



B. L. D. E. Association's

S. B. ARTS & K. C. P. SCIENCE COLLEGE, VIJAYAPUR

First

INTERNAL TEST 2022-2023

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Subject/ವಿಷಯ: Zoology Semester/ಸೆಮಿಸ್ಟರ್: II Exam Seat No./ಪರೀಕ್ಷೆ ಸ್ಥಳಾಂಕ: U15KM22S0241

Invigilator's Signature / ಕೂಲಿ ಮೇಲ್ವಿಚಾರಕರ ಸಹಿ Signature of Evaluator / ಪರೀಕ್ಷಕರ ಸಹಿ Marks obtained/ಪಡೆದ ಅಂಕಗಳು

29/30

Section-I

Ans-2 Glycoconjugates → It is formed from the process of Glycosylation. It is formed by chain link of covalent bond. protein, lipids & carbohydrates are called as Glycoconjugates.

Ans-3 Types of Lipids.

- i) Simple lipids
- ii) Compound lipids
- iii) Derivates lipids

Ans-4 Prolactin → It is hormone produced after delivery of baby to induce formation of milk in mammary gland is called as Prolactin.

Ans-5 FSH → Follicle Stimulating Hormone.
LH → Luteinizing Hormone.

Ans-6 ACTH → Adrenocorticotrophic Hormone.
Function: It stimulates our body to produce cortisol.

Section II

II

Ans-1 Classification of Carbohydrates.
Carbohydrates are classified on the bases of Reducing capacity of Reducing agent. They consist of two types.

i) Reducing Sugar.

ii) Non Reducing Sugar.

i) Reducing sugar → The sugars which can be reduced on reducing agents such as Fehling's agent & Tollen's Reagent are called as Reducing sugar.

* They can be reduced on reacting with Reducing agents such as Tollen's & Fehling's Reagent.

Example → Disaccharides like Maltose & Lactose.

ii) Non-Reducing sugar → The sugar which cannot be reduced on Reducing agents such as Tollen's Reagent & Fehling's Reagent are called Non-Reducing sugar.

* They can't be reduced on reacting with Reducing agents such as Tollen's & Fehling's Reagent.

Example → Monosaccharide like glucose.
→ Sucrose.

⇒ Some Carbohydrates are classified on the basis of sugar components they have.

i) Monosaccharide.

ii) Disaccharide.

iii) Polysaccharide.

i) Monosaccharide

The sugar Carbohydrates which contain only one sugar molecules are called as Monosaccharide.

Ex → Glucose
fructose
Galactose.

ii) Disaccharides

The carbohydrates which contain called as 2 sugar molecule are called as Disaccharides.

Ex → Sucrose
Maltose
Lactose.

ii) Polysaccharides → The carbohydrates which contain more than 2 sugar molecules are called as Polysaccharides.

Ex → Starch.

Cellulose

Galactogen

Ans → 4. Pituitary Gland.

* It is connected by stalk formed from struts. is called Pituitary gland.

* It is also called as Master gland because the hormone secreted in Hypothalamus were stored by Pituitary Gland.

* Pituitary gland is divided into two parts Anatomically

i) Anterior Pituitary (Adenohypophysis).

ii) Posterior Pituitary (Neurohypophysis).

i) Anterior Pituitary

* It is again divided into two parts. Pars & Distals. Distals also known as releasing hormone.

It produces some hormones namely

1) FSH → Follicle Stimulating Hormone → Stimulates follicle

2) LH → Luteinizing Hormone

→ maintain secondary sexual characters in males

3) TSH → Thyroid Stimulating Hormone

→ It stimulates thyroid gland to produce hormones

4) GH → Growth hormone

→ Induces growth of Human

→ High growth causes Gigantism

→ Low growth causes Dwarfism

5) GnRH → Gonadotrophin Releasing Hormone.

→ Induces Gonadotrophin

6) ACTH → Adrenocorticotrophic Hormone.

→ Induces to produce Cortisol.

ii) Neurohypophysis. (Posterior Pituitary)

* It is located in posterior part of Pituitary.

* It produces two hormones

i) Oxytocin $\rightarrow$ It called Birth hormone during birth
It causes contraction of uterine wall.

ii) Vasopressin.

Ans $\rightarrow$ 5. Thyroid gland.

* It is located on either side of lobe of Trachea.

* It is composed by connected by small connective tissue called Isthmus.

* Iodine is essential for normal working of Thyroid gland.

* Increase in Thyroid Iodine production causes the Hyperthyroidism which causes
 $\rightarrow$ Mental Retardation.

$\rightarrow$ weakness

$\rightarrow$ decrease in concentration.

* Decrease in Iodine production causes Hypothyroidism.

* It causes goitre.

* Thyroid gland is composed of

i) follicles

$\rightarrow$ It composes $T_3 \rightarrow$ Triiodothyronine

$T_4 \rightarrow$ Tetraiodothyronine

ii) Tissues

* Thyroid also produces TCT (Thyrocalcitonin).
Hormones

Function of Thyroid gland

* It maintain metabolism of body.

* It helps in RBE production.

* It helps in protein, carbohydrate, lipid formation.

* It also produces TCT $\rightarrow$ Thyrocalcitonin which increases the blood Ca^{2+} ions levels.

Ans → 6 Pineal Gland.

- * It is located in fore brain part of our body.
- * It produce melatonin
- * It controls our daily routine which is important to lead life.
- * It also balances our body diet
- * It also helps in every cycle of our life.

Functions

- ⇒ It balance sleep - wake cycle.
- ⇒ It maintains Rhythm.
- ⇒ It balances our diet
- ⇒ It maintains body diet balance.
- ⇒ It maintains Rhythm.
- ⇒ It maintains our heartbeat
- ⇒ It has control on our locomotion.

~~A~~



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INTERNAL TEST 20 22 -2023

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Subject/ವಿಷಯ: zoology (OEC) Semester/ಸೆಮಿಸ್ಟರ್: IInd Exam Seat No / ಪರೀಕ್ಷೆ ಸ್ಥಳಾಂಕ: 015KM7250004

Invigilator's Signature / ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರ ಸಹಿ Signature of Evaluator / ಪರೀಕ್ಷಕರ ಸಹಿ Marks obtained/ ಪಡೆದ ಅಂಕಗಳು

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ell

I)

1) CCI- Counter current immunoelectrophoresis. ~~but~~ it is the process of mixture of antigen and antibody separation by agarose gel electrophoresis is known as counter current immunoelectrophoresis.

