
 "Education for Knowledge, Science, and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur
(Autonomous)


KOLHAPUR (AUTONOMOUS)

Department of Botany

Continuous Internal Evaluation

2022-2023

Continuous Internal Evaluation 2022-2023

Department of Botany





"Education for Knowledge, Science, and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

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KOLHAPUR (AUTONOMOUS)

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Sangal
Head
Department of Botany



P. S.
PRINCIPAL
Vivekanand College
Kolhapur
Department of Botany

Departmental Activities 2018i-2019



Vivekanand College, Kolhapur (Autonomous)
Department of Botany

B. Sc. III, Sem. V

DSC 7F: "Plant Biochemistry and stress Physiology & Plant Systematics and
Paleobotany"

ASSIGNMENT (Section-I)

Total Marks: 10

Q. 1 Attempt any one.

i) Give a brief classification of carbohydrates.

(6 marks)

OR

ii) Explain in detail gluconeogenesis

Q. 2 Attempt any one shortnote.

i) Plant stress

(4 marks)

ii) Physical & chemical properties of amino acids

iii) Pathway of beta oxidation



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

B. Sc. III, Sem. V

DSC 7F: "Plant Biochemistry and stress Physiology & Plant Systematics and
Paleobotany "

ASSIGNMENT (Section-II)

Total Marks: 10

Q. 1 Attempt any one.

(6 marks)

i) What is fossil? Give different type of fossil.

OR

ii) Give general account on origin of angiosperms w.r.t. gnetalean theory.

Q. 2 Attempt any one shortnote.

(4 marks)

