



ARMY PUBLIC SCHOOL JHANSI SESSION 2020 – 21

**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

CLASS – 9th

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

HOLIDAY HOMEWORK

ENGLISH

BEEHIVE :

- Read and complete the additional questions of
The Fun They Had
The Sound of Music (Part 1 & Part 2)
The Little Girl
- Reference to context and central idea of the following poems.
The Road Not Taken
Wind
Rain on the Roof
The Lake Isle of Innisfree

Moments :

- Read in detail
The Lost Child
The Adventures of Toto
Iswaran the Storyteller

Words and Expressions :

Download English Work Book ([Link for Downloading already shared](#))

- Complete exercises on Reading Comprehension , Grammar , Vocabulary and Project Work from :
Unit 1 The Fun They Had
Unit 2 The Sound of Music
Unit 3 The Little Girl

[Complete the Project Work \(Unit -3 , pg. n. 53\)](#)

- Write a Diary Entry in about 200 words expressing your feelings/ experience on the present Covid-19 situations.

हिंदी

-: पढ़ाए गए पाठ्यक्रम को पढ़ें व अभ्यास करें ।

-: एक मई से दस मई तक की प्रतिदिन के किसी एक मुख्य समाचार को पढ़ें व अपने शब्दों में लिखें ।

-: अपनी विद्यालय पत्रिका के लिए कोई एक स्वरचित लेख लिखें ।

-: 'बचपन से दूर होते बच्चे' विषय पर एक चित्र बनाकर लेख लिखें ।

-: कोरोना के संक्रमण के समय विद्यालय न खुलने पर ऑनलाइन आयोजित पढ़ाई के बारे में जानकारी देते हुए अपने दादाजी-दादीजी को एक पत्र लिखें ।

नोट-: दिया गया गृहकार्य A4 साइज पेपर अथवा जो भी पेपर उपलब्ध हो उसमें पूर्ण करें व एक फोल्डर में रखकर सम्मिलित करें ।

MATHEMATICS

(To be done in a separate copy)

Solve any 25 questions and any one activity-

Topic: Number system

1. Express the following numbers in the form of p : q

(a) -25.6875

(b) 0.621621621..

(c) 15.712121212..

2. Write one rational & one fractional number between 0.515115111.... and 0.535335333....

3. Write one example each of two irrational numbers whose:

(a) Sum is a rational number

(b) Product is an irrational number

(c) Difference is an irrational number

(d) Quotient is a rational number

4. (a) Find the value of x if $2^{x-7} \times 5^{x-4} = 1250$

(b) Find the value of x and y if:

$$3^{x-1} = 9 \text{ \& } 4^{y+2} = 64$$

5. if $x = 0.125$, find the value of $\left(\frac{1}{x}\right)^{\frac{1}{3}}$

6. If $x = 3 + \sqrt{8}$, then find the value of $x^2 + \frac{1}{x^2}$

7. Visualize 3.756 on the number line, using successive magnification

8. Represent $\sqrt{3.5}$ on the number line

9. Express 0.1254545454.... in the form p/q

10. Rationalise the denominator: $\frac{1}{\sqrt{6} + \sqrt{5} - \sqrt{11}}$

11. Find two rational and two irrational numbers between 0.3101 and 0.3222.

12. Simplify: $\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}}$

13. 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 $a^2 + b^2$.

14. Find four rational numbers between $\frac{3}{5}$ and $\frac{4}{5}$.

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

Activity

Construct a square root spiral.

OR

Represent some irrational numbers on the number line.

SCIENCE

(Physics)

I. Plan to go to a place by a vehicle. Take readings of odometer and speedometer after every 5 minutes till you reach your destination. Record these observations in tabular form; plot graphs between distance-time and speed-time. State whether this motion is uniform or non-uniform.

III. Answer the following questions:

1. What is the acceleration of a body moving with uniform velocity?
2. What does the slope of a distance-time graph give?
3. Can displacement be zero even when distance is not zero? Give Example.
4. How can you get speed of an object from its distance – time graph?
5. How can you get distance of an object from its speed – time graph?
6. Can a body have zero velocity and still acceleration? Give example.
7. Is it possible in straight line motion a particle having zero speed and a non-zero velocity? Explain.
8. On a 60 km straight road, a bus travels the first 30 km with a uniform speed of 30 kmh⁻¹. How fast must the bus travel the next 30 km so as to have average speed of 40 kmh⁻¹ for the entire trip?
9. A driver takes 0.20 seconds to apply the brakes. If he is driving car at a speed of 54 kmh⁻¹ and the brakes cause a deceleration of 6.0 ms⁻². Find the distance travelled by the car after he sees the need to put the brakes.
10. A ball thrown vertically upwards with a speed of 19.6 ms⁻¹ from the top of a tower returns to the earth in 6 seconds. Find the height of the tower. ($g = 9.8 \text{ ms}^{-2}$)
11. A bullet initially moving with a velocity of 20m/s strikes a target and comes to rest after penetrating a distance of 0.01m in the target. Calculate the retardation produced by the target.
12. A body moving in a straight line at 72kmph undergoes an acceleration of 4m/s². Find its speed after 2 seconds.
13. A car moving at rate of 72km/h and applies brakes which provide a retardation of 5ms⁻².
 - a. How much time does the car take to stop.
 - b. How much distance does the car cover before coming to rest?
 - c. What would be the stopping distance needed if speed of the car is doubled?
14. A body starts from rest and moves with a uniform acceleration of 5m/s² for 5s and then it moves with a constant velocity for 4s. Later it slows down and comes to rest in 5s. Draw the velocity-time graph for the motion of the body and answer the following questions:
 - a) What is the maximum velocity attained by the body?
 - b) What is the distance travelled during this period of acceleration?
 - c) What is distance travelled when the body was moving with constant velocity?
 - d) What is the retardation of the body while slowing down?

