

class 9th

IMPROVEMENT IN FOOD RESOURCES

Green Revolution :- Related to increased food grain production.

White Revolution :- Increased milk production.

Sustainable Agricultural Practices :- it is increasing food production without degrading our environment and disturbing the balances maintaining it.

* Cereals :- Provide us carbohydrate.
eg - wheat, rice, maize, millets, Sorghum

* Pulses :- Provide us protein.
eg :- Gram, pea, Black gram, Green gram, Pigeon Pea (arhar), Lentils etc.

* Oil seeds :- Provide us fat.
eg :- Soyabean, ground nut, sesame, Sunflower, mustard, linseed etc.

"In a gentle way, you can shake the world." -Mahatma Gandhi



* Vegetables and fruits :- Provide us vitamins and minerals.

* Fodder Crops :- Barseem, oats or Sudan grass.

Photoperiod :- it is related to the duration of sunlight.

Kharif Crops :- They are grown in rainy season, from the month of June to October. eg:- Paddy, Soyabean, maize, cotton Pigeon pea etc.

Q.1 Define rabi crop with example.

Q.2 Define hybridisation.

Q.3 What are various types of hybridisation.

Q.4 Define genetically modified crop.

Q.5 What are desirable agronomic characteristics for crop improvement.

Q.6 What are biotic and abiotic factors affecting crop production.

Q.7 What are major activities for improving crop yield?

Ans-1 the crops are grown in the winter season is called rabi crop. from the month of November to April.

eg:- wheat, gram, peas, mustard and linseed.

Ans-2 Hybridisation refers to crossing between genetically dissimilar plants.

Ans-3 Hybridisation are three types:-

- i) intervarietal
- ii) interspecific
- iii) intergeneric.

Ans-4 genetically modified crops by introducing a gene that would provide the desired ~~char~~ characteristic.

Ans-7 There are three activities for improving crop yield.

- i) Crop variety improvement.
- ii) Crop production improvement.
- iii) Crop protection management.

- Ans-8 ~~Higher yield~~
- ii) ~~Improved quality~~
 - iii) ~~Biotic and abiotic resistance.~~
 - iv) ~~Change in maturity duration.~~
 - v) ~~wider adaptability~~
 - vi) ~~Desi~~

Ans-5 The desirable agronomic characteristics for crop improvement are:-

- i) Tallness and profuse branching in any fodder crops.
- ii) Dwarfness in cereals.

Ans-6 Crops production can go down due to biotic (diseases, insects and nematodes) and abiotic (drought, salinity, water logging, heat, cold and frost) stresses under different situations.

Date - 17/9/18

Macro nutrients:- Six are required in large quantities and is called macro nutrients.

Micro nutrients:- Seven nutrients are used by plants in small quantities is called micro nutrients.

Nutrients supplied by air, water and soil

Source	Nutrients
Air	Carbon, Oxygen
Water	Hydrogen, Oxygen
Soil	i) macro nutrients:- Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur.

"Failure comes only when we forget our ideals and objectives and principles." - Jawaharlal Nehru

ii) micronutrients :- iron, manganese, boron, zinc, copper, molybdenum, chlorine.

Manure :- Manure contains large quantities of organic matter and also supplies small quantities of nutrients to the soil.

manure are three types.

- i) Compost
- ii) Vermi - Compost
- iii) Green manure

Fertilizers :- Fertilizers are commercially produced plant nutrients, fertilizers supply nitrogen, phosphorus and potassium.

Date - 18/9/18

Home-work

- Q.1 what do we get from cereals, pulses, fruits and vegetables?
- Q.2 What are macro nutrients and why are called macro nutrients?
- Q.3 what are micro nutrients and why are called micro nutrients?
- Q.4 How do plants get nutrients?
- Q.5 Define organic farming.
- Q.6 Difference between manure and fertilizers.

Ans-1) cereals provide us with Carbohydrates.

ii) pulses give us proteins.

iii) Fruits and vegetables are a rich source of vitamins and minerals. A small amount of proteins, carbohydrates and fats are also present in them.