2) Entamoeba histolytica it is protozoan parasite caused by disease of dysentery stool, it is popular in Asia, India, china causes disease in human body of mucosa and submucosa of intestinal tract.

3) Fasciolepsis buski it is disease caused by unsegmented eggs in faeces & unsegmented eggs in water after in cercarial snail, enter into the swimming snail in cercarial by digestive tract of lungs.

4) Ascariasis diseases cause Ascaris lumbricoides in human by digestive system tract, it is a disease caused by contaminated food, drinks enters through mouth & cause ascariasis disease in human.

5) Ancylostoma duodenale it is disease caused human in through digestive tract of duodenum, Ilium & form Rhabditiform larvae & enter into soil after moulting stage occurs in that Ancylostoma duodenale life cycle.

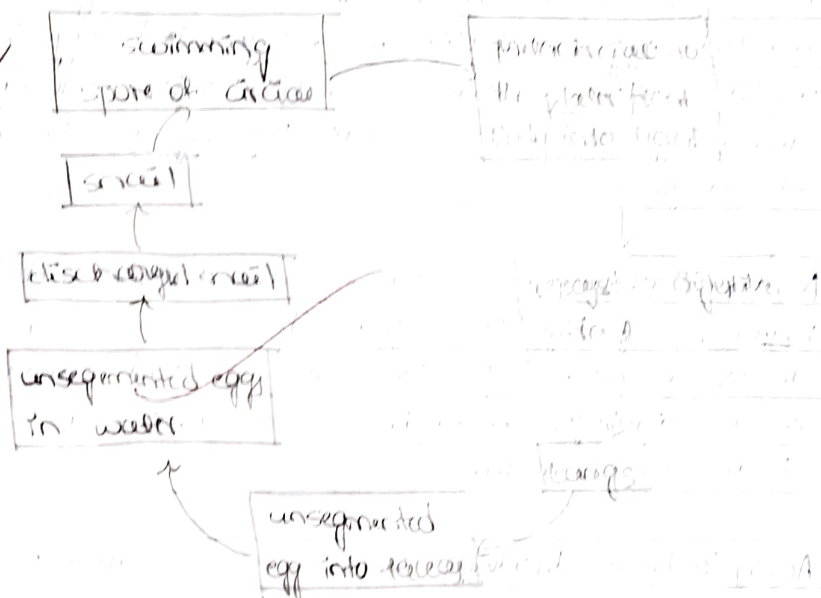
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2) Hymenolysis, it is caused by man
washes pig in digestive tract of human
in duodenum, ileum and jejunum in
that system

* First it enters through the mouth by
contaminated food through circulation
system in the body

* Larva enter into the body to form coenurus
in the ileum system to show coenurus in
that system Pig to pig, human to pig
coenurus has to digestive system tract
in human body.

* First to unsegmented egg in water to
forms segmented egg in water after to
discharged snail to snail after through
lungs.



3) PCR is Polymerase chain Reaction, PCR is
defined as the separation or break down
of hydrogen bond in between two strands
to form DNA polymerase, it is
known as polymerase chain Reaction.

In polymerase chain Reaction there are 3 types

- 1) Denaturation
- 2) Annealing
- 3) Extension of polymerase.

* Denaturation: It is the process of break down of hydrogen bond by separation of two strands to form new chain of DNA tag polymerase reaction it is known as Denaturation.

* Annealing: It is the process of separation of two strands by PCR technique by separation of two hydrogen bonds from strand to form new chain & reaction it is known as Annealing.

* Extension: It is the process of break down of strand by Adenine, Guanine type of reaction to form new tag polymerase chain reaction is known as Extension of polymerase chain reaction.

* RT-PCR: Real time Polymerase chain reaction is exhibited in 1986.

* Loop: It is the reaction of PCR by formation of loop between chains in two strands of Y shaped PCR technique in this process.

g) * Schistosoma haematobium it is a disease caused by through contaminated food through the tract of gastrointestinal tract.

* It is causing through mouth to stomach and small intestine, large intestine through Ileum (Jejunum) to the tract of intestine to cause larvae enter into the tract.

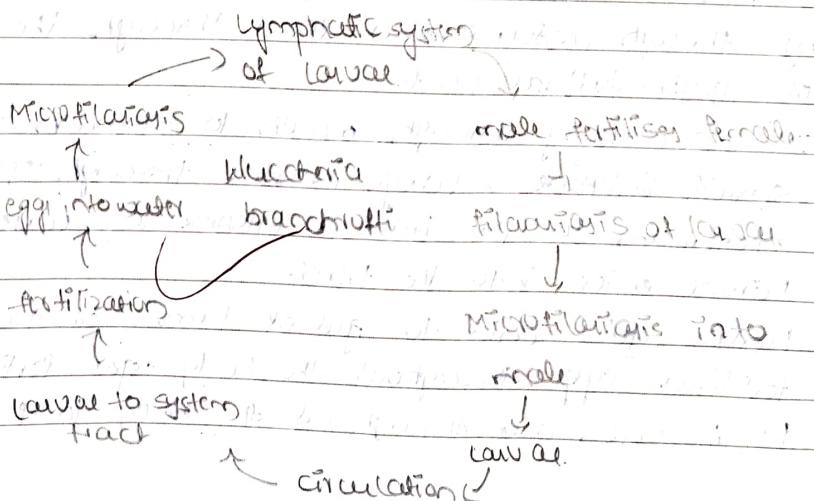
* Larvae gets enter to gut of human of tract fertilized eggs throughout the body get fertilized to hatched out throughout the body to form

moulting stages of occurs in the life cycle to the pig to man it causes disease to human body

