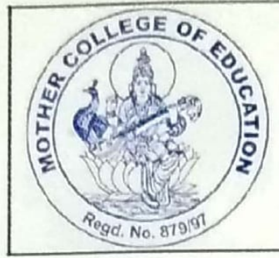


Mother College of Education, Code Number:249

Y.D.PETA-531115



B.Ed. Programme (Academic Year-2017-2019)

Semester-- I / II / III / IV

Course:

Name: Manjulata Palei

Roll No: _____ Regd.No: _____

Pedagogy: _____



ANDHRA UNIVERSITY
VISAKHAPATNAM

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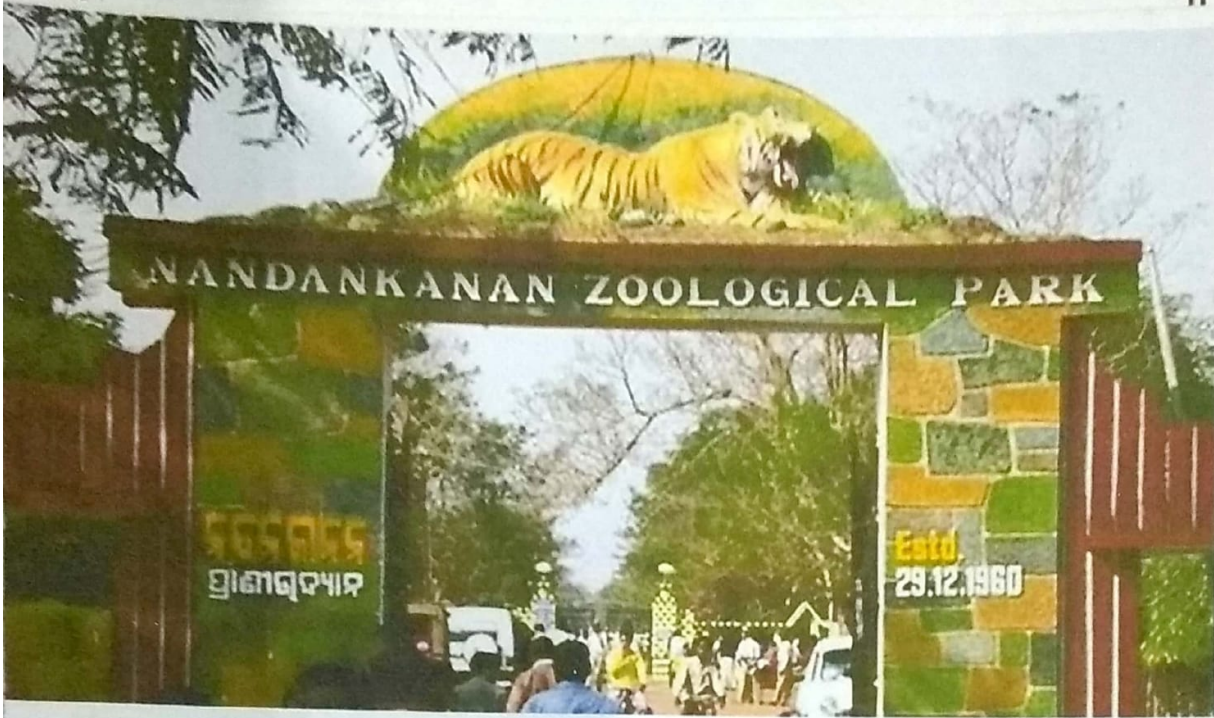
SL.NO	PARTICULARS OF ACTIVITY	COLLEGE/ SCHOOL/ SOCIETY	PAGE NO.
1.	Visit any zoological park/ Botanical Garden/ Agro based industry/ food park/ institution of scientific interest on science		
2.	Identify and write the objectives and specifications under the three domains on any topic of your choice.		
3.	Sketch the life history and write his/her contribution of any one Biologist.		
4.	Name any common branch of both Botany & Zoology and explain how you		
5.	integrate the pedagogy in dealing with the content.		

ACTIVITY

I

Biology

A Report on Zoological park:- Nandankanan Zoological Park Bhubaneswar, Odisha



Nandankanan "Zoological Park" is a 400-hectare zoo and botanical garden in "Bhubaneswar", Odisha, India.

It Established in 1960, it was opened to the public in 1979 & became the 1st zoo in India to join "World Association of zoos & Aquarium (WAZA) in 2009.

There are 2669 no. of animal & 152 types of species are located.