Ans-2 Six are required in large quantities is ~~called~~ known as macro nutrients. and nitrogen, phosphorus, potassium, calcium, magnesium and sulphur is called macro nutrients.

Ans-3 Seven nutrients are used by plants in small quantities and iron, manganese, boron, zinc, copper, molybdenum, chlorine is called micro nutrients.

Ans-4 Manure and fertilizers.

Ans-5 Organic farming is a farming system with minimal or no use of chemicals as fertilizers, herbicides, pesticides etc. is called organic farming.

Hydrates.

Source of amount of th are

ities is nitrogen, magnesium, ients.

ts in Small boron, zinc, Called

ystem with s as fertilize d organic

Q. 5

Manure

it is made up of Human waste.

They are made in Humus.

They are less nutrients.

Manure provides a lot of Humus to the Soil.

Fertilizers

it is made up of factories.

They are less in Humus.

They are more nutrients

Fertilizers does not provides any humus to the Soil.

Irrigation:- The supply of water to crops at fixed intervals time is called Irrigation.

Cropping patterns:- There are two types.

- i) mixed cropping
- ii) Inter Cropping.

Mixed Cropping:- Mixed cropping is growing of two or more crops simultaneously on the same piece of land.

eg:- wheat + gram, wheat + mustard, groundnut + sunflower.

Inter cropping :- Growing two or more crops in definite row patterns is known as inter cropping.

eg. Soyabean + maize, finger millet (bajra) + Cowpea (lob)

Crop rotation :- The growing of different crops on a piece of land in pre-planned succession is called crop rotation.

Weeds :- weeds are unwanted plants in the cultivated field.

eg. Xanthium (gokhroo), Parthenium (gajar ghas), Cyperinus rotundus (motha).

Stores of grains :- factors responsible for such losses are biotic - insects, rodents, fungi, mites and bacteria.

and abiotic - inappropriate moisture and temperatures in the place of storage.

Animal Husbandry :- The Science of rearing, feeding, caring, breeding and disease control of animals is called animal husbandry.

or
Scientific management of live stock.

Cattle
for a
and
Two a
Eg:-
i) Cows
ii) Buffalo
Exotic
Cross
Indig
Meth
V. Imp Indig
Poul
of a
reac
Fish
and
nat
Cat

Cattle farming :- Milk and draught labour for agricultural work such as tilling, irrigation and carting.

Eg:- Two different species.

- i) Cows (*Bos indicus*)
- ii) Buffaloes (*Bos bubalis*)

✓. Imp Exotic breeds of cows :- Jersey, Brown Swiss

Cross breeds of cows :- Karan - Shries, Karan - Shries, Frieswal.

Indigenous breeds of buffaloes :- ^{Mirzapur} ~~Mussals~~, Mehsana, Nagpuri etc.

✓. Imp Indigenous breeds :- Red Sindhi, Sahiwal.

Poultry farming :- Poultry is the branch of animal husbandry concerned with the rearing of birds for eggs and meat.

Fish farming :- Fish farming involves the rearing and breeding of fish scientifically by man in natural and artificial water bodies.

Capture fishing :- It is the process of obtaining fish from natural resources is called Capture fishing.

Culture fishery:— it is the practice of farming fishes. Farming can be done in both freshwater ecosystem and marine ecosystem.

Marine fisheries:— it involves commercial fish production in coastal sea waters.

eg:- mullets, bhetki and pearl spots etc.

Inland fisheries:— it involves fish production in freshwater resources and brackish waters like estuaries and lagoons.

eg:- Catla, silver carp, Rohu, mrigal, Grass carp, Common carp.

Bee-keeping:— Apiculture is the process of rearing of honey bees in the artificial hives called apiaries or Bee-keeping.

eg:- i) Indian bee is called *Apis cerana indica*.

ii) Rock bee is called *Apis dorsata*.

iii) Little bee is called *Apis florea*.

iv) Italian bee variety is called *Apis mellifera*.

* Bee-keeping is done to get honey and wax.

* Intext questions *

Q-1 why should preventive measures and biological controls methods be preferred for protecting crops?