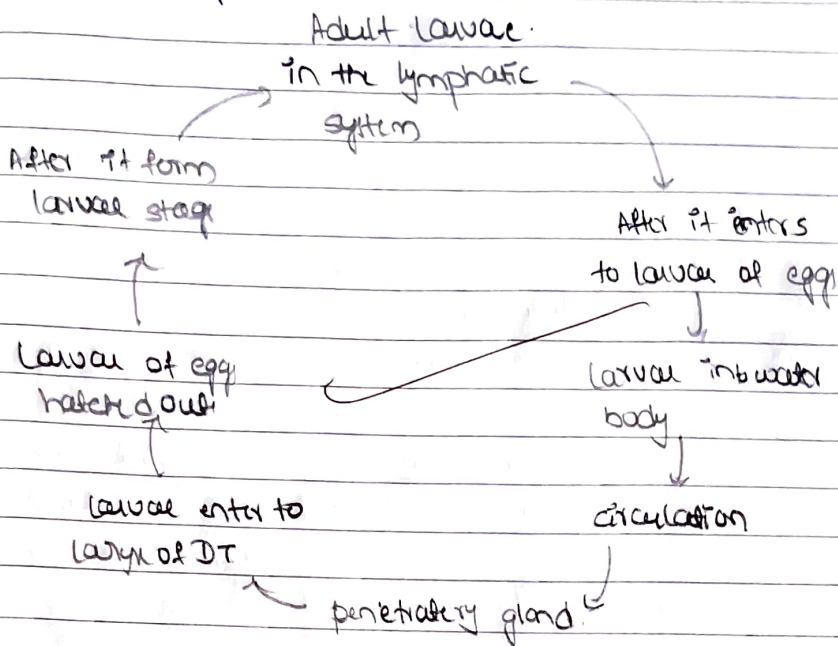
- * Larvae gets enter into tract of digestive tract of lymphatic system to destroy the the eggs to host in the life cycle.
- * Larvae in the adult stage to form larval infection to male & female body to form diseases.
- * Microfilaria gets discharged in the larva after microfilaria into eggs to hatched into water & male fertilises female into the tract of system.

10) Wuchereria Bancrofti

- * Wuchereria Bancrofti is disease of lymphatic, filariasis / filarial forms.
- * It is disease caused in both male and female
- * It is symptoms is to cause swollen legs
- * In female it causes of swollen mammary - ary glands
- * In male it causes of swollen testies.
- * It is transmitt, white and elongated
- * wuchereria bancrofti causes of swollen legs in female & male.
- * It is filarial disease causes filariasis.
- * Wuchereria bancrofti causes the disease in



n) *Tricinelia spiralis*



3



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Roll No./ಸ್ಥಾನಂಕ: 356 Date/ದಿನಾಂಕ: 21/01/2023

Subject/ವಿಷಯ: Zoology

Semester/ಸೆಮಿಸ್ಟರ್: Vth

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Marks obtained/ ಪಡೆದ ಅಂಕಗಳು

20/20

(1)

1. Probiotics:-

"Probiotics are ~~for~~ used in probiotics related to biologically important one, acts as important express their characteristics."

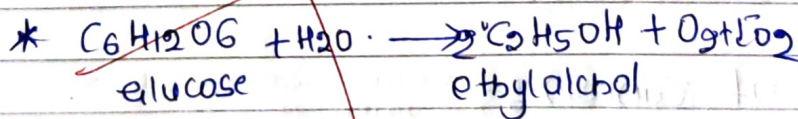
(2) Phytoremediation:-

"Phytoremediation is a process using the light and protect the living organisms, using photons to increase the quality of the living beings are called phytoremediation."

★ Phytoremediation is a technique used to formation of living beings

(3) Fermentation:-

The process of ~~ferment~~ conversion glucose into alcohol and complex compounds into simple compounds are called as fermentation



ex:- fermentation of alcohol
ethyl alcohol from grapes

[6] Carcinogens:-

* Cancer causing elements/substances are called as carcinogens.

* "Continuous division of cell occurs in the body tumor cells are formed — cancer cells."

* "Carcinogens also called as carcinogens/cancer cells"

"Causes of Cancer:-

"Metastasis:-

* Continuously dividing of cell occurs in the body uncontrolled manner

* "Abnormal cell division:-

Normal human beings division of cell occurs in the way of controlled manner.

But in cancer disease patient have uncontrolled cells divide and divide to form "tumor".

"Formation of tumor:-

* cells divide and divide to form the tumor.

Different types of Cancer:-

* Skin Cancer

* Breast Cancer

* Bone marrow Cancer

* Blood Cancer

* Cytoplasmic Cell Cancer

Treatment of Cancer:-

* Chemotherapy

* Immunotherapy

* Radiation therapy

* Surgery.

Prenatal of carcinogens:-

- * completely stop the intake of tobacco.
- * "Stop to drink alcohol.
- * Stop and avoid to take drugs.
- * To maintained healthy food.
- * To maintained balanced diet food.
- * avoid to direct exposure sunlight on the body.
- * using sun creams to avoid rays. to protect our body.
- * Healthy vegetables, fruits, cereals and pulses are used daily food
- * "avoid junk food
- * do practice yoga

Endoplasmic Reticulum:-

endoplasmic reticulum is membranous structure made by the tubules, vesicles and membranous network like structure are called as endoplasmic reticulum.

P endoplasmic reticulum seen in "eukaryotic cells"

Endoplasmic Reticulum 2 types

- 1) Rough endoplasmic reticulum
- 2) Smooth endoplasmic reticulum.

1) Rough endoplasmic reticulum:-

Ribosomes are attached to the cisternae part in endoplasmia are called as Rough endoplasmic reticulum.

2) Smooth endoplasmic reticulum:-

Ribosomes are not attached to this membrane are called as Smooth endoplasmic reticulum.

Functions of endoplasmic reticulum:-

Functions of Rough endoplasmic reticulum:-

- * Ribosomes are attached to or at
- " " Synthesis, lipid, and phospholipids
- * metabolism of carbohydrates.
- * formation of steroid hormones

Functions of Smooth endoplasmic reticulum:-

- * Protein Synthesis
- * folding process is proceed by SER
- * Protein Secretion

"

- * " transformation of substances to cytosol
to vacuole vice versa

- * most of the membrane is cytoplasmic
hence functioning of cytosol

- * Synthesis & secretion of steroid
hormones.

- * Protein Synthesis, Synthesis of lipids,
phospholipids and cholesterol

- * folding of protein.

(9)

Motivation of research:-

"Research"

- * "Research is the technique finding
New one,

- * method finding unknown things from
the known things

- * "Research" → interesting field finding
new one, and learned, and acquire the
knowledge.

