

THE S.D. VIDYA SCHOOL, NOIDA
SESSION 2022-23
CLASS IX
HOLIDAY HOMEWORK

Mathematics

A- PROJECT WORK

ART INTEGRATION

Topic-1 : (Roll No. 1-15)

The religious monuments are geometric design that holds a great deal of symbolism in all cultures. Such monuments are believed to represent different aspects of the universe and are used as instruments of meditation and symbols of prayer.

Apply mathematics on such monuments and compare architectural designs (Temples, Mosque, Church, Monastery etc) of Arunachal Pradesh and Meghalaya. Identify the different shapes as cube, cuboid, cylinder, cone, hemisphere and sphere and also for each give a detail description of its surface area and volume.

- For ref use this link :

<https://youtube.com/watch?v=nVry6rVIPRg&feature=share>

Topic -2: (Roll No 16 onwards)

Algebraic Identities Wheel

Algebra is the branch of mathematics that represents problems in the form of mathematical expressions. Prepare a file or ppt and explain algebraic identities, bring out the artist in you and make an algebraic identities wheel

- For ref use this link :

<https://youtu.be/2gu2oyaNiHQ>

B- SOLVE THE FOLLOWING QUESTIONS

MULTIPLE CHOICE QUESTIONS:

1. The value of x for which $(7/12)^{-4} \times (7/12)^{3x} = (7/12)^5$, is
(a) -1 (b) 1 (c) 2 (d) 3
2. If $(2^{3x-1} + 10) \div 7 = 6$, then x is equal to
(a) -2 (b) 0 (c) 1 (d) 2
3. $\{(1/3)^{-3} - (1/2)^{-3}\} \div (1/4)^{-3} = ?$
(a) 19/64 (b) 27/16 (c) 64/19 (d) 16/25
4. Which point lies on y-axis?
(a) (1, 3) (b) (0, 3) (c) (5, 2) (d) (-2,-3)

5. Which of the following is a polynomial:

- (a) $x^2 + \frac{1}{x^2}$ (b) $2x^2 - \sqrt{3}x + 1$ (c) $x^2 + x^{-2} + 7$ (d) $3x^2 - 3x + 1$

LONG ANSWER TYPE QUESTIONS

1. Simplify and find the value of

- (a) $(729)^{1/6}$ (b) $(64)^{2/3}$ (c) $(243)^{6/5}$ (d) $(21)^{3/2} \times (21)^{5/2}$

2. Visualise (a) 3.14 (b) 5.678 (c) 9.498 on the number line.

3. Locate (a) $\sqrt{8.5}$ (b) $\sqrt{3.5}$ (c) $\sqrt{7}$ on the number line.

4. Find the value of a and b :

(a) $\frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} = a - \sqrt{15} b$

(b) $\frac{\sqrt{2} + \sqrt{3}}{\sqrt{2} - 2\sqrt{3}} = a - b\sqrt{6}$

5. Find the value of x and Y if $\frac{\sqrt{7}-1}{\sqrt{7}+1} - \frac{\sqrt{7}+1}{\sqrt{7}-1} = x - Y\sqrt{7}$

6. Show that : $\frac{1}{3+\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-\sqrt{2}} = 5$

7. Express as a fraction in simplest form:

(a) $1.\overline{32} + 0.\overline{35}$

(b) $0.\overline{6} + 0.\overline{7} + 0.\overline{47}$

8. Verify whether the indicated numbers are zeros of the polynomials corresponding to them in the following cases:

(i) $f(x) = 3x + 1, x = -\frac{1}{3}$ (v) $f(x) = 5x - \pi, x = \frac{4}{5}$

(ii) $f(x) = x^2 - 1, x = 1, -1$ (vi) $f(x) = x^2, x = 0$

(iii) $g(x) = 3x^2 - 2, x = \frac{2}{\sqrt{3}}, -\frac{2}{\sqrt{3}}$ (vii) $f(x) = lx + m, x = -\frac{m}{l}$