'Kanjia lake' with its vast expanse over 125 acres low & undulating hills of Jujhagarh land Krishnanagar D.P.S. with lush green vegetation on both side of the lake presented a picturesque site.

Jujhagarh forest block had all the advantage for locating the zoo except communication from Bluebanswan & the only approach was via Chandaka covering a distance of 38 km.

There are spotted deer, barking deer, nilgai & bears. in spacious. other animals like leopard cat, mongoose, flying squirrel, porcupine, python, monkeys, hyena, Jackel, civet cat, pangolin, jungle cat, parrot, mynah & other birds located in this zoological park.

The zoo is home to about 1660 individual animals representing 166 species, including 67 species of mammals, 81 species of birds, & 18 species of reptiles.

Endangered species such as the Asiatic lion, three Indian crocodilians, sangal lion-tailed macaque, Nilgiri langur, Indian pangolin, mouse deer & countless birds, reptiles & fish have been breeding successfully at Mandankanan.

The zoo includes 34 aquarium which are home to a large variety of fresh water fish.



The tigers were born in the Mandankanan Zoo in Bhubaneswar, Odisha, India in 1980.

Their parents were a father-daughter pair called Deepak & Ganga.

Bio Act ① ④

Today the Mandankanan zoo has the largest collection of white tigers in India.



Asiatic lion in the zoo



Giraffe at Mandankanan

During animal safari in Mandankanan, visitors can spot animals & birds like Indian crocodiles, black buck, Himalayan black bear, nilgiri langur, Indian pangolin, monkey,

Burmese python, Pigeon, squirrel, Hippopotamus, deer & more.

Aquaria :-

The zoo include 34 aquaria which are home to a large variety of fresh water fish.

Reptile park :-

The Reptile park's cave-like entrance is guarded by life size replica
→ This houses numerous species of crocodiles, lizards, turtles, & snakes.

Onehid house

The zoo will have the largest Onehid House of Odisha soon spreading over 5,000 square feet (460 m²)