Ans because they are not harmful to crop as well as to environment. They are ecologically safe, target specific and harmless to other organisms.

Q-2 what factors may be responsible for losses of grains during storage?

Ans Biotic factors:— Rodents, insects, birds, mites, fungi; bacteria etc.
abiotic factors:— moisture, temperature.

Q-3 which method is commonly used for improving cattle breeds?

Ans Cattle farming.

Q-4 What management practices are common in dairy and poultry farming?

Ans Common management practices in dairy and poultry farming are:—

- i) Proper shelter facilities and their regular cleaning.
- ii) ~~Some~~ Animals are kept in spacious, airy and ventilated place.

iii) prevention and care of diseases at the right time is ensured.



Q.5 How are fish obtained?

Ans There are two methods:-

- i) Capture fishing
- ii) Culture fishery

Q.6 What are the advantages of composite fish culture?

Ans Some times fish culture is done in combination with paddy crop in the field is called advantage of composite fish culture.

Q.7 What are the desirable characters of bee varieties suitable for honey production?

Ans Bee varieties having the following desirable characters are suitable for honey production:-

- i) They should yield high quantity of honey.
- ii) They should sting much.
- iii) They should stay in the beehive for long duration.
- iv) They should breed very well.

Q.8 What is posturage and how is it related to honey production?

Ans Posturage is the availability of flowers from which bees collect nectar and pollen. It is related to the production of honey as it determines the taste and quantity of honey.

Name
Define
what
placed
and w

Q.1
Q.2
Q.3

Ans-1-

Ans-2

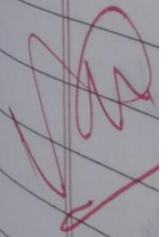
Ans-3

Bersee

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Remedial - Class

Q.1 Name two fodder crops.

Q.2 Define macro nutrient and micro nutrient.

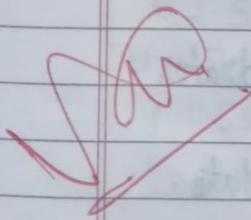
Q.3 What happens to an animal cell when it is placed in a very dilute external medium and why?

Ans-1 - Berseem and Sudan grass.

Ans-2. Macro nutrient: - Six are required in large quantities is known as macro nutrient.

Micro nutrient: - Seven nutrients are used by plants in small quantities is called micro nutrient.

Ans-3 it is swell up. because the amount of solute is very high as a result it will get burst up.



Date 24 / 9 / 18

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Revis - Revision

Q-1 Define hybridisation.

Q-2 Define weeds and give example.

Q-3 Define fodder crop with example.

Q-4 What we get from cereals, pulses, oil seeds.

Ans-1 Hybridisation refers to crossing between genetically dissimilar plants.

Ans-2 Weeds are unwanted plants in the cultivated field.

eg:- Xanthium (gokhroo), Parthenium (ga jar ~~gha~~),
Cyberinus rotundus (motha)

Ans-3 The crops grow for livestock and animals. eg:- Oats, berseem etc

eg:- Berseem and sudan grass.

Ans-4 i) cereals provide us with Carbohydrates.

ii) pulses give us proteins.

iii) oil seeds provide us ~~with~~ necessary fats.

Revision

Q.1

An object of mass 100 kg is accelerated uniformly from a velocity of 5 m/s to 8 m/s in 6 sec. Calculate the initial and final momentum of the object. Also find the magnitude of the force exerted on the object.

Q.2

A hockey ball of mass 200g travelling at 10 m/s is struck by a hockey stick so as to return it along its original path with a velocity of 5 m/s. Calculate the change of momentum occurred in the motion of the hockey ball by the force applied by the hockey stick.

