THE ASIAN SCHOOL, DEHRADUN

HOLIDAY HOMEWORK- SUMMER VACATION 2018 FOR CLASS IX

English: **1.** Read a book/story by Isaac Asimov and write a review in not more than 200 words.

2. Read poems by Robert Frost and write the theme of any two (in 80-100 words) that you liked the most.

3. Read the lessons Sound of Music (Beehive) and The Adventures of Toto (Moments). Write 10 key words from each lesson, highlighting their meanings. Use any five words from each lesson in sentences of your own.

4. Write a Descriptive Paragraph in about 100-150 words on Independence Day Celebrations in your school or The Founder's Day Celebrations in your school.

Note : The Holiday Homework should be done in the English Homework Notebook.

Hindi: 1 "गंगा बोलती है" विषय पर 1 हजार शब्दों में परियोजना कार्य तैयार कीजिए।
2. कबीर के दोहे तथा पहला पद याद कीजिए। (मौखिक परीक्षा के लिए)

Mathematics ACTIVITY:

(1). To verify the algebraic identity by paper cutting and pasting method:
$(x+y+z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$
(2). Construct a **square root spiral.**
Reference: Students should use all available resources (NCERT BOOKS, INTERNET etc.)

Instructions:

1. The activity should be hand written.
2. The activity should be done in a **stick file**.
3. The activity should contain acknowledgement.
4. The activity should be done using colored papers.
5. It should have pictures and other relevant material.

Q1. Locate $\sqrt{11}$ on number line.

Q2. Express $32.1\overline{235}$ in the form m/n.

Q3. Find 3 irrational number between 3 and 4.

Q4. Simplify $\frac{1}{2}\sqrt{486}$ - $\sqrt{\frac{27}{2}}$

Q5. Rationalise $\frac{6-4\sqrt{2}}{6+4\sqrt{2}}$

Q6. Find the values of 'a' and 'b' if :

$\frac{\sqrt{7}+1}{\sqrt{7}-1} - \frac{\sqrt{7}-1}{\sqrt{7}+1} = a + b\sqrt{7}$

Q7. Find the value of x in $3\sqrt{3x-2} = 4$

Q8 If $\frac{9^x x 3^2 x (3^{-n/2})^{-2} (27)^n}{3^{3m} x 2^3} = 1/27$

Prove that m-n = 1

Q9. Simply $(3+\sqrt{3})\ (2+\sqrt{2})^2$

Q10. Find square root of 4.2 geometrically.

Q11. If $(5)^{x-3} \times (3)^{2x-8} = 225$ find x.

Q12. If $x = 5 - 2\sqrt{6}$ then find value o $x^2 + \frac{1}{x^2}$

Q13. Prove that $\frac{1}{1+x^{a+b}} + \frac{1}{1+x^{b+c}} = 1$

Q14. Prove $\frac{2^{30}+2^{29}+2^{28}}{2^{31}+2^{30}+2^{29}} = 7/10$

Q15. Simplify $\left(\frac{81}{16}\right)^{-3/4} \times \left\{\left(\frac{25}{9}\right)\right\}$

Q16. Find five rational numbers between 2/3 and 8.

Q17. Divide $f(y) = 3y^4 - 8y^3 - y^2 - 5y - 5$ by y-3

Q18. Find value of P for which the Polynomial $2x^4 + 3x^3 + 2px^2 + 3x + ^6$ is divisible by x+2.

Q19 Find value of K if (x-3) is a factor of x^2-kx-2

Q20. Factorise i) $xy(z^2+1) + Z(x^2+y^2)$ ii) 1+a+b+c+ab+bc+ac+abc

Q21. Factorise i) $4(x+3y)^2 - 28(x+3y)+49$ ii) $\frac{x^2}{4y^2} - \frac{1}{3} + \frac{y^2}{9x^2}$

Q22. Factorise i) $x^2 + 19x - 150$ ii) $x^2 - 20x - 300$

Q23. Prove that $\frac{0.96X0.96X0.96+0.04X0.04X0.04}{0.96X0.96-0.96X0.04+0.04X0.04} = 1$

Q24. Factorise by factor theorem $x^3 + 6x^2 + 11x + 6$

Q25 If $a^2+b^2+c^2 = 250$ and ab + bc +ac = 3 find $(a+b+c)^2$

Q26. If x-2y = 11 xy=8 find $x^3 - 8y^3$

Q27. Find remainder when $3x^3 - 4x^2 + 7x - 5$ is divided by x-3 and x+3.

