COMPETENCY BASED QUESTIONS

CLASS- VIII

SUBJECT- SCIENCE

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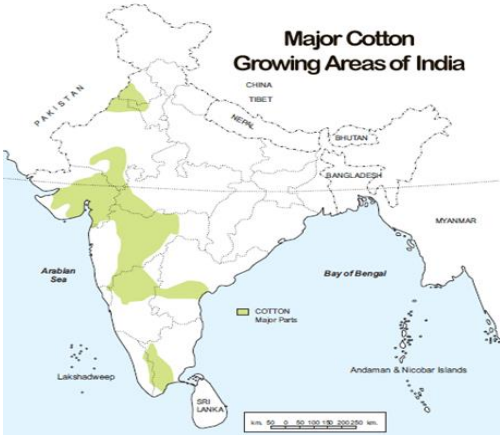
Chapter1

Crop production and Management

1- Observe the graph and write the answer-



Why do cotton growing areas are restricted in a few states only? (Comment in the box)

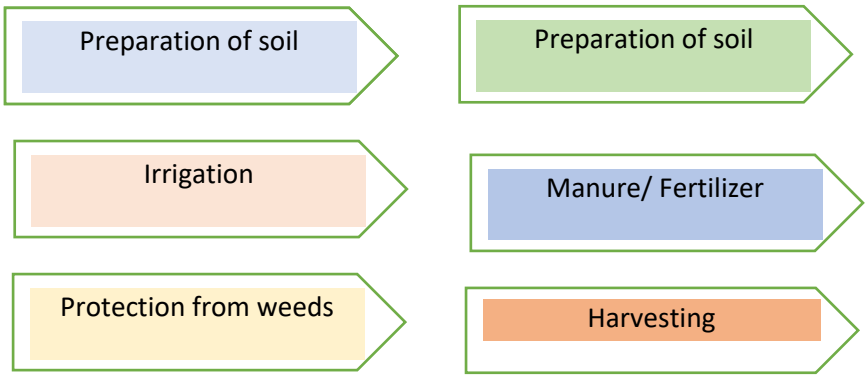
2- Identify the given diagram and answer the given questions-

Type of irrigation	
Two advantages	1.
	2.

3- Kanhaiya a small farmer ploughing his field with the help of a shawl. A eight class student told him about new inventions by which the time and labour of farming can be reduced. Can you mention any three such inventions and their benefits?

Innovations	Benefits
1.	1.
2.	1.
3.	1.

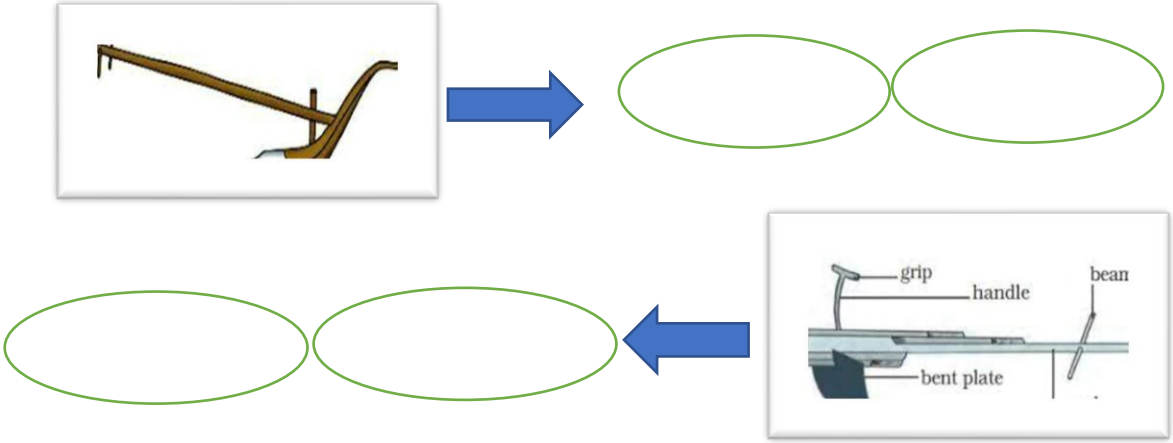
4- The cultivation of crops involves several activities undertaken by farmers over a period of time. Arrange the following activities in the correct sequence.



5- Some microorganisms play an important role in the decomposition of waste organic material like vegetable peels, biological litter etc. This action is very useful for nature as well as farmers. List any two advantages of this activity as directed in the given table-

Advantage for nature	
Advantage for farmers	

6- Identify the following instruments used in agriculture and write their name and advantages in the round circle –



7- Manure is a natural substance that can be added to the soil to increase its fertility. Fertilizer is given to the soil to promote fertility and productivity.
a- Write one advantage of both.

Advantage of Manure	
Advantage of fertilizer	

b- Which should be promoted by us and why?

8- a- Weeds are also controlled by using certain chemicals, called weedicides. Which one of the followings is a good example of weedicide-

2,4 D	2,4 E	2,4 T	2,4 G

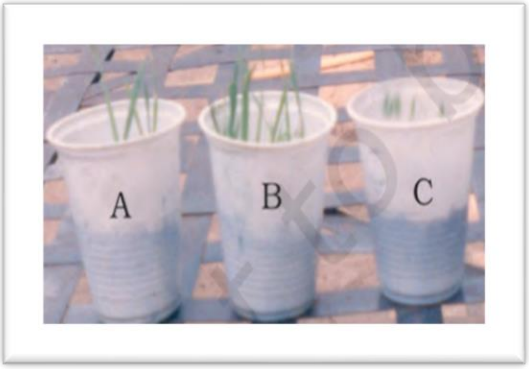
b- The weedicides should be used –

Just before onset of fruits	2,4 T	during the vegetative growth	Can be used any time

9- Identify the state by name of festivals of harvesting –

Festival	State
Pongal	
Baisakhi	
Bihu	
Nabanya	

10- The following pots labelled as A, B, and C are germinated by using different cultivation methods.



Pot A- manure is added

Pot B- Fertilizer is added

Pot C- Neither manure nor fertilizer is added

a- Which one shows the least growth and why?

b- We should use the product of which pot and why?

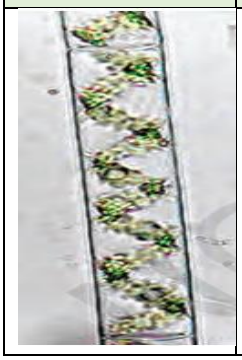
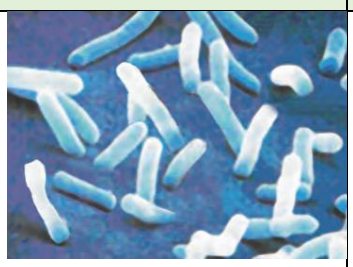
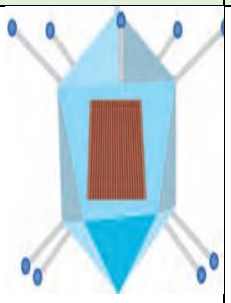
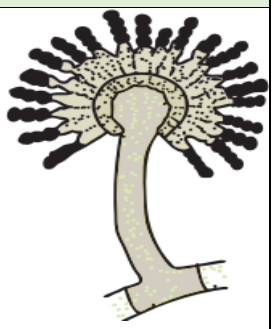
c- What will happen if we grow legume plants and enrich the soil with rhizobium bacteria?

Answer a-
Answer b-
Answer c-

Chapter 2

Microorganisms-Friend or Foe

1- Identify the group with the help of the diagram given-

Bactria	**Algae**	**Fungi**	**Virus**
			

2- A student in a village area observed a few green patches on the boundary wall of his school. He asked him about the green patches to his teacher. His teacher clarifies the doubt of that student. Now he is able to recognize the group of organisms belonging to the green patches. In your view, green patch is most likely to be- (colour the correct box with pencilcolorr)-

A type of Bacteria	A type of Algae
A type of Virus	A type of Fungus

3- Eating curd every day will help in reducing cholesterol levels, thus lowering the risk of high blood pressure and hypertension. It helps in keeping the level of cholesterol balanced and the heart healthy. Do you know in making curd a microorganism plays the most significant role? If yes, please identify –

Bacteria Salmonella	Bacteria Bacillus	Bacteria Vibrio	Bacterial Lactobacillus

4- We all kept food in the refrigerator to enhance its longevity. How does the refrigerator achieve this- (arrange only the correct in proper sequence)

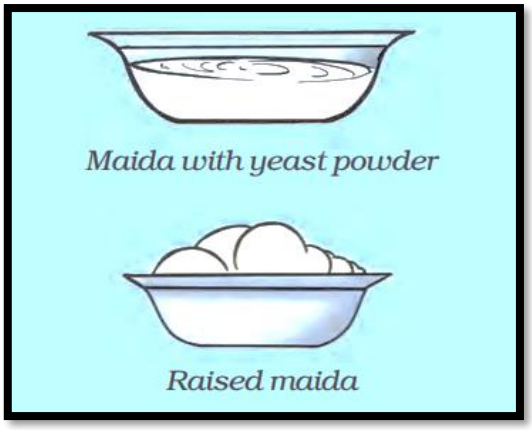
Lower temperature	**Increase temperature**	**Lower Humidity**
Decrease temperature	**Decrease ripening rate**	**Decrease respiration rate**

5- Observe the diagram and comment on the followings-

a- Process involved

b- Microorganisms involved

c- Reason for the process



6- Identify the disease/ diseases categorized as a communicable disease-

Flu	**Cancer**	**Malaria**
Gout	Diabetes	Chicken pox

7- Read the following statements –

a- Streptomycin, tetracycline and erythromycin are antibiotics as they kill the same microorganism from which these are produced.

b- Antibiotics are also used in poultry farms.