Ans -1

$$m = 100 \text{ kg}$$

$$u = 5 \text{ m/s}$$

$$v = 8 \text{ m/s}$$

$$t = 6 \text{ sec.}$$

$$\text{Initial momentum } u = m u$$

$$= 100 \times 5$$

$$= 500 \text{ Kg m/s Ans}$$

$$\text{Final momentum } m = m v$$

$$= 100 \times 8$$

$$= 800 \text{ Kg m/s Ans}$$



Date 25, 9, 18

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$$F = ?$$

$$v = 8 \text{ m/s}$$

$$u = 5 \text{ m/s}$$

$$t = 6 \text{ sec.}$$

$$F = ?$$

$$a = ?$$

$$a = \frac{v-u}{t} = \frac{8-5}{6} = \frac{3}{6} = 0.5 \text{ m/s}^2$$

$$F = m \times a$$

$$F = 100 \times 0.5$$

$$F = 50 \text{ kg m/s}^2 \text{ Ans}$$

Q.2 $M = 200 \text{ g} = \frac{200}{1000} = 0.2 \text{ kg}$

$$u = 10 \text{ m/s}$$

$$v = -5 \text{ m/s}$$

$$P = mv - mu$$

$$P = 0.2 \times (-5) - 0.2 \times 10$$

$$P = -1 - 2$$

$$P = -3$$

$$P = -3 \text{ kg m/s Ans}$$

HALF YEARLY EXAMINATION, 2018 - 19 CLASS - IX SCIENCE

Physics PHYSICS

Q.1 what would be the acceleration of a body if its velocity time graph is a line parallel to time axis.

Ans Constant velocity. / 0

Q.2 Write the S.I. unit of linear momentum and force.

Ans Momentum — kg m/s
force — Newton (N)

Q.3 Distinguish between mass and weight of a body.

Mass	Weight
i) it is the quantity of matter contained in a body	i) weight of a body is the force with which the earth attracts a body
ii) it is scalar quantity	ii) it is vector quantity.
iii) its S.I. unit is kg .	iii) its S.I. unit is Newton (N)

"In a gentle way, you can shake the world." — Mahatma Gandhi



Q.4 - A particle is moving in a circular path of radius 'r'. Calculate distance and displacement after half circle.

Ans Distance $\rightarrow \pi r$
Displacement $\rightarrow 2r$

Q.5 State Newton's law of motion.

Ans Newton's Ist law of motion:— A body at rest will remain at rest a body at motion will remain at uniform motion unless unbalanced force action to the change of state of rest.

Newton's 4th law of motion:— The rate of change of momentum of an object is proportional to the applied unbalanced force to the direction of force.

Newton's IIIrd law of motion:— To each and every action there is equal and opposite reaction.

Q.6 Give two differences between acceleration due to gravity and universal gravitational Constant. Also obtain the relation between them.

Ans

- | | | |
|-----|--------------------------------------|--|
| i) | The value of $g = 9.8 \text{ m/s}^2$ | i) The value of G is $6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$ |
| ii) | $g = \frac{GM}{R^2}$ | ii) $G = \frac{Fd^2}{M \times m}$ |

Q-7 State universal law of gravitational. if two bodies having masses 4 kg and 6 kg are placed at a distance 2m apart

Relation between G and g .

we know that

$$F = ma$$

acceleration to the change of gravity

$$F = mg$$

we know that "

$$F = G \frac{M \times m}{R^2}$$

$$mg = G \frac{M \times m}{R^2}$$

$$g = G \frac{M \times m}{m R^2}$$

$$g = \frac{G M}{R^2}$$

Q-7 state universal law of gravitational. if two bodies having masses 4 kg and 6 kg are placed at a distance 2m apart. Calculate the force of attraction between them. what would be the new Force between them if distance between them is increased twice.

Ans

Universal law of gravitational:- Every object in the universal attracts every other object with a force which is proportional to the product of their masses and



inversely proportional to the square of the distance between them.

