THE ASIAN SCHOOL, DEHRADUN
HOLIDAY HOMEWORK OF WINTER VACATION 2016 FOR CLASS XI

English: 1. Read to recite the Poem 'The Melon City' by Vikram Seth a write a detailed summary of the Poem and read other works by the writer.

2. Read 'A collection of short stories' by Oscar Wilde and write a review on one of the stories.

3. Read 'A Book of Simple Living' by Ruskin Bond and write review on it.

Hindi: क) निम्नलिखित पठित पाठों का सारांश लिखिए —

1. स्पीति में बारिश (आरोह),   2. रजनी (आरोह),   3. जामुन का पेड़ (आरोह),   4. भारतमाता (आरोह)   5. आलो आँधारि (वितान)

ख) निम्नलिखित कविताओं का प्रतिपाद्य लिखिए —   1. चंपा काले–काले अच्छर नहीं चीन्हती,   2. गजल

3. अक्क महादेवी की कविता का प्रतिपाद्य

ग) निम्नलिखित विषयों पर फीचर लेखन तैयार कीजिए —   1. नोटबंदी का प्रभाव   2. कालेधन पर बढती पकड़

Mathematics: Sequence and Series :

1. The sum of four numbers in A.P is 24 and product of the squares of extremes is 729. Find the numbers.
2. The interior angles of a polygon are in arithmetic progression. The smallest angle is 52^0 and the common difference is 8^0. Find the number of sides in the polygon.
3. There are n arithmetic means between 3 and 17. The ratio of the first mean to the last mean is 1:3. Find n.
4. The sum of three numbers in GP is 56. If we subtract 1, 7, 21 from these numbers in that order, we obtain an AP. Find the numbers.
5. Evaluate : $7^{1/2} \times 7^{1/4} \times 7^{1/8}$ .... to infinite terms.
6. Show that $1/\log_3 e + 1/\log_3 e^2 + 1/\log_3 e^4 + \ldots \infty = \log_e 9$
7. Find the sum of n terms of the series. $5 + 11 + 19 + 29 + 41 + \ldots$
8. The A.M and G.M of the roots of a quadratic equation are 8 and 5 respectively then find the quadratic equation.
9. *If the sum of infinity of the series $3 + 5r + 7r^2 + \ldots$ is 44/9 then find the value of r.*
10. Find the sum of first n terms of the series $\dfrac{1^3}{1} + \dfrac{1^3 + 2^3/13^3}{1+3+5} + \ldots$
11. Find the sum of the products of the corresponding terms of the two series : 2,4,6,16,32, and 128,32,8,2,1/2.
12. Which term of the sequence 12 + 8i, 10+7i, 8 + 6i.... is   i) real   ii) Purely imaginary.
13. If $a^2(b+c)$, $b^2(c+a)$, $C^2(a+b)$ are in AP prove that either a,b,c are in AP or ab+bc +ca = 0.
14. Find the sum of all the three digit numbers which leave the remainder 2 when divided by 5.
15. Evaluate $\displaystyle\sum_{n=1}^{50} (2^n - 1)$

Trigonometry

16. The large hand of a big clock is 35cm long. How many cm does its extremity move in 9 minutes.
17. If sec x = 13/15 and x lies in the fourth quadrant, find the values of other five trigonometric functions.
18. Find values of the following :
    $\tan 19\pi/3$, $\sin(-11\pi/3)$, $\cot(-15\pi/4)$, $\operatorname{Cosec}(-19\pi/3)$, $\cos(-1710^0)$, $\operatorname{cosec}(-1410^0)$
19. Prove that $\cos 24^0 + \cos 55^0 + \cos 125^0 + \cos 204^0 + \cos 300 = \frac{1}{2}$.
20. Prove $\sin 10^0 \cdot \sin 50^0 \sin 60^0 \sin 70^0 = \dfrac{\sqrt{3}}{16}$
21. If cos A + cos B = 1/3 and sin A + sin B = ¼ Prove that tan (A + B)/2 = 3/4.
22. Show that $\sin 18^0 = \dfrac{\sqrt{5}-1}{4}$.
23. Prove that $\cos 6x = 32 \cos^6 x - 48\cos^4 x + 18\cos^2 x - 1$.
24. Prove that $4 \sin x \sin(x + \pi/3) \sin(x + 2\pi/3) = \sin 3x$
25. Solve $\sec\theta - \operatorname{COSEC}\theta = \frac{4}{3}$.
26. In ΔPQR, $<R = \frac{\pi}{2}$ if $\tan(\frac{P}{2})$ and $\tan(\frac{q}{2})$ are the roots of $ax^2 + bx + c = 0$, $a = 0$ then find relation between a, b and c.
27. Solve for x; $\tan x + \tan 2x + \sqrt{3} \tan x \tan 2x = \sqrt{3}$
28. Prove that $\dfrac{\cos 4x + \cos 3x + \cos 2x}{\sin 4x + \sin 3x + \sin 2x} = \cot 3x$
29. Solve : $3 \tan(Q-15) = \tan(Q + 15)$
30. Solve : $\cot\frac{q}{2} - \cot q = \operatorname{Cosec}\frac{q}{2}$

