



# ARMY PUBLIC SCHOOL JHANSI

## SESSION 2021 – 22

### CLASS - 9<sup>th</sup>

It's summer time, school vacation has begun, Its time to play and have fun INDOORS. Time to spend with kith and kin

*Happy Holidays*

Dear Student,

- Summer Vacation is the best and the most fruitful time for learning and nurturing creativity. Keeping this objective in mind we have planned diverse and exciting activities that will enhance your knowledge and boost your creativity.
- "Knowledge is Power". Therefore read lots and lots of books to cultivate the reading habit and develop your vocabulary, language skills, increase your attention span and improve your spellings.
- "A healthy mind lives in a healthy body". So play the sport of your choice INDOORS. It will help to instill discipline, generate sporting spirits and channelize your energies constructively.
- Get up early in the morning and see the rising sun. Do indoor exercises / yoga and stay healthy and fit. Spend quality time with your elders and share your thoughts and ideas with them.
- Eat healthy food and drink lots of water during summer.
- Integrating curriculum helps students deepen their understanding of the subject matter and comprehend relationship between different areas of study. This year's holiday homework has been designed keeping this interdisciplinary aspect in mind.

Principal

## English-

Moments: Read and find meanings of unfamiliar words from the following chapters.

Write character sketches of the main characters.

1. Ishwaran the story teller
2. Adventures of Toto
3. In the Kingdom of fools

Words & Expressions: Complete Unit 1&2

Beehive: learn Q& A The Fun They Had,

The Sound of Music and The Road Not Taken

Writing Skill: Write an original story with the words 'It was raining hard that night. In my hurry to get into the house, I didn't notice the black car parked across the road ,I realized something was wrong when...

## Science-

1. Learn question and answers from chapters - Matter in our Surroundings ( Chemistry), Fundamental unit of life ( Biology) , Motion (Physics)
2. Write following Practicals in a practical file :-

Chemistry :-

- i) Burning of Magnesium Ribbon
- ii) Combination Reactions
- iii) Decomposition Reactions
- iv) Displacement Reactions
- v) Double Displacement Reactions

Biology :-

- I) To prepare a temporary mount of Onion peel

Physics :-

- I) Establishing the relation between the loss in weight of a solid when fully immersed in
  - a) Tap water
  - b) Strongly salty water with the weight of water displaced by it by taking at least two different solids.

## Mathematics-

### Holiday Homework Mathematics Class 9th:( To be done in a separate Note book )

Solve any(10-10-10) Questions from each Chapter, Activity and Project

#### Topic: Number system

- Express the following numbers in the form of  $p : q$ 
  - 25.6875
  - 0.621621621..
  - 15.712121212..
- Write one rational & one fractional number between 0.515115111.... and 0.535335333....
- Write one example each of two irrational numbers whose:
  - Sum is a rational number
  - Product is an irrational number
  - Difference is an irrational number
  - Quotient is a rational number
- Find the value of  $x$  if  $2^{x-7} \times 5^{x-4} = 1250$
  - Find the value of  $x$  and  $y$  if:  
 $3^{x-1} = 9$  &  $4^{y+2} = 64$
- if  $x = 0.125$ , find the value of  $(\frac{1}{x})^{\frac{1}{3}}$
- If  $x = 3 + \sqrt{8}$ , then find the value of  $x^2 + \frac{1}{x^2}$
- Visualize 3.756 on the number line, using successive magnification
- Represent  $\sqrt{3.5}$  on the number line**
- Express 0.1254545454.... in the form  $p/q$
- Rationalise the denominator:  $\frac{1}{\sqrt{6} + \sqrt{5} - \sqrt{11}}$
- Find two rational and two irrational numbers between 0.3101 and 0.3222.
- Simplify:  $\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}}$
- If  $a = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$  and  $b = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ , find the value of  $a^2 + b^2$ .
- Find four rational numbers between  $\frac{3}{5}$  and  $\frac{4}{5}$ .
- Find two irrational numbers lying between  $\sqrt{2}$  and  $\sqrt{3}$ .

#### Topic: Polynomials

- Q1. Factorize the following by splitting the middle term:  
(a)  $x^2 + 11x + 30$  (b)  $2\sqrt{2}x^2 + 9x + 5\sqrt{2}$  (c)  $4x^2 - 13x + 10$
- Q2. Factorize the following by Factor theorem:  
(a)  $x^3 + 9x^2 + 23x + 15$  (b)  $x^3 + 6x^2 + 11x + 6$
- Q3. Factorize by using a suitable identity:  $4x^2 + 12xy + 9y^2$

Q4. Evaluate the following using a suitable identity:

(a)  $(998)^3$  (b)  $(10.2)^3$  (c)  $(9.8)^3$  (d)  $998^2 - 4$  (e)  $999^2 - 1$

Q5. If 5 is a zero of  $x^3 + kx^2 + 2x + 8$  find k.

Q6. If  $(x-2)$  is a zero of  $x^3 - 4x^2 + kx - 8$  find k.

Q7. If  $(x-2)$  and  $(x+3)$  are factors of  $x^3 + ax^2 + bx - 30$ , find a and b.

Q8. If  $x + y + z = 8$  and  $xy + yz + zx = 20$  find the value of  $x^3 + y^3 + z^3 - 3xyz$

Q9. If  $a + b + c = 9$  and  $a^2 + b^2 + c^2 = 35$ , find the value of  $a^3 + b^3 + c^3 - 3abc$

Q10. Find the value of  $2.7^3 - 1.6^3 - 1.1^3$  using a suitable identity.