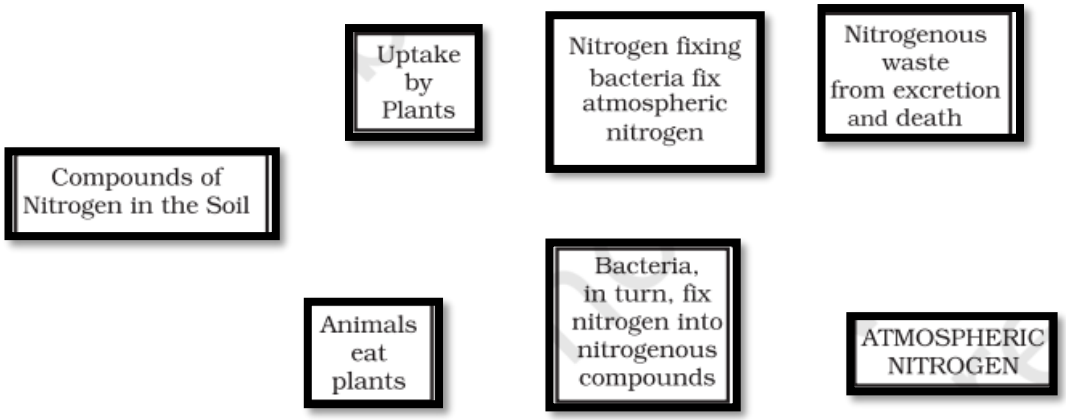
c- Antibiotics are very effective against viral diseases like flu and cold.

Write the correct statements in the box.

8- Passive immunity is provided when a person is given antibodies directly to the patient. A good example is a new-born baby who acquires passive immunity from its mother through the placenta. When during sports/cycling we often get cut and the doctor advised us for an injection. In your view, such injection can prevent us from-

Rabies	**Tetanus**	**Polio**	**Covid**

9- Arrange the following boxes in the correct sequence to make complete nitrogen cycle-



10- Preservatives are used to protect our foodstuff for a longer time. Answer as per questions asked in different boxes.

a- Identify the type of preservative used in our kitchen

b- Write the mechanism

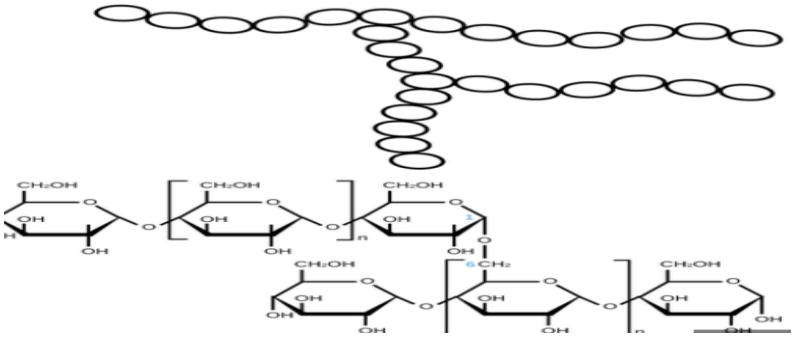
c- Define the process

Pickle	Preservative name	
Jam and Jellies	Preservative name	
Milk	Name of process	Definition of process
Sugar	How act as a preservative?	
Chemical preservative	Example 1	Example 2

CHAPTER 3

SYNTHETIC FIBRES AND PLASTICS

1- Cellulose a plant polymer which consists of many glucose molecules. Starch is a stored food component in many vegetables and grains. Classify the given diagram of starch as polymer or monomer



Answer:

2- Draw a diagram to show the:
(a) linear arrangement of units in plastic.
(b) cross-linked arrangement of units in plastic.

linear arrangement of units in plastic.	cross-linked arrangement

3- Name the form of polyester which is replacing materials like glass and used for making bottles and jars-

Option A	**Option B**	**Option C**	**Option D**
PET	PVC	CFC	2,4 D

4- Fill in the blanks with the suitable answer-

Nylon is another _____ (natural/artificial) fibre. The raw materials used in this is obtained from _____(plant/animal). It was prepared from_____,

_____and_____ Nylon fibre was _____ and light. It was _____ and very easy to wash. It is widely used in making _____.

5- Synthetic fibres are strong, elastic, light, wrinkle-resistant, and easy to wash and dry. Even with so many advantages, we do not wear clothes made of pure synthetic fibres, but a mixture of synthetic and natural fibres. Why is this necessary?

Reasons:
1.
2.

6- Which was the first true synthetic fibre?

Option A	**Option B**	**Option C**	**Option D**
Silk	PVC	Polyester	Nylon

7- Mention True and False. In case of a false statement modify the correct statement-

Statement	**True / False**	**Correct statement**
Synthetic fibres are heat stable.		
Rayon is obtained from a natural source, wood pulp		
All plastics have the same type of arrangement of units		
plastic can easily mould i.e. can be shaped in any form.		
Plastics do not react with water and air		

8- Synthetic fibres or synthetic fibres are fibres made by humans through chemical synthesis. Nylon, terylene, and rayon are different kinds of synthetic fibres.

i- Rayon resembles with silk, therefore also known as

ii- Four R principles are reduced, reuse, recycle and

iii- Nylon is called fully synthetic fibre because it is prepared fr

Water and air.

iv- is widely used as a substitute for natural wool for

knitting sweaters, shawls, blankets etc.

9- Although refrigerator preserving is more straightforward than traditional canning, you must store jams, chutneys, and relishes in nonreactive, airtight containers. The best containers to use are glass canning jars, found in large supermarkets and some hardware stores. Can we store jams and pickles in plastic containers? Give reason.

Reason:

10- i-Which material is used for coating non-stick kitchen wares-

a- Teflan b- Melamine

Which material is used in making electrical switches-

a- Melamine b- Bakelite

CHAPTER – 5

MATERIALS: METALS AND NON-METALS

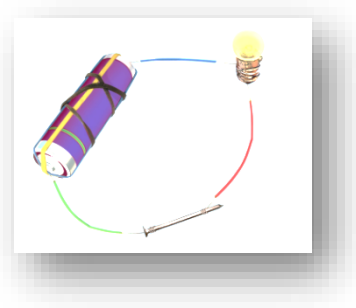
1- The boiling point is the temperature at which a liquid boil at. The boiling point of water is 100 ° C . Mark tick boxes having correct statements-

The boiling point is different at different pressure.	At high altitudes, the boiling point is different from the sea level.
The pressure cooker is based on the principle of increased temperature at high pressure	**° C / ° F** are used aa s unit of boiling point

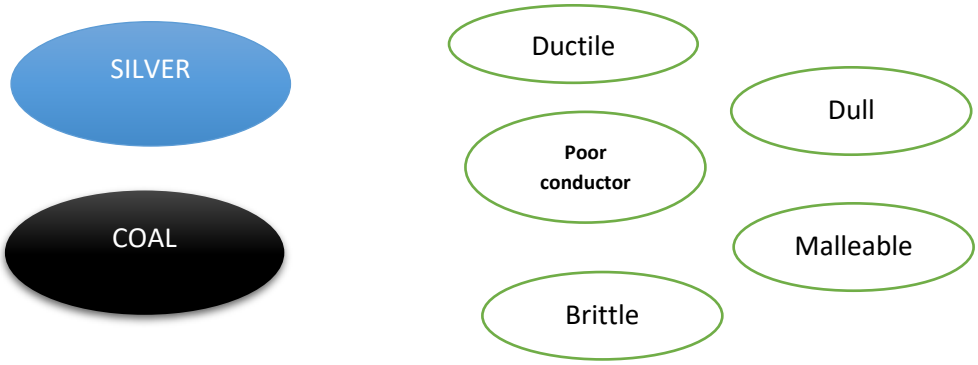
2- A goldsmith has a piece of gold with 1 cm length, 1 cm width and 1 cm height. With the help of that piece of gold, he makes the following item -

With what property he would have done it? Explain.

3- Observe the following diagram and make a list of any four items which can be used in place of the iron nail-



4- Pair the followings (Silver and Coal) with the correct answer-



5- The given diagram is related to the chemical nature of solutions. A particular paper is used to determine the nature of the solution as acidic, basic and neutral. Give answers to the questions related to the diagram-

Statement	Possible answers	Correct answer
In which colour such papers are available in the lab?	a- Red and green b- Blue and red c- Red and orange d- Yellow and blue	
What is the correct statement about the pH scale?	a- pH value 7 represents neutral b- pH value < 7 is acidic c- Ph value > 7 is basic d- All are correct	
The litmus paper is obtained from-	a- Lichen b- Algae c- Rose d- Turmeric	

6- Fill in the boxes with correct answers-

a- Oxides of metals are _____ in nature.

b- $SO_2 + H_2O =$ _____

c- Na metal is stored in _____ due to its vigorous nature.

