Kendriya Vidyalaya INS Kalinga Bheemunipatnam
Holidays Home Work / Summer Vacation SESSION 2021-2022

Class 6

SUBJECT - SOCIAL STUDIES

Social science

Q.1 Draw the political map of India and locate Indian state with their capital.

 Q.2 Name all the planets according to their distance from sun.

Q.3 Write the name of 10 rivers of India.

Q.4 Write the name of festivals which are celebrated in India

विषय - हिन्दी

 प्रश्न .1 निम्नलिखित शब्दों की सहायता से एक कविता लिखियेगा तथा कविता से संबंधित कोई चित्र बनाकर उसमें रंग भरिये ।
बचपन, खिलौने, माँ, चाँद, तारे, खेल, दोस्त, घर,

प्रश्न 2 यदि आप पंक्षी होते तो क्या करते, इस विषय पर दस वाक्य लिखिये ।

प्रश्न 3   ऐसी 20 वस्तुओं की सूची बनाये जो आपको खाने में बहुत अच्छी लगती है ।

प्रश्न 4   अपने जन्मदिन पर अपने दोस्त को आमंत्रित करते हुए पत्र लिखिए।

    KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM
HOLIDAY HOMEWORK CLASS VI ENGLISH – 2021-2022
PROJECT: TO BE WRITTEN IN ACTIVITY BOOK
1. WRITE A PARAGRAPH ON THE FOLLOWING TOPICS: (CAN DRAW/ PASTE PICTURES)
A. PATRICK – A MODEL KID
B. MY FAMILY
C. WRITE ABOUT THE TWO BIRDS IN THE FOREST
2. ASSIGNMENT: TO BE WRITTEN IN HW NOTEBOOK
A. WRITE THE DIFFICULT SPELLINGS AND MEANINGS OF THE WORDS FROM LESSON

1 AND 2 FROM THE READER THE HONEYSUCKLE.
(WHO DID PATRICK'S HW, AND HOW THE DOG FOUND HIMELF HIS MASTER)
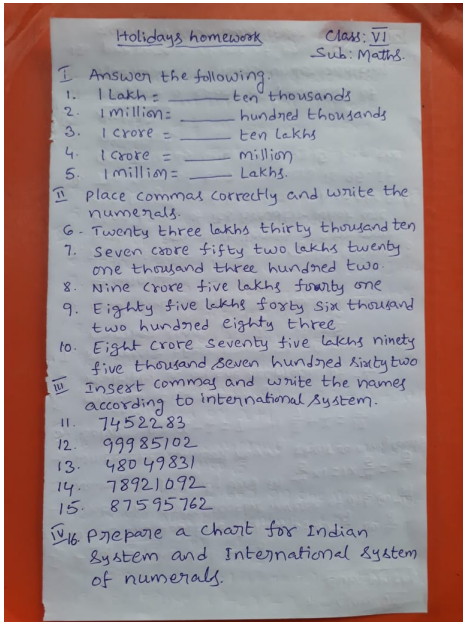B. WRITE A FEW SENTENCES DESCRIBING YOUR PET DOG
C. MY VIEWS ABOUT HOME WORK
D. HANDWRITING IN CURSIVE HANDWRITING BOOK FOR CLASS VI

SANSKRIT- HOLIDAY HOME WORK

विषयः - संस्कृतम

1) संस्कृत मे पढ़ाये गए दोनों पाठ के प्रश्न उत्तर तथा अभ्यास को अपने नोटबुक में लिखकर उसे याद करे।

2) संस्कृत में पढ़ाए गए शब्द रूपानि,(बालकः, बालिका, पुष्पं) धातु रूपानि,(पठ, सेव धातु) कारक रचना, आदि व्याकरण को लिख लिख कर याद करें ।

3) संस्कृत में 1-100 तक गिनती याद करें।

4) दैनिक जीवन से जुड़े 20 वस्तुओं के चित्र संकलित कर अपने नोटबुक में चिपकाए तथा उनके संस्कृत मे नाम लिखें।

5) सभी को A4 sheet या ग्रामर नोटबुक में लिखें।

HOLIDAY HOME WORK OF MATHEMATICS

CHAPTER – 3

FIBRE TO FABRIC

• Fibres: There are two types of fibres:

(a) Natural Fibres: The fibres which are obtained from plants and animals. Example:

cotton, jute, silk and wool.

(b) Synthetic Fibres: Man-made fibres which are not obtrained from plant and animals

sources. Examples: rayon, nulon, polyester, etc.

• Fibres from plant sources:

(a) Cotton: cotton is grown in black soil and warm climate.

(b)Jute: jute is obtained from stem of jute plant.

• Fibres from animal sources:

(a) Wool: wool cloth is spun from yarn made from the fibres of the thick fleece of sheep.

(b) Silk: silk thread is obtained from the saliva of an insect called silkworm.

• Processing of wool: It involves four steps:

(a) Shearing: The process of removal of wool from the sheep's skin.

(b) Grading: The process of separating fleece from damaged wool.

(c) Carding: The process after the wool has been washed and dried, it is passed through

the rollers (that have teeth).

(d) Spinning: The process by which fibrs are gathered together and drawn into a long

rope and then twisted to make yarn.

• Fabrics are made from yarns, which in turn are made from fibres.

• Making Fabric from Yarn: It is done by two processes:

(a) Weaving: The process by two sets of yarns are arranged together to form fabric. It is

done on looms.

(b) Knitting: The process by which a single yarn is used to make fabric. It is done by hand machine

KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM
HOLIDAY HOME WORK 2021-2022

विषय - हिन्दी

प्रश्न .1 निम्नलिखित शब्दों की सहायता से एक कविता लिखियेगा तथा कविता से संबंधित कोई चित्र बनाकर उसमें रंग भरिये ।
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प्रश्न 2 यदि आप पंक्षी होते तो क्या करते, इस विषय पर दस वाक्य लिखिये ।

प्रश्न 3   ऐसी 20 हिन्दी फिल्मों   की सूची बनाये जो आपको बहुत अच्छी लगती है ।

प्रश्न 4   अपने जन्मदिन पर अपने भाई को आमंत्रित करते हुए पत्र लिखिए।

VII SCIENCE HOLIDAY HOME WORK/ASSIGNMENT

Nutrition in Animals Work sheet April 2021
Level 1:
Fill in the blanks and MCQ
1) Saliva is secreted in mouth by --------------------.
2) --------------------- is produced by liver.
3) Food is pushed down into the stomach by ---------------.
4) Amoeba digest its food in the ----------------.
5) Digestion of starch starts in ----------------------.
6) A substance which kills bacteria in stomach
a. Water b. Hydrochloric acid c. Sulphuric acid d. Citric acid
7) Animals that chew cud are called
a. Herbivores b. Omnivores c. Ruminant d. Grass eating
8) Total number of canine's teeth in adult human beings is
a. 2 b. 4 c. 6 d. 8
9) Gastric juice contain enzyme
a. Lipase b. Amylase c. Cellulose d. Pepsin
10) Fat is completely digested in
a. Stomach b. Small intestine c. Mouth d. Large intestine
Level 2
1) Water from undigested food is absorbed by
a. Small intestine b. Large intestine c. Food pipe d. Liver
2) Which one is not a ruminant animal?
a. Dog b. Cow c. Buffalo d. Deer

3) Utilization of digested food to obtain energy is called

a. Ingestion b. Digestion c. Absorption d. Assimilation

5. Match the following.

Column A Column B

a. Mastication i. Gall bladder

b. Ruminant ii. Pseudopodia

c. Ptyalin iii. Teeth

d. Ingestion in amoeba iv. Cellulose digesting

e. Bile storing organ v. Saliva

LEVEL 3

1) Which gland release gastric juice? What is its function?

2) What are ruminants? Name the four compartments of their stomach?

3) What Oral Rehydration Solution?

4) Mention the important functions of pancreas.

5) Explain the working of buccal cavity?

6) What are the functions of small intestine?

7) Name four types of teeth.

8) Draw a labeled diagram of Amoeba.

9) Name the acids produced in stomach?

10) Name the Scientist who discovered the working of stomach.

LEVEL 4 – SUBJECT ENRICHMENT:

1) DRAW A NEAT AND LABELLED DIAGRAM OF TONGUE. 5MARK
2) DRAW A NEAT AND LABELLED DIAGRAM OF HUMAN DIGESTIVE SYSTEM. 5MARK
3) Find out what vitamins are and get the following information.
   (i) Why are vitamins necessary in the diet?
   (ii) Which fruits or vegetables should be eaten regularly to get Vitamins?

Write a one-page note on the information collected by you. You may take help of a doctor, a dietician, your teacher or any other person, or from any other source. 5MARK.

4. Collect data from your friends, neighbors and classmates to know more about "milk teeth".

Tabulate your data. One way of doing it is given below:

S. No.	Age at which first tooth fell	Age at which last tooth fell	No. of teeth lost	No. of teeth replaced
1.				
2.				
3.				
4.				
5.				

Find out from at least TEN children and find the average age at which children lose the milk teeth. You may take help of your friends. 5 MARK.

Class-7

Summer Holiday Homework

Note:1. All students write that homework in Activity notebook.

2. After completion the work convert in a signal PDF and post in Google classroom.

Q1. In what ways has the meaning of the term 'Hindustan' charged over the centuries?
Ans: The meaning of the term 'Hindustan' has changed over the centuries in the following manner:

1. In the thirteenth century Minhaj-i-Siraj used the term 'Hindustan'. He meant areas of Punjab, Haryana and the lands between Ganga and Yamuna. He used this term in a political sense that were a part of the dominions of the Delhi Sultanate. The term never included South India.
2. In the sixteenth century poet Babur used the term 'Hindustan' to describe the geography, the fauna and the culture of the inhabitants of the subcontinent.
3. In fourteenth-century poet Amir Khusrau used the term 'Hind' in the same sense as Babur did in the sixteenth century.
4. 'Hindustan' did not carry the political and national meanings as the term 'India' does today.

Q 2. How were the affairs of jatis regulated?
Ans: The affairs of jatis were regulated in the following way:

1. Jatis formed their own rules and regulations.
2. There was an assembly of elders called jati panchayat.
3. It enforced the rules and regulations.
4. Jatis were also directed to follow the rules of the village.
5. Several villages were governed by a chieftain.

Q 3. How did the Rashtrakutas become powerful?
Ans: Rashtrakutas became powerful in the following manner:

1. Rashtrakutas were subordinates to the Chalukyas of Karnataka.
2. In the mid-eighth century Dantidurga, a Rashtrakuta chief, overthrew his Chalukyan overlord.
3. He performed a ritual called Hiranya-garbha with the help of Brahmanas.

4. This ritual was, then, considered to lead the rebirth of the sacrificer as Kshatriya, even if he was not Kshatriya by birth.

Q 4. What did the new dynasties do to gain acceptance?
Ans: The new dynasties gained power and wealth. Thereafter they declared themselves to be maha-samantas or mahamandaleshwara. Many of such kings adopted high sounding titles like maharaja-adhiraja or tribhuvana-chakravartin. They also deputed learned brahmanas to depict them as valiant, victorious warriors. Their activities were recorded in Prashastis. They tried to demonstrate their power and resources by building large temples

Q 5. Give reasons:

1. **Man modifies his environment**
2. **Plants and animals depend on each other.**

Ans:

1. **Man modifies his environment in the following ways:**

   - He cuts forests and clears land for agriculture, industries, and habitation.
   - He tills land for agriculture.
   - He uses the land to build buildings, roads, and railways.
   - He uses water.
   - He uses air for his survival.
   - He sets up industries, factories, etc.
   - He does numerous other activities for his life, making it comfortable.
2. **Plants and animals depend on each other in the following ways:**
   - Plants provide food to animals.
   - They, in the form of forests, provide shelter to wildlife.
   - Wildlife adds beauty to the forests.
   - Animals provide manure to plants for growth.
   - Animals also provide beauty to forests.
   - Dead animals also provide humus content

<p style="text-align:center">ग्रीष्मकालीन अवकाशं गृह कार्य</p>

Class7   विषयः - संस्कृतम

1) संस्कृत मे पढ़ाये गए पाठ के प्रश्न उत्तर तथा अभ्यास को अपने नोटबुक में लिखकर उसे याद करे।

2) संस्कृत में पढ़ाए गए शब्द रूपानि, धातु रूपानि, कारक रचना, वर्ण विचार:आदि व्याकरण को लिख लिख कर याद करें ।

3) , चित्र वर्णनं का अभ्यास करें

4) 1-100 गिनती संस्कृत में याद करें

5) सभी को A4 sheet में लिखें

Mathematics

Holidays homework   Class: VII   Sub: Maths

Answer the following.

① Write down a pair of integers whose:
(a) Sum is -7   (b) Difference is -10.

② In a quiz team A scored -40, 10, 0 and team B scored 10, 0, -40 in three successive rounds. which team scored more? Can we add integers in any order?

③ Find the products: i) $(-1) \times 225$
ii) $(-21) \times (-30)$ iii) $(-15) \times 0 \times (-18)$
iv) $(-12) \times (-11) \times 10$

④ verify: $18 \times [17 + (-3)] = [18 \times 7] + [18 \times (-3)]$

⑤ what is the additive identity of integers?

⑥ what is the multiplicative identity of integers?

⑦ The temperature of different places given in °C

Lahulspiti Srinagar Shimla Ooty Bangaluru
(number line: -10 -5 0 5 10 15 20 25)

i) write the temperature of the places marked on it.
ii) what is the temperature difference between Lahulspiti and Srinagar?

⑧ verify $a - (-b) = a + b$
i) $a = 21, b = 18$ ii) $a = 75, b = 84$

⑨ use $<, >$ or $=$ in the box. (i) $-8 + (-4) \Box -8 - (-4)$
ii) $21 - 41 + 11 \Box 23 - 41 - 11$

⑩ Prepare a chart of "properties of integers" under addition.

Class VII ENGLISH

1.Writing of notes of two lessons

2 Writing notes of two poems

3.Writing two letters to friend and uncle on the topic of your choice

4. Writing two essays of your choice

Summer vacation is dated on   03-05-2021 to 20-06-2021.