"Motivation:-

- * Research improves thinking power
- * encourage the capacity of man to find new one to the society.
- * Government also helps to provide the information and encouragement to the researchers
- * finally successful process give a award from research institute.
- * Different types of research institutes are present in India and other countries.

Different types research methods :-

- 1] Descriptive v/s Analytical
- 2] Fundamental v/s Basic
- 3] Quantitative v/s Qualitative

* Quantitative v/s Qualitative

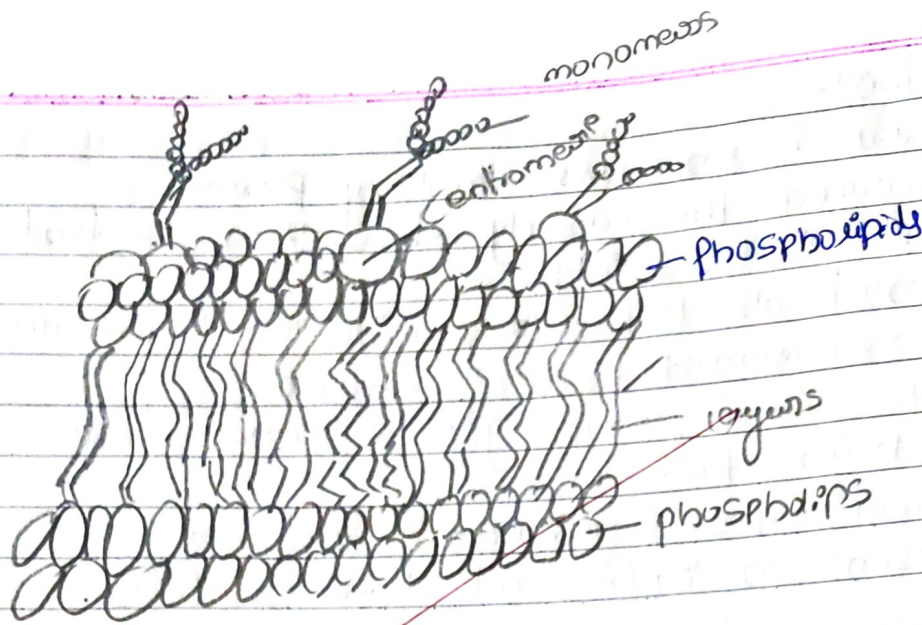
This method of Quantitative is the measuring the quantity of amount and express their quantity.

- Qualitative method
- Qualitative method phenomenon
- Interest of research method technology

Application of research method :-

- "Motivate to generation to generation find something new.
- Improves thinking power
- Improves the institutions
- " states to the country. Status by the organising the functions and new search methods.

7)



→ "plasma membrane" -

"plasma membrane is made by the phospholipids, proteins and fats."

→ "plasma membrane" outer layer of the cell

→ * plasma membrane separates the cell wall and cytoplasm.

→ plasma membrane is the barrier that layers transport the minerals.

→ "Singer and nicolson" proposed the plasma membrane in "1972"

→ * plasma membrane made by 2 layers of phospholipids.

→ * Composition of plasma membrane
proteins
phospholipids
cholesterol

→ * Different theories are processed by different scientists

Functions of Plasma membrane :-

- * transport the substance from cell wall to cytoplasm
- * Plasma membrane is the barrier membrane layers transport the minerals, ions and salts.
- * Plasma membrane helps to 'plasmolysis' and shrinkage process

4) Bioremediation :-

The process of using using microbes, bacteria and organisms to protect the food materials substances and using and non using things are called as Bioremediation.

'Advantage of Bioremediation :-

- * increasing quantity
- * nutritional value
- * quality of the substance
- * different types of remediation
 - * → Photoremediation
 - Bioremediation
 - Chemoremediation
- * Bioremediation process are used in different places of India and other countries
- * Bioremediation is the economically important one.
- * • Productivity increases
- * quantity and quality
- * • Nutritional value
- * More help to economically and society
- * • Bioremediation are used by the scientists.

* Phytoremediation

Phytoremediation Phytos are used in this
• Phytoremediation.

~~Di~~

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Date / ದಿನಾಂಕ: 20/2-2023Subject/ವಿಷಯ: ZoologySemester/ಸೆಮಿಸ್ಟರ್: BSCIIIrdExam Seat No / ಪರೀಕ್ಷೆ ಸ್ಥಳಾಂಕ: U15KM2100065

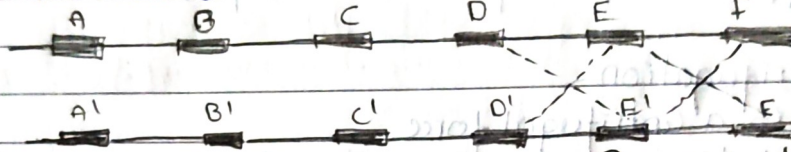
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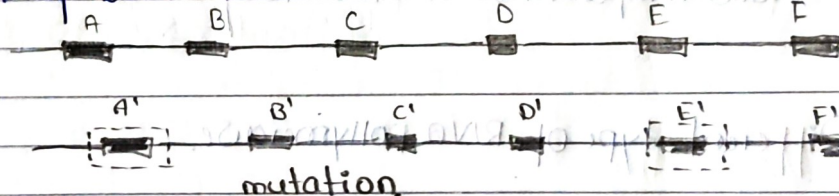
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30/30I. ~~Muton~~ - Recon

3. ~~Muton~~ → Crossing over occurs b/w the two genes
- * In 1962 Benzer demonstrate the crossing over or recombination unit with functional gene or cistron.
- * In cistron the recombination units are only more than one.

2. Muton -

- * The term muton is describe in 1962 to Benzer.
- * The term denote the smallest unit of chromosomes to undergoing the mutation changes.
- * Hence, The muton is also called as the smallest unit of DNA which are the nucleotides.

4. HPLC -High performance Liquid chromatography.

It also known as HPLC. It is

analytic technique. use to separate, identify, and quantify the to all mixture of components

→ use high atmospheric pressure.

→ There are two types ① mobile phase

② stationary phase,

5. Dark field microscopy -

The microscopes are either the light microscopes or electron microscope which is similar to the ordinary light microscope.

- * However the system is modified so that the specimen is not illuminated directly.
- * The Dark field microscope is arranged so that the light source is blocked up.
- * It is cone of light the rays are diffracted, refracted and reflected to the object.