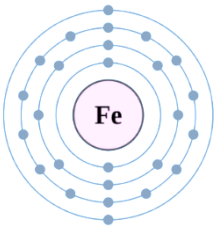
d- Phosphorus is a _____ and stored in _____

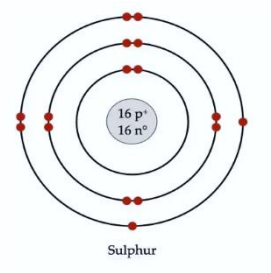
e- The colour of $CuSO_4$ is _____ and Cu is _____

7- Identify the correct chemical reaction from the given set –

Chemical reactions	Correct option
a- Vaporization of water at high temperature	
b- Rusting of the iron rod while exposed to air and moisture	
c- A metal is drawn into wires and used in electric wire formation	
d- A electrical tester glow while touch in electric current e-	

8- Identify the correct statement about S , Fe , Atoms and Element –





i- Sulphur and Irons are examples of an element.

ii- The atom is the smallest unit of an element.

iii- The atom of an element remains unaffected by physical changes in the element.

iv- An atom of liquid sulphur would be exactly the same as the atom of solid or vapour sulphur.

a- Only I and ii are correct
b- Only ii and iv are correct
c- Only I, ii and iii are correct
d- All are correct.

9- The amount of iron you need is: 8.7mg a day for men aged 19 and over. 14.8mg a day for women aged 19 to 49. 100 grams of prunes contain 0.93 mg of iron while raisins contain 2.6 mg of iron. To determine the level of Fe in our body which of the following test is performed- (you can tick one/ more than one)

Liver function test	Eosinophil test of blood	Haemoglobin test of blood	Kidney function test

Iron helps in which of the following activities in our body- (you can tick one/ more than one)

Oxygen transport	CO2 Transport	Energy generation	Reduces tiredness and fatigue

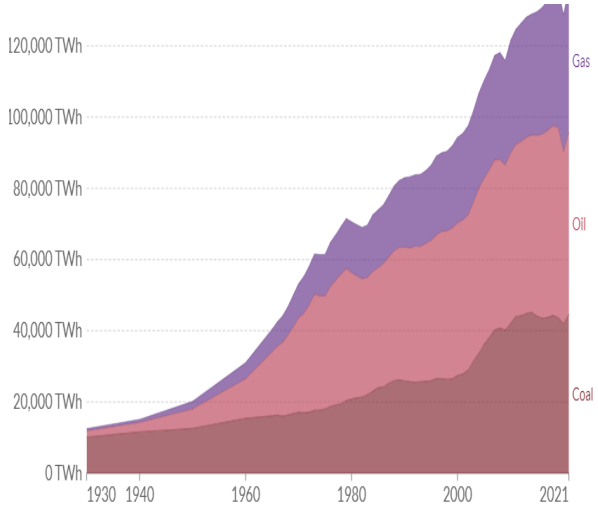
10- Math the column with the correct pair-

Lustrous non-metal	Soft enough to cut
Potassium and sodium	Nonmetal in liquid state
Mercury	Iodine
bromine	Kept in water
phosphorus	Metal in liquid state

Chapter 5

Coal and Petroleum

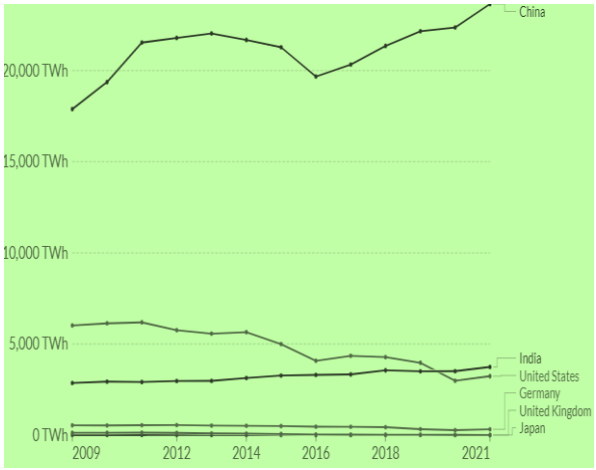
1- Year by year, global energy consumption is getting higher, therefore the use of fossil fuels is getting higher too. The world does not have enough renewable energy to supply industries' and populations' full demand.



i- In graph the demand of gas is highest? Can you explain?

ii- Can you suggest two methods to minimize the use of fossil fuels?

2- Observe the following data related to coal production and write answers-



i- Which country produces most of the coals?

ii- What would be the reason for the such high demand for coal?

iii- The use of coal in India is decreasing. (True / False)

iv- India uses more coal than the USA. (True / False)

3- Fill the box with the appropriate answer-

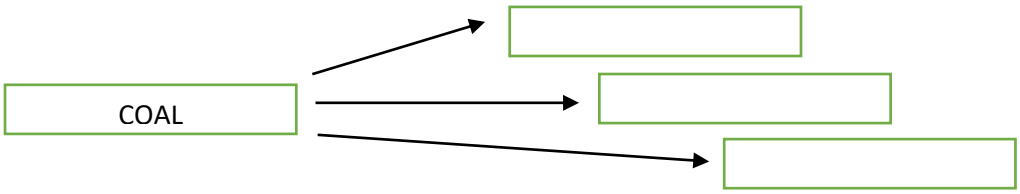
	Used in	For
Coal	Industries like BHEL	
	Rail engine	
	Thermal plants like NTPC	

4- Coal is a sedimentary deposit composed predominantly of carbon that is readily combustible. India is the second largest producer and consumer of coal after China. The use of coal is not recommended as it produces a lot of air pollutants.

i- The main carbon component of coal is carbon. (true/false)

ii- Jharkhand has the most coal reserve in India. (true/false)

iii- Fill the given boxes with different products of coal –



5- The petroleum industry in India dates back to 1889 when the first oil deposits in the country were discovered near the town of Digboi.

i- An organization established in India in 1978, under the aegis of the Ministry of Petroleum and Natural Gas of the Government of India that is engaged in promoting energy efficiency in various sectors of the economy-

a- CPRA

b- PCRA

c- RERA

d- KVIC

ii- Label the state in the map of India where first oil deposits were discovered.

6- In the given table fill the name of three states other than the state where digboi is located. Also mention the two river basins where we get petroleum products.

State 1	State 2	State 3	Two river basins

7- On the basis of statements write the correct responses-

i- _____ are the substances obtained from petroleum and natural gas.

ii- Hydrogen gas obtained from natural gas, is used in the production of _____

iii- _____ Is also known as black gold.

8- Marks the statements correct/incorrect-

i- Petroleum is also known as crude oil.

ii- It is a natural resource.

iii- It cannot mix in water as heavier than water.

iv- it is made up of a long chain of carbon and hydrogen.

v- Different forms of petroleum products are formed by simple diffusion techniques.

9- Find out the characteristics of coke –

purest form of carbon	Non porous	Used in metallurgy	All are correct

10- Air is an inexhaustible natural resource

a- Which of the following is an inexhaustible natural resource?

Option a	Option b	Option c	Option d
Coal	Mineral	Sunlight	Forest

b- Petroleum was formed from organisms

Option a	Option b	Option c	Option d
living on the land	living on the plants	living in the sea	living on the rocks

Chapter-6

COMBUSTION AND FLAME

1- Combustion is a chemical process in which a substance reacts rapidly with a specific gas and gives off heat.

   i- Among combustion and explosion which one is a slow combustion in comparison to the other?

   ii- Combustion is a physical process (True/ False)

   iii- Which specific gas is required in combustion?

2- The energy released by the exothermic reactions increases the temperature. During combustion, heat is produced.

i- Combustion is a (mark ✓ on the correct option)

   a- Oxidation process ( )

   b- Reduction process ( )

ii- Oxygen is a neutral gas that supports the reduction process during combustion-

   a- True

   b- False

3- Identify the type of fuel from the given box and also write their names?

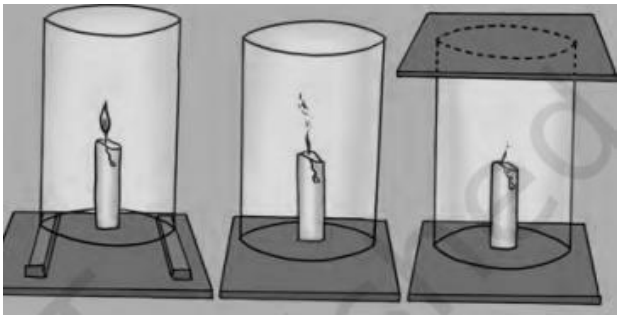
   i- Liquid

   ii- Solid

   iii- Gas

4- I- Can you infer anything at all about the role played by air in the process of burning?

   ii-Identify the name of the gas which is responsible for the following event/ events.



5- Calorific value is the amount of heat energy released during the complete combustion of a unit mass of fuel. It is expressed in kJ/kg. What conclusion you will draw from the following data-

Fuel	Calorific Value (kJ/kg)
Cow dung cake	6000-8000
Wood	17000-22000
Coal	25000-33000
Petrol	45000
Kerosene	45000
Diesel	45000
Methane	50000

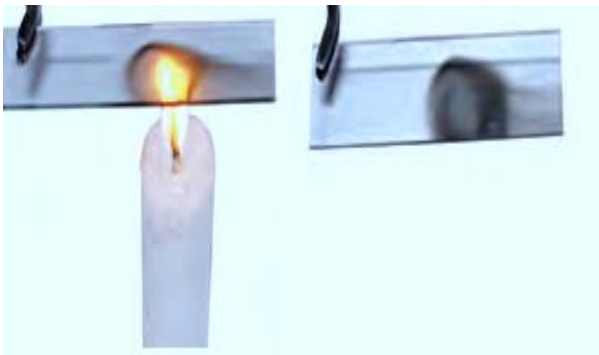
i- Which of the fuel will produce maximum energy?

ii- Coal has generally < 10% volatile matter and about 90 % fixed carbon). Compare its calorific value with wood.

iii- From which sources we can get methane?

iv- Is the use of cow dung cake judicious?