के.वि.भा.नौ.पो.कलिंग,भीमुनिपट्टनम

(ग्रीष्मकालीन अवकाश गृहकार्य   )

विषय – हिंदी   कक्षा -8 वीं (अ)   शिक्षिका – मालती अंगिरा

<u>निर्देश</u> : --

> अपनी गतिविधि उत्तर पुस्तिका में कार्य लिखें ।

> सभी प्रश्न करना अनिवार्य है ।

> आवश्यकता अनुसार प्रश्नों के उत्तर दें । आवश्यकानुसार चित्र भी बनाए ।

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1. वसंत ऋतु को ऋतुराज क्यों कहा गया है ?

2. 'मशीनी युग ने कितने हाथ काट दिए।' - इस इस पंक्ति में लेखक ने किस व्यथा की ओर संकेत किए हैं ?

3. व्याकरण ----

    (i) संज्ञा के तीन भेद किए गए हैं । उनके नाम लिखो और प्रत्येक संज्ञा के 5-5 उदाहरण भी लिखिए ।

    (ii) हरे-हरे, पुष्प - पुष्प, कोमल, सुंदर शब्दों का विशेषण और संज्ञा रूप में उपयोग करते हुए वाक्य बनाइए ।

4. सन 2025 में आप अपने घर के आस-पास की प्रकृति कैसी देखना चाहते हैं, उसके लिए आप आज से ही क्या कोशिश करेंगे ? अनुच्छेद लिखिए और चित्र बनाइए ।

5. ऑनलाइन कक्षाओं में आ रही समस्याओं से अवगत (बताते हुए) कराते हुए, उन्हें दूर करने के लिए अपने विद्यालय के प्राचार्य महोदय को प्रार्थना पत्र लिखिए ।

Note:1. All students write that homework in Activity notebook.

2. After completion the work convert in a signal PDF and post in Google classroom.

Q 1. DEFINE THE FOLLOWING

1. Colonization

2. Calligraphy

3. Archives

4. Census

Q 2. MULTIPLE CHOICE QUESTIONS

1. Battle of Buxar was held in the year
   a. 1784   b. 1764   c. 1760   d. 1769

2. Who was the Governor- General of India from 1798 to 1805?
   a. Robert Clive   b. Lord Ripon   c. Richard Wellesley   d. Lord Mayo

3. In which year, the Mughal Emperor appointed Company as the Diwan of the provinces of Bengal?
   a. 1775   b. 1765   c. 1780   d. 1782

4. The first English factory was set-up on the banks of river Hugli in the year
   a. 1691   b. 1720   c. 1630   d. 1651

Q 3. PICTURE BASED QUESTION

Answer the following questions based on the picture given below.

1.The picture depicts which type of resource?

2.Name the two places in India where windmills are found?

Q 4. Write the answer of following question

1. What is universal adult franchise?
2. Mention the key features of the Indian Constitution.

KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM

HOLIDAY HOMEWORK   CLASS VIII   ENGLISH – 2021-2022

PROJECT: TO BE DONE IN A FILE

1. PREPARE A PROJECT WORK ON TSUNAMI BASED ON THE LESSON THE TSUNAMI

2. PREPARE A PROJECT ON CHRISTMAS AND ITS CELEBRATION

ASSIGNMENT:

1. WRITE A LETTER TO YOUR FRIEND ABOUT YOUR VIEWS ON ONLINE CLASSES, YOUR

EXPERIENCE AND THEIR IMPORTANCE.

2. DRAFT A PARAGRAPH ON THE FOLLOWING

A. WARS AND THEIR IMPACT ON COMMON MAN

B. LAZINESS OR IDLENESS IS A DANGEROUS DISEASE

C. CONTRIBUTION OF FREEDOM FIGHTERS FOR INDIA'S INDEPENDENCE (ANY 2)

SUMMER VACATION HOMEWORK

CLASS-VIII   SCIENCE

1.Write the different agricultural practices.

2.What are the modern methods of irrigation?

3.What are the harvest festivals? Why are they celebrated?

4.Name some weeds in the agricultural fields. How they compete the food crop?

5.What is rabi crop and kharif crop explain with suitable examples?

6.What are the advantages of ploughing?

7.Name the different methods of irrigation process in India.

8.Write the differences between manures and fertilisers.

9.What is crop rotation?How it improves the soil fertility?

10.Why storage of food grains is very important?

<div align="center">ग्रीष्मकालीन अवकाशं गृह कार्य</div>

Class8   विषयः - संस्कृतम

1) संस्कृत मे पढ़ाये गए पाठ के प्रश्न उत्तर तथा अभ्यास को अपने नोटबुक में लिखकर उसे याद करना।

2) संस्कृत के रचनात्मक कार्य के अंतर्गत, , चित्रवर्णनं, संस्कृत भाषा अनुवाद का अभ्यास करें।

3) सभी को A 4 sheet में लिखें।

4) 10:30, 10:45,7, 8संस्कृत मे समय लिखे तथा चित्र बनाये।

Holiday homework   subject – maths   class – 8th

Holidays homework   Class: VIII

Sub: Maths

I   Answer the following.

1. Write the additive inverse of (i) $-\frac{5}{9}$ (ii) $\frac{2}{8}$

2. Write the multiplicative inverse of (i) $\frac{1}{5}$ (ii) $-\frac{13}{19}$

3. Name the property used in $-\frac{4}{5} \times 1 = 1 \times -\frac{4}{5} = -\frac{4}{5}$

4. Write the numbers having their own reciprocals

5. Solve: (i) $x - 2 = 7$ (ii) $\frac{3}{7} + x = \frac{17}{7}$.

II   Answer the following.

6. Multiply $\frac{6}{13}$ by the reciprocal of $-\frac{7}{16}$.

7. Represent these numbers on the number line. (i) $\frac{7}{4}$ (ii) $-\frac{5}{6}$

8. Find five rational numbers between $\frac{2}{3}$ and $\frac{4}{5}$

9. The perimeter of a rectangular swimming pool is 154 m. It length is 2m more than twice of its breadth. what are the length and the breadth of the pool?

10. The sum of two numbers is 95. If one exceeds the other by 15, find the numbers.

III   Activity

11. prepare a chart of "properties of national numbers" under addition.

12. prepare a chart of "properties of national numbers" under multiplication.

Holidays homework

Class: IX
Sub: Maths

I. Answer the following questions.

1. Define an irrational number.

2. Write $4\frac{1}{8}$ in decimal form.

3. Write the rationalising factor of $2+\sqrt{3}$.

4. Find the zero of the polynomial $2x+3$

5. Define "Remainder theorem".

II. Answer the following questions.

6. Find six rational numbers between 3 and 4

7. Express $0.4\overline{7}$ in the form of $\frac{p}{q}$. where p and q are integers and $q \neq 0$

8. Find (i) $64^{\frac{1}{2}}$ (ii) $125^{-\frac{1}{3}}$

9. $P(y) = y^2 - y + 1$. Find $P(0)$, $P(1)$ and $P(2)$

10. Find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by "$x+1$"

III.

11. Activity:- construct "square root spiral" upto $\sqrt{5}$

12. Visualise 2.665 on the number line.

13. Rationalise the denominators of
   i) $\frac{1}{\sqrt{5}+\sqrt{2}}$ ii) $\frac{1}{\sqrt{7}-2}$

14. Find 'k' if $x-1$ is a factor of $P(x) = x^2 + x + k$

15. Factorise $x^3 - 2x^2 - x + 2$.

CHAPTER – 1   "Matter in our Surroundings"

CONCEPT DETAILS

KEY CONCEPTS : *[*rating as per the significance of concept]*

1. Particle nature of Matter	***
2. States of Matter	****
3. Interchange in states of Matter	*****
4. Evaporation & Boiling	****
5. Kelvin , Celsius scale	***

🞣 **Pre requisites**

- *Definition of matter.*
- *Elementary idea of three physical states of matter .*

SURVEY ANALYSIS

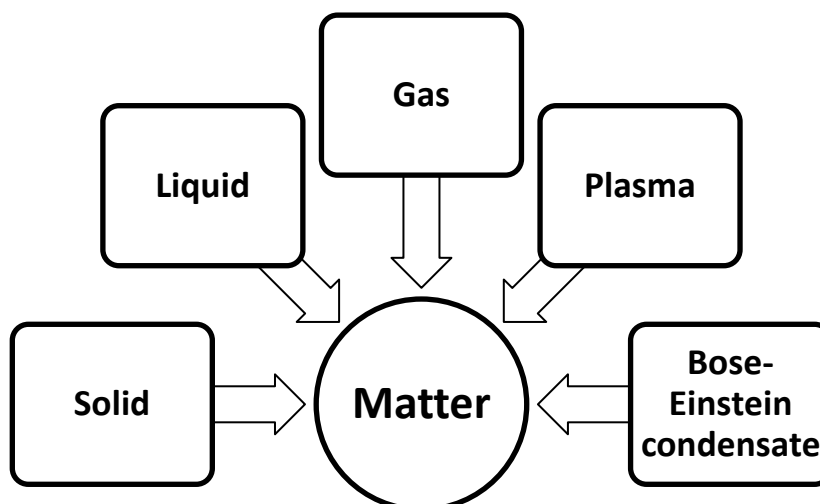*Conceptual levels of comprehension on the basis of feedback taken from the students*
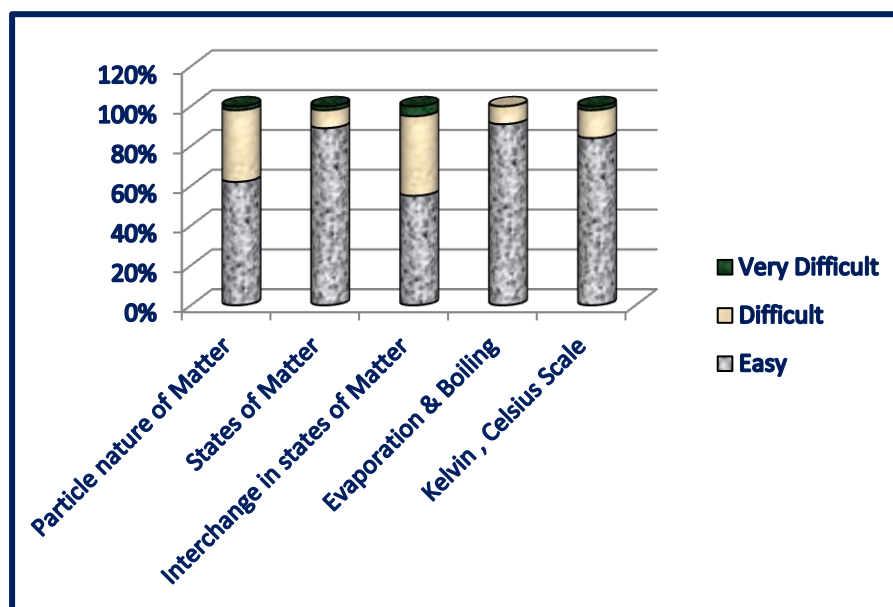
1. Particle Nature of Matter

[refer NCERT text book activities 1.1 to 1.8]

- ➢ Anything that occupies space and has mass and is felt by senses is called matter.
- ➢ Matter is the form of five basic elements the Panch tatva – air , earth ,fire , sky and water.
- ➢ **Characteristics of particles of matter**
  - Made of tiny particles.
  - Vacant spaces exist in particles.
  - Particles are in continuous motion.
  - Particles are held together by forces of attraction.

Q.1   *Define matter.*
Q.2   *What happens if you put copper sulphate crystals in water?*
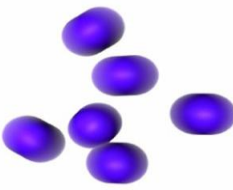
2. States of Matter
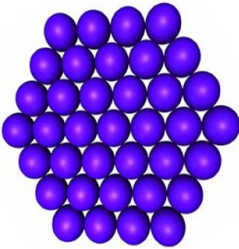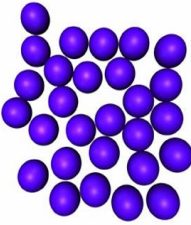
[refer NCERT text book activities 1.9 to 1.11]

Basis of Classification of Types

- Based upon particle arrangement
- Based upon energy of particles
- Based upon distance between particles
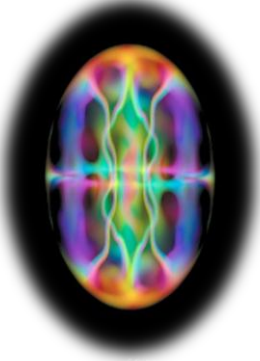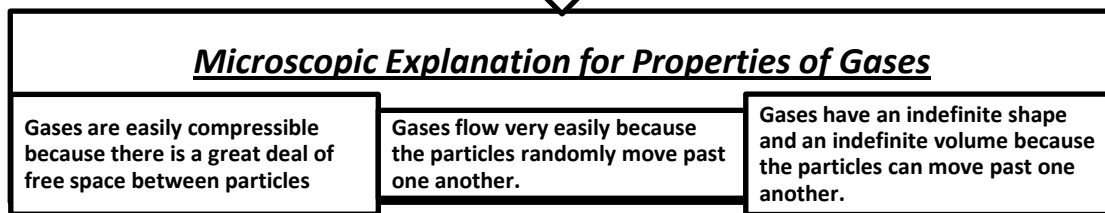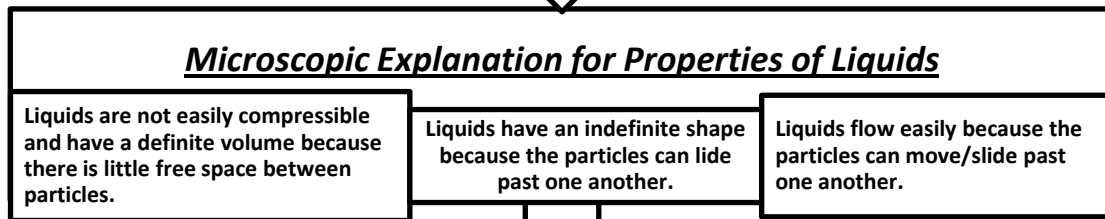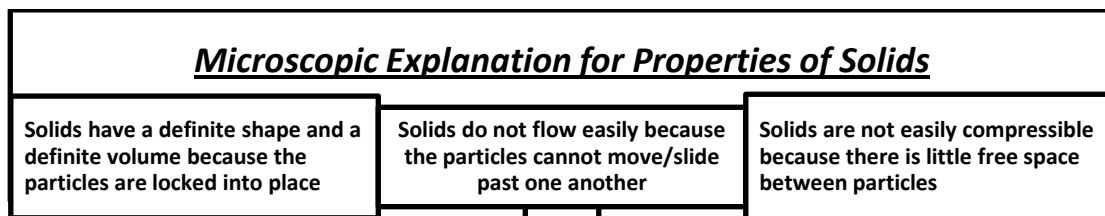 - ➢ **Five states of matter**

(i) SOLID	(ii) LIQUID	(iii) GAS
• Fixed shape and definite volume .	• Not fixed shape but fixed volume.	• Neither fixed shape nor fixed volume.
• Inter particle distances are smallest.	• Inter particle distances are larger.	• Inter particle distances are largest.
• Incompressible.	• Almost incompressible.	• Highly compressible.
• High density and do not diffuse.	• Density is lower than solids and diffuse.	• Density is least and diffuse.
• Inter particle forces of attraction are strongest.	• Inter particle forces of attraction are weaker than solids .	• Inter particle forces of attraction are weakest.
• Constituent particles are very closely packed.	• Constituent particles are less closely packed.	• Constituent particles are free to move about.