i) Herbarium

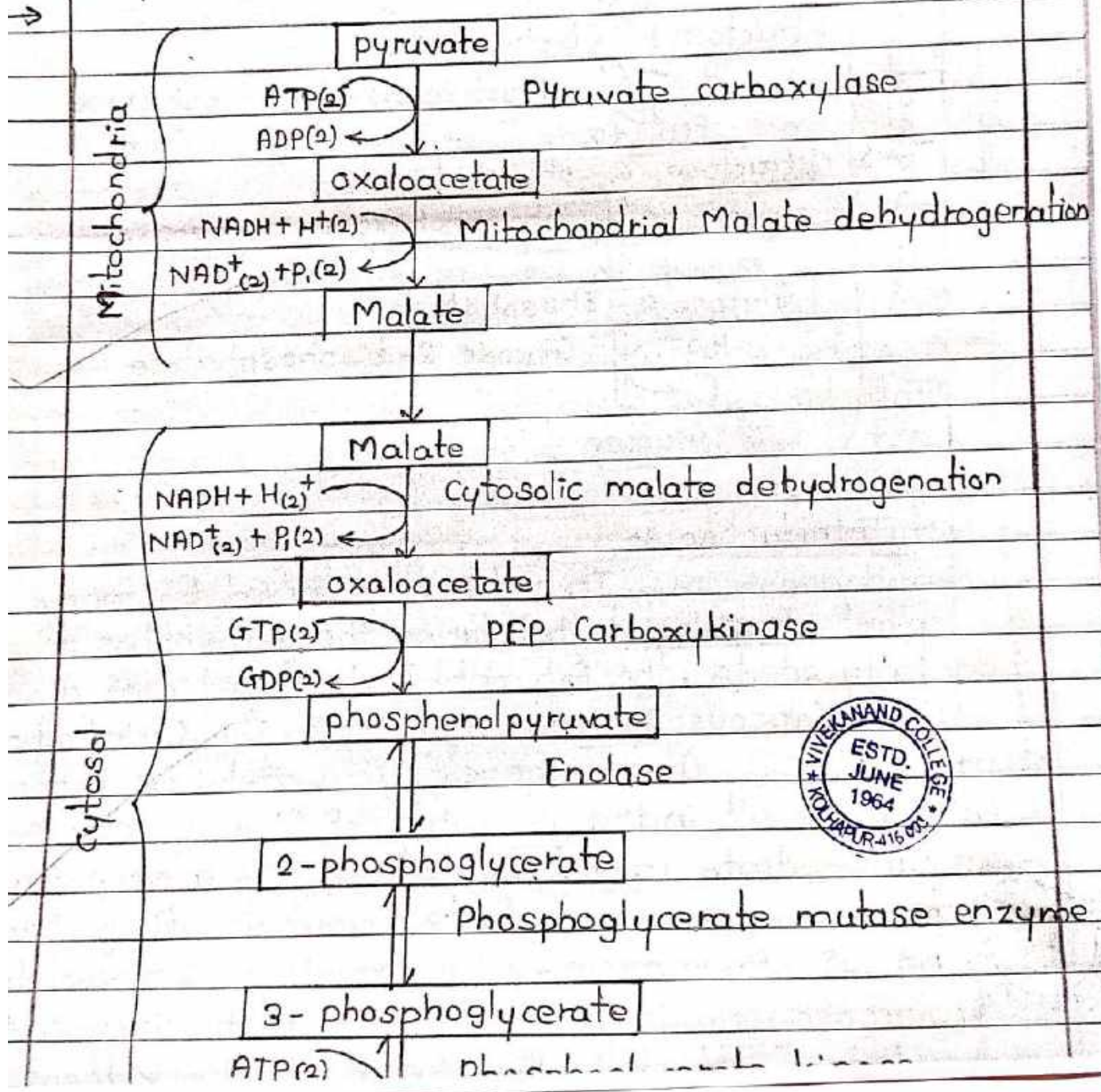
ii) Ranks of IUCN



Name :- Kamble Pradnya Shankar.
class :- Bsc III
Roll No :- 8424

Botany Assignment - SEM V (Plant biochemistry & stress (Section-I) Physiology)

Q.1 Attempt any one.
1 Explain in details Gluconeogenesis



Name :- Kamble Pradnya Shankar.

Class :- Bsc. III

Roll No :- 8424

BOTANY ASSIGNMENT - SEM V

Attempt any one.

What is fossils? Give different types of fossils?

Fossils :-

The remains or impression of a prehistoric plants or animal that have become harden into the rock.

A Fossils is an impression, cast, original material or track of any animal or plant. i.e. Preserved in rock after the original organic material is transform or remove.

Fossilization :-

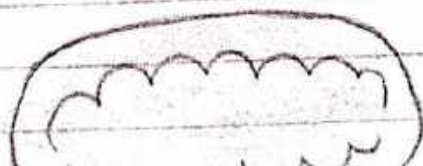
Under certain condition the process of distruction gets delayed and the body of organism is left in the form of fossils.

Types of Fossils :-

- 1] Compression
- 2] Impression
- 3] Petrification
- 4] Molds & cast
- 5] Coal ball



1] Compression :-



Plant parts compress by partial preserve of the sediment & the organism or the plant parts are flattened thin.

This plant fossils are two dimensional imprints that have transformed during fossilization process. These fossils often retain some organic matter.

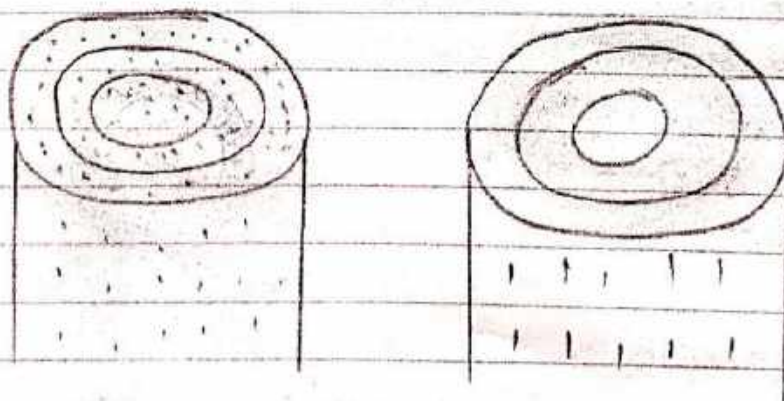
[2] Impression :-

- plant body compress by sediments & give & imprint of it.
- Impression fossils are two dimensional Impression fossils live an imprint of the plant material in some fine grained or soft sediments are such as clay or silt. Once the plant matter decays, Impression remains to be fossilized.



[3] Petrification :-

- In these type of fossil both internal & external structure are preserved.
- Organic material material becomes a fossil due to a replacement of original matter & filling of the original pore space with mineral like SiO_2 , $MgCO_3$, FeS , $CaCO_3$.



Destroy original material & minerals fill up



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

B. Sc. III, Sem. V

DSC 7E: "Cytology and Research Techniques in Life Sciences & Microbiology, Plant Pathology and Biofertilizers"

ASSIGNMENT (Section-I)

Total Marks: 10

Q. 1 Attempt any one.

(6 marks)

i) Write in detail cell cycle

OR

ii) Describe principle and technique of paper chromatography

Q. 2 Attempt any one shortnote.

(4 marks)

i) Eukaryotic cell

ii) Cell theory

iii) Radioactive isotopes



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

B. Sc. III, Sem. V

DSC 7E: "Cytology and Research Techniques in Life Sciences & Microbiology, Plant Pathology and Biofertilizers"

ASSIGNMENT (Section-II)

Total Marks: 10

Q. 1 Attempt any one.

(6 marks)

i) What is sterilization? Give different methods of sterilization.