(iv) $p(x) = x^3 - 6x^2 + 11x - 6, x = 1, 2, 3$ (viii) $f(x) = 2x + 1, x = \frac{1}{2}$

9. If $x = -1/2$ is a zero of the polynomial $p(x) = 8x^3 - ax^2 - x + 2$, find the value of a.

10. If $x = 2$ is a root of the polynomial $f(x) = 2x^2 - 3x + 1a$, find the value of a.

11. If $x = 0$ and $x = -1$ are the roots of the polynomial $f(x) = 2x^3 - 3x^2 + ax + b$, find the value of a and b.

12. Find the integral roots of the polynomial $f(x) = x^3 + 6x^2 + 11x + 6$.

13. Find the rational roots of the polynomial $f(x) = 2x^3 + x^2 - 7x - 6$.

14. Draw the graph of $y=4x$. From the graph find the value y when $x=-2$

15. If $x^2 + \frac{1}{x^2} = 18$ then find the value of $x - \frac{1}{x}$.

C- Write the algebraic identities and verify them:

$(a + b)^3, (a - b)^3, (a^3 + b^3), (a^3 - b^3), (a + b + c)^2, (a^3 + b^3 + c^3 - 3abc)$

SCIENCE

Project of all the Science subjects -Chemistry, Biology and Physics should follow the following format:

1. Title of the Project
2. Certificate
3. Acknowledgement
4. Index
5. Introduction of the Topic
6. Description
7. Creative work if any
8. Bibliography/ References

Project should be done on light coloured A-4 size sheet.

Roll No 1 to 10 – will do Physics project.

Roll No 11 to 20- will do Chemistry project.

Roll No 21 to 30- will do Biology Project.

All assignment sheets should be solved by each child.

PHYSICS

TOPIC- Physics-based sound synthesis of musical instruments

- i). Introduction to Physics-based sound synthesis of musical instruments
- ii). Compare between the musical instruments used by people of Uttar Pradesh and Meghalaya for folk music.
- iii). Make figure of any one instrument used by people of Uttar Pradesh or Meghalaya (use sheet, paper etc.)
- iv). Attachments (Sample of instruments)

Reference link: (Introduction)

https://www.academia.edu/es/18908444/SIGNAL_AND_PHYSICS_BASED_SOU..

Reference link: (musical instruments used by people of Meghalaya)

https://youtu.be/ok_4VH6nT1Q

Reference link: (musical instruments used by people of Uttar pradesh)

<https://youtu.be/ZpnYkio0uDw>

CHEMISTRY

TOPIC – METALS AND NON- METALS

- i). Introduction to metals, nonmetals and alloys (Physical properties).Write the exceptional cases of metals and non-metals.
- ii). Enlist metals, nonmetals and alloys used in making jewellery by tribes of Arunachal Pradesh/Meghalaya.
- iii). Prepare a collage of jewellery worn by tribes of Arunachal Pradesh/Meghalaya.

iv). Design a jewellery using clay or white m-seal. To make it more attractive use acrylic colours.

v). Attachments

Reference link: (use of clay in jewellery making)

<https://www.youtube.com/watch?v=WPSnXoc9j14&feature=youtu.be>

Reference link: (use of m-seal in jewellery making)

<https://www.youtube.com/watch?v=lkW2ekhdxuk&feature=youtu.be>

Reference link: (jewellery used by people of Arunachal Pradesh)

<https://local-moda.blogspot.com/2012/12/tribal-jewelry-and-adornments-of.html?m=0>

<https://indianbijou.wordpress.com/2015/04/18/north-east-india-jewellery/>

BIOLOGY

TOPIC – Changing pattern adapted in the field of Agriculture

i). Introduction on the changing pattern adapted in the field of agriculture. For example: Agricultural Practices.

ii). Write the agriculture practices used by people of Meghalaya/ Arunachal, also mention the reason.

iii). Mention the importance of the change brought in the mentioned field.