(iv) Plasma (non –evaluative)

	• A plasma is an ionized gas. • A plasma is a very good conductor of electricity and is affected by magnetic fields. • Plasma, like gases have an indefinite shape and an indefinite volume. Ex. Ionized gas

(v) Bose-Einstein condensate (non –evaluative)

	• A **BEC** is a state of matter that can arise at very low temperatures. • The scientists who worked with the Bose-Einstein condensate received a Nobel Prize for their work in 1995. • The BEC is all about molecules that are really close to each other (even closer than atoms in a solid).

Microscopic Explanation for Properties of Solids

Solids have a definite shape and a definite volume because the particles are locked into place	Solids do not flow easily because the particles cannot move/slide past one another	Solids are not easily compressible because there is little free space between particles

Microscopic Explanation for Properties of Liquids

Liquids are not easily compressible and have a definite volume because there is little free space between particles.	Liquids have an indefinite shape because the particles can lide past one another.	Liquids flow easily because the particles can move/slide past one another.

Microscopic Explanation for Properties of Gases

Gases are easily compressible because there is a great deal of free space between particles	Gases flow very easily because the particles randomly move past one another.	Gases have an indefinite shape and an indefinite volume because the particles can move past one another.

(non –evaluative)↓

Microscopic Explanation for Properties of Plasmas

Plasmas have an indefinite shape and an indefinite volume because the particles can move past one another.	Plasmas are easily compressible because there is a great deal of free space between particles.	Plasmas are good conductors of electricity &are affected by magnetic fields because they are composed of ions

Microscopic Explanation for Properties of BEC

Particles are less energetic than solids because Exist at very low temperature .	Particles are literally indistinguishable because they are locked into same space .	BEC shows superfluidity because Particles can flow without friction.

Q.1 A substance has a definite volume but no definite shape ? State whether this substance is a solid , a liquid or a gas.

Q.2 Arrange the following substances in increasing order of force of attraction between the particles. (a) Milk   (b) Salt   (c) Oxygen.

Q.3 A substance has neither a fixed shape nor a fixed volume . State whether it is a solid , a liquid or a gas.

Q.4 The melting point of a substance is below the room temperature . Predict its physical state.

3.Interchange in states of matter

[refer NCERT text book activities 1.12 to 1.14]

Matter Can Change its State

Water can exist in three states of matter –

• Solid, as ice ,

• Liquid, as the familiar water, and

• Gas, as water vapour.

Sublimation : The changing of solid directly into vapours on heating & vapours into solid on cooling. Ex. Ammonium chloride , camphor & iodine.

a) **Effect of change in temperature**

The temperature effect on heating a solid varies depending on the nature of the solid & the conditions required in bringing the change .

• On increasing the temperature of solids, the kinetic energy of the particles increases which overcomes the forces of attraction between the particles thereby solid melts and is converted to a liquid.

• The temperature at which a solid melts to become a liquid at the atmospheric pressure is called its melting point.

• The melting point of ice is 273.16 K.

• The process of melting, that is, change of solid state into liquid state is also known as fusion.

b) **Effect of Change of Pressure**

• Increasing or decreasing the pressure can change the state of matter. Applying pressure and reducing temperature can liquefy gases.

• *Solid carbon dioxide (CO_2) is stored under high pressure. Solid CO_2 gets converted directly to gaseous state on decrease of pressure to 1 atmosphere without coming into liquid state. This is the reason that solid carbon dioxide is also known as dry ice*.

Latent Heat :

The hidden heat which breaks the force of attraction between the molecules during change of state.

Fusion	Vaporisation
Heat energy required to change 1kg of solid into liquid.	Heat energy required to change 1kg of liquid to gas at atmospheric pressure at its boiling point.

Thus, we can say that pressure and temperature determine the state of a substance , whether it will be solid, liquid or gas.

[refer fig. 1.9 NCERT Text Book , page-8]

Q.1   What is vapour ?
Q.2   Name the temperature at which the solid and liquid states of substance can exist together .
Q.3   What is the effect of pressure on boiling point?
Q.4   Name any two substances which sublime.
Q.5   Define Condensation.
Q.6   For any substance, why does the temperature remain constant during the change of state?

4. Evaporation & Boiling

- Particles of matter are always moving and are never at rest.
- At a given temperature in any gas, liquid or solid, there are particles with different amounts of kinetic energy.
- In the case of liquids, a small fraction of particles at the surface, having higher kinetic energy, is able to break away from the forces of attraction of other particles and gets converted into vapour .
- This phenomenon of change of a liquid into vapours at any temperature below its boiling point is called evaporation.

  ➢ **Factors Affecting Evaporation**
- The rate of evaporation increases with an *increase of surface area.*
- With the *increase of temperature*, more number of particles get enough kinetic energy to go into the vapour state.
- *Humidity* is the amount of water vapour present in air. The air around us cannot hold more than a definite amount of water vapour at a given temperature. If the amount of water in air is already high, the rate of evaporation decreases.
- Wind speed : the higher the wind speed , the more evaporation.

Evaporation cause cooling.

The particles of liquid absorb energy from the surrounding to regain the energy lost during evaporation,

Evaporation Vs   Boiling

- Boiling is a bulk phenomenon. Particles from the bulk (whole) of the liquid change into   vapour state.

- Evaporation is a surface phenomenon. Particles from the surface gain enough energy to overcome the forces of attraction present in the liquid and change into the vapour state.

Q.1 Which is the slow process , Evaporation or Boiling ?
Q.2 State the effect of surface area on rate of evaporation.
Q.3 Why are we able to sip hot tea faster from saucer rather than from a cup?

5. Kelvin & Celsius Scale

- Kelvin is the SI unit of temperature, 0^0 C =273.16 K. we take 0^0 C = 273 K.

- SI unit of temperature is Kelvin. T (K)= T (^{o}C) +273

- Kelvin scale of temperature has always positive sign , hence regarded as better scale than Celsius.

- Atmosphere (atm) is a unit of measuring pressure exerted by a gas. The SI unit of pressure is Pascal (Pa):

- 1 atmosphere = 1.01 × (10 to the power 5) Pa. The pressure of air in atmosphere is called atmospheric pressure. The atmospheric pressure at sea level is 1 atmosphere, and is taken as the normal atmospheric pressure.

Q.1 What is the SI unit of temperature?
Q.2 Kelvin scale of temperature is regarded as better scale than Celsius. Why?
Q.3 Convert 10^oC into Kelvin scale.

QUESTION BANK [*HOTS]

1 Mark Questions:

1. Pressure on the surface of a gas is increased. What will happen to the inter particle forces?

2. Name the three states of matter.

3. What happens when a liquid is heated ?

4. A gas can exert pressure on the walls of the container. Assign reason.

5. Convert the following temperature to Kelvin Scale   (a) 100°C   (b) 37°C

6. What is meant by density?

7. Give the characteristics of the particles of matter.

8. Water droplets seen on the outer surface of a glass containing ice-cold water is due to _____ .

9. Change of gaseous state directly to solid state without going through liquid sate is called _____ .

10. _____ is a surface phenomenon.

2 Marks Questions:

1. Define Latent heat of vaporisation.

2. Explain why temperature remain constant during the change of state of any substance?

3. Define Sublimation with examples.

4. *Do we sweat more on a dry day or humid day ? Justify your reason.

5. Why do we see water droplets on the outer surface of a glass containing ice cold water?

6. Convert the following temperature to the Kelvin scale (a) 25°C   (b) 373°C

7. List two properties that liquids have in common with solids.

8. List two properties that liquids have in common with gases.

9. *What will happen to the melting point temperature of ice if some common salt is added to it? Justify your answer.

10. *How will you show that air has maximum compressibility?

3 Marks Questions:

1. Define the term (a) Latent heat of fusion   (b) Latent heat of vaporization
2. *State the effect of (i) surface area (ii) nature of the liquid on the rate of evaporation.
3. *Liquids generally have lower density as compared to solids. But you must have observed that ice floats on water. Why?
4. What is the physical state of water at 250°C, 100°C, 0°C?
5. Give reasons :

    i) A sponge can be pressed easily; still it is called a solid.

    ii) Water vapours have more energy than water at same temperature.
6 . What are intermolecular forces ? How are these related to the three states of matter ?
7. Is it possible to liquify atmospheric gases? If yes, suggest a method.

5 marks Questions:

1. a) What is meant by evaporation? What are the factors on which the rate of evaporation depend upon?

   b) How does evaporation causes cooling?
2. State the properties of all the five states of matter.
3. Define : Melting point , Freezing point & Boiling point

You are expected to know………

➢ Particle nature of matter.

➢ All five states of matter & their behaviour

➢ Inter conversion of states of matter

➢ Latent heat

➢ Conversion between Kelvin scale & Celsius scale

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Assignment:
Formal Letters : 2.

HHW : Project/S.E

1) Paragraph Writing
Traditional Edn <u>VS</u> Modern
Education

2) Bio Sketch of Bismillah Khan

3) Evelyn is an inspiration to
all of us. Do you agree?

KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM

SUMMER HOLIDAY HOME WORK

Artificial Intelligence (417)

CLASS 9

Q1: **What do we understand by AI in EDUCATION?**

Q2: Write the areas where we using AI in our daily Life.

Q3: What do you mean by Deep learning , Machine Learning, Data Science.

Q4: What do you mean by Supervised and unsupervised learning?

Q5: AI Activity-1 Description

Ask the students to go out and record the sounds of birds which chirp in a free environment. After this, ask them to collect the data of caged birds. Now, the students need to explore the clips by listening to them carefully. Ask the students to work on the following questions:
1. Do the sounds of free and caged birds sound similar?
2. Can you identify any difference in the sounds of free and caged birds?
3. Can you predict if a bird is caged or not just by listening to its chirping?
This activity explains how an Artificially Intelligent machine is able to predict answers according to the data on which it is trained.

Q6: Write a letter to Future self in to mention what you would be in the year 2030.

KENDRIYA VIDAYALAYA INS KALINGA, BHEEMUNIPATNAM

PROJECT WORK   **CLASS: IX**

TOTAL MARKS: 20   DATE OF ALLOTTMENT: 1/05/2021

DATE OF SUBMISSION: 21/06/2021

Topic for the Project:

National vegetation and wild life.

It will be completed under the following heads:
1.   Introduction: Flora, Fauna
2.   Factors which affect the diversity of flora and fauna
3.   TYPES OF VEGETATION
4.   Located the all 14th biosphere reserves and Project Tiger in India Political MAP.
5.   Conclusion of the Project

EVALUATION & ASSESSMENT PATTERN FOR PROJECT

S.NO	EVALUTATION POINT	MARKS
1	Project report and Standards	5 Marks
2	Creativity and Neatness	5 Marks
3	Content accuracy & Presentation	5 Marks
4	Summary/Conclusion what have you learn of and of Project	5 Marks
	Total marks	**20 Marks**

Note: 1. Finally write in the form of certificate that "This project work has been done by myself."
2. Take the help for preparing the project of your parents or text book or Google.
3. For this project purpose use A4 size paper.
4. Project submit online (through G-suite) before due date given above.
5. When school open that project you submit with project file.