6- Observe the diagram given under. The diagram depicts that a steady candle flame is introduced on a clean slide. After some time we observe the black colour in a circular manner on the slide.



i- What is represented by the black circular ring?

ii- What is the chemical nature of the component of black spot?

iii- Are you able to define unburnt carbon?

iv- Does candle may cause air pollution?

7- Global warming is the rise in the temperature of the atmosphere of the earth. This results, among other things, in the melting of polar glaciers, which leads to a rise in the sea level, causing floods in the coastal areas.

i- Increased concentration of which gas mainly causes global warming?

ii- What will happen if CO_2 % becomes zero?

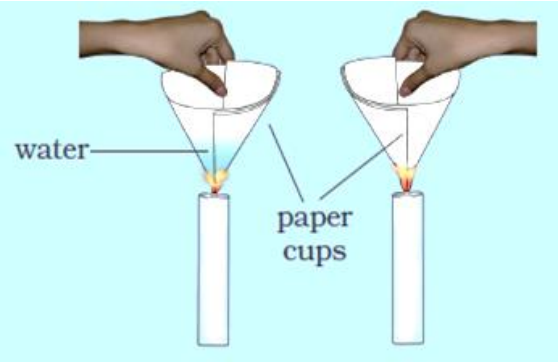
iii- What impacts you will observe on plants due to increased global warming?

iv- Suggest two ways to reduce the impact of global warming.

8- Match the columns-

Column A	Column B	Column C	Column D
Oxides of sulphur and nitrogen	Released from unburnt coal	CNG	
Cleaner fuel	Acid rain	May cause serious suffocation and death	
carbon monoxide gas	Left negligible amount of unburnt material	suffocating and corrosive gas	

9- Which one the following caught fire easily and why?



Answer:

10- Observe the diagram and answer-

i- Label the Hottest part

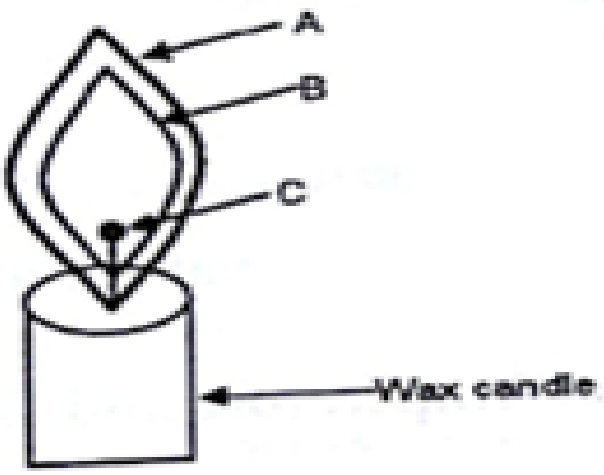
ii- Label the Least hot part

iii- Which zone represents complete combustion?

iv- Which type of reaction is shown by melting wax?

v- Burning of the candle is a chemical reaction. **True/ False**

vi- "B" is moderately hot. **True/ False**



CHAPTER – 7

CONSERVATION OF PLANTS AND ANIMALS

1- Now a days major threat to the wild animal is due to –

Afforestation	Industrialization	Global warming	Deforestation

2- UNESCO suggested that Biosphere reserves are 'learning places for sustainable development'. Are you able to locate the followings in the map of India-

Satpura
Panchmarhi
Nilgiri

3- From 2002 to 2021, India lost 371kha of humid primary forest, making up 19% of its total tree cover loss in the same time period. The total area of humid primary forest in India decreased by 3.6% in this time period. Mention three major consequences of such loss of primary forests-

1.
2.
3.

4- From 2001 to 2021, India lost 2.07Mha of tree cover, equivalent to a 5.3% decrease in tree cover since 2000. From 2001 to 2021, India lost 34.8kha of tree cover from fires and 2.03Mha from all other drivers of loss.
Write the consequences of desertification-

Desertification →

5- a-Which of the following are involved to make a biodiversity community- (Mark at correct pic)

b- The place where flora and fauna are conserved in the natural habitat is/are-

(i) Zoological garden (iii) Wildlife sanctuary

(ii) Botanical garden (iv) National Park

(a) i & ii (b) ii & iii (c) iii & iv (d) i & iv

6- Match the option a, b and c with the correct statement –

Statement 1- where animals are protected from any disturbance to them and their habitat.

Statement 2- reserved for wildlife where they can freely use the habitats and natural resources.

Statement 3- Large areas of protected land for the conservation of biodiversity and traditional life of the tribals

Option 'a'	Option 'b'	Option 'c'
National Park	Biosphere Reserve	Wildlife Sanctuary

7- Organize the followings into flora and fauna –

Tiger, Mango, Cat, Snake, Lizard, Guava, Banyan, Silver fern, Lichen

Flora	
Fauna	

8- a- Endemism is the state of a species being found in a single defined geographic location, such as an island, state, nation, country or other defined zone. List any two endemic species and exotic species in relation to our country.

b- Species is a group of populations that are unable to interbreed. (True/ False)

9- Satpura national park is famous for which of the following.

Elephant reserve	**Tiger reserve**	**Rhino reserve**	**Lion reserve**

Satpura National Park is located in which state-

Madhya Pradesh	**Jharkhand**	**Orissa**	**Chhattisgarh**

10- a- identify the box which is an integral part of a component of the ecosystem-

SUNLIGHT	PLANT
BACTERIA	SOIL
ANIMALS	AIR
FUNGI	ALL ARE COMPONENTS OF ECOSYSTEM

b-List names of endangered animal species of India.

Answer:

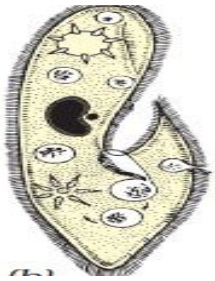
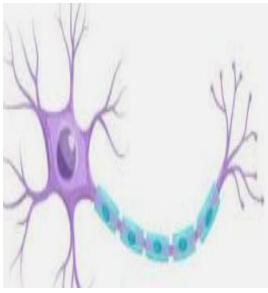
Chapter- 8

CELL ELL — STRUCTURE AND FUNCTIONS

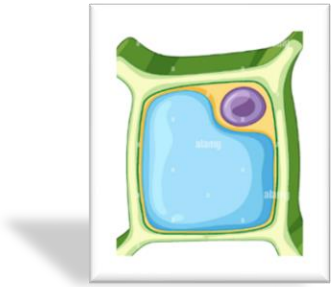
1- Hen egg contains egg albumin (protein). Other than this protein what is true about the hen's egg-

Statement	**True / False**
It is a cell	
It is a tissue	
It has embryo	
It has no fat	
It divides to form chicken	
The outer covering of the egg is calcium carbonate	

2- Label the following as a unicellular / Multicellular

3- Observe the following diagram and answer the related questions-



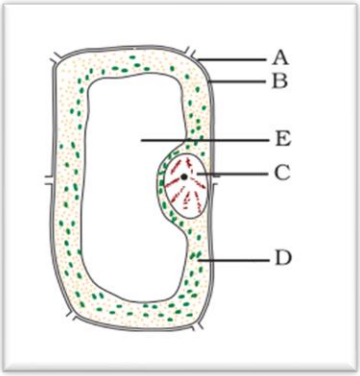
a- It is an animal cell. True/ False

b- It is a plant cell as it has …….

c- The cell wall is a feature of both animal cells and plant cells. True/ False

d- Plant cell contains chloroplast. True/ False

4- Label the parts A to E and mention their functions-



Label	Name	Function
A		
B		
C		
D		
E		

5- Identify the incorrect statement about cell membrane-

1. It encloses cytoplasm and nucleus
2. It is thicker than the plasma membrane
3. It allows the movement of substances
4. In a few cells it is surrounded by thicker walls

6- Classify the following terms into cells, tissues and organs
Ostrich egg, red blood cell, Neuron, human blood, Muscles of hand, kidney, liver

CELL	
TISSUE	
ORGAN	

7- Gene is a unit of inheritance in living organisms. It controls the transfer of a hereditary characteristic from parents to offspring. The children possess the genes of their parents but they don't look like them-

a- Genes play no role

b- The features of genes are never expressed by children

c- The different combinations of genes from parents results in different characteristics

d- All are incorrect

8- Select the correct option (s)-

i- The nucleus of plants and animals are similar

ii- The nucleus of plants, animals, and bacteria are similar

iii- The nucleus of bacteria is different from plant and animals

iv- Bacteria don't have a nucleus.