Reference link: <http://nopr.niscair.res.in/handle/123456789/6792>

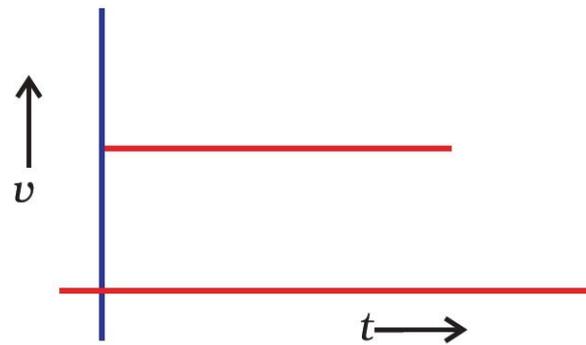
ASSIGNMENT

Chapter: MOTION

Multiple Choice Questions

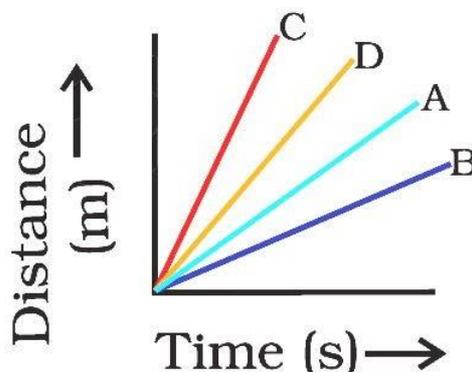
1. If the displacement of an object is proportional to square of time, then the object moves with
 - (a) uniform velocity
 - (b) uniform acceleration
 - (c) increasing acceleration
 - (d) decreasing acceleration
2. The distance time graph of a body coincides with its time axis. The body must be
 - (a) in uniform motion
 - (b) at rest
 - (c) in uniformly accelerated motion
 - (d) in zig-zag motion
3. From the given $v - t$ graph (see below Fig.), it can be inferred that the object is

- (a) in uniform motion
- (b) at rest
- (c) in non-uniform motion
- (d) moving with uniform acceleration



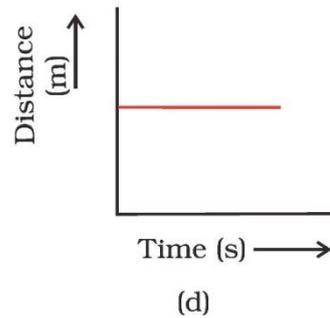
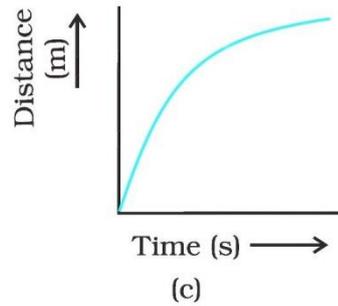
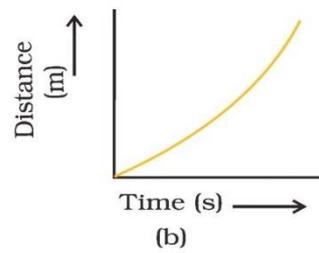
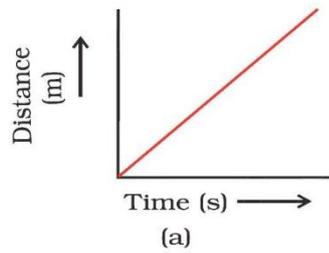
4. The velocity time graph of a body is parallel to the time axis. The body is
- (a) at rest
 - (b) having uniform acceleration
 - (c) having zero acceleration
 - (d) having non-uniform acceleration
5. A particle is moving in a circular path of radius r . The displacement after half a circle would be:
- (a) Zero
 - (b) πr
 - (c) $2 r$
 - (d) $2\pi r$