ग्रीष्मकालीन अवकाशं गृह कार्य

Class 9th   विषयः - संस्कृतम

1) संस्कृत मे पढ़ाये गए दोनों पाठ के प्रश्न उत्तर तथा अभ्यास को अपने नोटबुक में लिखकर उसे याद करना।

2) संस्कृत के अनुपयुक्त व्याकरण के अंतर्गत संधि, वर्ण विचार:, शब्द रूपानि, धातु रूपानि आदि सभी व्याकरण को लिख लिख कर याद करें ।

3) संस्कृत के रचनात्मक कार्य के अंतर्गत, पत्रलेखनं, चित्रवर्णनं, संस्कृत भाषा अनुवाद का अभ्यास करें ।

4) सभी को A 4 sheet में लिखें

के.वि.भा.नौ.पो.कलिंग,भीमुनिपट्टनम

(ग्रीष्मकालीन अवकाश गृहकार्य)

विषय – हिंदी   कक्षा -9वीं (अ)   शिक्षिका – मालती अंगिरा

निर्देश : --

> अपनी गतिविधि उत्तर पुस्तिका में कार्य लिखें ।

> सभी प्रश्न करना अनिवार्य है ।

> आवश्यकता अनुसार प्रश्नों के उत्तर दें । आवश्यकानुसार चित्र भी बनाए ।

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1. कवि ने सच्चे प्रेमी की क्या कसौटी बताई है ?
2. ज्ञान की आँधी का भक्त के जीवन पर क्या प्रभाव पडता है ?
3. निम्न शब्दों से उपसर्ग व प्रत्यय छाँटकर लिखिए –
   भूखा, नमकीन , बुराई, महानता, कथाकार (प्रत्यय)
   अधिखिला, अनजान, भरपेट, अनुचित, दुबला (उपसर्ग)
4. अपने स्वेच्छा से चित्र सहित एक कविता लिखिए ।
5. अनुच्छेद लिखिए - ऑनलाइन कक्षाएं और शिक्षा
                अथवा
         स्वच्छ भारत – स्वस्थ भारत

KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM

HOLIDAY HOMEWORK FOR CLASS IX ENGLISH 2021-2022

PROJECT:

1. COMPARE AND CONTRAST THE TRADITIONAL EDUCATION IN SCHOOLS WITH MODERN EDUCATION WITH REGARD TO ONLINE CLASSES IN A PARAGRAPH OF 75-80 WORDS. PICTURES/ DRAWINGS CAN ALSO BE USED
2. BIO- SKETCH OF BISMILLAH KHAN
3. EVELYN IS A GREAT INSPIRATION TO ALL OF US BECAUSE OF HER STRONG WILLPOWER AND DETERMINATION. JUSTIFY.

ASSIGNMENT:

1. DRAFT A LETTER TO M/S GUPTA BROTHERS BOOKS PLACING AN ORDER FOR SOME BOOKS WHICH YOU WANT TO PREPARE FOR PISA EXAMS.
2. PARAGRAPH WRITING ON THE PRECAUTIONS TO BE TAKEN TO FACE THE PANDEMIC SITUATION
3. ARTICLE WRITING ON THE TOPIC ROAD SAFETY AND WAYS TO MINIMISE ROAD ACCIDENTS.
4. READ THE LESSONS AND POEMS TAUGHT IN THE CLASS, LEARN SPELLINGS AND PRACTISE HANDWRITING.

IX PHYSICS – MOTION LESSON HOLIDAY HOME WORK
QUESTIONS AND NUMERICALS

1. Distinguish between distance and displacement. 2 MARK

2. Draw the position - time graph for an object (i) at rest (ii) with uniform motion. 3. Draw the position - time graph for an object (a) moving with positive velocity and (b) moving with negative velocity.

4. Draw position - time graph for motion with (a) positive acceleration (b) negative acceleration (c) zero acceleration.

5. Draw velocity - time graphs for motion in (a) positive direction with positive acceleration (b) negative direction with negative acceleration.

6. Find the velocity of the particle for the time interval t = 5 to t = 10 s from the following graph.

7. WRITE ANY THREE DIFFERENCES BETWEEN SPEED AND VELOCITY. 3 MATK

8. A ball is thrown vertically upward and it reaches a height of 90 m. Find the velocity with which it was thrown.

9. Define relative velocity with an example.

10. A car travels with a uniform velocity of 20 $ms-1$. The driver applies the brakes and the car comes to rest in 10 second. Calculate the retardation.

KENDRIYA VIDYALAYA, INS KALINGA

SUMMER VACATION HOMEWORK

CLASS-IX BIOLOGY

1.Describe the structure of prokaryotic cell.

2.Write the differences between plant cell and animal cell.

3.Describe the structure of eukaryotic cell.

4.Write the functions of cell membrane.

5.Write the role of nucleus.

6.Explain the difference between chromosome, DNA and gene.

7.Write the functions of the following

a)Mirochondria   b)Chloroplast   c)Endoplasmic reticulum

KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM

CLASS X ENGLISH HOLIDAY HOME WORK

MARKS WILL BE AWARDED

1. **ASSIGNMENT:** DRAFT A SMALL PARAGRAPH WITH PICTURES ON THE FOLLOWING
   A. MISERABLE PLIGHT OF THE INDIAN FARMERS
   B. NELSON MANDELA AND HIS ROLE AND CONTRIBUTION FOR THE FREEDOM OF SOUTH AFRICA FROM THE WHITE SUPREMACY

2. **SUBJECT ENRICHMENT**
   FORMAL LETTERS
   (LETTERS TO EDITOR)
   TOPICS/SUBJECT-
   A. DRAFT A LETTER TO THE EDITOR OF A NATIONAL DAILY ABOUT THE RESIDENTS OF YOUR LOCALITY FLOUTING (DISOBEYING) QUARANTINE RULES TO BE FOLLOWED DURING THE PANDEMIC CRISIS

   B. INSANITARY & UNHYGIENIC CONDITIONS PREVAILING IN OUR LOCALITY

   C. RASH AND RECKLESS DRIVING LEADING TO INCREASE IN ROAD ACCIDENTS

   D. LETTER PLACING AN ORDER
   IMAGINE YOURSELF TO BE THE LIBRARIAN OF TINY TOTS PUBLIC SCHOOL. DRAFT A LETTER TO M/S HIMANSHU BOOKS AND STATIONERY PLACING AN ORDER FOR BOOKS (SAMPLE PAPERS, TEXT BOOKS AND RESOURCE BOOKS)

3. **PROJECT**:
   PREPARE A POSTER/PAMPHLET ON THE FOLLOWING
   1. SAY NO TO JUNK FOOD
   2. EDUCATION IS A POWERFUL WEAPON TO CHANGE THE MINDSET OF PEOPLE.

3. The other two zeroes of the polynomial $x^3 - 8x^2 + 19x - 12$ if its one zeroes is $x = 1$, are:

(A) -3, 4

(B) -3, -4

(C) 3, -4

(D) 3, 4

4. The quadratic polynomial, the sum and product of whose zeroes are -3 and 2, is:

(A) $x^2 + 3x - 2$

(B) $x^2 + 3x + 2$

(C) $x^2 + 3x + 2$

(D) $x^2 - 3x + 2$

5. The third zero of the polynomial $x^3 + 7x^2 - 2x - 14$, if two its zeroes are $\sqrt{2}$ and $-\sqrt{2}$, is:

(A) 7

(B) -7

(C) 14

(D) -14

6. If $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$ are two zeroes of the polynomial $3x^4 + 6x^3 - 2x^2 - 10x - 5$ then its other two zeroes are:

(A) -1, -1

(B) 1, -1

(C) 1, 1

(D) 3, -3

7. If $a - b$, a and $a + b$ are zeroes of the polynomial $x^3 - 3x^2 + x + 1$ the value of $(a + b)$ is:

(A) $1 \pm \sqrt{2}$

(B) $-1 + \sqrt{2}$

(C) $-1 - \sqrt{2}$

(D) 3

8. A real numbers α is called a zero of the polynomial $f(x)$, then

(A) $f(\alpha) = -1$

(B) $f(\alpha) = 1$

(C) $f(\alpha) = 0$

(D) $f(\alpha) = -2$

9. Which of the following is a polynomial:

(A) $x^2 + \frac{1}{x}$

(B) $2x^2 - 3\sqrt{x} + 1$

(C) $3x^2 - 3x + 1$

(D) $x^2 + x^{-2} + 7$

10. The product and sum of zeroes of the quadratic polynomial $ax^2 + bx + c$ respectively are:

(A) $\frac{b}{a}, \frac{c}{a}$

(B) $\frac{c}{a}, \frac{b}{a}$

(C) $\frac{c}{b}, 1$

(D) $\frac{c}{a}, \frac{-b}{a}$

11. The quadratic polynomial, sum and product of whose zeroes are 1 and -12 respectively is:

(A) $x^2 - x - 12$

(B) $x^2 + x - 12$

(C) $x^2 - 12x + 1$

(D) $x^2 - 12x - 1$

12. If the product of two of the zeroes of the polynomial $2x^3 - 9x^2 + 13x - 6$ is 2, the third zero of the polynomial is:

(A) -1

(B) -2

(C) $\frac{3}{2}$

(D) $-\frac{3}{2}$

4.   Splitting the middle term.

To factorise $x^2 + bx + c$ into factors of form $(x + p)$ and $(x + q)$, we find the numbers p and q such that $p + q = b$ and $p \times q = 0$.

So that, $x^2 + bx + c$

$$= \quad x^2 + (p + q)x + p \times q$$

$$= \quad x^2 + px + qx + pq$$

$$= \quad x(x + p) + q(x + p)$$

$$= \quad (x + p)(x + q)$$

Fill in the blank boxes

(a) $x^2 + 7x + 12$

$$= \quad x^2 + \boxed{}\, x + \boxed{}\, x + 12$$

$$= \quad x\,(x + \boxed{}\,) + (x + \boxed{}\,)$$

$$= \quad (x + \boxed{}\,)(x + \boxed{}\,)$$

(b) $6x^2 + 19x + 10$

Product of factors $= 60$

Sum of factors $= 19$

$$= \quad 6x^2 + \boxed{}\, x + \boxed{}\, x + 10$$

$$= \quad 3x\,(2x + \boxed{}\,) + \boxed{}\,(2x + \boxed{}\,)$$

$$= \quad (3x + \boxed{}\,)(2x + \boxed{}\,)$$

Rational Number $(x=\dfrac{a}{b}, b\neq 0$, a & b are integers a & b are coprime)	Decimal expansion will terminate (Put ✔ or ✘) (If it terminates then after how many decimal places it will terminate ?)	Decimal expansion will not terminate (Put ✔ or ✘)
(1) $\dfrac{13}{3125}$		
(2) $\dfrac{29}{343}$		
(3) $\dfrac{177}{210}$		
(4) $\dfrac{23}{2^3 5^2}$		
(5) $\dfrac{49}{2^7 5^2}$		
(6) $\dfrac{7}{80}$		
(7) $\dfrac{13}{125}$		
(8) $\dfrac{120}{400}$		

5. $(2 + \sqrt{3} + \sqrt{5})$ is a:

    A. natural number

    B. Integer number

    C. Rational number

    D. Irrational number

6. If $\left(\frac{9}{7}\right)^3 \times \left(\frac{49}{81}\right)^{2x-6} = \left(\frac{7}{9}\right)^9$, the value of x is:

    A. 12

    B. 9

    C. 8

    D. 6

7. The number .211 2111 21111 211111....... is a:

    A. terminating decimal

    B. non-terminating repeating decimal

    C. non-terminating decimal which is non-repeating

    D. None of the above

8. If $(m)^n = 32$, where m and and n are positive integers, then the value of $(n)^{mn}$ is:

    A. 32

    B. 25

    C. (5)10

    D. (5)25

9. The number 0.57 in the $\frac{p}{q}$ form $(q \neq 0)$ is:

    A. $\frac{19}{35}$

    B. $\frac{57}{99}$

    C. $\frac{57}{95}$

    D. $\frac{19}{30}$

10. 0.57 can be written as $\frac{p}{q}$, $q \neq 0$ as:

    A. $\frac{26}{45}$

    B. $\frac{13}{27}$

    C. $\frac{13}{29}$

    D. $\frac{57}{99}$

11. Any one of the numbers a, $(a + 2)$ and $(a + 4)$ is a multiple of:

    A. 2

    B. 3

    C. 5

    D. 7

12. If p is a prime number and p divides k^2, then p divides:

    A. $2k^2$

    B. k

    C. $3k$

    D. None of these

Remedial Worksheet

1. Learn statement of Euclid's Division. Lemma Euclid Division Lemma states t
   _____.

2. Given positive integers a and b, there exist unique integers q and r satistfying $a = bq$
   _____. (write other condition).

3. Complete the missing steps.

   Use Euclid's algorithm to find the HCF of 324 and 12084.

   Since $12084 > 324$, by Eudid's division lemma $12084 = 324 \times 37 + 96$.

   Since remainder $\neq 0$, again by division lemma. $324 = 96 \times 3 + 36$.

   Remainder $= 36$, $96 =$ _____ $\times$ _____ $+$ _____

   _____, $36 =$ _____ $\times$ _____ $+$ _____

   _____, $24 = \underline{12}$ _____ $\times \underline{2}$ _____ $+ \underline{0}$ _____

   _____, HCF$=$_____ $\times$ _____ $+$ _____

4. The fundamental theorem of arithmetic states that every composite number can be expres
   as _____ and this factorization is _____ apart from _____

5. For any two positive integers a and b, HCF (a, b) $\times$ LCM (a, b) $=$ a $\times$ b.
   Find HCF of 96 and 404 by division lemma and hence find LCM.

Home Assignments

1. Which of the following are not polynomials ?

   (A) $3x^3 + x^2 + x^{-2} + 7$

   (B) $x^2 + px + q$

   (C) $x^2 + \dfrac{1}{x^2} + 7$

   (D) $2x^3 + 3x^2 - 5x - 6$

2. What do you understand by the value of a polynomial at a given point ?

3. If $p(x) = 3x^3 - 2x^2 + 6x - 5$, find $p(2)$.

4. Find the quadratic polynomial whose one zeroes $2 + \sqrt{3}$.

5. Find a quadratic polynomial whose sum and product of zeroes are $\sqrt{2}$ and 3 respectively.

6. Find the zeores of the polynomial $mx^2 + (m + n) x + n$.

7. If m and n are zeroes of the polynomial $3x^2 + 11x - 4$, find the value of $\dfrac{m}{n} + \dfrac{n}{m}$

8. If a and b are zeroes of the polynomial $x^2 - x - 6$, the find a quadratic polynomial whose zeroes are $(3a + 2b)$ and $(2a + 3b)$.

9. If p and q are zeroes of the polynomial $t^2 - 4t + 3$, show that $\dfrac{1}{p} + \dfrac{1}{q} - 2pq + \dfrac{14}{3} = 0$

10. If $(x - 6)$ is a factor of $x^3 + ax^2 + bx - bx = 0$ and $a - b = 7$, find the values of a and b.

Multiple Choice Questions

Choose the correct option.