Straight Lines

31. Find the values of K for which the line $(K-3)x - (4-K^2)y + k^2 - 7K + 6 = 0$ is a) parallel to x axis b) parallel to 4 axis c) passes through the origin
32. One side of a rectangle lines along the line 4x + 7y + 5=0. Two of its vertices are (-3,1) and (1,1). Find equation of the other 3 sides.
33. Reduce the following equation to Normal form y + 4=0. Also find their perpendicular distance from the origin and the angle between perpendicular and the positive direction of x axis.
34. Find the equation of the perpendicular dropped from the point (-2,3) to the line x -4y +7=0. Also find coordinates of the foot of perpendicular.
35. Find the equation of line which passes through the point (2,3) and the sum of whose intercepts on axes is 10.
36. Find the equation of a line which is at a distance of 5 units from origin and the perpendicular from origin to this line makes an angle and from the positive direction of x axis where $\tan x = \frac{4}{3}$
37. Find the equation of a line perpendicular to the line $\frac{x}{a} + \frac{y}{b} = 1$ and passes through the midpoint of the line segment lying between the axes of the given line.
38. If P is the length of perpendicular from point (1,1) o the straight line ax + by + a + b = 0 them prove that : $P^2 = 4 + \dfrac{8ab}{a^2 + b^2}$
39. Find the ratio in which the line x + y = 4 divides the line segment joining the points (-1,1) and (5,7)

40. The vertices of a Δ are (6,0), (0,6) and (6,6) then what is the distance between circumcentre and centroid of a Δ.

41. A straight line is drawn through the point P (1,0). It intersects the straight line y = 2x-3 at the point Q. find slope of straight line PQ if PQ = $\sqrt{2}$.

42. If the lines aX + 2y + 1 = 0, bx + 3y + 1 = 0 and cx + 4y + 1=0 are concurrent prove that a,b,c are in AP.

43. A vertex of an equilateral Δ is (2,3) and the equation of the opposite side is $\sqrt{3}x + y = 2$ find the equation of the other two sides.

44. Prove that the points A (4,1), B(-2,3) and C (-5,4) are collinear. Also find the equation of the line passing through these points.

45. Find distance of the point A (3,5) from the line 2x+3y = 14 measured parallel to a line having slope ½

Statistics

46. Find the mean, variance and standard deviation for the following :

xi	4	8	11	17	20	24	32
fi	3	5	9	5	4	3	1

47. The mean and the standard deviation of 25 observations are 60 and 3. Later on it was decided to omit an observation which was incorrectly recorded as 50. Calculate the man and standard deviation of remaining 24 observation.

48. Find the mean deviation using median.

Classes	0-10	10-20	20-30	30-40	40-50
Frequency	5	12	20	9	4

49. The mean monthly salary paid to all employees of a company is Rs 8300. The mean monthly salary paid to male and female employees was Rs 8000 and Rs 9000 respectively. Determine the percentage of males and females employed by company.

50. The mean and S.D of the income of the employees of two banks are as follows :

Bank	Mean Income (In Rs)	SD In Rs
A	3200	160
B	3500	140

Compare the coefficient of variation of the income of the employees of two banks.

51. Give below are the diameters of circles (in mm) drawn in a design.

Diameter	33-36	37-40	41-44	45-48	49-52
Number of Circles	15	17	21	22	25

52. The mean and variance of the heights and weights of the students of a class are given below :

	Height	Weight
Mean	160cm	50.4kg
Variance	116.64cm^2	17.64K5^2

53. Coefficient of variation of two distribution are 60% and 75% and their standard deviations are 18 and 15 respectively find their arithmetic means.

54. Find the mean deviation about the mean for the following data :

Marks Obtained	10-20	20-30	30-40	40-50	50-60	60-70
No of students	8	6	12	5	2	2

55. find the mean deviation about the median for data given 45, 36,50,60,53,46,51,48,72,42

Physics: 1. NCRT Numerical from the following chapters:
1. Gravitation (Questions 1 to 20)   2. Properties of solids (Questions 1 to 20)   3 Properties of Fluids (Questions 1 to 20)
4. Thermodynamics (Questions 1 to 10)

Chemistry : Make a project report on :

An assignment of Back exercise questions from S & p Block elements and numerical from the chapter : Equilibrium, Thermodyromics and Gaseous states of Matter.