In Odisha alone, 120 species of onehids have been documented to date

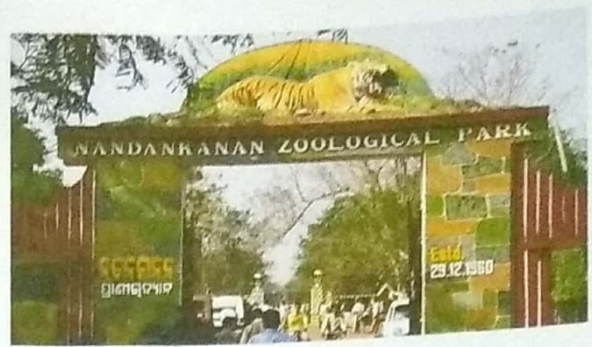


Botanical Garden at Nandankanan

Bio Act ① ⑤



Nandankanan
zoological park
Main Gate



Nandankanan
Second Gate



Bear at Nandankanan



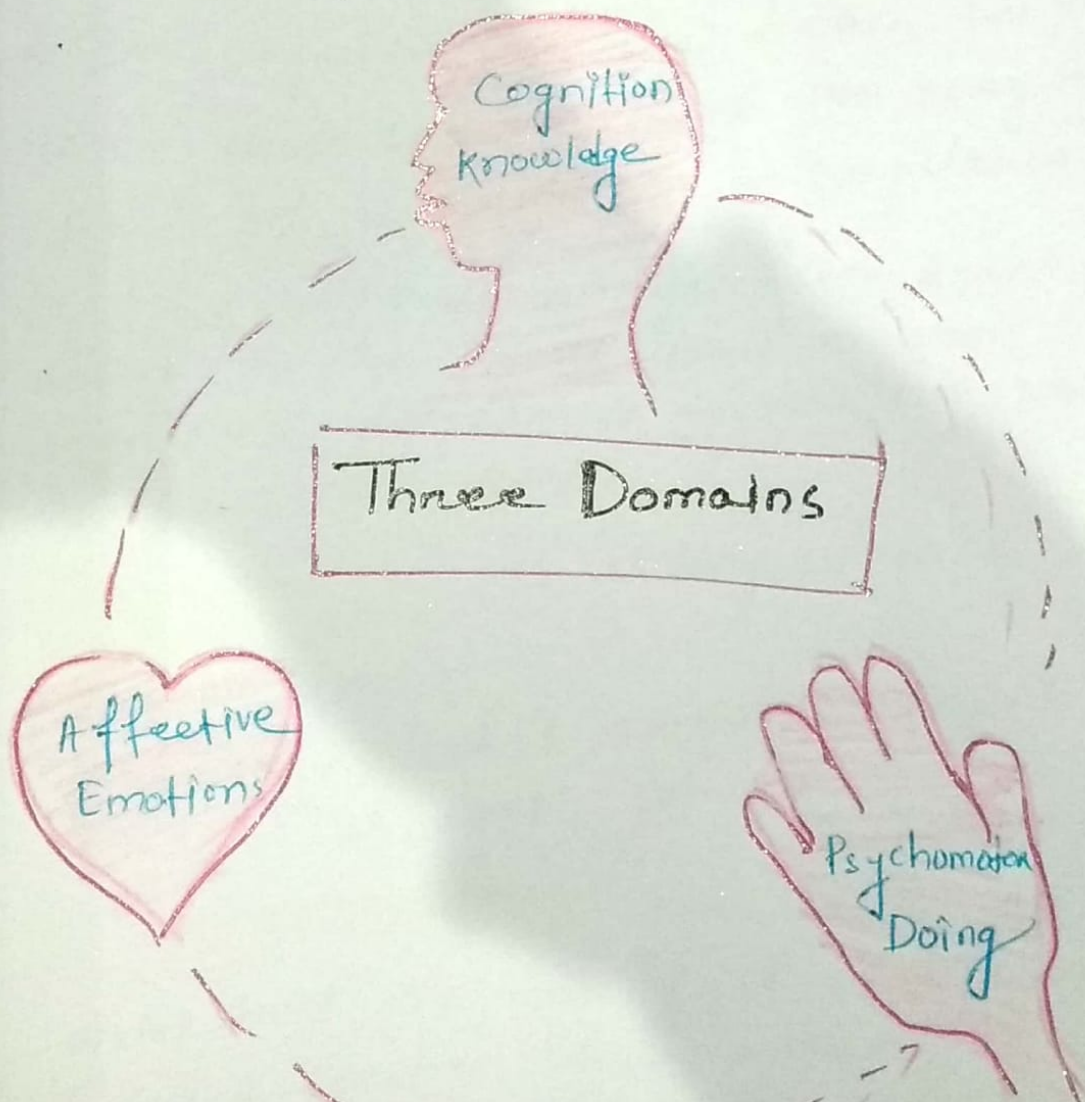
Deer at Nandankanan

Objective & Specification under three Domains

Learning is everywhere. We can learn mental skills, develop our attitudes acquire new physical skills as we perform the activities of our daily living.

These domains of learning can be categorised as

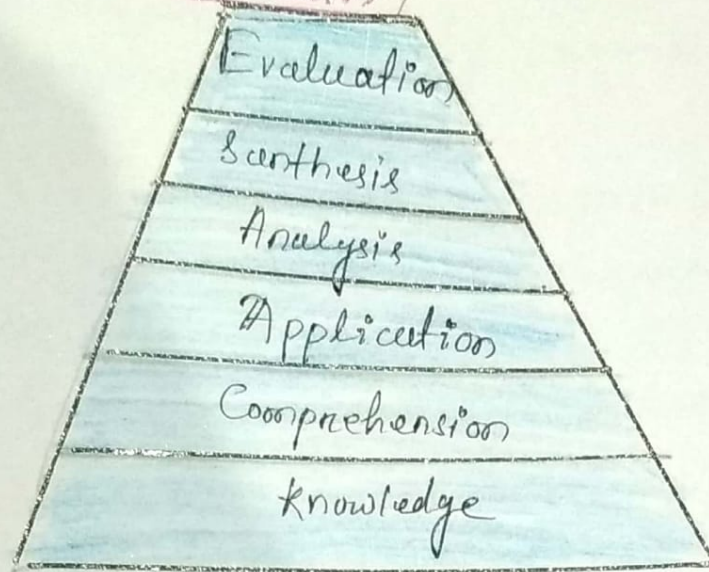
- (i) Cognitive domain (Knowledge)
- (ii) Psychomotor domain (Skill)
- (iii) Affective domain (Attitude)



Bio Act (2) (2)

Domains of Learning Activity:-

Cognitive Domain



→ The cognitive (thinking) domain has six levels that are associated with varying levels of understanding or competence.

→ The domains range from knowledge, which is the lowest level in the cognitive domain to evaluation, which is the highest level.

① Knowledge the ability to recall & information.