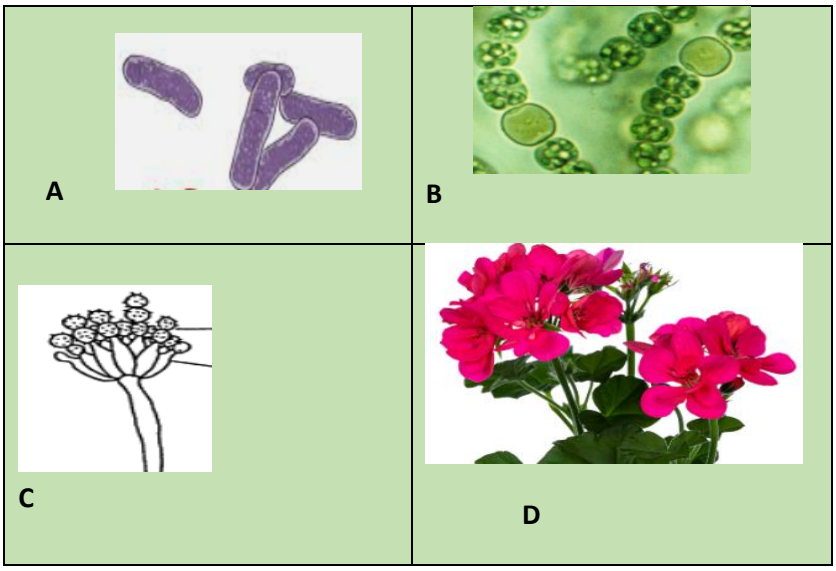
a- Only i , ii and iii are correct

b- Only i and iii are correct

c- Only ii is correct

d- All are incorrect

9- Identify the prokaryotic and eukaryotic cells-



10- a- It is very known fact that many plants like Tradescantia are photoautotrophs. They are able to perform photosynthesis and can make their food. Which cell organelle is helpful in this process-

Nucleus	Vacuole	Plastid	Cell wall

b- Which of the following is not observed in the nucleus of plant cell-

Chromosome	Gene	Chlorophyll	Nucleoplasm

c- The following pairs are not correctly matched, arrange these is correct order-

Peudopodia ----------Chloroplast

Primitive nucleus -------- Amoeba

Gene …….. Cytoplasm

Gelly like ……. Chromosome

Answer:

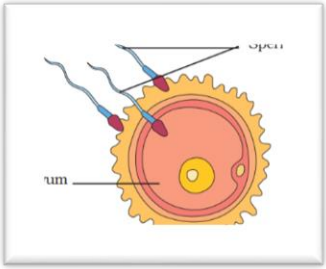
CHAPTER- 9

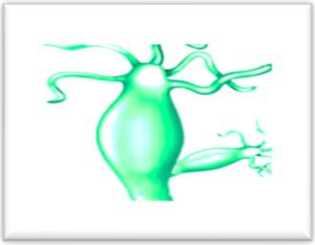
REPRODUCTION IN ANIMALS

1- Identify correct statements about the zygote-

Formed by the fusion of sperm and egg	Develops into offspring	It is a product of sexual reproduction	All are correct

2- Which type of reproduction is exhibited by the following diagrams-





3- a- Roslin Institute in Edinburgh successfully cloned a sheep. The name given to that sheep was-

Rosie	Dolly	Selvi	Chelsa

b- The process by which sheep was produced is known as -

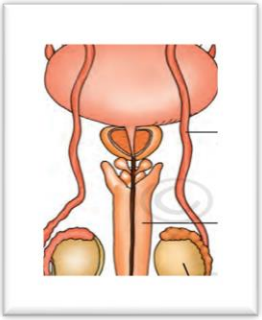
4- In asexual reproduction only single parents are involved. The offspring are similar as their parent. Which statement/ statements is/ are correct/ incorrect about asexual reproduction- (put correct/ incorrect marks)

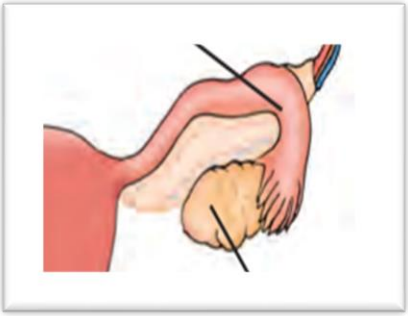
Potato plants propagate through asexual reproduction
The progenies of asexual reproduction show more variation
The sexually reproducing organism have poorly developed reproductive system
Zygote is product of asexual reproduction

5- At a time male gametes are produced in an enormous amount in comparison to the female gamete in human females. The number of eggs is limited in human females. Mention the site of production of male and female gametes in the following format-

Gamete	Name	Site of production	Number of gametes
Male			
Female			

6- The given diagrams are of male and female reproductive systems-





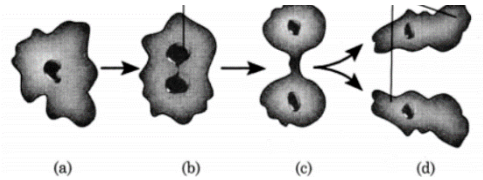
a- Label the indicated parts.

b- What is the role of uterus?

7- Indicate whether the following statements are True (T) or False (F). also mention the correct statement in the case of a false statement –

Statement	**T/ F**	**Correct statement if given statement is false**
Oviparous animals give birth to young ones.		
Sperm is a single cell.		
Amoeba reproduces by budding.		
Fertilisation is necessary even in asexual reproduction.		
Binary fission is a method of asexual reproduction.		

8- Amaoeba divides by _____ method. The most common method is _____ . The given diagram represents the reproduction steps of Amoeba. What is significance of step “c”.



9- Complete the crossword puzzle using the hints given below-

STRAIGHT-

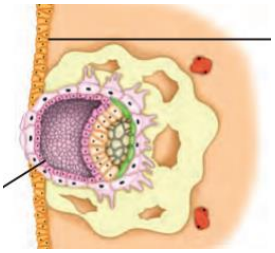
a- Ovary releases
b- Sperms have
c- Another term for the fertilized egg.
d- Vivipary occur in _____fertilization

DOWN-

a- Sperm is a type of _____
b- Internal organization is shown by_____
c- Fertilisation outside the body_
d- Zygote develops into _____

		G			E		
I							L
C							
W	H	E					

10- a- Label the given diagram-



b- Rearrange the events of the life cycle of silkworm and frog in correct sequence-

Larvae / Caterpillar	Early Tadpole
Pupa	Egg
Egg	Adult
Late Tadpole	

CHAPTER- 10

REACHING THE AGE OF ADOLESCENCE

1- Ranu is a brilliant student. He is admitted to class one at the age of 7 years. Now he is studying in class 5. He looks different from other students. What do you think about the statement-

i- He is in adolescence age.

ii- Adolescence age has some specific feature which is different from non-adolescent age children.

Only i is correct	Only ii is correct	Both are incorrect	Both are correct

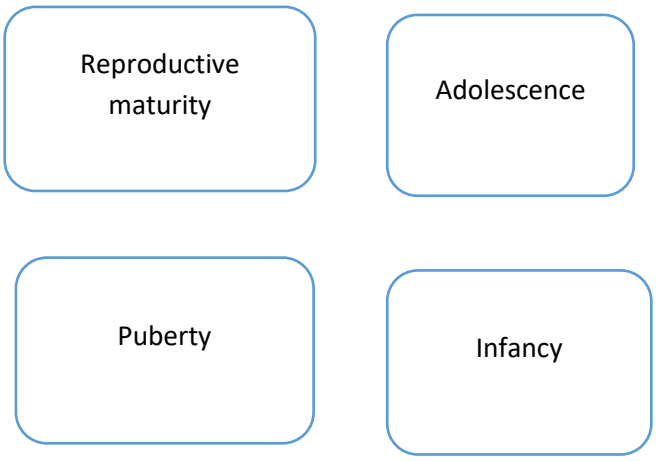
2- In a class of 40 students 23 are girls and the remaining are boys. The class has an average of 10- 11 years. Based on this statement find out the correct option from the followings-

i-	Adolescence begins around the age of 11
ii-	In girls, adolescence may begin a year or two earlier than in boys

a- Both statements are correct

b- Both statements are incorrect

3- Arrange the followings in the correct sequence-



4- Adolescence is a time for growth spurts and puberty changes. It is the period of transition between childhood and adulthood. We can calculate the total height of a adolescent by a simple formula- identify the correct formula-

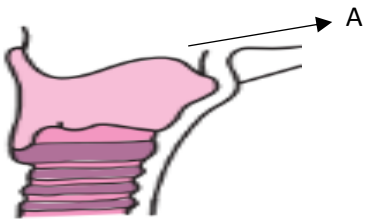
$\frac{\text{Present height (cm)}}{\text{full height at this age}} \times 100$	$\frac{\text{Present height (cm)}}{\text{full weight at this age}} \times 100$
$\frac{\text{Full height (cm)}}{\text{Present height at this age}} \times 100$	Not possible

5- Roohi is very curious to know the reason behind the similarity of a children with their family members. Select the correct reason from the given options-

The similarity of child with a family member is due to -

- Cells
- Eggs
- Sperms
- Genes

6- The given diagram also determines the onset of puberty age.



Label the "A" and also mark the correct statement-

a- "A" is more developed in boys than girls. ( )

b- It determines the louder and pitched voices in girls and boys respectively. ( )

7- Form the given statements mark true/false

Statement	**True/ false**
Testes start producing sperm at age of 21 years	
In girls, egg formation starts after adolescence age	
Beard in boys is a secondary sexual character	

8- Write the name of the hormone and its functions-

	Hormone	Function
TESTES		
OVARY		

9- In a family there are two children. Identify their sex and also mention the parent (father/mother) from whom they receive the chromosome-

Set of chromosomes	**Sex of children**	**Father provides**	**Mother provides**
XX			
XY			

10- Mark the statement is true or false-

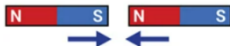
S.N.	**Statement**	**True / False**
1	Thyroxine is also secreted in frogs.	
2	Growth hormone is secreted by the kidney	
3	Insulin prevents the diabetes	
4	Pancreas helps in digestion	
5	Liver is the largest organ	
6	Adrenal gland is located near to kidneys	

CHAPTER- 11

FORCE AND PRESSURE

1- a- A push or a pull on an object is called ..... (force/ pressure)

b- Repulsion between similar poles ..... (push/pull)

c- 

the given diagram represents ..... (push/pull)

2- The strength of a force is usually expressed by its –

Attitude	Aptitude	Magnitude	Substitute

3- The International System Of Units (SI) is the metric system that is used universally as a standard for measurements. The SI unit of pressure is –

Watt	Pascal	KJ / kg	Jule

4- Newton/ Metre2 is equal to –

Watt	Pascal	KJ / kg	Jule

5- Pressure can be calculated by which formula-

Pressure = Force x Area	Pressure =(force) ^{2} / area
Pressure = force x (area) ^{2}	All are incorrect

6- A force of 50 Newtan is applied on an area of 2 meters ^{2}. Compute pressure being applied to the area. Also, mention the unit of pressure.