6. The numerical ratio of displacement to distance for a moving object is
- always less than 1
 - always equal to 1
 - always more than 1
 - equal or less than 1
7. Suppose a boy is enjoying a ride on a *merry-go-round* which is moving with a constant speed of 10 m/s. It implies that the boy is
- at rest
 - moving with no acceleration
 - in accelerated motion
 - moving with uniform velocity
8. Area under a $v - t$ graph represents a physical quantity which has the unit
- m^2
 - m
 - m^3
 - m/s
9. Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs are shown in below Fig.. Choose the correct statement
- Car A is faster than car D.
 - Car B is the slowest.
 - Car D is faster than car C.
 - Car C is the slowest.



10. Slope of a velocity – time graph gives
- the distance
 - the displacement
 - the acceleration
 - the speed
11. In which of the following cases of motions, the distance moved and the magnitude of displacement are equal?
- If the car is moving on straight road
 - If the car is moving in circular path
 - The pendulum is moving to and fro
 - The earth is revolving around the Sun

12. Which of the following figures (see below Figure) represents uniform motion of a



moving object correctly?

SHORT ANSWER QUESTIONS

13. The displacement of a moving object in a given interval of time is zero. Would the distance travelled by the object also be zero? Justify your answer.
14. How will the equations of motion for an object moving with a uniform velocity change?
15. A car starts from rest and moves along *the x-axis* with constant acceleration 5 m/s^2 for 8 seconds. If it then continues with constant velocity, what distance will the car cover in 12 seconds since it started from the rest?



CHEMISTRY

Chapter: Is Matter Around Us Pure

Choose the correct options:

- Which of the following statements are true for pure substances?
(i) Pure substances contain only one kind of particles
(ii) Pure substances may be compounds or mixtures
(iii) Pure substances have the same composition throughout
(iv) Pure substances can be exemplified by all elements other than nickel
(a) (i) and (ii)
(b) (i) and (iii)
(c) (iii) and (iv)
(d) (ii) and (iii)
- Rusting of an article made up of iron is called
(a) corrosion and it is a physical as well as chemical change
(b) dissolution and it is a physical change
(c) corrosion and it is a chemical change
(d) dissolution and it is a chemical change
- A mixture of sulphur and carbon disulphide is
(a) heterogeneous and shows Tyndall effect
(b) homogeneous and shows Tyndall effect
(c) heterogeneous and does not show Tyndall effect
(d) homogeneous and does not show Tyndall effect
- Tincture of iodine has antiseptic properties. This solution is made by dissolving
(a) iodine in potassium iodide
(b) iodine in vaseline
(c) iodine in water
(d) iodine in alcohol
- Which of the following are homogeneous in nature? (i) ice (ii) wood (iii) soil (iv) air
(a) (i) and (iii)
(b) (ii) and (iv)
(c) (i) and (iv)
(d) (iii) and (iv)
- Which of the following are physical changes? (i) Melting of iron metal (ii) Rusting of iron (iii) Bending of an iron rod (iv) Drawing a wire of iron metal
(a) (i), (ii) and (iii)
(b) (i), (ii) and (iv)
(c) (i), (iii) and (iv)
(d) (ii), (iii) and (iv)
- Which of the following are chemical changes? (i) Decaying of wood (ii) Burning of wood (iii) Sawing of wood (iv) Hammering of a nail into a piece of wood
(a) (i) and (ii)
(b) (ii) and (iii)
(c) (iii) and (iv)
(d) (i) and (iv)
- Two chemical species X and Y combine together to form a product P which contains both X and Y $X + Y \rightarrow P$ X and Y cannot be broken down into simpler

substances by simple chemical reactions. Which of the following concerning the species X, Y and P are correct?