e) What is the distance travelled by retarding?

f) What is the total distance travelled?

(Biology)

1. What are cell organelles? Name them.

2. Why are they present in Eukaryotes?

3. Write the functions of SER and RER respectively.

4. What is membrane biogenesis?

5. Write the functions of Golgi apparatus.

6. Name the types of plastids. Where are they found in plant cell?

7. Why is mitochondria called the power house of the cell?

8. Name the cell organelle which detoxifies many poisons and drugs.

9. Name the cell organelle which is involved in the formation of Lysosomes.

10. Why is the Lysosomes called as suicidal bags, demolition squads, scavenger of the cell?

11. Write the 3 functions of vacuoles.

12. What is osmoregulation? How is it done in unicellular organisms?

13. Why is cell called as fundamental, structural, and functional unit of life?

14. How do lysosomes help in fertilization of the human sperm with ova?

15. What is the difference between cisternae and cristae?

16. How does Amoeba obtain its food? Name the process.

17. Why Doctors advice gargles with salt solution during throat infections?

18. Where are proteins synthesized inside the cell? How is it done in the cell?

19. Name the fluid present in vacuoles. Also write its function.

20. Draw a plant cell and animal cell. (coloured and labeled)

Collect information about any two communicable diseases and present the information in a folder with

illustration, pictures and photographs. $\frac{3}{4}$ What are communicable diseases? $\frac{3}{4}$ Sign and symptoms $\frac{3}{4}$ Cure and prevention

21. Make a project report on Biofuels , including: $\frac{3}{4}$ What are biofuels? $\frac{3}{4}$ How are they made? $\frac{3}{4}$ Pros and cons of biofuels.

22. Make a report on genetic engineering including: $\frac{3}{4}$ information on gene cloning $\frac{3}{4}$ what is biotechnology, $\frac{3}{4}$ application of biotechnology.

(Chemistry)

I. Draw 3D Charts on any one of the following topics: Fractional distillation , Chromatography , Sublimation , Evaporation , Separation funnel , Distillation , Interconversion of states of matter

II. Answer the following questions:

1. Why do the doctors advise to put strips of wet cloth on forehead of a person having high fever?
2. The melting points of three solids X,Y,Z are 298K, 314K and 398K, respectively .Arrange these in increasing order of their inter-particle force of attraction.
3. Why do we feel comfortable under a fan when we are perspiring?
4. Why do solids have a regular geometrical shape?
5. Water as ice has cooling effect , whereas water as steam may cause severe burns. Explain these observations.
6. How does evaporation differ from boiling?
7. Why do we see water droplets on the outer surface of a glass containing ice cold water?
8. When 50g of sugar is dissolved in 100 m L of water ,there is no increase in volume .What characteristic of matter is illustrated by this observation?
9. Why do wet clothes dry quickly in sun than in shade?
10. Describe an activity to determine the boiling point of water

SOCIAL SCIENCE

(History)

Read Chapter 3 – The Rise of Nazism.

Write a project report on any one of the following topics.

- | | |
|------------------------------|------------------------|
| a) Ghettos | c) Concentration Camps |
| b) Children of the Holocaust | d) Anna Frank |

Note : 1. Choose the topic

2. Research the topic
3. Design the layout
4. DESIGN THE TITLE/CAPTIONS
5. Write a report
6. DESIGN ANY EXTRA HANDOUTS (NEWSLETTER,BROCHURES ETC)

WEBSITES FOR REFERENCE :-

<http://www.graceproducts.com>

click on Anna Frank , VIDEO – “FORGET ME NOT”

<http://remember.org>

www.annefrank.com

<http://fcit.coedu.usf.edu/holocaust/people/rescuer.htm>

<http://www.historyplace.com/worldwar2/riseofhitler/index.htm>

(Civics)

1. Do the case study of any six different countries

Make a project file on ‘Democracy v/s Dictatorship’.

(Economics)

Write an article about Food wastage leading to food shortage in about 500 words. (In your article describe any two case studies where food conservation has been taken up in different countries.)

(Geography)

Make an extensive comparison of Flora, Fauna and Minerals found in the Eastern and Western Ghats.