[Example] = A child recites the English alphabet (17-2)

② Comprehension - the ability to understand the meaning of what is known
[Ex] A teacher explains a theory

③ Analysis - Divide material or ideas in to component parts.

[e.g.] - compare, classify, appraise, dissect, organise.

④ Application - Apply acquired knowledge in the workplace unprompted in new or original ways.

[e.g.] - Distinguish, prioritize, deduce, devise,

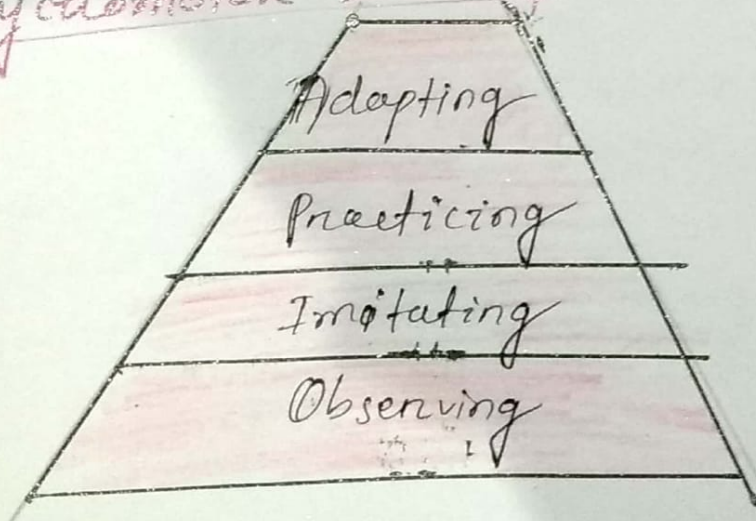
⑤ Synthesis - Construct or arrange from a plan.

[Objective] - select & build from diverse elements, compile, imagine, originate, stimulate, solve.

⑥ Evaluation - Discern the value of ideas & concepts.

[Objective] - Estimate, judge, defend, critique.

Psychomotor Domain



Psychomotor objectives entail learning new skills or altering or combining existing skills that involve physical skills & manual dexterity.

Manipulating the colonoscope during a colonoscopy is an example of a psychomotor skill.

① Observing - Pay active attention to a physical event.

Objective - select, describe, recognize, detect, differentiate.

② Imitating - Copy a physical behavior.

Objective - Answer, reproduce, copy, trace, grasp

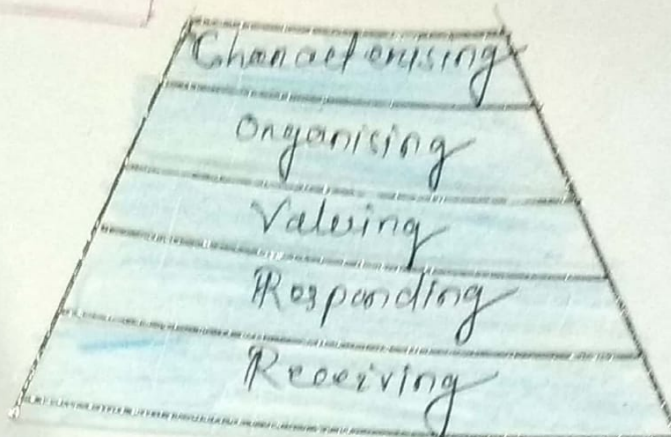
③ Practicing - Practice a particular physical activity repeatedly.

Objective - Fasten, measure, assemble, dismantle, stretch

④ Adapting - Make adjustments to a physical activity in an attempt to achieve perfection.

Objective - vary, recognize, change, adjust, rearrange.

Affective Domain



The affective domain encompasses the way an individual reacts & focuses on such factors as motivations, appreciations, values, emotions, & attitude.

① Receiving - Learner is aware & receptive. otherwise ~~the~~ ^{learning} ~~he~~ ^{can't} take place.

Objective - Reply, use, describe, follow, locate

② Responding - Learner actively participates in the process

Objective - Discuss, answer, perform, present

③ Valuing - It identifies the value an individual associate with an object or behavior.

Objective - share, invite, explain, join, report,

④ Organizing - Learner can synthesize different information & values.

Objective - Formulate, defend, prepare, arrange, integrate

⑤ Characterising - A belief becomes a part of system that controls the learner's behavior.

Objective - influence, practice, perform, discriminate, propose.