Bio : Prepare a herbarium of fifteen plant specimens of medicinal value from your locality on a standard herbarium sheet following the criteria for preparation and preservation of plant herbarium.

Computer : Q1. 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.

Q2.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)

Q3. 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}

Q4. 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

Q5.Define a function alpha which pass an array as parameter and return sum of all elements.

Q6 Define a function which accepts a String and return no. of vowels from it.

Q7.Define a function to pass one integer as a parameter and replace its odd digits by even and vice versa.

Q8.Define a function which returns 'y' if character passed is 'z' otherwise 'n'

Q9.Define a function to find sum of even and odd digits separately of integer which is passed as a parameter.

Q10. Define a function to pass an integer and display it in words.

      For e.g. 123 : one two three

History : **Topic :** To make a project file on the topic **Industrial Revolution**.

    Guideline: Students should make a project file on Revolution of new technology impact of Industrial Revolution on Human beings

    Instructions: The project should consist of the following :

      i) Title Page   ii) Acknowledgement   iii) Table of Contents   iv) Introduction

      v) The body of the project should have the description of the selected topic, pictures, data and other relevant information.

      vi) Conclusion should have student's observation on the topic.   vi) Bibliography

Geography : Make a project file on the topic : "Landforms created by Wind Erosion and Deposition ".

    1.   Collect and paste the pictures of the related topic.

    2.   Collect the information through the science or geography books and internet.

    3.   Make a project file using punch papers. (Minimum 10 pages)

Economics : Prepare a project report on the effects of 'Demonetization' on the Indian Economy. Also evaluate the pros and cons of Demonetization on the economic development graph of the country in the coming years

Accounts : Prepare a project on Journal Entries including :

    a)   Meaning of journal entries with family journal

    b)   Types of journal entries : Meaning and Example (At least 5 examples of each type with imaginary figures)

    Note : Draw proper format for journal entries.

Psychology : 1 Question and Answers of Chapter 5 to 7

        2. Practical 1 and 2 as directed and given in the class.

Physical Education – Group – 2

      1 Detailed study on Types of Adventure Sports Activities – Camping, Rock Climbing, Trekking, River Rafting and Mountaineering

      2. BMI of ten family members and their resting heart rate.

Physical Education – Group –3

      1. Detailed study on the Types of Postural Deformities.

      2. History of Yoga and Five Asanas, Surya Namaskar-Asana and Benefits

Business Studies : Visit a departmental and a chain store and prepare a detailed report on their objectives, working mechanism (Procurement, Recruitment, Training) merits and demerits from your point of view. The report should conclusively show the differences between them.

Music : Tabla   1. Write down the Thekas of following taals with their introduction and dugun, tigun, chaugun layakari

      a) Teentaal   b) Keharwataal c) Chartaal   d) Ektaal   e) Jhaptaal   f) Sooltaal   g) Dadra   h) Tivrataal   i) Rupaktaal

    2. Write down the biography of any ten of the following tabla players :

a) Pt. Anokhe Lal Mishra	b) Pt. Kishan Maharaj	c) Pt. Kanthe Maharaj
d) Pt. Gyan Prakash Ghose	e) Pt. Shankar Ghose	f) Pt. Kumar Bose
g) Pt. Govinda Bose	h) Ustad Latif Ahmad Khan	i) Ustad Allah Rakha Khan
j) Ustad Zakir Hussain	k) Ustad Ahmed Jhan Thirakva	l) Ustad Kadir Baksh
m) Ustad Masit Khan		

Vocal   **Answer these questions :**

    1.   What do you know about Hindustani Classical Music?

    2.   What is the difference between 'Classical and Semi classical Music'? Give a brief Introduction of Classical and Semi Classical

          musical forms : Classical   –   a) Khayal   b) Tarana   c) Dhrupad   d) Dhamaar

                        Semi Classical –   a) Thapa   b) Thumri   c) Geet   d) Ghazal

    3.   Write a paragraph on any one artists of the following Gharanas : a) Gwalior   b) Jaipur   c) Kirana   d) Delhi

Painting : **Topic :Pen and Ink**

    * Make 10 sketches with the help of black pen.

    Note : Size- A3

          Sheet- Cartridge Sheet (Drawing sheet)

Vice Principal