(i) P is a compound (ii) X and Y are compounds (iii) X and Y are elements (iv) P has a fixed composition

(a) (i), (ii) and (iii),

(b) (i), (ii) and (iv)

(c) (ii), (iii) and (iv)

(d) (i), (iii) and (iv)

- 9 Two substances, A and B were made to react to form a third substance, A₂B according to the following reaction $2A + B \rightarrow A_2B$ Which of the following statements concerning this reaction are incorrect? (i) The product A₂B shows the properties of substances A and B (ii) The product will always have a fixed composition (iii) The product so formed cannot be classified as a compound (iv) The product so formed is an element

(a) (i), (ii) and (iii),

(b) (ii), (iii) and (iv)

(c) (i), (iii) and (iv)

(d) (ii), (iii) and (iv)

- 10 Which of the following shows Tyndall effect

(a) CuSO₄ solution

(b) Salt solution

(c) Lemonade

(d) Starch solution

Answer the following questions

- 11 Rain water stored in a tank contains sand grains, unfiltrable clay particles, calcium carbonate, salt, pieces of paper and some air bubbles. Select from amongst these one example each of a solvent, a solute, a colloid and a suspension.

- 12 Classify the following into metals, non-metals and metalloids:

(i) Germanium

(ii) Boron

(iii) Diamond

(iv) Iodine

(v) Copper

(vi) Helium

- 13 A group of students took an old shoe box and covered it with a black paper from all sides. They fixed a source of light (a torch) at one end of the box by making a hole in it and made another hole on the other side to view the light. They placed a milk sample contained in a beaker/tumbler in the box as shown in the figure.

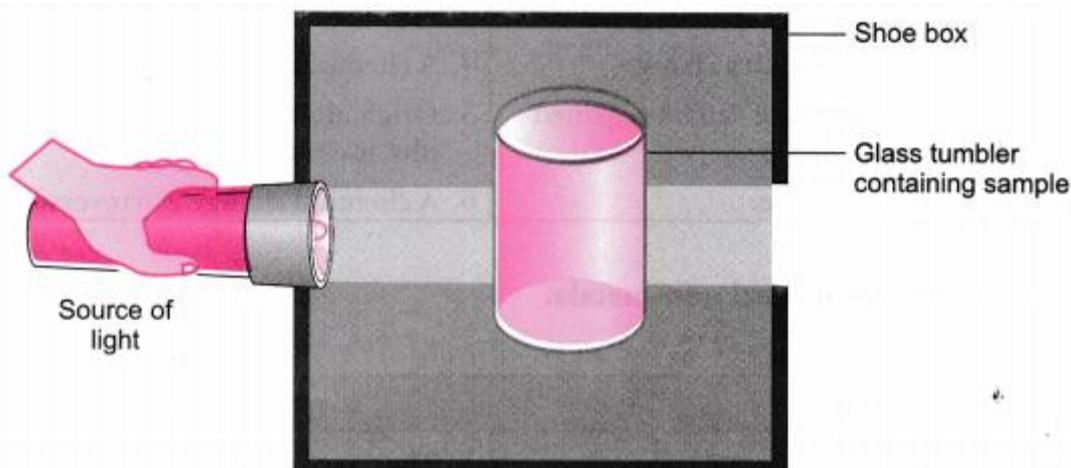
They were amazed to see that milk taken in the tumbler was illuminated. They tried the same activity by taking a salt solution but found that light simply passed through it.

(a) Explain why the milk sample was illuminated. Name the phenomenon involved.

b) Same results were not observed with a salt solution. Explain.

(c) Can you suggest two more solutions which would show the same effect as

shown by the milk solution?



- 14 Iron filings and sulphur were mixed together and divided into two parts 'A' and 'S'. Part 'A' was heated strongly while Part 'S' was not heated. Dilute hydrochloric acid was added to both the parts and evolution of gas was seen in both the cases. How will you identify the gases evolved?
- 15 During an experiment the students were asked to prepare a 10% (Mass/Mass) solution of sugar in water. Ramesh dissolved 10 g of sugar in 100 g of water while Sarika prepared it by dissolving 10 g of sugar in water to make 100 g of the solution.
 - (a) Are the two solutions of the same concentration?
 - (b) Compare the mass % of the two solutions.