Q28. Evaluate $(999)^{3}$

Q29. If $x^2 + kx + 6 = (x+2)(x+3)$ for all x the value of k will be.

Q30. Find Zeroes of $P(x) = 3x^2 + x - 2$

Q31. Factorise (i) $x^2 + \frac{x}{4} - \frac{1}{8}$ (ii) $(x-y)^3 + (y-z)^3 (z-x)^3$

Q32. If the polynomial $P(x) = x^4 - 2x^3 + 3x^2 - ax + 8$ is divided by (x-2) it leaves a remainder 10 find value of a .....

Q33. Find 3 rational nos. between 2 & 6.

Q34. Find 5 rational nos. between 3/7 and 8/14

Q35. Show that $\sqrt{2} + \sqrt{3}$ is an irrational no.

Q36. Rationaise : $\frac{6-4\sqrt{2}}{6+4\sqrt{2}}$

Q37. Simplify : $\frac{\sqrt{25}X\sqrt{60}X\sqrt{63}}{\sqrt{40}\sqrt{200}}$

Q38. If $x = 7-4\sqrt{3}$ then find $\sqrt{x} + \frac{1}{\sqrt{x}}$

Q39. Find the value of 'a' and 'b' if :

$\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a+b\sqrt{3}$

Q40. Prove that $\left(\frac{2^a}{2^b}\right)^{a+b} \times \left(\frac{2^b}{2^c}\right)^{b+c} \times \left(\frac{2^c}{2^a}\right)^{c+a} = 1$

Q41. Find p(0), p(1) and p(2) for the following polynomials :

i) $X^2 + 2x+1$ ii) (x-3) (x+3)

Q42. Find zero of the polynomial $p(x) = 25-x^2$.

Q43. Divide $p(x) = x^3 + 2x^2 + 2x-7$ by $g(x) = -2+x$

Q44. Find the remainder when $4x^3 - 12x^2 + 14x-3$ is divided by 2x-1

Q45. If the polynomials $(3x^3+ax^2+3x+5)$ and $(4x^3+x^2-2x+a)$ leave the same remainder when divided by (x-2) then find the value of a. Also find the remainder in each case.

Q46. Find the value of a and b so that the polynomial $x^3-ax^2-12x+b$ has x-1 and x+3 as factors.

Q47. What must be subtracted from $4x^3 + 16x^2 - x+5$ to obtain a polynomial which is exactly divisible y x+5?

Q48. Factorise : i) $m^2n^3 (m^2n+3m-n)$ ii) $2b^2 (a-2b) (a^2+4b^2)$

Q49. Factorise : i) $\frac{a^2}{b^2} + 2\frac{b^2}{a^2}$ ii) $4a^2 + ab^2 + c^2 + 12ab + 4ac + 6bc$

Q50. Factorise : i) $a^4 + 4a^2+3$ ii) $(p+q)^2 - 20 (p+q) - 125$

Q51.Solve : $\frac{991x991x991+9x9x9}{991x991-991x9+9x9}$

Q52. Factorise : $x^3 + 13x^2+31x-45$ by factor theorem.

Q53. Factorise : $a^7 + ab^6$.

Q54. Evaluate : (Using Identities) i) (998x1002) ii) (104x106)

Q55. Without calculating find the value of

(i) $(-28)^3 + (15)^3 + (13)^3$ ii) $(+12)^3 + (-7)^3 + (-5)^3$ iii) $(24)^3 + (-16)^3 + (-8)^3$

Note : The above given questions are to be done in Maths Homework notebook.

SCIENCE :

Physics: Do the following practice question from Chapter Motion in your homework notebook.

Q1. Give an example of a body which may appear to be moving for one person and stationary for the other.

Q2. What is the difference between uniform velocity and non-uniform velocity?

Q3. What do you understand by instantaneous velocity?

Q4. A particle is moving in a circular path of radius r. What would be the displacement after half a circle?

Q5. Distinguish between speed and velocity.

Q6. How will you show that the slope of displacement- time graph give velocity of the body?

Q7. Deduce the following equation of motion by graphical method:

a) $v = u+ 80$

b) $s = ut + (1/2)at^2$

c) $v^2 = u^2 + 2as$

Q8. Obtain a relation for the distance travelled by an object moving with a uniform acceleration in the interval between 4^{th} and 5^{th} seconds.

Q9. A farmer moves along the boundary of a square field of side 10 m in 40s. What will be the magnitude of displacement of the farmer at the end of 2 minutes and 20 seconds?

Q10. A body travels along a circular path of radius 70m. After travelling half a revolution in 20s, find the (i) average velocity (ii) average speed.