1. $\sqrt{5}-3-2$ is:

   A.   a rational number   B.   a natural number

   C.   equal to zero   D.   an irrational number

2. Let $x = \dfrac{7}{22 \times 53}$ be a rational number. Then x has decimal expansion which terminates:

   A.   after four places of decimal   B.   after three places of decimal

   C.   after two places of decimal   D.   after five places of decimal

3. The decimal expansion of $\dfrac{63}{72 \times 175}$ is:

   A.   Terminating   B.   Non-terminating

   C.   Non terminating and repeating   D.   None of these

4. If HCF and LCM of two numbers are 4 and 9696, then the product of the two numbers is:

   A.   9696   B.   24242   C.   38784   D.   4848

product of zeroes = constant term / coefficient of x^2

Quadratic Polynomial	Factorisation by splitting the middle term	Zeroes	Verfication
(1) $x^2 + 7x + 10$			Sum of Zeroes = Product of Zeroes =
(2) $x^2 - 3x - 28$			Sum of Zeroes = Product of Zeroes =

Quadratic Polynomial	Factorisation by splitting the middle term	Zeroes	Verfication
(3) $3x^2 - x - 4$			Sum of Zeroes = Product of Zeroes =

Multiple Choice Question

1. The degree of the polynomial whose graph is given below is :

   (A) 1

   (B) 2

   (C) ≥ 3

   (D) Can not be found
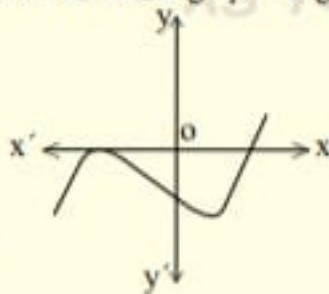
2. If the sum of the zeroes of the quadratic polynomial $3x^2 - kx + 6$ is 3, the value of k is:

   (A) 3   (B) -3   (C) 6   (D) 9

Home Assignment : Short & Long Questions

1. Show that only one out of a, $a + 2$ and $a + 4$ is divisible by 3.

2. Without actual division find whether the rational number $\dfrac{1323}{(6^3 \times 35^2)}$ has a terminating or a non-terminating decimal.

3. If LCM (480, 672) = 3360, find HCF (480, 672).

4. Prove that $7 - \sqrt{5}$ is an irrational number.

5. Show that the product of three consecutive natural numbers is divisible by 6.

6. Express 0.69 as a rational number in $\dfrac{p}{q}$ form.

7. Show that the number of the form 7^n, $n \in N$ can not have unit digit zero.

8. Using Euclid's Division Algorithm find the HCF of 9828 and 14742.

KENDRIYA VIDAYALAYA INS KALINGA, BHEEMUNIPATNAM

PROJECT WORK

CLASS: X

TOTAL MARKS: 20

DATE OF ALLOTTMENT: 1/05/2021

DATE OF SUBMISSION: 20/06/2021

Topic for the Project:

Manufacturing Industries.

It will be completed under the following heads:
1. Introduction
2. Importance of Manufacturing
3. Contribution of Industry to National Economy
4. Classification of Manufacturing Industries
5. Industrial Pollution and Environmental Degradation
6. Locate the all Iron & Steel Industry in India Political MAP.
7. Conclusion of the Project.

EVALUATION & ASSESSMENT PATTERN FOR PROJECT

S.NO	EVALUTATION POINT	MARKS
1	Project report and Standards	5 Marks
2	Creativity and Neatness	5 Marks
3	Content accuracy & Presentation	5 Marks
4	Summary/Conclusion what have you learn of and of Project	5 Marks
	Total marks	**20 Marks**

Note: 1. Finally write in the form of certificate that "This project work has been done by myself."

2. Take the help for preparing the project of your parents or text book or Google.

3. For this project purpose use A4 size paper.

4. Project submit online (through G-suite) before due date given above.

5. When school open that project you submit with project file.

के.वि.भा.नौ.पो.कलिंग,भीमुनिपट्टनम

(ग्रीष्मकालीन अवकाश गृहकार्य)

विषय – हिंदी   कक्षा -10 वीं (अ)   शिक्षिका – मालती अंगिरा

<u>निर्देश : --</u>

<u>> अपनी गतिविधि उत्तर पुस्तिका में कार्य लिखें ।</u>

<u>> सभी प्रश्न करना अनिवार्य है ।</u>

> आवश्यकता अनुसार प्रश्नों के उत्तर दें । आवश्यकानुसार चित्र भी बनाए ।

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1. सेनानी न होते हुए भी लोग चश्मे वाले को कैप्टन क्यों कहते थे ?
2. अनुच्छेद लिखिए --- सुरक्षित पर्यावरण   अथवा
   . स्वच्छ धरती, सुंदर जीवन
3. आपके पडौस में बच्चों को खेलने के लिए सुरक्षित पार्क की व्यवस्था नहीं है, एक सुंदर स्वच्छ पार्क बनवाने का निवेदन करते हुए नगर परिषद अधिकारी को पत्र लिखिए ।
4. 'हम मीरा के घर खेलने जायेंगे ।' इस वाक्य में हम शब्द सर्वनाम है। मीरा शब्द व्यक्तिवाचक संज्ञा है । इसी प्रकार आप अन्य पाँच वाक्य लिखिए और उनमें आए शब्दों का परिचय बताइए ।
5. आपने स्कूल के बच्चों के लिए पाठ्यपुस्तकें उपलब्ध करवाने के लिए एक दुकान खोली है , उसके प्रचार के लिए एक विज्ञापन तैयार कीजिए ।

ग्रीष्मकालीन अवकाशं गृह कार्य

Class 10th   विषयः - संस्कृतम

1) संस्कृत में अपठित अवबोधन के अंतर्गत आने वाले पठित गद्यांश अपठित गद्यांश का अभ्यास करें ।

2) संस्कृत के अनुपयुक्त व्याकरण के अंतर्गत संधि समास धातु रुपाणी शब्दरूपाणि आदि सभी व्याकरण को लिख लिख कर याद करें ।

3) संस्कृत के रचनात्मक कार्य के अंतर्गत, पत्रलेखनं, चित्रवर्णनं, संस्कृत भाषा अनुवाद का अभ्यास करें ।

4) सभी को A4 sheet पर लिखें

1) DRAW THE RAY DIAGRAMS OF CONCAVE MIRROR AND CONVEX MIRROR AND WRITE THE PROPERTIES OF THE IMAGES.
2) DRAW THE RAY DIAGRAMS OF CONVEX LENS AND CONCAVE LENS AND WRITE THE PROPERTIES OF IMAGE.
3) EXPLAIN WITH THE HELP OF RAY DIAGRAMS, THE DEFECTS OF VISION AND HOW WILL YOU CORRECT THEM.

CHAPTER – 1
Chemical Reactions and Equations

Chemical Reaction : – Whenever a chemical change occurs we can say that a chemical reaction has taken place

eg   –   Food gets digested in our body

   –   Rusting of iron.

Chemical Equation :– A chemical reaction can be expressed symbolically by using chemical equation

eg magnesium is burnt into air to form magnesium oxide can be represented as

$$Mg + O_2 \rightarrow MgO$$
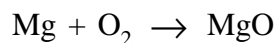
–   We can observe or recognise a chemical reaction by observing change in state, colour, by evolution of gas or by change in temperature.

Physical state of the reactant and products are mentioned to make chemical reaction more informative. eg we use (g) for gas, (l) for liquid, (s) for solid and (aq) for aqueous.

Balancing Equation :– We balance the chemical equation so that no. of atoms of each element involved in the reaction remain same at the reactant and product side.

$$eg\ Fe + H_2O \rightarrow Fe_2O_3 + H_2\ can\ be\ written\ as$$

$$3\ Fe(s) + 4H_2O(g) \rightarrow Fe_2O_3(s) + 4H_2(g)$$
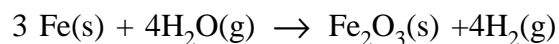
Combination Reaction :– The reaction in which two or more substances combine to form a new single substance

eg $CaO_{(s)}$ + $H_2O_{(l)}$ $\longrightarrow$ $Ca(OH)_{2\ (aq)}$

Calcium   Water   Calcium hydroxide

oxide   (slaked lime)
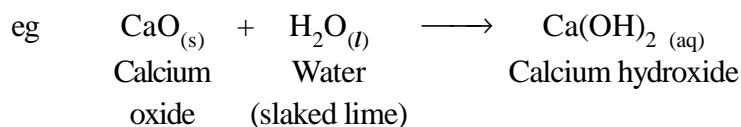
Quick lime

– $Ca(OH)_2$ slaked lime is used for white washing walls. It reacts will CO_2 to form $CaCO_3$ and gives a shiny finish to the walls.
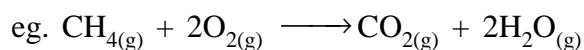
$Ca(OH)_{2_{(aq)}}$+ $CO_{2_{(g)}}$ $\longrightarrow$ $CaCO_{3_{(s)}}$+ $H_2O\ (l)$

Calcium   Calcium

hydroxide   Carbonate

– Burning of Coal

$C_{(s)}$ + $O_{2(g)}$ $\longrightarrow$ $CO_{2(g)}$ + heat + light
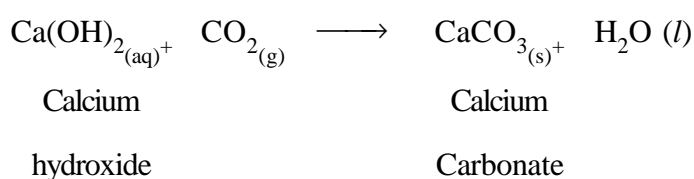
– Formation of water

$2H_{2(g)}$ + $O_{2(g)}$ $\longrightarrow$ $2H_2O(l)$
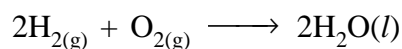
Exothermic Reactions :– Reaction in which heat is released along with the formation of products.

eg. $CH_{4(g)}$ + $2O_{2(g)}$ $\longrightarrow CO_{2(g)}$ + $2H_2O_{(g)}$

– Respiration is also exothermic reaction.

– De composition of vegetable matter into compost.

De compositon Reactions :– The reaction in which a single substance decomposes to give two or more substances. De composition reactions can be of three types
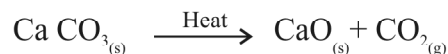
Thermal Decompositon :– When a decompositon reaction is carried out by heating
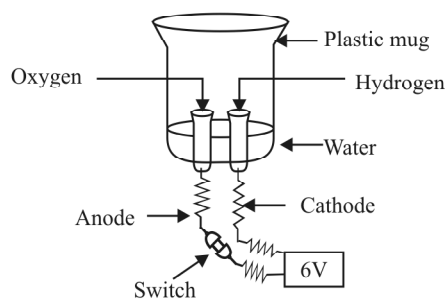
Decomposition Reactions

Thermal Decomposition :- When a decomposition reaction is carried out by heating

eg $2\ FeSO_{4(s)} \xrightarrow{\text{Heat}} Fe_2O_{3(s)} + SO_{2(g)} + SO_{3(g)}$
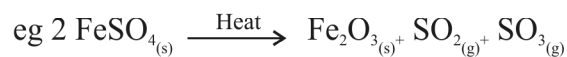
Ferrous Sulphate   Ferric Oxide

   Green Colur $\longrightarrow$ Reddish brown colour

$Ca\ CO_{3(s)} \xrightarrow{\text{Heat}} CaO_{(s)} + CO_{2(g)}$

$Pb\ (NO_3)_{2(s)} \xrightarrow{\text{Heat}} PbO_{(s)} + 4NO_{2(g)} + O_{2(g)}$

Lead Nitrate   Leadoxide   Nitrogen   Oxygen

White colour $\longrightarrow$ Brown colour   dioxide
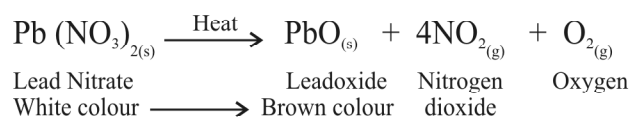
Electrolytic Decomposition :- When a decomposition reaction is carried out by electric current,

eg. $H_2O_{(l)} \xrightarrow{\dfrac{\text{electric}}{\text{current}}} 2\ H_{2(g)} + O_{2(g)}$

Plastic mug

Oxygen —   — Hydrogen

— Water

Anode —   — Cathode

Switch   6V
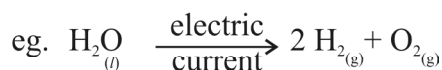
Photolytic decomposition :- When a decomposition reaction is carried out by light

eg. $2Ag\ Cl_{(s)} \xrightarrow{\text{Sunlight}} 2Ag_{(s)} + Cl_{2(g)}$
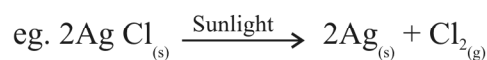
White colour $\longrightarrow$ grey clour

–   Silver bromide behaves similarly
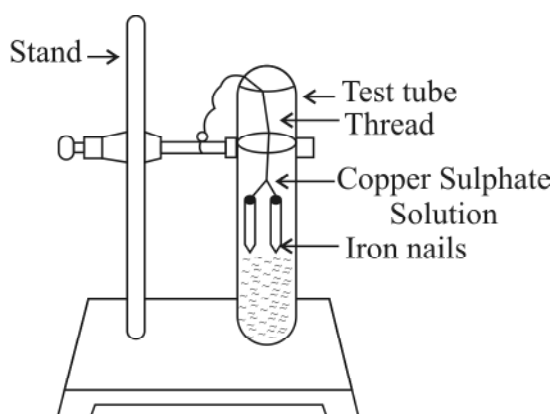
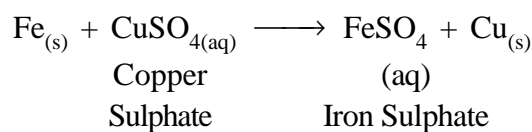$2Ag\ Br \xrightarrow{\text{Sunlight}} 2Ag(s) + Br_2(g)$
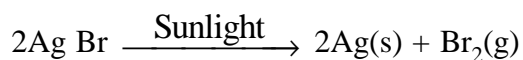
–   The above two reactions are used in black and white photography.