Option a	**Option b**	**Option c**	**Option d**
100	1250	200	All are incorrect

7- Among muscular force, gravitational force, magnetic force, electrostatic force, frictional force, identify contact and noncontact force-

Contact force	
Non-contact force	

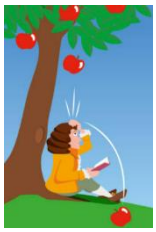
8- Which statement is correct about force-

Statement	**Correct / Incorrect**
may make an object move from rest.	
I may change the speed of an object if it is moving	
I may change the direction of motion of an object.	
May bring about a change in the shape of an object.	

9- It is easier to walk on sand if we have flat shoes rather than shoes with sharp edge heels. It is because- (identify correct one)

Flat shoes have more area so will exert less pressure
Flat shoes have more area so will exert more pressure

10- Identify the type of force-



CHAPTER – 12

FRICTION

1- What enables a ladder to lean against the wall?

2-

When a runner's foot comes in contact with the ground, friction occurs between the two objects. The direction of the arrow shows which types of resistance-

3- The different types of surfaces have different intensity of friction. The following table shows two types of surfaces. Which on shows high friction-

4- Fluid friction is the force that opposes a motion that takes place within fluids or in between fluids. The frictional force exerted by fluids is also called-

Option A	Option B	Option C	Option D
Drag	Pressure	Force	Friction

5- An average, tyre life ranges from between 3 -5 years, and between 30,000 to 60,000 miles. But we often see that wearing the tyres is more in rural areas than in urban cities. Identify the main cause-

i- Urban areas have more smooth roads than villages

ii- Smooth roads have less friction effect

iii- Friction is the main cause of wearing of tyre

a- Only ii is correct

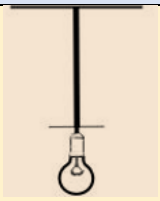
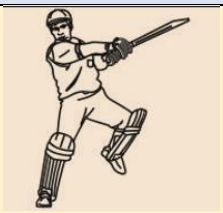
b- Only iii is correct

c- All are correct

6- A pulley is a wheel with a groove along its edge, that holds a rope or cable. What is the role of the pully –

Option A	Option B	Option C	Option D
It changes the direction of force	It reduces frictional force	Decreases rate of contact force	All are correct

7- Air resistance is a special kind of frictional force that acts on objects as they travel through air. Identify the situation where this frictional force is ABSENT, from the ones given below.

Option A	Option B	Option C	Option D
Man with parachute	 Bulb hanging from the roof	 Cricketer hit the ball	In all of these

8- Different types of motion of the object gives rise to different types of friction. Generally, there are 4 types of friction. They are static friction, sliding friction, rolling friction, and fluid friction. Identify the type of friction-

A knife is placed on the top of a table	Skiing on the mountain	Swimming in river
A	B	C

9- Friction produces heat which damages the moving parts of a machine. Fluid friction occurs between fluid layers that are moving relative to each other. How can fluid friction be minimised?

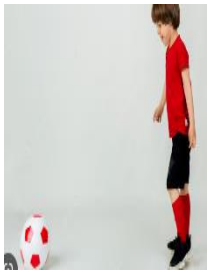
Option A	**Option B**	**Option C**	**Option D**
By adding lubricants in the water	By giving suitable shape	By increasing force	All of these

10- A football player hit the ball several times in various ways and Sunil who is outside the field observes the following things-

a- When kicked on the surface it lost its velocity after some time

b- When the ball is kicked in the air, it falls on the ground after some time.

c- Why do all the football balls have a similar shape



(Which one of the following pairs are correct)

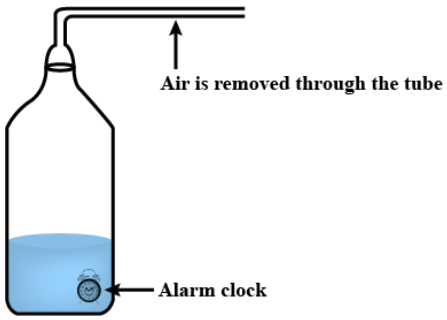
A, B, C	Due to friction, due to gravity, to reduce friction
A, B, C	Due to gravity, Due to friction, to reduce friction
A, B, C	Due to friction, to reduce friction, Due to friction

CHAPTER – 13
SOUND

1- How does it travel from one place to another-

Option A	Option A	Option A	Option A
As atoms	As waves	As sensation	As decibel

2- When air has been removed completely from a vessel, it is said that there is a vacuum in the vessel.



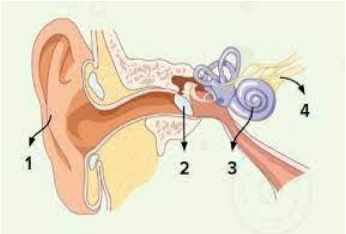
What will be the quality of the alarm clock sound in the above experiment? Also mention the reason for your answer.

Option A	Option B	Option C	Option D
Very low	Low	Very loud	No sound
Reason:			

3- a-How many vocal cards are present in humans-
b- sound is produced by vibration in -

	Option A	Option B	Option C	Option D
No of vocal card	1	2	0	2 pair
Sound production	Windpipe	Trachea	Tongue	Vocal cord

4- observe the diagram given below and answer-

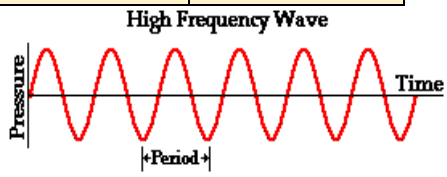


a- Label 1,2,3 and 4
b- Mention the role of 4

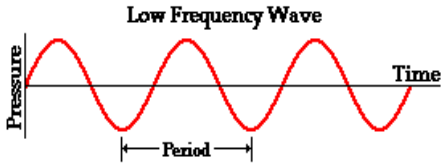
5- To and fro or back and forth motion of an object is called-

Option A	Option A	Option A	Option A
Vibration	Frequency	Hertz	Linear Motion

6- Frequency is the number of occurrences of a repeating event per unit of time. In the given diagram identify the event in which frequency s more than other. Also give the reason.



Answer:



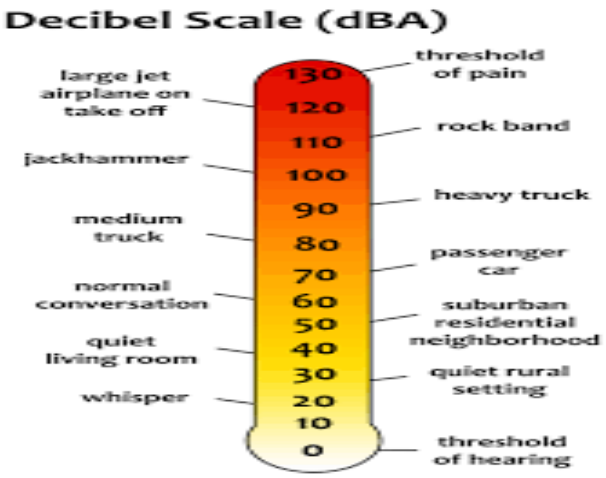
7- Ramesh was enjoying the rainy season. Suddenly he is scared by a thunderbolt **4** seconds after he saw lightning in the east direction. Which formula we can use to find out the distance of lightning from Ramesh?

Hint: (speed of sound= 300 m/ s)

a- Velocity = time/distance
b- Distance = velocity X time
c- Distance is cannot be calculated by the above data.
d- Distance will be infinite as lightning occurs in clouds

8- Decibel is a unit to measure the level of noise. Passenger cars has a decibel range of about 70 while jet plane has 120 dB.
Increase in decibel leads to –

a- Noise Pollution
b- Air pollution
c- Radiation pollution
d- No pollution



9- Match the column with correct pair-

Column A	**Column A**
< 20 Hz	Inaudible by human
20,000 vibrations per second	Audible by human
19000 Hz	Audible for dog
> 20,000 Hz	Inaudible by human

10- A simple pendulum makes a few oscillations in a few seconds. How can you calculate the time period and frequency of its oscillation?

i- Time period = time/ no of oscillation

ii- Time period= no of oscillation/time

iii- Frequency = no of oscillation/time

iv- Frequency = time/no of oscillation

A	i and ii are correct
B	i and iii are correct
C	Ii and iii are correct
D	Ii and iv are correct

CHAPTER- 14

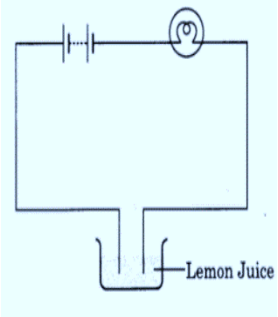
CHEMICAL EFFECTS OF ELECTRIC CURRENT

1- Distilled water cannot conduct electricity while tap water is a good conductor of electricity. The reason is –

A	Distilled water does not contain ions
B	Tap water contains ions
C	To conduct electricity ions are necessary
D	Only a and c are correct

2- Fill the blank spaces with appropriate answers-
An electric bulb glows due to _____ (heating / physical) effect of current. The object to be electroplated is taken as _____ (anode/cathode) electrode. Distilled water is ____ conductor of electricity while tap water is _____ conductor. (good/ bad).