ANIMAL TISSUE

- 1 Name the muscular tissue that functions throughout life without fatigue.
- 2 What is the name of bone cells?
- 3 How are oxygen, food, hormone and waste material transported in the body?
- 4 How are glandular epithelium formed?
- 5 Describe the function of bones.
- 6
 - (a) What is the lining of blood vessels made up of?
 - (b) What is the lining of small intestine made up of?
 - (c) What is the lining of kidney tubules made up of?
 - (d) Where are the epithelial cells with cilia found?
- 7 How are messages conveyed from one place to another within the body?
- 8 Differentiate between voluntary and involuntary muscles. Give one example of each type.
- 9 What is a neuron? Write the structure and functions of a neuron.
- 10 Describe the types of connective tissues along with their functions.
- 11 Describe the structure and function of different types of epithelial tissues. Draw the diagram for each type of epithelial tissue.
- 12 A person met with an accident in which two long bones of the hand were dislocated. What could be the reason?
- 13 How are messages conveyed from one place to another within the body?
- 14 Why are voluntary muscles also called skeletal muscles?
- 15 Why does an organism—plant or animal, require different types of cells in the body?

SOCIAL SCIENCE

PROJECT WORK CLASS IX

- Every student has to compulsorily undertake one project on Disaster Management

Objectives: The main objectives of giving project work on Disaster Management to the students are to:

- a. create awareness in them about different disasters, their consequences and management
- b. prepare them in advance to face such situations
- c. ensure their participation in disaster mitigation plans
- d. enable them to create awareness and preparedness among the community.

THE STORY OF VILLAGE PALAMPUR ASSIGNMENT SHEET (ECONOMICS)

1. What are the four requirements for the production of goods and services?
2. What is the importance of land in production?
3. What is the difference between fixed capital and working capital. Give 2 examples of each type to support your answer.
4. What is human capital? Why is human capital necessary for production of goods and services?
5. This picture shows a factory with several workers and heavy machines
6. Why is labour important as a factor of production? Which factors of production can you identify from this picture?
7. In what ways can land under cultivation be increased in a place like Palampur?
8. How is it possible to increase agricultural output from a fixed amount of land?
9. What is the difference between multiple cropping and modern farming methods?
10. Why is the Green Revolution considered a boon as well as a bane in modern agriculture?
11. 'The Green Revolution has been a boon to the farmers and the country. Yet it has some negative aspects.' What are some of the negative aspects of the Green Revolution?

THE FRENCH REVOLUTION (HISTORY)

Assignment-1

1. What did the French Revolution of 1789 stand for?
2. Name the special tax levied by the church on peasants.
3. Who introduced Reign of Terror and where?
4. Describe the incidents that led to the storming of the Bastille.
5. What do you know about the abolition of slavery in France?
6. What were the main ideas behind the French Revolution?
7. What was subsistence crisis? Mention two factors responsible for this crisis?
8. Describe the incidents that led to the storming of the Bastille.
9. Why did the French government increase the taxes?