ACTIVITY

III

Life history & contribution of one Biologist

Gregor Mendel

Father of Modern Genetics

Nationality = Austrian

Date of Birth = 22nd July 1822

Died at Age = 61

Born in = Heinzendorf Bei

Father = Edna, Austrian Empire

Mother = Anton Mendel

Siblings = Rosine Mendel

Siblings = Veronica Mendel

Died on = Theresia Mendel

Place of Death = 6th January 1884

Place of Death = Brno, Austria Hungary

He was a Austrian scientist & monk
 hailed as the "Father of modern genetics"
 for his pioneering research in the
 field of heredity.

He had a deep interest in botany
 which led him to conduct experiment
 on pea plant.

Over the course of his study
 he observed that there were 7
 characteristics in the pea plant.

For eight years he carefully cross-bred & grew thousands of pea plants, & patiently analysed & compared the plants & seeds for difference in colour & size of the seeds, & variation in length of the plants.

He took various precautions to prevent the accidental pollination of the flowers which could have altered the results of the experiments.

Childhood & Early Life:

⇒ He was born as the middle child & only son of Anton & Rosine Mendel.

⇒ As a child he worked in the garden & studied beekeeping which cultivated in him a deep love for biological science.

⇒ He received his schooling in his own small village. Later on he went to the university of Olomouc where he studied philosophy & physics from 1840 to 1843.

Cannon & Works -

Bio Act ③ ③

- In 1843, he began his training as a priest & joined the Augustinian Abbey of St Thomas in Brno as a monk.
- He rejoined monastery as a teacher in 1853 where he was motivated by his colleagues to conduct a study on plants.
- He began to conduct his practical study on plants in 1856.

He studied edible pea plants & recognized 7 distinct characteristics that remained consistent over generations in purebred varieties.

These characteristics include

- ① height of the plant
- ② shape of the pod
- ③ shape of the seed
- ④ size of the seed
- ⑤ colour of the seed etc.

Bio Act (3) (4)
→ He cross-pollinated the plants with
constraining character & cultivate
thousand of pea plants over the
course of his experiments.

→ He presented the results of his
experiments at the Natural History
Society of Brno in 1865.

→ His findings were published in a
paper "Experiments on Plant
Hybridization" in 1866.

Mojon work

→ He through his extensive experiment-
tation & analysis founded the three
laws on principles of inheritance.

(i) The law of Segregation

(ii) Law of Dominance

(iii) Independent Assortment

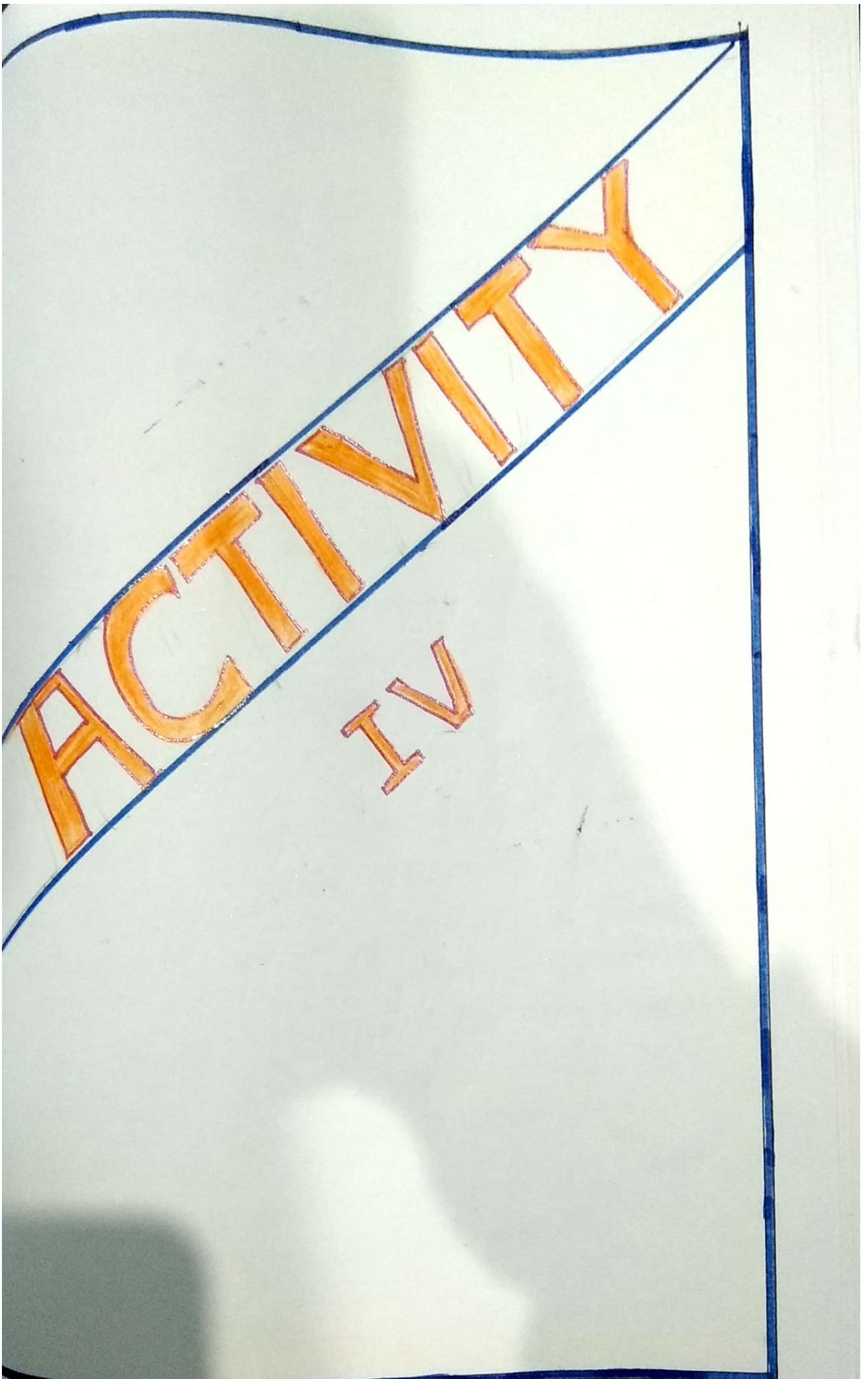
→ He developed the concepts of
dominant & recessive genes that
explain how genetic traits are
passed along from generation to
generation