6. Centrifugation -

- * It is a Centrifugal force
- * particles - size, shape, density, viscosity.
- * ~~Two~~ Three Types - low speed, high speed, Ultracentrifugation.
- * used to separation of urine compounds and blood components in laboratory.

II.

7. Different type of RNA polymerase.

There are 5 types of RNA polymerase.

1. RNA polymerase I
2. RNA polymerase II
3. RNA polymerase III
4. RNA polymerase IV
5. RNA polymerase V

1) RNA Polymerase I -

- * The enzyme is found in the nucleus of the cells.
- * It is a specialized nuclear substructure and RNA polymerase undergoes the synthesized transcription and assembled ribosomes.
- * They are the process of small microbes are the transcription units.

2) RNA Polymerase II -

- * The enzyme found in the nucleus.
- * The organisms are more in RNA Polymerase II.
- * It has 12 subunits.
- * It consists transcription units and transcriptional ribosomes.
- * It is mainly synthesized the code of pre-mRNA in eukaryotic cells.

3) RNA Polymerase III -

- * The enzyme found in the nucleus.
- * The RNA polymerase III contains 16 or distinct subunits.
- * It transcribes the transfer RNA, messenger RNA and small RNAs.

4) RNA polymerase IV + V

- * The enzymes are found in the plants.
- * In plants, mitochondrial ribosomes are seen.

9. SEM -

Scanning Electron microscope -

- * It is a electron microscope it a specimen to uses a beam of electron to move at low energy level.
- * It has a very short wavelength comparison to the light microscope.

Principle -

- * Instead of Scanning electron microscope emits the Scattered light and the Transmitted electron microscope transmit the electron
- * which is not visible in the human eye.
- * The transmitted electron microscope works on the principle of applying the kinetic energy.
- * The secondary and diffracted index and the refracted index are the used to crystalised photons and Image.
- * The Secondary index and diffracted index are used to seen the image.

Application

- * It is a better resolution power.
- * used in the study of microorganism like algae, plankton, Bacteria, insects etc.
- * used in the industries.
- * used in laboratories.
- * Used to analyse the chemical and X-ray
- * used in Hospitals.

10.

Phase Contrast microscope -

It is an optical microscope that specimen can move to the transparent specimen to brightness changes in the image. it is called phase contrast microscope.

Principle -

- * when light passes through cells. The other phase contrast is occurs.
- * It is not visible in the human eye.
- * phase contrast microscope is the having a changes into an amplitude.
- * In phase contrast microscope The image will separated.
- * when light passes through cells. small phase shift is occurs.
- * It is the work on the principle of apply the kinetic energy.

Application -

- * living organisms
- * The small slices
- * used in laboratories
- * used to study the microorganism.
- * used in genetic labs
- * used in hospital
- * Used in Industries.

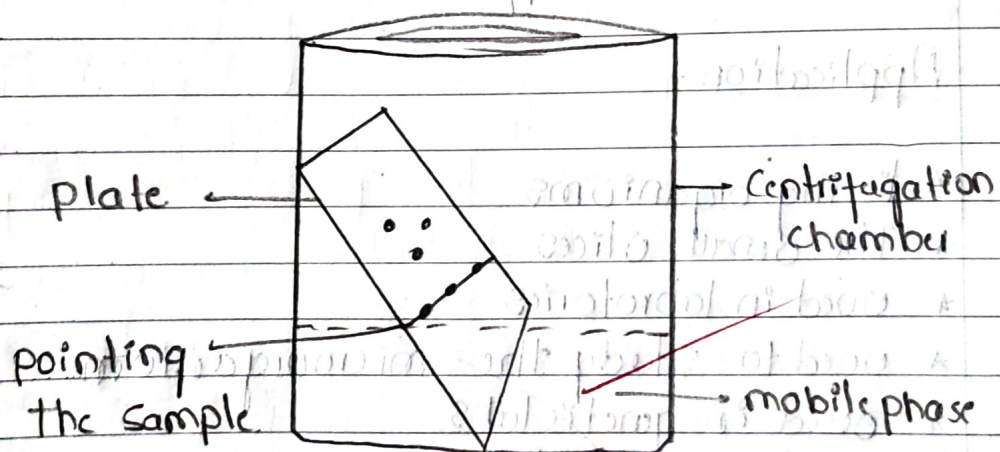
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Thin layer chromatography -

Thin layer chromatography can be defined as the separation and identification of the all the mixture of components.

Principle -

- * Thin layer chromatography is a separation of components. it is b/w two components.
- * The separation of components using mainly silica gel, aluminium oxide and cellulose.
- * Thin layer chromatography is on a sheet of glass, plastic and aluminium foil.
- * It is known as the separation phase.
- * After adding the sample on the plate, the pour the sample of via capillary action.



Application -

- * In monitoring the technique sample.

5

- * To identify or analysing the different components in a given mixture.
- To identify the medicinal plants and their constituents.
- * To impurity of the substance.

I..

1. Cistrone -

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Invigilator's Signature / ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರ ಸಹಿ Signature of Evaluator / ಪರೀಕ್ಷಕರ ಸಹಿ Marks obtained / ಪಡೆದ ಅಂಕಗಳು

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I.

- ① → These are the 4 small glands present at the back side of the thyroid gland
→ one pair of parathyroid gland present at the 2 lobes
→ These glands secrete calcitonin hormone.
→ this calcitonin hormone helps to increase the level of calcium in the blood
→ It also includes the osteoclastic activity.

②

- prostaglandin
→ These glands are present in all the parts of the body like hand, leg, head etc.
→ Its main function is vasodilation.
→ It promotes the help during injury & illness
→ It promotes naturally by swelling, Redness, hotness etc.
→ It also helps during menstruation, constriction, parturition.

- ④ → The two gastrointestinal hormones are

- ① Secretin
- ② gastrin
- ③ ghrelin
- ④ somatostatin

⑤

Gigantism

- It is the increased height due to increased secretion of the growth hormone by Acidophilic tumor during childhood.

→ This leads to the large head, noticeable forehead, weakness etc.

*Treatment

→ removal of tumour surgically

⑥

→ It is the condition in which less production of growth hormone during puberty.

→ It leads to the stunted growth

→ 10 years children look like 5 years.

→ no mental retardation

→ They are sexually matured

→ treatment by injecting the tumour.

II.