$$M = 4 \text{ Kg}$$

$$m = 6 \text{ Kg}$$

$$d = 2 \text{ m}$$

$$G = 6.67 \times 10^{-11}$$

$$F = G \frac{M \times m}{d^2}$$

$$= \frac{6.67 \times 10^{-11} \times 4 \times 6}{(2)^2}$$

$$= 40.02 \times 10^{-11} \text{ N Ans}$$

distance is increased and distance twice

$$M = 4 \text{ Kg}$$

$$m = 6 \text{ Kg}$$

$$d = 4 \text{ m}$$

$$G = 6.67 \times 10^{-11}$$

$$F = G \frac{M \times m}{d^2}$$

$$F = \frac{6.67 \times 10^{-11} \times 4 \times 6}{(4)^2}$$

$$F = \frac{160.08 \times 10^{-11}}{16}$$

$$F = 10.005 \times 10^{-11} \text{ N Ans}$$

Q.8 State Conservation law of linear momentum
 A hockey ball of mass 200g travelling at 15 m/s is struck by a hockey stick so as to return it along its original path with a velocity of 10 m/s. Calculate the change of momentum occurred in the motion of hockey ball by the force applied by hockey stick.

Ans Conservation law of linear momentum:-
 Total momentum of two object is unchanged or conserved by collision.

$$M = 200 \text{ g} = 0.2 \text{ kg}$$

$$V = 15 \text{ m/s}$$

$$u = -10 \text{ m/s}$$

$$\text{Change in momentum} = Mv - Mu$$

$$\Delta P = 0.2 \times 15 - 0.2 \times 10$$

$$\Delta P = 3$$

$$\Delta P = 0.2 \times -10 - 0.2 \times 15$$

$$\Delta P = -2 - 3$$

$$\Delta P = -5 \text{ kg m/s}$$

BIOLOGY

Q.1 Answer the following in very short $1 \times 10 = 10$.
 A) which meristem is present at growing tips of stem and roots?
 A ⇒ Apical meristem tissue.

B) what is the name given to a group of cells with similar structure organized to do a similar function?

Ans Tissue.

C) Which tissue is responsible to transport of water and mineral in plants?

Ans Xylem.

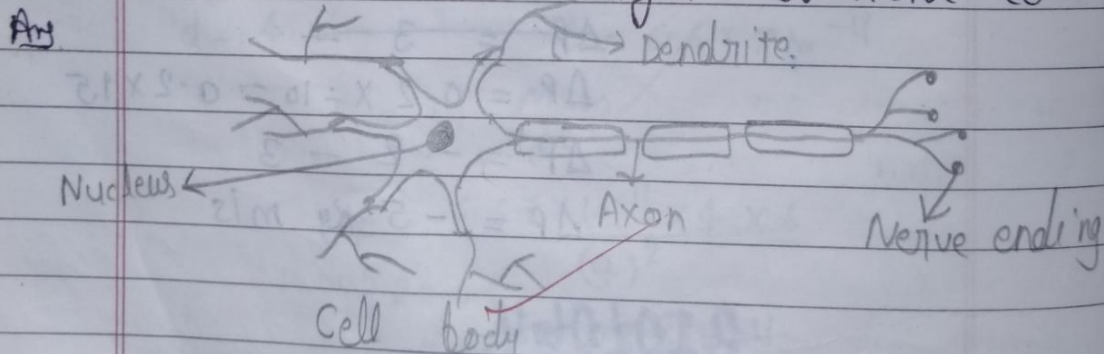
D) which tissue ~~conduct~~ in plants Conducts food?

Ans Phloem

E) what type of tissue is the blood?

Ans Connective tissue

F) Draw a labeled diagram of nerve cell.



G) Name two oil yielding crops.

Ans Sunflower, mustard.

H) Name the two fodder crop.

Ans berseem, sudden grass.

I) which cell organelle is known as the power house of the cell.

Ans Mitochondria.

J) where are the protein synthesized in the cell?

Ans Ribosomes.

Q.2- Answer the following in short. $2 \times 5 = 10$

A) Write any two differences between plant cell and animal cell.

Ans plant cell

animal cell

i) it is chloroplast present.

i) it is chloroplast absence.

ii) it is Cell wall present.