10. Which new Assembly was established by Jacobins?

11. Who was Napoleon Bonaparte? What reforms did he introduce in France?

12. Why was 'Directory' removed from France?

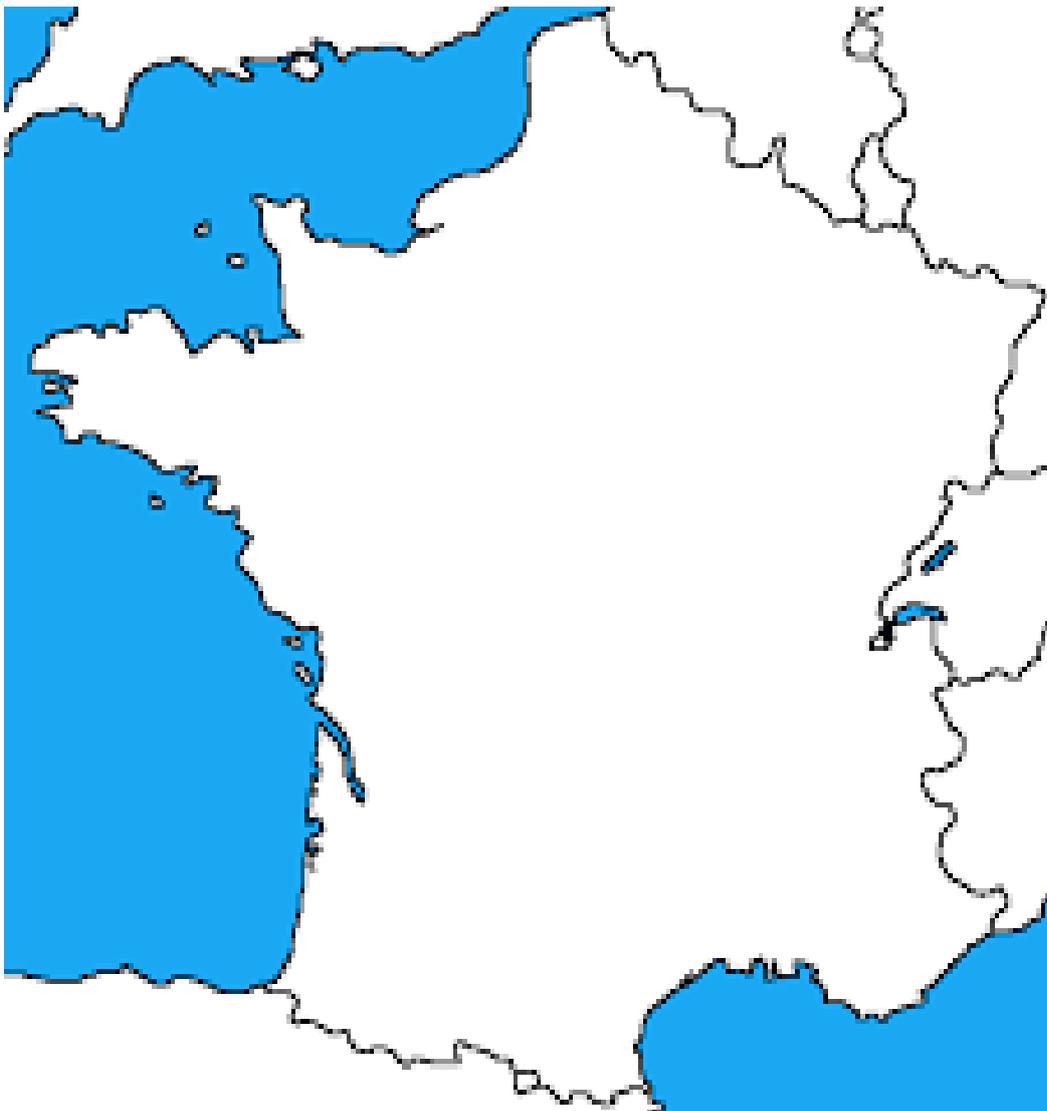
13. On an outline map of France, mark the following:-

Bordeaux

Nantes

Paris

Marseilles



हिंदी

1. मनुष्य अपने शरीर की रोग प्रतिरोधक क्षमता को किस प्रकार के भोजन से बढ़ा सकते हैं। यह एक चार्ट बनाकर समझाइए जिसमें भोजन के गुणों (विटामिन, प्रोटीन, कैल्शियम आदि) को भी दर्शाया गया हो। (ए-3)
2. भारत के मानचित्र में विभिन्न-विभिन्न राज्यों की उर्वरता की दर को दर्शाए व किन-किन राज्यों में कौन-सी फसल अत्यधिक होती है और मौसमी फसल की जानकारी देते हुए पावर पाइंट प्रदर्शन (पी.पी.टी.) तैयार कीजिए।
3. व्यक्ति की पहचान उसकी पोशाक से होती है। इस विषय पर एक कहानी तैयार कीजिए। कहानी के पात्रों को चित्रों से दर्शाइए जिससे उनकी पोशाक को देखकर उनके व्यवसाय को अनुमान लगाया जा सके। रोचक प्रसंगों के आधार पर कहानी को व्यवस्थित रूप प्रदान करें।