AK
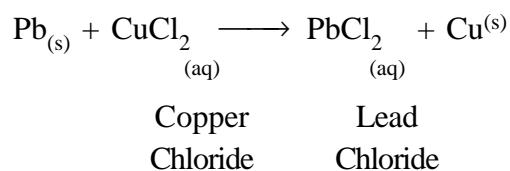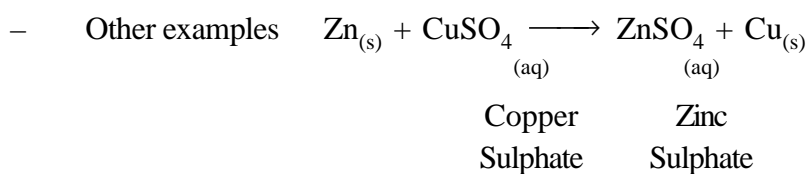
- **Endothermic Reactions** – The reactions which require energy in the form of heat, light or electricty are called Endothermic Reactions.

$$2Ba(OH)_2 + NH_4Cl \longrightarrow 2BaCl_2 + NH_4OH$$
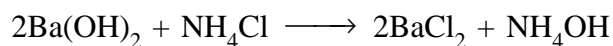
- **Displacement Reaction :** The chemical Reaction in which an element displaces another element from its solution

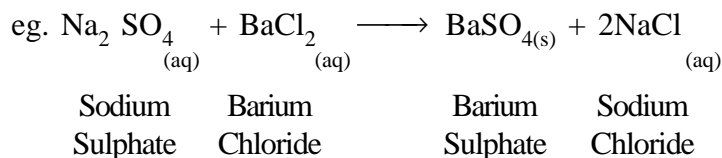$$Fe_{(s)} + CuSO_{4(aq)} \longrightarrow FeSO_4 + Cu_{(s)}$$
$$\text{Copper} \qquad\qquad (aq)$$
$$\text{Sulphate} \qquad \text{Iron Sulphate}$$

- The nail becomes brownish in colour and the blue colour of Copper Sulphate solution fade.

- Other examples $\quad Zn_{(s)} + CuSO_4 \longrightarrow ZnSO_4 + Cu_{(s)}$
$$\qquad\qquad\qquad\qquad\qquad (aq) \qquad\qquad (aq)$$
$$\qquad\qquad\qquad\qquad \text{Copper} \qquad \text{Zinc}$$
$$\qquad\qquad\qquad\qquad \text{Sulphate} \qquad \text{Sulphate}$$

$$Pb_{(s)} + CuCl_2 \longrightarrow PbCl_2 + Cu^{(s)}$$
$$\qquad\qquad (aq) \qquad\qquad (aq)$$
$$\qquad \text{Copper} \qquad \text{Lead}$$
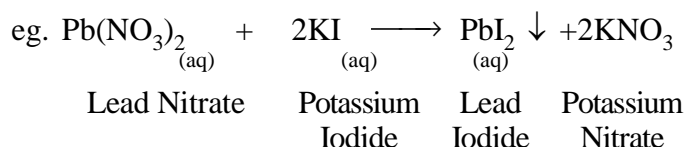$$\qquad \text{Chloride} \qquad \text{Chloride}$$

- Zinc and lead are more reactive elements than copper. They displace copper from its compounds.

– **Double Displacement Reaction :** The reaction in which two different atoms or group of atoms are mutually exchanged

eg. $Na_2 SO_{4_{(aq)}}$ + $BaCl_{2_{(aq)}}$ $\longrightarrow$ $BaSO_{4(s)}$ + $2NaCl_{(aq)}$

    Sodium   Barium   Barium   Sodium
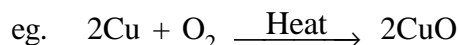   Sulphate Chloride   Sulphate Chloride

A white substance is formed due to above reaction. The insoluble substance is called precipitate.

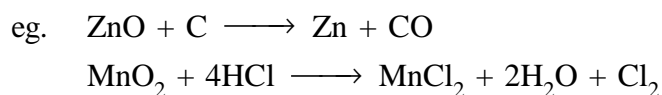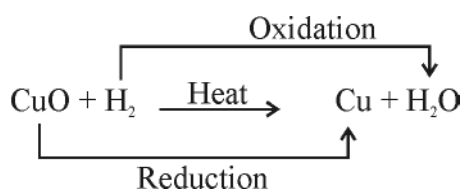Precipitation Reaction – Any reaction that produces a precipitate is called a precipitation reaction.

eg. $Pb(NO_3)_{2_{(aq)}}$ + $2KI_{(aq)}$ $\longrightarrow$ $PbI_{2_{(aq)}}$ $\downarrow$ $+2KNO_3$

    Lead Nitrate   Potassium   Lead   Potassium
                       Iodide   Iodide   Nitrate

– Oxidation : Oxidation is the gain of oxygen or loss of hydrogen

eg. $2Cu + O_2$ $\xrightarrow{\text{Heat}}$ $2CuO$

When Copper is heated a black colour appears. If this CuO is reacted with hydrogen gas then again Cu becomes brown as reverse reaction takes place

$CuO + H_2$ $\xrightarrow{\text{Heat}}$ $Cu + H_2O$

– **Reduction :** Reduction is the loss of oxygen or gain of hydrogen.

– **Redox Reaction :** The reaction in which one reactant gets oxidised while other gets reduced

$$\overset{\displaystyle\text{Oxidation}}{CuO + H_2 \xrightarrow{\text{Heat}} Cu + H_2O}$$

$$\underset{\displaystyle\text{Reduction}}{}$$

eg. $ZnO + C \longrightarrow Zn + CO$

$MnO_2 + 4HCl \longrightarrow MnCl_2 + 2H_2O + Cl_2$

–   **Corrosion :** When a metal is attacked by substances around it such as moisture, acids etc.

eg.   Reddish brown coating on iron.

(ii)   Black coating on Silver.

–   **Rancidity :** When fats and oils are oxidised they become rancid and their smell and taste change.

–   Antioxidants are added to foods containing fats and oil.

EXERCISE
(Question Bank)

(1 Mark)

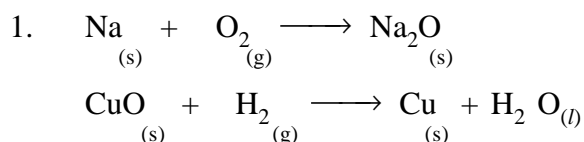**Answer the following questions very breifly**

1.   What happens when the milk is left at room temperature during summer?

2.   Write a chemical equation when magnesium is burnt in air to give magnesium oxide.

3.   A substance under goes chemical reactions to produce simpler products, what type of reaction is this?

4.   Why do copper vessels lose their shine when exposed to air?

5.   Which gas is produced by the action of dilute hydrochloric acid on zinc granules?

6. $Fe_2O_3 + 2Al \longrightarrow Al_2O_3 + 2Fe$

The above reaction is an example of which type of reaction.

7.   Name the type of reaction in which energy is absorbed.

8.   Why does the colour of copper sulphate solution change when an iron nail is dipped into it?

9.   Give an example of decomposition reaction which proceeds by absorbing electric energy.

10.   Why do we balance the chemical equation?

Answer the following questions briefly (2 mark)

1. Write down the observations which indicate the occurence of a chemical reaction.

2. Why is respiration considered as an exothermic reaction? Explain.

3. Transfer the following statements into Chemical equations and then balance them.

   a) Hydrogen gas combines with nitrogen to form ammonia.

   b) Potassium metal reacts with water to give potassium hydroxide and hydrogen gas.

4. Identify the substances that are oxidised and the substances that are reduced to the folllowing reactions.

   1. $Na_{(s)} + O_{2(g)} \longrightarrow Na_2O_{(s)}$

   $CuO_{(s)} + H_{2(g)} \longrightarrow Cu_{(s)} + H_2O_{(l)}$

5. What happens when silver chloride is exposed to sunlight? Give one practical application of this reaction. Write the equation also.

6. Why is the bag used for potato chips flushed with nitrogen gas?

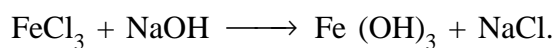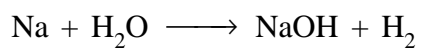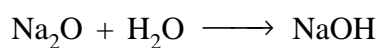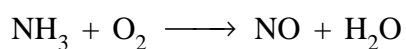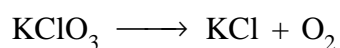**Answer the following questions in detail** (3 marks)

1. Write down the balanced chemical equations for the following reactions.

   a) $Zinc\ Carbonate_{(s)} \longrightarrow Zinc\ Oxide + Carbon\ Dioxide_{(g)}$

   b) $Aluminium_{(s)} + Chlorine_{(g)} \longrightarrow Aluminium\ Chloride_{(s)}$

   c) $Magnesium_{(s)} + Water_{(l)} \xrightarrow{Heat} Magnesium\ Hydroxide_{(l)} + Hydrogen_{(g)}$

2. Choose combination, displacement and double displacement reactions out of the given reactions.

   i) $MnO_{2(s)} + 4HCl_{(l)} \longrightarrow MnCl_{2(s)} + Cl_{2(g)} + 2H_2O_{(l)}$

   ii) $CaO_{(s)} + CO_{2(g)} \longrightarrow CaCO_{3(s)}$

   iii) $2AgCl_{(s)} \longrightarrow 2Ag_{(s)} + Cl_{2(g)}$

3.   What happens when $CO_{2(g)}$ is passed through slaked lime? Write the balanced chemical equation. Write the type of reaction that has occured.

Explain the following questions detail   (5 marks)

1.   Balance the following chemical equation and identify the type of reaction they represent

$KClO_3 \longrightarrow KCl + O_2$

$NH_3 + O_2 \longrightarrow NO + H_2O$

$Na_2O + H_2O \longrightarrow NaOH$

$Na + H_2O \longrightarrow NaOH + H_2$

$FeCl_3 + NaOH \longrightarrow Fe\,(OH)_3 + NaCl.$

2.   Define various types of chemical reactions. Write one chemical equation for each type.

SUMMER VACATION HOMEWORK

CLASS-X BIOLOGY

1.Write the three events of photosynthesis.

2.What are the raw materials for photosynthesis?

3.Write the equation of photosynthesis.

4.Explain the different modes of nutrition in animals.

5.Describe the Human digestive system with the help of diagram.

6.Explain the mode of nutrition in amoeba.

7.What are the enzymes. Write their role in human digestion.

8.Write the excretory products in plants.

9.What is lymph. Write its functions.

10.Explain the human respiratory system.

Q1: What do you mean by Communication and What are the types of communication?

Q2: What is the concept of 7C's in communication ?

Q3: Difference between Verbal and Non Verbal Communication?

Q4: What is stress? What are the techniques for stress management?

Q5: Explain self management concept? What should take

Q6: Define sustainable development ?

Q7: What do you mean by SDG's ? What are the 17 SDG's decided by UN.

Q8: What is renewable and nonrenewable resources?

Q9: What is Feedback and Types of feedback?

Q10: What do you mean by parts of Speech in written communication?

Q11: Why stress is important in life? Give the difference between Positive stress and Negative stress?

Q12: Define the term: Self regulation, Self Awareness, Self Motivation

Q13: What is Operating System? Name any three Operating System?

Q14: What is Green Skill?

Q15: What are the characteristics of an Entrepreneur?

Q16: How an Entrepreneur affects the society?

Q17: What are the myths related to Entrepreneur?

Q18: What is enterprise, Entrepreneur and Entrepreneurship?

<u>Art Integration Project :</u>

Prepare a Project report (using MS Word) on Artificial Intelligence, Data Science, Machine Learning, Deep Learning, IoT, Python.

    Project must prepare in the following order:

    1: Front page

    2: Certificate

3: Acknowledgement

4: Index

5: Explanation about the Topic with relevant Photographs

6: Conclusion

7: References

Project must be prepare on MS Word and should be uploaded on Google class room .

Last Date: 20.06.2021

KV INS KALINGA BHEEMUNIPATNAM
CLASS : XII   SUB : PHYSICS
HOLIDAY HOME WORK/Work Sheet 1 on Electrostatics
Answer the following questions.

1. What is Quantization of charge?

2. How many electrons constitute 1 coulomb charge?

3. State and explain Coulomb's Inverse law in Vector form. Mention its limitations.

4. What is   Absolute Permitivity and Relative Permittivity?

5. Define Dielectric constant in terms of permittivity, Force and Electric field intensity.

6. Explain the principle of superposition. Write the expression for result force.

7. Explain linear, aerial and volumetric continuous charge distributions.

8. Define electric field intensity. State its physical significance.

9. Derive an expression for the electric field intensity due to a point charge.

10. Write the properties of electric lines of force.

11. Explain "Electric field lines are continuous curves without breaks" and

     "two lines of force never intersect with each other.

12. What is electric dipole? Define dipole moment.

13. What is the nature of symmetry of dipole field? Write the physical significance of dipoles.

14. Define ideal dipole.

15. Derive equations for the dipole field intensity at any point a) on the axial line of the dipole

     b) on the equatorial line of the dipole & c) near the dipole.

KV INS KALINGA BHEEMUNIPATNAM
CLASS : XII   SUB : PHYSICS
Work Sheet 2 on Electrostatics
Answer the following questions.

1). Derive the following when an electric dipole is placed in a uniform electric field

a) No translator force acts on the dipole, b) Torque acting on the dipole   &

          c) Potential energy of the dipole

2. Define electric flux. Mention its formula. Write its SI unit.

3. State and prove Gauss's theorem in electrostatics.

Using Gauss theorem, derive equations for the electric field intensity at a point due to

    a) a line charge

    b) a uniformly charged thin spherical shell

    c) a uniformly charged non conducting sphere

    d) an infinite sheet of charge &

    e) two parallel sheets of charge

4. Briefly explain the concept & physical meaning of potential and potential difference.

 5. Derive expression for the potential at a point due to

    a) a point charge. b) An electric dipole

6. Prove that electrostatic forces are conservative.

7. Explain the properties of equipotential surface.

   Explain "two equipotential surfaces never intersect"

8. Draw equipotential surfaces for

    a) Uniform electric field b) a dipole c) two identical positive charges

9. Write the equation of potential energy due to

    a) A single   b) A system of two charges   and   c) A dipole   placed in an external field.