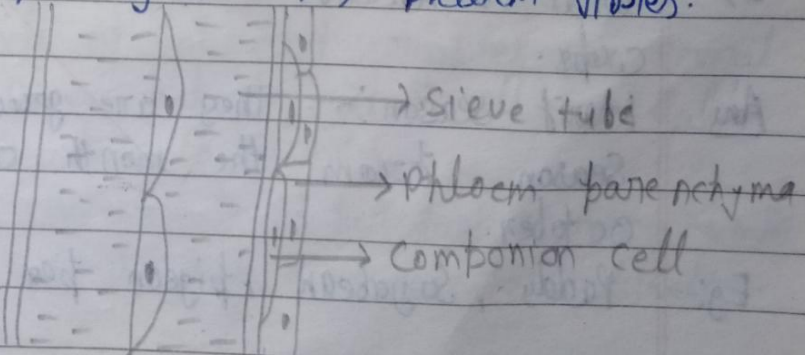
ii) it is Cell-wall absence.

Q.3) What are the constituent of phloem? Explain through labeled diagram.

Ans Phloem are 4 constituent :-

i) Sieve tube ii) Companion cell

iii) phloem parenchyma iv) phloem fibres.



Phloem

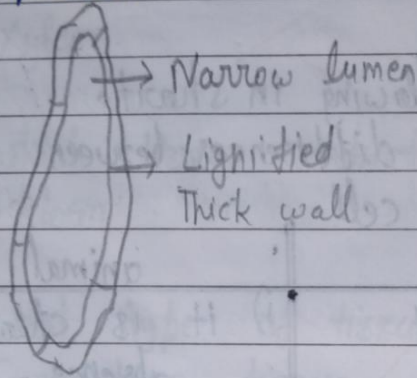
"In a gentle way, you can shake the world." - Mahatma Gandhi

c) Differentiate between sclerenchyma and parenchyma tissues. Draw a well labeled diagram.

Ans Sclerenchyma

i) it is intercellular space absence.

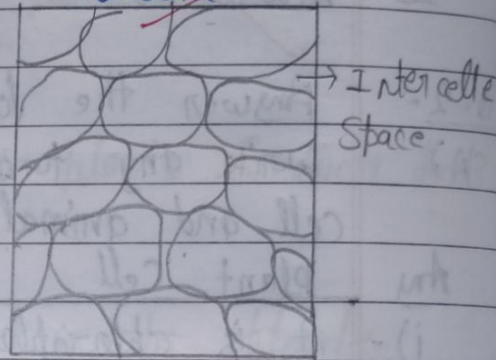
ii) it is narrow lumen present.



parenchyma

i) it is intercellular space present.

ii) it is narrow lumen absence.



D) Explain any one method of crop production which ensures high yield.

Ans Hybridisation.

Hybridisation refers to crossing between genetically ~~modified~~ dissimilar plants.

E) What is kharif season? Name few kharif crops.

Ans Kharif season:— They are grown in rainy season from the month of ~~June~~ June to October.

Eg:— Paddy, Soyabean, pigeon pea etc.

3-
A)
Any.
B)
C)
A)
b)
c)
d)
Q-1
A)
Q-2
i)
Any

3- Practical Based questions.

A) state the function of stomata for the plant.

Ans. it helps in ~~increase~~ transpiration and exchange of gases.

B) which of the following is not a source of carbohydrate?

- a) Rice
- b) millets
- c) Sorghum
- d) Gram ✓

CHEMISTRY

Q-1 Define evaporation with example.

Ans. evaporation:— The phenomenon of change of liquid into vapour at any temperature below its boiling temperature is called evaporation.

eg: → Sodium chloride from its solution in water.

Q-2 Give Reason for the following questions:—

i) The smell of hot food reaches you several meters away, but to get smell of cold food you have to go close.

Ans. because The smell of hot food is more kinetic energy and The ~~hot~~ cold food is less kinetic energy.

"In a gentle way, you can shake the world." —Mahatma Gandhi

ii) Naphthalene balls disappear with time without leaving any solid.

Ans because Naphthalene balls sublimation and directly change it to vapour state without leaving any solid.

3. a) Name the process to separate the following.

i) oil from water

⇒ separating funnel.

ii) two coloured dyes

⇒ chromatography

b) one point difference between mixture and compound.