⑦

→ thyroid gland

→ thyroid gland is located in the throat region.

→ then it is in 2 lobes of the throat region.

→ thyroid gland connected by a isthmus.

→ thyroid gland produces 2 hormones thyroxine & triiodothyronine.

→ these two hormones are made up of amino acids & iodine atoms.

→ thyroxine is made up of 4 Iodine atoms

→ Triiodothyronine is made up of 3 Iodine atoms.

→ Hyposecretion of thyroxine in children leads to the cretinism. It leads to stunted growth, wrinkled skin, etc.

→ thyroxine plays main role in maintaining healthy skin, hair, blood pressure etc.

- Hypo secretion of thyroxine in adults leads to the bull's diseases.
- Some times it also leads to the goitre. it is commonly seen in himalayan people.
- Hyper secretion of thyroxine leads to the graves disease.

⑧ Adrenal gland.

- It is superior to the kidney.
- Adrenal gland consists of two regions Adrenal cortex & Adrenal medulla.

* Adrenal cortex:

→ It consists of regions they are:

① Zona glomerulosa

- The mineralocorticoid hormone is secreted by Zona glomerulosa.
- It helps in maintaining the blood pressure, heart beat etc.

② Zona fasciculata

- The cortisol hormone glucocorticoid is secreted by zona fasciculata.
- It helps in maintaining stress, emotions, B.p etc.

③ Zona reticularis

- Androgen steroid hormone is secreted by zona reticularis.
- It helps in maintaining & converts oocytes into the Estrogen hormone & sperms into Androgen hormone.

* Adrenal medulla

- It produces two hormones they are Adrenaline & nor-Adrenaline.
- these Adrenal medulla, maintains heart beat, Blood pressure & Stress etc.

10) The functions of the hypothalamus are

- controls the sleep-wake cycle
- controls thirst
- controls food intake.
- controls circadian rhythm
- controls Biological clock
- controls Anterior pituitary gland
- controls posterior pituitary gland
- controls urinary track
- controls stress
- controls Emotions.
- controls Body temperature
- controls Body activity.
- controls Blood pressure
- controls Increasing heart Beat rate
- controls Biological rhythm
- controls sleep cycle.

11) Pineal gland

- pineal gland is one of the small gland
- pineal gland is present at the third ventricle of the Brain.
- pineal gland promotes the circadian rhythm.
- pineal gland It produces neuro-glia & secretory cells called

- pinealocytes.
- pineal gland promotes the melatonin.
- So it also controls the sleep cycle
- the melatonin produces more in the darkness
- the melatonin produces less in the day time.
- In mammals the melatonin produces within the brain then the light via is goes through eyes through the optic nerve
- In amphibians It produces on the skin. light absorbed through the skin.
- In fishes It is produced on the skin. then the light absorbed through the skin.
- In birds It is produced on the brain then light absorbed directly through the skull.

g) * Jet-lag.

- It is curable or short-term sleep disorder
- this sleep disorder is more seen in the people who are travelling from one area to another area for work trip.
- this disorder causes due to the circadian rhythm of our own area weather not changes with the travelling area.
- So for the prevention of these jet-lag disorder we have to maintain a circadian rhythm 4-5 days before travelling

- to that area.
- When we have to travel to East so we have to sleep 1 hour before what we have to sleep daily time.
- If we have to travel to the west so we have to sleep 1 hour lesser than that daily time.
- before we are going to another place we have to go 10-15 days earlier to adjust their.

* Shift work

- Shift work sleep disorder is happen due to the non-standard timing of the shift work.
- due to night heavy shift work also leads to the SWSO disorder.
- It also exchange circadian rhythm like sleep cycle during old age.
- the main symptoms of shift work are: more excessive sleepiness
- less sleepiness, headache.
- to avoid SWSO some peoples take a precautions like black, eye covers, headphones etc.
- To avoid SWSO avoid more night shifts.
- avoid the TV sounds
- avoid mobile sounds in the home during sleeping time.



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1) Vermitechnology

It is a technique (or) technology which is used in preparation of compost.

* Different types of earth worms are used and produce vermicompost.

* Ex:- *Eudilus euginae*, *Eisenia fetida*.

2) Symbiosis

Symbiosis is a mutualism process in which two organisms are having co-relation each other.

Symbiosis is not harm to the organisms.

Ex:- star star fish and pilot fish.

3) Habituation

Habituation is process in which biological response is reduced for stimuli that stimuli is rapidly occurs.

Ex:- First time we visualize our tv then after few days later see tv.

5) Parental care

Parental care is a care in which parent organisms are gives care to their eggs young ones.

Ex:- 1) Eggs are protect around the body - *Ichthyophila*
2) Eggs around leg - male hyla.

6) Two Species of prawns

1) *Peneaus*

2) *Palaemon*.

7) Chronobiology.

It is come under biology.

* Chronobiology is the study of time.
(or) Study of the biological clock system.

* It consist of 24 hours cyclic clock.

* Chronobiology is helps in the study of time (or) clock involved in living organisms.

9) Definitive host.

Definitive host is a host in which sexual reproduction takes place by parasite in the host.

→ Example for definite host is man in filarial worm. Wuchereria bancrofti.

10) Hippocampus (seahorse) having brood pouch.

11) Exotic breeds of cow.

1) Jersey.

2) Red dane.

3) Holsteio.

12) Geotaxis

It is type of taxes and respond to the gravitational force.

→ These are having ability to perform the gravitational system taxis.
Ex: Birds.

II)

13) Preservation & processing of fishes.

- * Fishes are preserved because they are decomposed in future
- * Fish processing and preservation is very important in Fishculture.
- * It consist many methods.

1) Refrigeration :-

Fishes are refrigerated in the 0°C for preserving purpose it is having more expense therefore it is only used in more economic industries.

2) Deep freezing -

It is also very important process in a preserving of fishes it having -18°C temperature and it is now used in core areas.

3) Freeze drying -

It consist of drying process. in 20°C temperature desirable fishes are preserved. It removes moisture of the fishes.

4) Sun drying.

It consist of no expense because fishes are poured to land and stay for 2-3 days. after 2-3 days fishes are dry and removes moistureness.

5) Sun curing.