रहीम जी के अन्य दोहों व उनकी जीवन की विचारधारा को दर्शाते हुए उनका जीवन परिचय लिखिए व उनकी प्रमुख कृतियों का कोलाज तैयार कीजिए।

English

Art Integrated English Project

Topic: Critical Appreciation of the poem Rain on the Roof

Assignment 1:

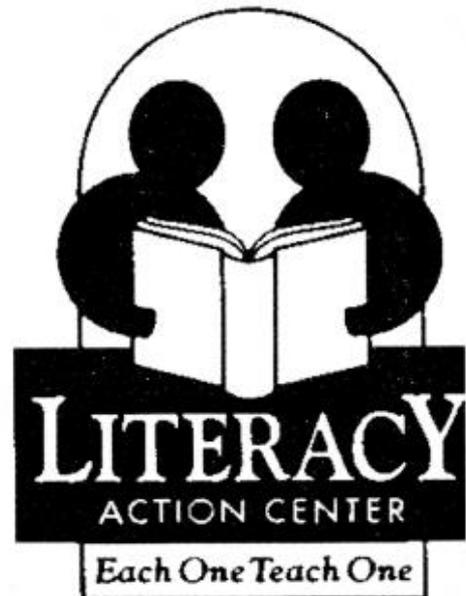
1. **Make a Project File showcasing the topic stated above.**
 1. **Title**
 2. **Certificate**
 3. **Acknowledgement**
 4. **Index**
 5. **Introduction to the Topic**
 6. **Elaborate the “Humid Shadows” and “Bliss” that Coates talks about**

7. Explain the poetic devices – Onomatopoeia ,
Personification, Transferred Epithet etc. used in the poetry
8. Showcase Different varieties of plants and trees that grow
during rainy season in Meghalaya
9. Bibliography/Reference

Assignment 2 : to be done in the English Language Note book.

1. Tourism being one of the biggest and fastest- growing industries globally, affects the economic, socio-cultural, environmental and educational resources of nations. Improving tourism industry in India would thus lead to national development in many spheres. As Ankit/ Ankita, write a letter to the Editor of The Times of India expressing your views on the same.

2. Story writing using the visual prompt.



2. Knowledge is power. Based on the following visual along with your ideas, develop a story based on the theme of helping children from economically weaker sections of society (EWS) and below the poverty line (BPL) learn, in 200–250 words.

ग्रीष्मकालीन संस्कृत गृहकार्य

- क) अध्याय प्रथम से षष्ठ के शब्दार्थों से एक शब्द कोश का निर्माण करें तथा हस्त निर्मित सञ्चिका (कापी) बनाए ।
- ख) विद्या,सत्संगति,नीति पर आधारित चार श्लोक अर्थ सहित लिखकर एक टाँगने वाला चार्ट बनाईए
- ग) अकारान्त,इकारान्त,उकारान्त,ऋकारान्त पुल्लिंग आकारान्त ईकारान्त ऋकारान्त इकारान्त स्त्रीलिंग शब्द रूपों को लिखकर याद कीजिए ।
- घ) उपपद विभक्तियों को लिखकर प्रत्येक के दो-दो वाक्य लिखें ।
- ङ) पा,दा,स्था,गम,गै(गाय),नम,अस्,कृ धातूओं के पाँचों लकारों में रूप लिखिए ।