Ans

Mixture	Compound.
i) mixture is a variable composition.	i) Compound is not variable composition.
ii) mixture is separate physical method.	ii) Compound is separate chemical method.

c) what happens when light is passed through a colloidal solution.

Ans Tyndall effect.

4. i) what are the characteristics of particles of matter.

- Any
- Particles of matter have space between them.
 - Particles of matter are continuously moving.
 - Particles of matter are attract to each other.

(ii) Convert the following into kelvin scale.

a) -273°C

$$K = -273 - (-273)$$

$$K = C + 273$$

$$K = -273 + 273$$

$$K = 0^{\circ}\text{K} \text{ Any}$$

b) 0°C

$$K = C + 273$$

$$K = 0 + 273$$

$$K = 273^{\circ}\text{K} \text{ Any}$$

0.5

A solution of urea in water is 120 g and it contains 16 g of urea. Find out the mass percentage of solution.

Any

Solute = 16 g.

Solution = 120 g.

$$\text{Mass \% of substance} = \frac{16}{120} \times 100$$

$$= \frac{40}{3}$$

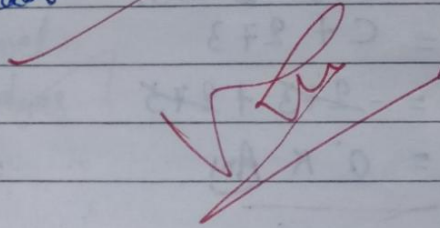
$$\approx 13.33\% \text{ Any}$$

6. i) there are three test-tubes A, B and C. A is filled with milk B is filled with chalk powder solution and C is filled with salt solution. identify the types of solution (true, suspension and colloid)

Ans A is Colloid
B is Suspension
C is Solution

ii) A substance which is used to kill germs of the woollen clothes, property of sublimation and having pungent smell. Name the substance.

Ans Naphthalene balls.



Q.2

Q.3

Ans

- i)
- ii)
- iii)

- i)
- ii)
- iii)

Q.5

Ans

- i)

- ii)

Exercise

Q.2 why are manure and fertilizers used in fields?

Ans They are used to ensure good vegetable growth (leaves, branches and flowers) giving rise to healthy plants. that results in high crop production.

Q.3 what are the advantages of inter-cropping and crop rotation?

Ans Advantages of using inter cropping:-

- i) it helps to maintain soil fertility.
- ii) it increases productivity per unit area.
- iii) Save labour and time.

Advantages of using crop rotation:-

- i) it improves the soil fertility
- ii) it minimise pest infestation and disease.
- iii) it helps in weed control.

Q.5 How do storage grain losses occur?

Ans The factors responsible for loss of grains during storage are:-

- i) abiotic factors like moisture (present in food grains), humidity (of Air) and temperature.
- ii) Biotic factors like insects, rodents, birds

"You have to take the calculated risk, to earn something." - Dhirubhani Ambani



mits and bacteria.

Q.6 How do good animal husbandry practices benefit farmers?

Ans Good animal husbandry practices are beneficial to the farmers in the following ways:-

- i) improvement of breeds of the domesticated animals.
- ii) Increasing the yield of food stuffs such as milk, eggs and meat.
- iii) Proper management of domestic animals in terms of shelter, feeding, care and protecting against disease. which ultimately helps the farmers to improve their economic condition.

Q.7 what are the benefits of cattle farming?

Ans Cattle farming is beneficial in the following ways:-

- i) milk production is increased by high yielding animals.
- ii) good quality of meat, fibre and skin can be obtained.
- iii) Good breed of draught animals can be obtained.



Q-8 For increasing production, what is common in poultry, fisheries and bee-keeping?

Ans Through cross breeding the production of poultry, fisheries and bee-keeping can be increased.

Q-9 How do you differentiate between capture fishing, mariculture and aquaculture?

Ans Capture fishing:— it is the fishing in which fishes are captured from natural resources like pond, sea water and estuaries.

Mariculture:— it is the culture of fish in marine water. Varieties like prawns, oysters, bhetki and mullets are cultured for fishing.

Aquaculture:— it is done both in fresh water in marine water.