3- In the given diagram a circuit is used to test whether lemon juice is good or bad conductor of electricity.



a- What will be your answer?

b- In place of lime juice what other solutions we can use? Give any two examples.

c- What will happen if lemon juice is replaced by sugarcane juice and distilled water?

Answer a	
Answer b	
Answer c	

4- Fill in the blank with the correct options-

When the _____(liquid/ sold) between the _____(one/ two) ends of the tester allows the _____(electric / metallic) current to pass, the circuit of the tester becomes _____(complete/ incomplete) . The current _____(hault/ flows) in the circuit and the bulb _____(remains same/ glows) .

5- Write the full form of the given diagram –

a	Light emerging diode
b	Light enhancing diode
c	Light emitting diode

6- Chromium plating is done on car parts, bath taps, kitchen gas burners, bicycle handlebars, wheel rims etc.

i- Name the process-

a- Electrocoating

b- Electroplating

c- Electronics

d- Electromagnetism

ii- What is the advantage of this process? Mention any two.

Answer: 1. 2.

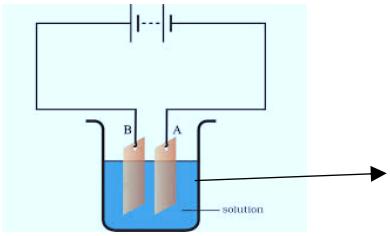
7- Complete the following equation-

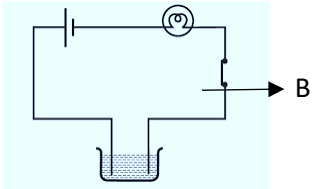
i- When an electric current is passed through the copper sulphate solution

$CuSO_4 \longrightarrow$ _____ + _____

ii- Cu will deposit at the positive terminal. (True/ False)

8- In the following diagram label the A and B in both diagram





a.
b.

a.
b.

9- In yesr 1800 a scientist had shown that if electrodes were immersed in water, current was passed.

a- Name the scientist

b- He also observe bubbles. Write the name of gases who were observed as bubbles.

Anser a.
b.

10- An electrolyte is a-

Option a	**Option b**	**Option c**	**Option d**
Solids that conducts electricity	liquids that does not conduct electricity	Solids that does not conducts electricity	liquids that conduct electricity

CHAPTER- 15

SOME NATURAL PHENOMENA

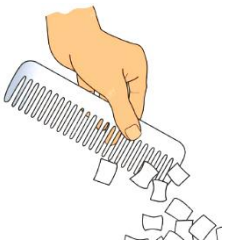
1- Lightning is a visible electrical discharge from a cloud. What is your view about lightning and the spark from your clothes?

Option a	Option b
Both are different	Both are same

2- When we rub against something, we get charged. Transfer of charges takes place which results in sparks. This is an example of-

Option a	Option b
Static electricity	Non-static electricity

3- We can create charge on rubbing the balloon, refill, comb etc. based on your observation complete the following sentences with right answer-
Hint: repel, attract



a- A charged balloon _____a charged balloon.

b- A charged refill _____a charged refill.

c- A charged balloon _____a charged refill

4- Mention the reason of two different diagrams given below-

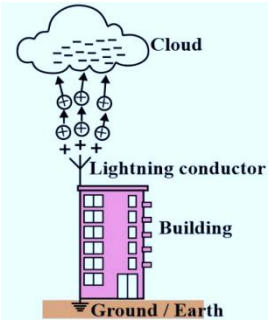
Balloons attracted
Reason:

Balloons repel
Reason:

5- There are two types of charges positive; (+) and negative; (-) Which device is used to find whether an object is carrying charge or not ?

Option a	Option b	Option c	Option d
Periscope	Electroscope	Microscope	Kaleidoscope

6- Lightning Conductor is a device used to protect buildings from the effect of lightning. Some metal plates are provided in buildings to protect us from electrical shocks due to electrical current leakage.



a- The process of transferring charge from a charged object to the earth is called-

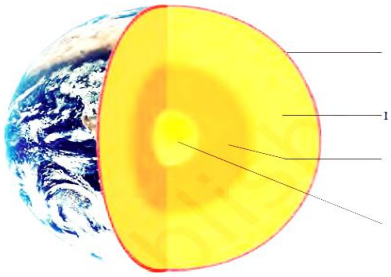
Option a	Option b	Option c	Option d
Earthing	Airthing	Conducting	Plating

b- In earthing Aluminum plate is used. **(True / False)**

7- Mark the statement as true or false. If the statement is false write correct statement-

Statement	**True/ False**	**Correct statement**
Earthquakes occur all the time, all over the earth.		
Bathing should not be avoided during thunderstorms as bathing is essential for health.		
Best lightning conductor devices are those which are made up of carbon compounds rather than metals.		
Accumulation of charges in the cloud may result in lightning		

8- Earth is a rocky planet with a solid and dynamic surface of mountains, canyons, plains and more. Most of our planet is covered in water. Label the given diagram of the earth with correct labeling-



9- The outermost layer of the earth is not in one piece. It is fragmented. Each fragment is called a plate. These plates are in continual motion. Write the name of any three such plates-

1.	2.	3.

10- The plates in the earth may collide and cause disturbance in the earth's crust. This disturbance results in an earthquake. Some areas are very sensitive to earthquake.

i- The area where the earthquake is very common are known as-

ii- The power of an earthquake is expressed in terms of a magnitude on a scale called-

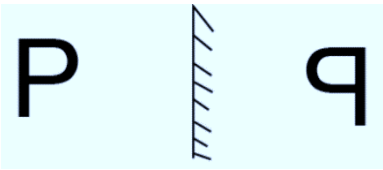
iii- The tremors produce waves on the surface of the earth. These are called

iv- Such waves are measured by a graph known as-

CHAPTER – 16

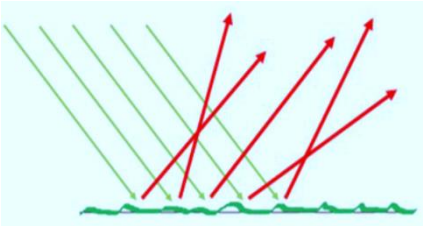
LIGHT

1- Name the phenomenon shown in the figure-



PHENOMENON:

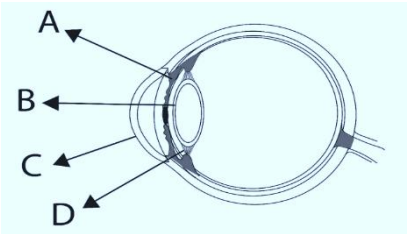
2- In a phenomenon reflection of light from a surface occur in such a way that a ray incident on the surface is scattered at many angles rather than at just one angle. Identify the phenomenon with the help of the given diagram-



3- Louis Braille, himself a visually challenged person, developed a system for visually challenged persons and published it in 1821. From the given symbol can you make a word-

Option a	Option b	Option c	Option d
RAT	MAT	CAT	BAT

4- Label A, B, C and D and write their role-

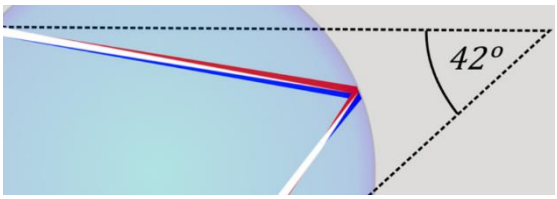


Label		Role
A		
B		
C		
D		

5- In the dark, we are unable to locate things but owls have excellent night vision. This is because of pigment rods and cones in their eyes. Which of the statement is correct for night vision in the owls-

a- More rods and low cones
b- Low cones and low rods
c- Low rods and more cones
d- Equal number of rods and cones

6- A rainbow is a multicolored arc made by light-striking water droplets. The most familiar type of rainbow is produced when sunlight strikes raindrops in front of a viewer at a precise angle (42 degrees). Rainbows can also be viewed around fog or waterfalls. A rainbow is an optical illusion—it does not actually exist in a specific spot in the sky. What is the cause of rainbow formation?



Answer:

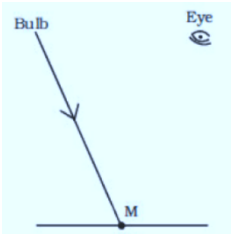
7- Light is falling on surface S1, S2, S3 as shown in Fig.