Q11. Factorize the following by using a suitable identity:

(a)  $a^3 + b^3 - 8c^3 + 6abc$

(b)  $8x^3 - 27y^3 + 125z^3 + 90xyz$

Q12. Find the value of  $a^3 + 8b^3$  if  $a + 2b = 10$  and  $ab = 15$ .

Q13. Find the value of  $a^3 - 27b^3$  if  $a - 3b = (-6)$  and  $ab = (-10)$

Q14. Show that  $x-2$  is a factor  $p(x) = x^3 - 12x^2 + 44x - 48$

Q15. Factorize :  $x^3 + \frac{1}{x^3} - 2$

**Topic:Coordinate Geometry**

Q1. In which quadrants abscissa and ordinate have the same signs.

Q2. Two points A and B are equidistant from the origin. If the position of A is  $(0, -3)$  and the ordinate of B is zero. Find the possible coordinate of B.

Q3. Find the perpendicular distance of the point P  $(5, 7)$  from the y axis.

Q4. Write the coordinate of the point in the second quadrant which is at a distance of 2 units from x-axis and 3 units from y-axis.

Q5. In which quadrant or on which axis each of the following points lie  $(-5, 7)$ ,  $(6,0)$  ?

Q6. If the point  $(3, 4)$  lies on the graph of the equation  $3y = ax + 7$ . Find the value of a.

Q7. The distance of a point from x axis is 3 units and from y axis is 5 units. If the point lies in the third quadrant. Find the coordinate of the point.

Q8. Plot the following points and check whether these are collinear or not :

(i)  $(2, -4)$   $(3, -6)$ ,  $(-1, 2)$

Q.9. Plot the point P  $(-2, 1)$ , Q  $(2, 1)$ , R  $(3, 2)$  and S  $(-1, 2)$  and write the name of the figure thus obtained.

Q.10 In which quadrant or on which axis does each of the following points lie ?

$(-4, 2)$ ,  $(3, -2)$ ,  $(4, 0)$ ,  $(3, 3)$ ,  $(-4, -5)$  .

Q.11 Find the perpendicular distance of the point P  $(4,6)$  from the x - axis.

Q.12 Find the coordinates of the point -

(i) Which lies on both the axis.

(ii) Whose abscissa is  $-4$  and lies on x - axis.

(iii) Whose ordinate is 5 and lies on y axis.

Q.13 Three vertices of a rectangle are  $(-1, 1)$   $(5,1)$  and  $(5, 3)$ . Plot the points and find the Coordinate of the fourth vertex.

Q.14 Find the ordered pairs  $(x, y)$  such that  $x + 3y = 6$ . and plot them.

Q.15 Draw the quadrilateral with vertices  $(-4, 4)$ ,  $(-6, 0)$ ,  $(-4, -4)$ ,  $(-2, 0)$ . Name the type of quadrilateral and find its area.

### Activity

1. Construct a square root spiral.

**PROJECT( Prepare a ppt of 10 slides)**

2. Explore Pi ( $\pi$ ) Fact.

### Social Science

#### **Project work on Disaster Management.**

As students of social sciences and as conscious citizens, doing a project on disaster management is going to give you a first-hand experience and opportunity to get yourself familiarise not only with the meaning, factors, etc. of disasters but also to learn the essentials of disaster preparedness and ways to collect relevant information pertaining to disasters and its effective dissemination.

A. Make a project on earthquake prone areas in India - causes, impact on life and property seismic zones , mitigation strategies used to reduce the impact in earthquake prone areas. (Roll No.1-15)

B. Collect information on areas prone to cyclones in India -warning systems, effects of cyclones, mitigation strategies to be used while construction of buildings (Roll. No. 16 onwards)

#### **GUIDELINES FOR THE PROJECT-**

- Project to be done on A-4 size sheet
- Project should be hand written for 15 pages
- On the first page student Performa to be given- Name, Class, Roll no., Name of the school, year of submission and topic.
- Acknowledgement
- Content or Index
- At the last Bibliography or references
- Newspaper cuttings ,maps , diagram , illustrations are must
- Project should be strictly based on India

B. Prepare a report on Role of RTE Act- A bill passed by UNICEF.

C. Select any one of the following non-democratic country in the world at present and write about their Political, Social and Economic condition.

(Bhutan, Vietnam, Saudi Arabia, Nepal, Jordan, UAE, Malaysia, China, North Korea, Egypt, Libya, Sudan, Congo, Afghanistan, Cuba, Guantanamo Bay)

D. Read the book 'The Social Contract' and prepare a critical Analysis of the book.

Or

Napoleon was the child of the Revolution. Discuss in context of The French Revolution. Write Napoleon's Memoirs.

## Hindi

- 1:- शहर झाँसी के कोई दो चौराहे पर स्थित मूर्ति का चित्र सहित संक्षिप्त वर्णन कीजिए ।
- 2:- अपने छोटे भाई को कोरोना महामारी के बचाव के उपाय बताते हुए एक पत्र लिखिए ।
- 3:- कोई एक स्वरचित कविता अथवा किसी विषय पर एक लेख लिखिए ।
- 4:- पढ़ाए गए पाठ्यक्रम को पढ़ें व प्रश्नोत्तर याद करें ।

नोट- दिए गए कार्य को **A4** साइज पेपर पर पूर्ण करें व एक फोल्डर के साथ विषय अध्यापिका को सम्मिलित करे