10. Explain the Behaviour of conductors in electrostatic fields. (Electrostatics of conductors)

11. Prove the relation between electric field intensity and electric potential. What is the physical

    Significance of the line integral of electric field? Show graphically the variation of E and V

    of a point charge with distance.

12. Derive equations of parallel and series combination of capacitors.

13. Differentiate polar and nonpolar dielectrics.

14. What is capacitor? Define capacitance. Explain the principle and working of a

    Parallel plate capacitor.

15. Write the physical quantities whose unit is

    a) Newton/coulomb   b) coulomb-meter   c) volt/meter   d) coulomb/meter ^{2}

    e) volt-meter   f) joule/coulomb   g) Newton-met^2/coulomb   h) coulomb/volt.

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- Solutions:

  Solutions are the homogeneous mixtures of two or more than two components.

- Binary solution:

  A solution having two components is called a binary solution.

- Components of a binary solution

  It includes solute and solvent.

  a) When the solvent is in solid state, solution is called solid solution.

  b) When the solvent is in liquid state, solution is called liquid solution.

  c) When the solvent is in gaseous state, solution is called gaseous solution.

- Concentration:

  It is the amount of solute in given amount of solution.

- Mass by volume percentage (w/v):

  Mass of the solute dissolved in 100 mL of solution.

- Molality (m) is the number of moles of solute present in 1kg of solvent.

  $$Molality = \frac{\text{Number of moles of solute}}{\text{Mass of solvent in kilograms}}$$

- Molarity (M) is the number of moles of solute present in 1L of solution.

  $$Molality = \frac{\text{Number of moles of solute}}{\text{Volume of solution in litres}}$$

- Normality is the number of gram equivalent of solute dissolved per litre of solution.

  $$Molality = \frac{\text{Number of gram equivalent of solute}}{\text{Volume of solution in litres}}$$

- Solubility:

  It is the maximum amount that can be dissolved in a specified amount of solvent at a specified temperature.

- Saturated solution:

  It is a solution in which no more solute can be dissolved at the same temperature and pressure.

- In a nearly saturated solution if dissolution process is an endothermic process, solubility increases with increase in temperature.

- In a nearly saturated solution if dissolution process is an exothermic process, solubility decreases with increase in temperature.

- Henry's Law:

It states "at a constant temperature the solubility of gas in a liquid is directly proportional to the pressure of gas". In other words, "the partial pressure of gas in vapour phase is proportional to the mole fraction of the gas in the solution".

$$P = K_H \, x$$

- When a non-volatile solute is dissolved in a volatile solvent, the vapour pressure of solution is less than that of pure solvent.
- Raoult's law:
  It states that "for a solution of volatile liquids the partial vapour pressure of each component in the solution is directly proportional to its mole fraction".

$$p_1 = p^0_1 X_1; \, p_2 = p^0_2 X_2$$

- Using Dalton's law of partial pressure the total pressure of solution is calculated.

$$p_{total} = p^0_1 + (p_2 - p^0_1) X_2$$

- Comparison of Raoult' law and Henry's law:
  It is observed that the partial pressure of volatile component or gas is directly proportional to its mole fraction in solution. In case of Henry's Law the proportionality constant is K_H and it is different from p_10 which is partial pressure of pure component. Raoult's Law becomes a special case of Henry's Law when K_H becomes equal to p_10 in Henry's law.
- Classification of liquid –liquid solutions:
  It can be classified into ideal and non-ideal solutions on basis of Raoult's Law.
- Ideal solutions:
  a) The solutions that obey Raoult's Law over the entire range of concentrations are known as ideal solutions.
  b) $\Delta_{mix}H = 0$ and $\Delta_{mix}V = 0$
  c) The intermolecular attractive forces between solute molecules and solvent molecules are nearly equal to those present between solute and solvent molecules i.e. A-A and B-B interactions are nearly equal to those between A-B.
- Non-ideal solutions:
  a) When a solution does not obey Raoult's Law over the entire range of concentration, then it is called non-ideal solution.
  b) $\Delta_{mix}H \neq 0$ and $\Delta_{mix}V \neq 0$
  c) The intermolecular attractive forces between solute molecules and solvent molecules are not equal to those present between solute and solvent molecules i.e. A-A and B-B interactions are not equal to those between A-B
- Types of non- ideal solutions:
  There are two types of non-ideal solutions namely,
  a) Non ideal solution showing positive deviation
  b) Non ideal solution showing negative deviation
- Non ideal solution showing positive deviation
  a) The vapour pressure of a solution is higher than that predicted by Raoult's Law.

- b) The intermolecular attractive forces between solute-solvent molecules are weaker than those between solute-solute and solvent-solvent molecules i.e., A-B < A-A and B-B interactions.
- Non ideal solution showing negative deviation
  a) The vapour pressure of a solution is lower than that predicted by Raoult's Law.
  b) The intermolecular attractive forces between solute-solvent molecules are stronger than those between solute-solute and solvent-solvent molecules i.e. A-B > A-A and B-B interactions.
- Azeotopes:
  These are binary mixtures having same composition in liquid and vapour phase and boil at constant temperature. Liquids forming azeotrope cannot be separated by fractional distillation.
- Types of azeotropes:
  There are two types of azeotropes namely,
  a) Minimum boiling azeotrope
  b) Maximum boiling azeotrope
- The solutions which show a large positive deviation from Raoult's law form minimum boiling azeotrope at a specific composition.
- The solutions that show large negative deviation from Raoult's law form maximum boiling azeotrope at a specific composition.
- Colligative properties:
  The properties of solution which depends on only the number of solute particles but not on the nature of solute are called colligative properties.
- Types of colligative properties:
  There are four colligative properties namely,
     a) Relative lowering of vapour pressure
     b) Elevation of boiling point
     c) Depression of freezing point
     d) Osmotic pressure
- Relative lowering of vapour pressure:
  The difference in the vapour pressure of pure solvent p_1^0 and solution p_1 represents lowering in vapour pressure $(p_1^0 - p_1)$.
- Relative lowering of vapour pressure:
  Dividing lowering in vapour pressure by vapour pressure of pure solvent is called relative lowering of vapour pressure $\left(\dfrac{p_1^0 - p_1}{p_1^0} \right)$
- Relative lowering of vapour pressure is directly proportional to mole fraction of solute. Hence it is a colligative property.

- Elevation of boiling point: $\left(\dfrac{p_1^0 - p_1}{p_1^0} \right) = X_2$

  The difference in boiling points of solution T_b and pure solvent T_b^0 is called elevation in boiling point $\Delta T = T_b - T_b^0$

- For a dilute solution elevation of boiling point is directly proportional to molal concentration of the solute in solution. Hence it is a colligative property.
$$\Delta T_b = \dfrac{k_b \text{ x } 1000 \text{ x } w_2}{M_2 \text{ x } w_1}$$

- Depression of freezing point:
  The lowering of vapour pressure of solution causes a lowering of freezing point compared to that of pure solvent. The difference in freezing point of the pure solvent T_f^0 and solution T_f is called the depression in freezing point.
$$\Delta T = T_f^0 - T_f$$

- For a dilute solution depression in freezing point is a colligative property because it is directly proportional to molal concentration of solute.
$$\Delta T_f = \dfrac{k_f \text{ x } 1000 \text{ x } w_2}{M_2 \text{ x } w_1}$$

- Osmosis:
  The phenomenon of flow of solvent molecules through a semi permeable membrane from pure solvent to solution is called osmosis.

- Osmotic pressure:
  The excess pressure that must be applied to solution to prevent the passage of solvent into solution through a semipermeable membrane is called osmotic pressure.

- Osmotic pressure is a colligative property as it depends on the number of solute particles and not on their identity.

- For a dilute solution, osmotic pressure (π) is directly proportional to the molarity (C) of the solution i.e. π = CRT

- Osmotic pressure can also be used to determine the molar mass of solute using the equation $M_2 = \dfrac{w_2 RT}{\pi V}$

- Isotonic solution:
  Two solutions having same osmotic pressure at a given temperature are called isotonic solution.

- Hypertonic solution:
  If a solution has more osmotic pressure than other solution it is called hypertonic solution.

- Hypotonic solution:
  If a solution has less osmotic pressure than other solution it is called hypotonic solution.

- Reverse osmosis:

  The process of movement of solvent through a semipermeable membrane from the solution to the pure solvent by applying excess pressure on the solution side is called reverse osmosis.
- Colligative properties help in calculation of molar mass of solutes.
- Abnormal molar mass:

  Molar mass that is either lower or higher than expected or normal molar mass is called as abnormal molar mass.
- Van't Hoff factor:

  Van't Hoff factor (i) accounts for the extent of dissociation or association.

  $$i = \frac{\text{Normal molar mass}}{\text{Abnormal molar mass}}$$

  $$= \frac{\text{Observed collogative property}}{\text{Calculated collogative property}}$$

  $$= \frac{\text{Total number of moles of particles after association / dissociation}}{\text{Total number of moles of particles before association / dissociation}}$$
- Value of i is less than unity in case solute undergo association and the value of i is greater than unity in case solute undergo dissociation.
- Inclusion of van't Hoff factor modifies the equations for colligative properties as:

  $$\frac{p_1^0 - p}{p_1^0} = i . \frac{n_2}{n_1}$$

  $$\Delta T_b = i . \frac{k_b \text{ x } 1000 \text{ x } w_2}{M_2 \text{ x } w_1}$$

  $$\Delta T_f = i . \frac{k_f \text{ x } 1000 \text{ x } w_2}{M_2 \text{ x } w_1}$$

  $$\pi = i . \frac{n_2 RT}{V}$$

CHAPTER – 3 MATRICES

Q1. If $a_{ij} = i + j$, then $A = \left(a_{ij}\right)_{3 \times 4}$ is:

(a) $\begin{bmatrix} 1 & 2 & 3 & 4 \\ 4 & 5 & 6 & 7 \\ 8 & 9 & 10 & 11 \end{bmatrix}$
(b) $\begin{bmatrix} 2 & 3 & 4 & 5 \\ 3 & 4 & 5 & 6 \\ 4 & 5 & 6 & 7 \end{bmatrix}$
(c) $\begin{bmatrix} 2 & 3 & 4 & 5 \\ 4 & 5 & 6 & 7 \\ 6 & 7 & 8 & 9 \end{bmatrix}$
(d) none of these

Q2. If $\begin{bmatrix} a+b & 2 \\ 5 & ab \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 5 & 8 \end{bmatrix}$, then (a, b) is:

(a) $(2, 4), (4, 2)$
(b) $(3, 3), (3, 4)$
(c) $(2, 2), (1, 1)$
(d) none of these

Q3. If $A = \begin{bmatrix} 2 & 3 & -4 \\ 1 & 0 & 6 \\ -2 & 1 & 5 \end{bmatrix}$, $B = \begin{bmatrix} 5 & 1 & 2 \\ 6 & -1 & 4 \\ 5 & 3 & -4 \end{bmatrix}$ then $2A - 3B$ is:

(a) $\begin{bmatrix} 7 & 4 & -3 \\ 7 & -1 & 10 \\ 3 & 4 & 1 \end{bmatrix}$
(b) $\begin{bmatrix} 19 & -6 & 8 \\ 12 & 6 & 2 \\ 10 & 4 & 1 \end{bmatrix}$
(c) $\begin{bmatrix} -11 & 3 & -14 \\ -16 & 3 & 0 \\ 19 & -7 & 22 \end{bmatrix}$
(d) none of these

Q4. If $A = \left(a_{ij}\right)_{m \times n}$ and $B = \left(b_{ij}\right)_{p \times q}$ and $AB = BA$, then

(a) $n = p$
(b) $n = p, m = q$
(c) $m = n = p = q$
(d) $m = q$

Q5. If A is of order 2×3 and B is of order 3×2, then the order of AB is:

(a) 3×3
(b) 2×2
(c) 3×2
(d) 2×3

Q6. If $A = \begin{bmatrix} 2 & 0 & 2 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$, then value of A^5 is:

(a) $5A$
(b) $10A$
(c) $16A$
(d) $32A$

Q7. If $A = \begin{bmatrix} ab & b^2 \\ -a^2 & -ab \end{bmatrix}$, then value of A^2 is:

(a) 0
(b) I_2
(c) $-I_2$
(d) none of these

Q8. If $A = \begin{bmatrix} 2 & -1 \\ 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 4 \\ -1 & 7 \end{bmatrix}$, then value of $3A^2 - 2B + I$ is:

(a) $\begin{bmatrix} 4 & -20 \\ 38 & -10 \end{bmatrix}$ (b) 0   (c) $\begin{bmatrix} 4 & -20 \\ 18 & -15 \end{bmatrix}$ (d) none of these

Q9. If $A = \begin{bmatrix} 4 & 3 \\ 2 & 5 \end{bmatrix}$ and $A^2 - xA + yI = 0$, then (x, y) is:

(a) $(3, 7)$ (b) $(9, 14)$ (c) $5, 14$ (d) $(3, 14)$

Q10. If $A = \begin{bmatrix} 2 & -3 \\ -2 & 4 \end{bmatrix}$, then $6A - 6A^2$ is equal to:

(a) I (b) $2I$ (c) $3I$ (d) $4A$

Q11. If A is a square matrix, then $AA^T + A^T A$ is:

(a) Unit matrix   (b) null matrix   (c) symmetric matrix   (d) skew-symmetric matrix

Q12. If $A = \begin{bmatrix} 0 & x+2 \\ 2x-3 & 0 \end{bmatrix}$ is a skew-symmetric matrix, then x is equal to:

(a) $\dfrac{1}{3}$ (b) 5   (c) 3   (d) 1

Q13. If A and B are 2×2 square matrices and $A + B = \begin{bmatrix} 4 & -3 \\ 1 & 6 \end{bmatrix}$ and $A - B = \begin{bmatrix} -2 & -1 \\ 5 & 2 \end{bmatrix}$, then $AB = ?$

(a) $\begin{bmatrix} -7 & 5 \\ 1 & -5 \end{bmatrix}$ (b) $\begin{bmatrix} 7 & -5 \\ 1 & 5 \end{bmatrix}$ (c) $\begin{bmatrix} 7 & -1 \\ 5 & -5 \end{bmatrix}$ (d) $\begin{bmatrix} 7 & -1 \\ -5 & 5 \end{bmatrix}$

Q14. If $A = \begin{bmatrix} 2x & 0 \\ x & x \end{bmatrix}$ and $A^{-1} = \begin{bmatrix} 1 & 0 \\ -1 & 2 \end{bmatrix}$, then $x = ?$

(a) 1   (b) 2   (c) $\dfrac{1}{2}$ (d) -2

Q15. If $A \begin{bmatrix} 3 & 2 \\ 1 & -1 \end{bmatrix} = \begin{bmatrix} 4 & 1 \\ 2 & 3 \end{bmatrix}$, then $A = ?$

(a) $\begin{bmatrix} 1 & -1 \\ 1 & 1 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$ (c) $\begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$ (d) none of these

Q16. If $A = \begin{bmatrix} -2 & 3 \\ 1 & 1 \end{bmatrix}$, then $|A^{-1}| = ?$

(a) -5 (b) $-\dfrac{1}{5}$ (c) $\dfrac{1}{25}$ (d) 25

Q17. If $A = \begin{bmatrix} 3 & -4 \\ -1 & 2 \end{bmatrix}$ and B is a square matrix of order 2 such that $AB = I$, then $B = ?$

(a) $\begin{bmatrix} 1 & 2 \\ 2 & 3 \end{bmatrix}$ (b) $\begin{bmatrix} 1 & \dfrac{1}{2} \\ 2 & \dfrac{3}{2} \end{bmatrix}$ (c) $\begin{bmatrix} 1 & 2 \\ 1 & 3 \\ 2 & 2 \end{bmatrix}$ (d) none of these

Q18. If $|A| = 3$ and $A^{-1} = \begin{bmatrix} 3 & -1 \\ -\dfrac{5}{3} & \dfrac{2}{3} \end{bmatrix}$, then $adj\, A = ?$

(a) $\begin{bmatrix} 9 & 3 \\ -5 & -2 \end{bmatrix}$ (b) $\begin{bmatrix} 9 & -3 \\ -5 & 2 \end{bmatrix}$ (c) $\begin{bmatrix} -9 & 3 \\ 5 & -2 \end{bmatrix}$ (d) $\begin{bmatrix} 9 & -3 \\ 5 & -2 \end{bmatrix}$

Q19. If A is an invertible matrix and $A^{-1} = \begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}$, then $A = ?$

(a) $\begin{bmatrix} 6 & -4 \\ -5 & 3 \end{bmatrix}$ (b) $\begin{bmatrix} \dfrac{1}{3} & \dfrac{1}{4} \\ \dfrac{1}{5} & \dfrac{1}{6} \end{bmatrix}$ (c) $\begin{bmatrix} -3 & 2 \\ \dfrac{5}{2} & -\dfrac{3}{2} \end{bmatrix}$ (d) none of these

Q20. If $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$ and $(A+B)^2 = A^2 + B^2$, then:

(a) $a=2, b=-3$ (b) $a=-2, b=3$ (c) $a=1, b=4$ (d) none of these

ANSWERS

1. b 2. a 3. c 4. c 5. b 6. c 7. a 8. a 9. b 10. b 11. c 12. a 13. b 14. c

15. c 16. b 17. c 18. b 19. c 20. c

SUMMER VACATION HOMEWORK

CLASS-XII BIOLOGY

1.Draw the structure of TS of megasporangium.

2.Name the functions of following

a)Tapetum   b)Endosperm   c)PEN

3.Draw the structure of 8 nucleated embryosac.

4.Differentiate the oviparous and viviparous animals with animals.

5.What iis pollinantion. Describe the various types of pollination.

6.Explain the various methods of vegetative reproduction in plants.

7.Describe the artificial hybridization.

8.Write the significance of flower in relation to human life.

9.Differentiate between cleistogamous and chasmogamous flowers.

10.Draw the structure of monocot seed.

MULTIPLE CHOICE QUESTIONS

CHAPTER – 4 DETERMINANTS

Q1. If $\Delta_1 = \begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{vmatrix}$, $\Delta_2 = \begin{vmatrix} 1 & bc & a \\ 1 & ca & b \\ 1 & ab & c \end{vmatrix}$ then:

    (a) $\Delta_1 + \Delta_2 = 0$ (b) $\Delta_1 + 2\Delta_2 = 0$ (c) $\Delta_1 = \Delta_2$ (d) none of these

Q2. The value of $\begin{vmatrix} 5^2 & 5^3 & 5^4 \\ 5^3 & 5^4 & 5^5 \\ 5^4 & 5^5 & 5^6 \end{vmatrix}$ is:

    (a) 5^2 (b) 0   (c) 5^{13} (d) 5^9

Q3. If $\begin{vmatrix} 1-x & 2 & 3 \\ 0 & x & 0 \\ 0 & 0 & x \end{vmatrix} = 0$, then its roots are:

    (a) 1 only   (b) 0,1   (c) 0 only   (d) $-1,0,1$

Q4. If $A(3,4), B(-7,2), C(x,y)$ are collinear, then:

    (a) $x+5y+17=0$ (b) $x+5y+13=0$ (c) $x-5y+17=0$ (d) none of these

Q5. If $A = \begin{bmatrix} 3 & 4 \\ 2 & 3 \end{bmatrix}$, $B = \begin{bmatrix} -2 & -2 \\ 0 & -1 \end{bmatrix}$ then $(A+B)^{-1}$ is:

    (a) $\begin{bmatrix} -1 & 1 \\ 1 & -\dfrac{1}{2} \end{bmatrix}$ (b) does not exist   (c) is a skew-symmetric   (d) none of these

Q6. If A is a square matrix such that $A^2 = I$, then A^{-1} is equal to:

    (a) $2A$ (b) O (c) A (d) $A+I$

Q7. The system of equations $x+2y=11$, $-2x-4y=22$ has:

    (a) Only one solution   (b) finitely many solutions

    (c) no solution   (d) infinitely many solutions

Q8. The number of distinct real roots of $\Delta = \begin{vmatrix} \cos ecx & \sec x & \sec x \\ \sec x & \cos ecx & \sec x \\ \sec x & \sec x & \cos ecx \end{vmatrix} = 0$ lying in $-\dfrac{\pi}{4} \le x \le \dfrac{\pi}{4}$ is:

    (a) 1   (b) 2   (c) 3   (d) 0

Q9. Value of $\begin{vmatrix} \cos 15^0 & \sin 15^0 \\ \sin 15^0 & \cos 15^0 \end{vmatrix}$ is:

    (a) 1   (b) $\dfrac{1}{2}$ (c) $\dfrac{\sqrt{3}}{2}$ (d) none of these

Q10. Value of $\begin{vmatrix} a+ib & c+id \\ -c+id & a-ib \end{vmatrix}$ is:

    (a) $a^2 + b^2 - c^2 - d^2$ (b) $a^2 - b^2 + c^2 - d^2$ (c) $a^2 + b^2 + c^2 + d^2$ (d) none of these

Q11. Value of $\begin{vmatrix} x+y & x & x \\ 5x+4y & 4x & 2x \\ 10x+8y & 8x & 3x \end{vmatrix}$ is:

    (a) 0   (b) x^3 (c) y^3 (d) none of these

Q12. Value of $\begin{vmatrix} 1! & 2! & 3! \\ 2! & 3! & 4! \\ 3! & 4! & 5! \end{vmatrix}$ is:

    (a) 2   (b) 6   (c) 24   (d) 120

Q13. Value of $\begin{vmatrix} 1 & 1 & 1 \\ 1 & 1+x & 1 \\ 1 & 1 & 1+y \end{vmatrix}$ is:

    (a) $x+y$ (b) $x-y$ (c) xy (d) none of these

Q14. Value of $\begin{vmatrix} \dfrac{1}{a} & a^2 & bc \\ \dfrac{1}{b} & b^2 & ac \\ \dfrac{1}{c} & c^2 & ab \end{vmatrix}$ is:

    (a) 0   (b) 1   (c) -1   (d) none of these

Q15. The value of $\begin{vmatrix} \cos(\theta+\phi) & -\sin(\theta+\phi) & \cos 2\phi \\ \sin\theta & \cos\theta & \sin\phi \\ -\cos\theta & \sin\theta & \cos\phi \end{vmatrix}$ is:

(a) Independent of θ only

(b) Independent of ϕ only

(c) Independent of both θ and ϕ

(d) Dependent of both θ and ϕ

Q16. The solution set of the equation $\begin{vmatrix} x & 3 & 7 \\ 2 & x & 2 \\ 7 & 6 & x \end{vmatrix} = 0$ is:

(a) $\{2,-3,7\}$ (b) $\{2,7,-9\}$ (c) $\{-2,3,7\}$ (d) none of these

Q17. The solution set of the equation $\begin{vmatrix} 5 & 3 & -1 \\ -7 & x & 2 \\ 9 & 6 & -2 \end{vmatrix} = 0$ is:

(a) $\{0\}$ (b) $\{6\}$ (c) $\{-6\}$ (d) $\{0,9\}$

Q18. If the points $A(3,-2), B(k,2)$ and $C(8,8)$ are collinear, then the value of k is:

(a) 2   (b) -3 (c) 5   (d) -4

Q19. The value of $\begin{vmatrix} x+1 & x+2 & x+4 \\ x+3 & x+5 & x+8 \\ x+7 & x+10 & x+14 \end{vmatrix}$ is:

(a) -2 (b) 2   (c) x^2-2 (d) x^2+2

Q20. The value of $\begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$ is:

(a) $abc(a+b+c)$

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

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

(d) none of these

ANSWERS

1. a   2. b   3. b   4. c   5. a   6. c   7. c   8. b   9.c   10. c   11. b   12. c   13. c   14. a

15. a   16. b   17. c   18. c   19. a   20. c

KENDRIYA VIDYALAYA INS KALINGA BHEEMUNIPATNAM

SUMMER HOLIDAY HOME WORK

Computer Science(083)

CLASS 12

Ques1: Write a program that accepts a list and removes at index 0 from the list. The program must actually modify the list passed in and not just create a second list with the first item removed .You may assume the list you are given, will have at least one element

for example: a=[1,2,3,4] the output should be [2,3,4]

Ques 2: Identify the mentioned parts from the code given below:

1. def lastdigitCube(n):
2.   d=n%10
3.   c=d**3
4.   return c
5. .
6. number =int(input ("enter a number")
7. cube=lastDigitCube(number)
8. print("the cube of its last digit is ",cube)

   a) **Function header,   b) name & number of argument,   c) number of statement in function body,   d) number of statement in main program   e) function call statement f) parameters' name   g) arguments' name   h) flow of execution**

Ques 3: Define the Python function called absolute that takes one parameter (x) and returns the absolute value of x i.e. as shown below:

$$|x|=(x \text{ if } x>=0, -x \text{ otherwise})$$

Ques 4: Write a function **chkodd()** that takes argument (a positive integer) and **reports if the argument is odd or not.**

Ques 5: A mersenne number is a number in the form 2^n-1

   1st Mersenne Number $2^1-1=1$

   2nd Mersenne Number $2^2-1=3$

   3rd Mersenne Numebr $2^3-1=7$

and so on

Write a program that passes value to a function mersenne() and the function returns n^{th} mersenne number

Ques 6: Write a void function that receives a 4 digit number and calculate the sum of squares of first 2 digit number and last two digits number e.g. if 1233 is passed as argument then function should calculate 12^2+33^2

Ques 7: Write a function that take one argument (a positive integer) and reports if the arguments is prime or not .Write a program that invokes this function?

Ques 8: Write short notes **on Mutability and Immutability of arguments (refer the function argument slide in google classroom)** .

Que9: Create a file phonebook.txt that stores the details in following format:

Name	phone
Jivin	**8890099**
Kriti	**4949494**

Ques 10: Write the all the solved programs in file handling chapter in your notebook?

Ques 11: Implement the Project in summer vacation on any real time problem using Python Technology like file handling , function , database, data science concepts.
Do complete the coding part of project.

Art Integration Project

Prepare a Digital Presentation any of the Topic related to your subject like functions, file Handling, Python Modules, Data Structures, Database Management.
and upload the PPT On Google Classroom

Holiday Home work

Class XII ENGLISH

1.Writing the Qns & Ans of the three lessons and thee Poems in Home work Book

2.Writing Two Notices of your choice

3. Writing Two Articles of your choice

4. Writing a Speech on any topic of your choice.

ग्रीष्मकालीन अवकाश गृहकार्य

कक्षा - 12   विषय - हिंदी   शिक्षिका - मालती अंगिरा

प्रश्न-1. संसार के कष्टों को सहते हुए भी खुशी और मस्ती का माहौल कैसे पैदा किया जा सकता है? स्पष्ट कीजिए ।

प्रश्न - 2 स्त्री माया न जोडे तो क्या करे? स्त्रियों द्वारा माया जोडना प्रकृति प्रदत्त नहीं , बल्कि परिस्थितिवश है । वे कौन सी परिस्थितियां हैं जो स्त्री को माया जोडने के लिए विवश करती हैं? स्पष्ट कीजिए।

प्रश्न - 3. किसी एक विषय पर निबंध लिखिए-

   अ. जैविक हथियार और मानव जीवन पर प्रभाव

   ब. नैतिक मूल्य और मानव जीवन

   स. पर्यटन का महत्व

प्रश्न -4. क्रियात्मक कार्य -

अपनी पसंद से कोई नीति विषयक चित्र का चुनाव कीजिए और उसके बारे में कविता या अनुच्छेद लिखिए ।