It consist of salt solution and it is same like a sun drying but this process is cures the moistureness and in this method. sun temperature is

15)

Contribution of Konrad Lorenz

- * Konrad Lorenz he is a biologist and perform many experiments (or) research about ethology method.
- * He is African scientist born in 1907.
- * He researched the biochemical rhythms and biological clock system.
- * He is former son and he is make in adult stage perform very active and. He is interested in ethology.

Konrad Lorenz is explain detail about ethology. He is take Nobel prize and he is completed M.D in the year of 1928.

- * He is completed his PhD in the year of 1933.
- * He is explained the animal behaviours and many researches regarding to the animals.
- * He is in '9' years old he is interested to capture the animals and birds photos and know about that organisms.
- * Konrad Lorenz is having ability to explain about the ethological factors of a animals (or) the organisms.
- * only 19 years old he is completed his M.D and he completed PhD also.
- * He is most popularized zoologist in the world.

III]

Transmission, preservation and control of Typhoid

- * Typhoid is a flu
- * Typhoid is very infectious fever.

Causative → Salmonella typhi

- * It is a gram negative bacteria
- * It is rod shaped and having flagella.
- * It grows in 37°C

Transmission

- * Typhoid is transmitted by the food (or) oral system.
- * And also transmitted by the cockroach and mosquito bite.
- * It is very infectious therefore transmitted by sneezing, shaking hands.
- * Eating in one plate.
- * Through syringes.
- * Through clothes.
- * Infection transmitted through the contact of the affected organism.
- * By the touching of infected human beings.

Prevention and control :-

- * Antibiotics treatment
- * Checkup health frequently.
- * Maintain hygiene.
- * Do not contact with infected person.
- * Regular exercise.
- * Wear masks.
- * Mouth is covered carefully
- * Treatment very essential
- * Do not eat brown, oily food.
- * Maintenance of health against insect bite.

18

Courtship behaviour in scorpion

Courtship behaviour is type of animal behaviour it is present in the scorpion species.

- * Scorpion consist of chain like body organs.
- * These are make a mating nothing but Sexual reproduction.
- * Male consist of spermatophore it is localized in the ventral part of the male scorpion.

Male scorpion while decide to mate the female scorpion it goes towards the female scorpion and join the chain like their organs and make a dance with each other.

- * This type of dance is known as 'pronemada in dues'

- * Scorpions are moving forward and backward for few minutes and these are mates this type.

- * Scorpions are having ability to secrete their reproductive organ

- * Scorpions are doing dance this dance (or) movement is called as 'pronemada' dance.

- * Male release the spermatophore and Female scorpion is attached to the male spermatophore.

- * Female scorpion is fuses with that male spermatophore and ready to give a new offspring after few day of mating female gives birth.

- * After the mating female scorpion eat male scorpion because Cannabinized system.

- * Male is eaten by the female scorpion

After the fertilization female is able to give new offspring.

* This type of courtship behaviour is present in the scorpion.

20) Parental care in Amphibians

Parental care is care given by parents to their young ones, eggs.

* Amphibians are having parental care.

- 1) Indirect (or) make suitable places for hatching
- 2) Direct care ^{or} to offsprings.

1) Indirect care

a) Deposition of eggs in suitable place.

→ Some amphibians deposit their eggs in suitable place for protection from predator organisms.

b) Deposition of eggs above water places (or) shady places.

→ Many amphibians lay eggs in shady places (or) above water surface.

→ Eg → Frogs.

c) Defending from the predators that place is essential.

→ Number of amphibians lay their eggs in the suitable place for the protection from the predator animals and give the total care to their eggs.

Foam nests are cover their nest by body. Exs - Ichthyophis

(b) Around the neck and head.

Some amphibians are protect their eggs in neck side (or) head side.

→ Granmonthus. Species.

(c) Around the legs

Male alyte is protect their eggs in their legs.

It is done by the males only.

(d) ~~Around~~ back the side of body.

Some amphibians are protected their exi-eggs in back side of this body. female hyla.

(e) Head and shoulder.

~~Dendrobates~~ and Some amphibians are protect their eggs on shoulder.

→ Advantages of parental care

* Parental care is very essential process because organisms are protect from predators

* Species are reproduce rapidly.

* It is done by parents only.

* New ones are not more active therefore it is very essential care to new born organisms.

IV)

2) Nesting behaviour in birds

Nesting behaviour is type of behaviour in which organisms (or) birds are protected from the biotic and abiotic factors.

Biotic factors :- prey, other micro-organisms causes disease.

Abiotic factors :- Temperature, light, wind etc

Birds are capable of make this nests. because prevent (or) protected from predators.

Types of nests

- ① Cup shape nest.
- ② Dome shape nest.
- ③ Tube shape nest.
- ④ Tailor nest.
- ⑤ Wasp nest

→ ① Cup shaped nest.

These nests are similar to the shape of cup.

* Formed by the birds.

* These are located on the big trees.

* And birds are lays their eggs in these nests and protect them.

* These type of nests are not having any walls

* Therefore not protect completely their eggs.

Ex:- crows nest.



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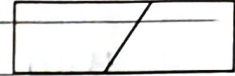
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⑤ Wasp's nest

This type of nest is constructed using glue like substance and make holes to the nest from beak of wasps.

- * Wasps nest are take more time of construction
- * These are having honey comb structure.
- * Holes are made by wasp.
- * And lays eggs in holes and protect from biotic and abiotic factors.

Ex: Wasps.

22) Significance of light & Sounds.

→ Significance of light [visible]

Some organisms having light emitting characteristic. It is essential to protect those organisms.

(a) Signal for danger :-

Some insects are capable to the visualized light and they are having special organs in their body and take that melatonin pigment.

→ These are noticed for other species → lightflies

(b) Sexual display

Some insects are ready to mate the opposite sex organisms and there gives signal to the opposite organism through lighting their body organs.

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I

1) Phagocytosis :-

It is process of Engulf the cell by lysosome. (n)

It is caused in the lysosome cells. these are suicide bags in the cell.2) Stages of Prophase I.

1) leptotene

2) Zygotene

3) Pachytene.

4) Diplotene.

5) Diakinesis

3) Haploid - Haploid is referred to as only one set of chromosomes are present that is represented as (n) Ex: Sperm Cells.4) Diploid - Diploid refers to the fusion two gametes and form (2n) chromosomes. It is represented by (2n)

Ex: Zygote.

