonal one : 4, 49, 81

Diagonal two : 49, 49, 25

9. Write a user defined function in C++ which accepts a squared integer matrix with odd dimensions (3*3, 5*5..) & display the sum of the middle row & middle column elements. For ex.

2 5 7

3 7 2

5 6 9

The output should be :

Sum of middle row = 12

Sum of middle column = 18

10. Write a user-defined function named Lower_half() which takes 2D array A, with size N rows and N columns as argument and prints the lower half of the array.

Eg. Input

2 3 1 5 0

7 1 5 3 1

2 5 7 8 1

0 1 5 0 1

3 4 9 1 5

the output will be

2

7 1

2 5 7



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0 1 5 0

3 4 9 1 5

11. Write an equivalent while loop for the following for loop

for (int i=2, sum=0 ; i<=20 ; i=i+2) sum += i ;

12. Rewrite the following code fragment using switch

If (ch == „O“)

Outstanding ++ ;

If (ch == „E“)

Excellent ++ ;

If (ch == „G“)

Good ++ ;

If (ch == „P“)

Poor ++ ;

else

Unknown ++ ;

13. Write a C++ program to print the Fibonacci series upto the N terms. [3] i.e. 0 1 1 2 3 5

8..... N.

14. Write a program to print the left and right diagonal element of an NXN matrix.

15. Convert

(i) (10.10)₁₀ = (?)

(ii) (101011.1110)₂ = (?)₁₀

16. What do you mean by Functions? Explain its types and categorized them.

17. What do you mean by Structure. Explain with example.

18. Explain the following terms :

i. Formal Parameters

ii. Actual Parameters

19. Write definition for a structure Product that stores information about an employee such as pid, pname, companyname, dealername, m_date and e_date. The Price member of Product stores the information MRP, tax.

20. What do you mean by Operators? Explain it in brief.