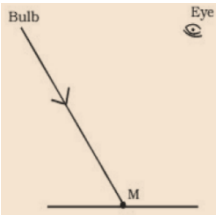
S1 S2 S3

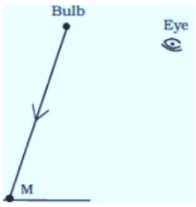
Surfaces on which the angle of incidence is equal to the angle of reflection is/are-

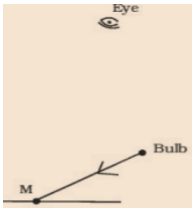
Option a	Option b	Option c	Option d
S1 and S2 only	S2 and S3 only	S1 only	All of these surfaces

8- A tiny mirror M is fixed on a piece of cardboard placed on a table. The cardboard is illuminated by light from a bulb. The position of the eye with respect to the position of the bulb is shown in Fig. as A, B, C, and D. In which position mirror will be visible? Mark on correct diagram-

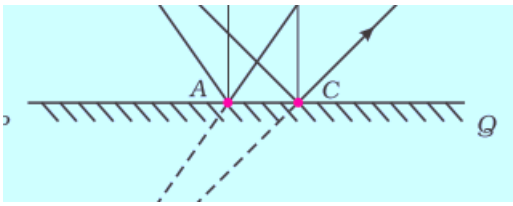




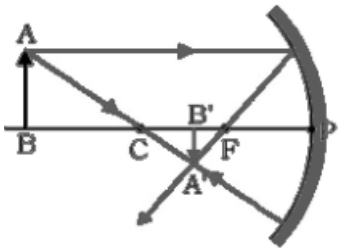


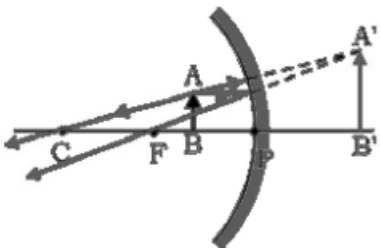


9- The given diagram is about image formation. it is incomplete. Complete the diagram-



10- A real image is always inverted whereas a virtual image is always erect. A real image is formed when the rays of light after reflection or refraction actually meet at some point whereas a virtual image is formed when the rays of light after reflection or refraction appear to meet at a point. Identify the real and virtual images in the given diagram-





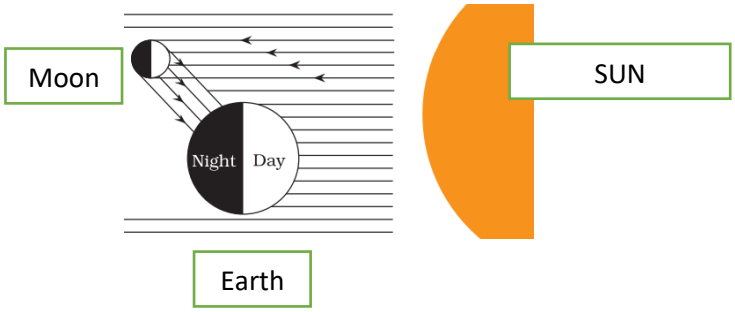
CHAPTER- 17

STARS AND THE SOLAR SYSTEM

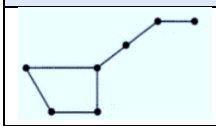
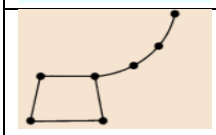
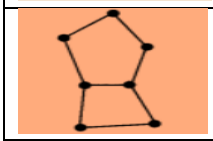
1- A natural object which is located outside of the Earth's atmosphere like the sun, moon are called as-

Option a	Option b	Option c	Option d
Asteroid	Celestial body	Planets	Satellite

2- The Moon is Earth's only natural satellite. It is the fifth largest satellite in the Solar System and the largest and most massive relative to its parent planet, with a diameter about one-quarter that of Earth. : Moon is visible due to – (name and mark the phenomenon in the diagram)



3- A constellation is an area in space where a group of visible stars forms a specific pattern like animals, subjects etc. Name the following constellations-

Constellation	Name
	
	
	

4- Answer the following questions-

Which is the nearest planet to the Sun?	
Which is the farthest planet to the Sun?	

Which two planets show phases like the Moon?	
Which two planets have asteroids between them?	
Name two artificial satellites of the Earth	
What is the speed of light?	
Which planet is known as the red planet	

5- Fill in the blank with the correct answer-
_____launched India's first Mars orbiter mission _____, on November 5, _____. It was successfully placed into an orbit of Mars on September 24 _____. With this India became the first country in the world to do so in its first attempt.

6- A meteor hit can lead to the death of many living things. If an asteroid the size of an apartment hits Earth, this blow could possibly destroy a small city. If an asteroid the size of a 20-story building hits Earth, this blow can completely flatten a small country. Even though many meteors enter in earth's atmosphere but very little damage has been reported till now. Give reason.

Answer:

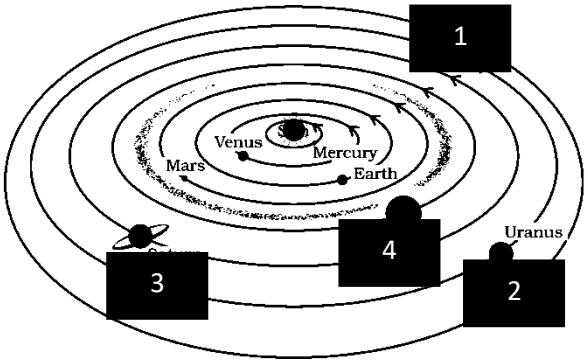
7- Match the column with I, ii, iii and iv with a column with the alphabet-

(i)	Inner planets	(a)	Saturn
(ii)	Outer planets	(b)	Pole star
(iii)	Constellation	(c)	Great Bear
(iv)	Satellite of the Earth	(d)	Moon
		(e)	Earth
		(f)	Orion
		(g)	Mars

8- The following are a few statements. Classify them into two groups namely meteoroid, galaxy and comet-

It is a small particle from comet asteroids orbiting the sun
It is made up of ice, dust and rocky material
It enters the earth's atmosphere
It is a collection of billions of stars
It does not enter earth atmosphere

9- The Solar System is the gravitationally bound system of the Sun and the objects that orbit it. It formed 4.6 billion years ago. Label the boxes with the correct name of the planets-



Number	Name of the planet
1	
2	
3	
4	

10- An artificial satellite is a man-made satellite used for communication and sending pictures of the celestial bodies in space.

i- Which is the first Indian artificial satellite –

a- Sputnik

b- Aryabhatt

c- Ramanujan

d- Bhabha

ii- First indigenous satellite of India

a- Aryabhatt

b- Rohini

c- Mandakini

d- INSTA- I

CHAPTER- 18

POLLUTION OF AIR AND WATER

1- Vehicles produce high levels of pollutants. These pollutants cause severe respiratory problems. Which of the following is not vehicular pollution-

Option a	Option b	Option c	Option d
CO_2	CO	N_2O	CFC

2- In Indian cities, a major part of air pollution is sourced, all year around, from the burning of diesel, petrol, gas, coal, biomass and resuspended dust. Which of the following reduces the oxygen-carrying capacity of the blood?

Option a	Option b	Option c	Option d
CFC	Nitrate	CO	NH_4

3- Since 1979, stratospheric ozone has decreased over the entire globe—between 4% and 6% per decade in mid-latitudes and between 10% and 12% per decade in higher southern latitudes. The portion of the stratosphere that protects our planet from the sun's ultraviolet rays — is continuing to decrease. Write the answer of the following questions-

Question	Answer
Which gas is mainly responsible for ozone depletion?	
What is the measurement unit of the ozone layer?	
What is the molecular formulae of the ozone?	

4- i-Marble cancer is the corrosion of statues and buildings made up of marble. Which term is associated by marble cancer-

a- Global warming

b- Greenhouse effect

c- Acid rain

d- Ozone hole

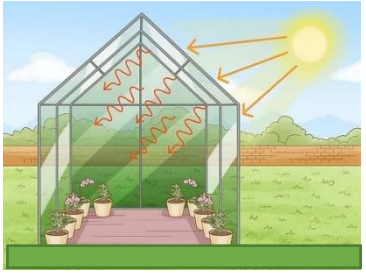
ii- The major cause of marble cancer is –

Option a	Option b	Option c	Option d
Nitric acid	Sulphuric acid	Acid rain	All of these

5- Identify the following and write their name, source and advantages-

Identify	Name	Source	Advantage

6- A greenhouse is a building with glass walls and a glass roof. Greenhouses are used to grow plants, such as tomatoes and tropical flowers. A greenhouse stays warm inside, even during the winter. In the daytime, sunlight shines into the greenhouse and warms the plants and air inside. Similarly, our earth is going warmer day by day. This is known as-



Answer:

7- CO_2 traps heat and does not allow it to escape into space. CO_2 is primarily responsible for global warming. Which of the following actions can reduce global warming-

Option a	Option b	Option c	Option d
Deforestation	Afforestation	Desertification	Nitrification

8- The Ganges is a transboundary river of Asia that flows through Bangladesh and India. The 2,525 km river rises in the western Himalayas in the Indian state of Uttarakhand. The Govt takes many initiatives to clean the Ganga River under the flagship programme "Ganga Action Plan". Which of the following statement is incorrect about said mission-

i- Ganga Action Plan was launched in 1985 **(True/ False)**

ii- National Mission for Clean Ganga (NMCG) was launched in 2016 **(True/ False)**

9- 25% of the world's population is without safe drinking water. Which chemical method is used to disinfect potable water-

Option a	Option b	Option c	Option d
Fumigation	Stagnation	Chlorination	Sedimentation

10- Match the columns A and B

Column A	**Column B**
chemicals used in agriculture that cause water pollution.	sulphur dioxide
combustion of fuels like coal	Weedicide
Toxic metals whose compounds are present in industrial wastes	typhoid
Kyoto Protocol	Acid rain
diseases caused by drinking polluted water	Green house gas emission
Tajmahal	arsenic, lead