Bio Act (3) (5)

→ His 1865 paper "Experiments on plant Hybridization", which was largely ignored during his lifetime is today regarded as the base of genetic experimentation.

Personal Life & Legacy

- As a young man he had very close & loving relation with his parents. Being a monk, he never married & led a life of celibacy.
- He died at the age of 61 after suffering from kidney problems.
- His work on heredity which did not find much acceptance during his lifetime took on much greater significance after his death & he was posthumously hailed as the Father of modern genetics.



Branch of Biology

The study of life is known as Biology. It mainly divided into 2 branches.

① Botany

② Zoology

① Botany :- It deals with the study of plant is known as Botany.

② Zoology :- It deals with the study of animal is known as zoology.

⇒ Both are pure applied branches.

⇒ In the pure branches the theories & concepts are in the area of study & the application of those theories for the welfare of the human beings are dealt in the applied branches.

⇒ The pure branch of biology also divided is some branches.

- (i) Morphology - This branch deals with the ^{gross} external structure of living organism
- (ii) Anatomy → study of internal structure
- (iii) Cytology → study of cell
- (iv) Histology → study of tissue
- (v) Physiology → study of functional activity
- (vi) Ecology → study of relationship between the organism and their environment
- (vii) Embryology → study of embryo
- (viii) Genetics → study of genetics
- (ix) Palaeontology → study of Fossils.
- (x) Taxonomy → study of nomenclature
- (xi) Evolution → study of ~~the~~ origin and gradual changes of animal & plant.
- (xii) Pathology → deals with study of diseases of the living organism

Applied Branches of Biology are :-

- (i) Applied Botany → study of applied botany
- (ii) Agriculture → study of crops.
- (iii) Horticulture → study of garden.

c) Pharmacognosy :- study of medicine from organism.

d) Forestry :- study of forest

e) Applied zoology :- study of applied zoology

f) Sericulture - works for rearing of silkworm.

Apiculture = study of rearing of honey bees

Lac culture = study of lac insects

Poultry = study of fowl, duck etc

Pisciculture = study of rearing and cultivation of fish.

Animal husbandry = study of rearing and cultivation of cattle-like domestic animals.

Other branches of science :-

1) Biotechnology :- It means technical manipulation of living organism, genetically modified and improved variety of crops and successfully clone animals and plant has been produced

2) Bioinformatics :- systematic development and application of computing system in biological process.

3) Genetic Engineering :-

Extraction of selected genes from an organism or synthesizing of selected genes is inserted of to another organism and as a result, an organism develops with a new combination of gene by the genetic engineering.

4) Biomedical Engineering :-

Better production of spare parts for human beings for external use and internal implantation are the subject of Biomedical Engineering.