Q11. A cheetah is the fastest land animal and can achieve a peak velocity of 100 km/h up to distances less than 500 m. If a cheetah sports its prey at a distance of 100 m, what is the minimum time it will take to get its prey, if the average velocity attained by it is 90 km/h?

Q12. A driver of a car travelling at 52 kmh^{-1} applies the brakes and accelerates uniformly in the opposite direction. The car stops in 5s. Another driver going at 30 kmh^{-1} in another car applies his brakes slowly and stop in 10s. On the same graph paper, plot the speed versus time graphs for the two cars. Which of the two cars travelled farther after the brakes were applied?

Q13. The brakes applied to a car produce an acceleration of 6 ms^{-2} in the opposite direction to the motion. If the car takes 2s to stop after the application of brakes, calculate the distance it travels during this time.

Q14. An artificial satellite is moving in a circular orbit of radius 42250 km. Calculate its speed if it takes 24 hrs to revolve around the earth.

Q15. An object starting from rest travels 20m in first 2s and 160 m in next 4 s. What will be the velocity after 7s from the start?

Q16. Explain uniform circular motion with the help of examples.

Q17.A body is moving along a circular path of radius R. What will be distance travelled and displacement of the body when its complete half are revolution.

Chemistry:

- Activity – 1

  How to separate the list of mixtures given below.

a) Write and explain the name of the techniques/ purification methods used to separate them.

b) Show pictorial experimental representation.

i) Mixture of camphor and brine solution.

ii) Diesel and water

iii) Ethanol from water

iv) Perfume from flower petals.

v) Different particles of dye.

vi) Nitrogen, oxygen, carbon dioxide and argon from air mixture.

- **Make a report on the process involved in formation of different products from crude petroleum using different separation techniques, It should cover the cost, marketing and industries involved.**

Biology: Make an investigatory project report on the topic "**Connective Tissues**" emphasizing the following points:

i) Definition for connective tissue.

ii) Type of Connective tissue (Blood, Bone, Ligament, Tendon, Cartilage, Areolar, Adipose).

iii) Structure, Location and function of different types of connective tissues.

iv) Case study on Bone Disorder (Osteoporosis)

* Causes *Symptoms and Sign * Treatment * Post Treatment Preventive Measures

Instructions :

i) The project report should be handwritten in A-4 size pages and should be of 15-20 pages.

ii) The project report should be presented in the following order- a) Cover Page showing title of the project, student information, name of school and academic session b) Acknowledgements c) Chapters with relevant headings d) Summary and Conclusion based on findings e) Bibliography

iii) Credit will be awarded to the original drawings, illustrations and creative use of materials.

iv) All photographs and sketches should be labelled and acknowledged.

Social Science : Topic : Prepare a project on the topic "Integration of Forest with Human Resource Through Past, Present and Future".

Guild lines : i) The project should showcase the interdependence between the Natural Vegetation and the People.

ii) The students can also see these reference: a) Economy and Commercial Geography of India by T.C.Sharma b) Forest Economy and Planning in India (Report Published by State/ Department of Forest).

Method : Student can choose any of the following method to prepare the project :

i) Text based along with illustration (Newspaper Cutting, Pictures, Graphics, Diagram and it should contain page 10-12.

ii) Audio Visual iii) Painting/Pencil Sketches iv) Model for example: - a) Dense forest habitat b) Clustered villages in the fringes of dense forest habitat) c) Any other model related to the topic.

Sequence of the project should be: a) Acknowledgement b) Certificate c) Index d) Content e) Bibliography

Note : Project Should be ~~handmade~~/~~self-made~~. hand written .

Disaster Management : Make a project on a topic "Drought In Maharasthra 2016"

Guidelines : a) Use A4 Size sheet b) It should be handwritten c) A cover page should be in bold letter with topic name, roll number and class.

Instructions : a) Acknowledgment b) Index c) Define disaster in its type d) Causes of drought e) Extent of damage to agriculture f) Who is responsible g) Step taken by government to control drought h) Organization working to help the farmer .i) Do's and don'ts for next time to avoid such disaster j) Bibliography

Note : Map, pictures, graph, poster, chart related to the topic.

Computer:

Q1: Define any five input and output devices. Draw or paste pictures.

Q2: Define Impact and Non Impact Printers with diagram.

Q3: Explain any three I/O devices.

Q4: Differentiate between SRAM and DRAM

Q5: Solve the question paper of First Unit Test (Session 2018-19) in Class work Notebook.

PRINCIPAL

VICE-PRINCIPAL