5) Apoptosis -

Apoptosis is a programmed cell death. It is occurred naturally. & It is benefit to the organism.

Necrosis -

It is death of cells and caused by the external affects. and it is sometimes harmful to the organism.

6) Carcinogens:

Carcinogens are agents which causes the cancer.

Ex: - Phenolic compounds, smoke etc.

7) Bio-remediation: -

Bioremediation is a process in which microorganisms (fungi, bacteria) introduced to environment prevent hazardous material or convert toxic substances into less toxic or less contaminant.

4) Vectors

Vector are gene carrying vehicles and these vectors are helpful in the transformation of gene into the host cell.

11) Motivation in Research -

- Desire to get respectability.
- Desire to be knowing depth knowledge.

2 It is intellectual joy of creative mind.

- Receiving fellow ships from govt / private agencies
- giving service to society.

12) Research is a scientific investigation and it is voyage of discovery.

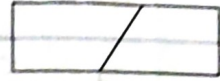
* Research is helpful to movement of knowing to unknowing.

* Research is a process in which get the depth knowledge for human beings.

* Research is a design collection of many informations.

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Q0) DNA fingerprinting.

DNA - fingerprinting is a process in which extraction or isolation of genetic material

* After extraction of DNA sample is subjected to the restriction designation by the restriction nuclease enzyme.

* After restriction designation is subjected to the gel-electrophoresis chamber.

Gel electrophoresis is a process in which separation of DNA fragments according to their sizes and charges.

* Then pour DNA sample to the gel-chamber and add agarose gel.

* In this process use EDTA and methylene blue dye used for visualization of DNA fragments.

* And apply electric current to the electrophoretic chamber after few hours DNA fragments are observed.

* DNA fragments are separated according to their sizes.

* Having red fluorescence and we expose to the U-V light then only visualize the DNA fragments.

* And end of process take photograph we clearly observed.

Uses of DNA finger printing

- * Search thieves
- * In forensic science
- * Identify parents
- * Identify illegal thumbs etc.

V)

25)

Methods of data collection

- 1) Survey and questionnaires
- 2) Interviews
- 3) observations
- 4) Schedules / Records or Documents.
- 5) Focus groups

Survey and questionnaires

First method of data collection we can survey and say ourself questions about research and problems facing society.

Interviews

It is formal conversation between two individuals. It is given information about the topic we make the research good after interview making.

Observations

We clearly observe the problems and find solutions those are helpful to the society and it is done when we ready to observe.

Records and documents

Some data collecting from the records and some references and it is clearly explained the topic which we select and it is important in collection of data.

Focus groups

6-12 members

It consist of minimum

- * It is a form of giving suggestion and opinions to the researcher.
- * It is also very important to the making good research.

26) Research method v/s methodology.

Research method is a technique to make the research and it is having less topic compare to the methodology.

* Research method is having skills, activities which are involved in the research method.

* It consist of many skills, and also activities.

* It is used to study the methods only.

* Find solutions for unsolved problems.

* All research methods are come under the methodology.



R-M
Research method

Research methodology

It consist of broad range in research having all solutions.

statistic precision to testing hypothesis

In good research design graphs and pi charts are must and should be added.

Hypothesis is explained clear explanations.

With in resource

Research is having many resources that are easily abundant and are more in amounts.

But only small amount of resources are used

Ex: Water, in fishes research

Flexibility

It is having flexibility because knowing the topic is helpful to the make research

* Research should be flexible.

Optimality

It is also important for good designing in research.

We consider time of day, and environmental conditions also considered in the research technique

IV.

24)

Gene therapy

Genethrapy is process in which insertion of gene to organism it prevents disease.

Gene therapy is having more value because it treats the disease.

First time of gene insertion first identify the damaged gene and it is replace that gene and perform their function.

Steps

- 1) Extraction of gene.
- 2) Isolation.
- 3) Introduce to the organism.

Extraction :-

First we extract desirable gene which is we need and it is free from any disease.

Isolate :-

After extraction of gene we can isolate the genes and desirable characters are taken and these characters are not harm to the body.

Introduce to the organism :-

Now isolated gene is injected or inserted to the organism which organism need genes for the treatment of disease.

Gene therapy is two types:-

① Somatic Cell gene therapy

In this gene therapy only somatic cells are introduced for example - cells of bone marrow, kidney cells, intestinal cells etc.

It is now present in animal biotechnology.



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Q.I A) Identity & describe:

- * The given photograph is identified as tube shaped nest.
- * These are not meant for protection.
- * These nest are elongated and having 2 branches.
- * They hang on branches.
- * The entry form the nest.

Q.I B (1) The given photograph is identified as drone.

- * The drone are about 500-1000.
- * They are the sterile diploid female.
- * They collect the nectar part of the flower.
- * They are smaller in size than queen.
- * They are having length about 10-15 mm.

Q.I B (2) The given photograph is identified as Queen.

- * The length is about 15-20 mm.
- * She has large abdomen.
- * She also have the ovipositor on the abdomen.
- * She doesn't work.
- * sterile female.
- * larger than drone & workers.
- * short wings & having hairs on body.

Q.I C) The given photograph is identified as Wasp.

- * Wasp are having sting.
- * And they are poisonous.
- * And They are similar like honey bees in the colour & size.
- * When the predator eat the wasp they get cause death for the poison.
- * It is an example for müllerian mimicry.

E(1) The given photograph is identified as Rhode Island

- * It was originated in Rhode Island, North America.
- * It is dual purpose based.
- * They have sed plumage except tail section.
- * legs are yellow in colour.
- * The body is bulked.

E(1) The given photograph is identified as perionyx Escavastus

- * It is also called Indian blue eorm.
- * It is used for food Vermierous technique
- * It has one major draw back. though mass collected don
- * It is not properly well known.
- * It is commonly found in the groent stake tend, mud.

E(2) The given photograph is identified as peaneus

- * It is marine animals.
- * Cephalothorax consists of head
- * The body is divided into cephalothorax abdomen & tail
- * Tail section consist of pair of telson
- * Abdomen consist of 6 segments and
- * And each segment consist pair of appendages

E(3) The given photograph is identified as Unio

- * It is marine in nature.
- * It is having bivalve structure.
- * It is covered with thin muscular shell.
- * The body is of shell like structure.
- * presence of muscular shell.
- * They are usually found in sea.