OR

ii) Give causal organism, symptoms, disease cycle and control measures of a disease rust of wheat.

Q. 2 Attempt any one shortnote.

(4 marks)

i) Role of quarantine

ii) Organic farming

iii) Bacterial staining



Name - Sheovani Popoteao Aswale

Roll No. 8420

Class - B.Sc III Botany

HOME ASSIGNMENT

"Cytology and Research Technique in life science and
Microbiology plant pathology & Biofertilizers"

Section - I

9
10

1 Attempt any one

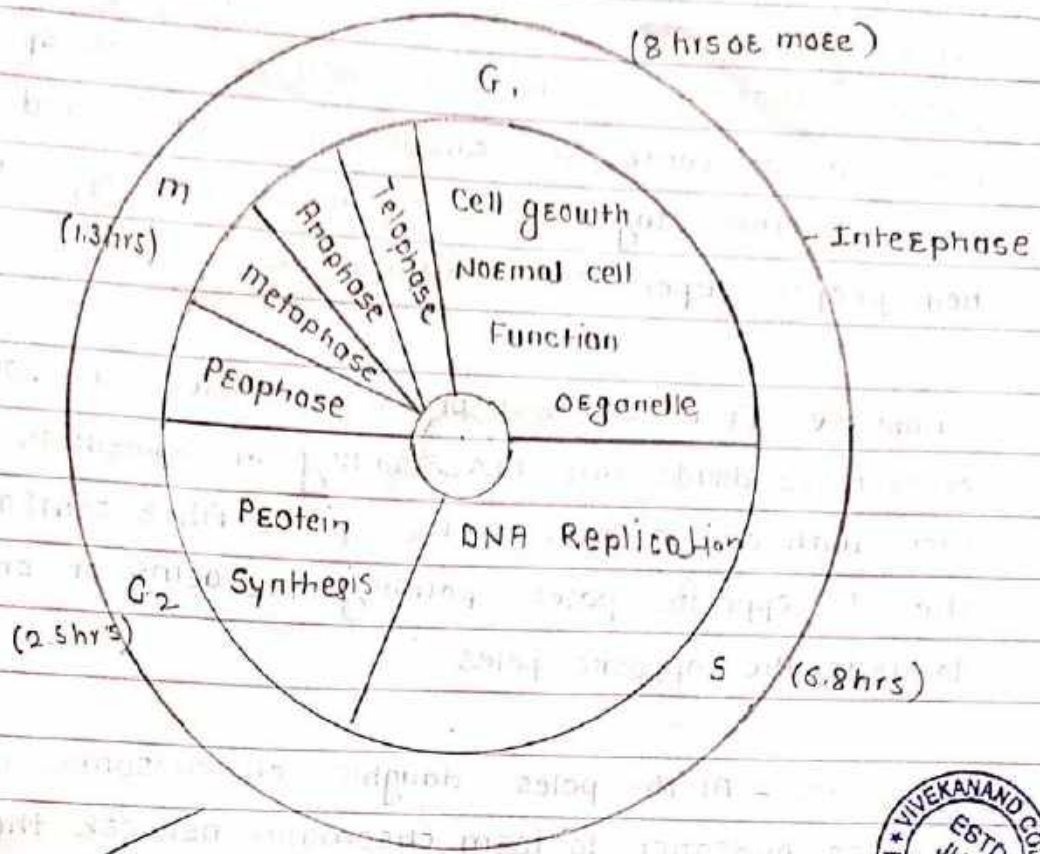


1] Write in detail cell cycle.
→ Sequential events cycle is a occurring in the life of a cell
is called as cell cycle.

The cell division cycle is a vital process by which a single
celled fertilized egg develops into a mature organism as
well as the process by which hair, skin and blood cell, some
internal organs are regenerated and healed after cell
division each of daughter cell beg in the interphase of a new
cell cycle. Each phase of cell cycle has a distinct set of
specialised biochemical processes that prepare the cell
for initiation of the cell division.

There are two phases of cell cycle as interphase and m-
phase during interphase - cell undergoes growth or rest as per
the need during m-phase - the cell undergoes division.

Interphase consist of G₁ phase, S phase (synthesis), G₂
phase. m-phase is itself composed of two tightly coupled
processes like karyokinesis and cytokinesis.



TOTAL CELL CYCLE TIME - 24 HRS.



Karyokinesis - It is the stage in which nucleus undergoes a series of changes to form two daughter nucleus. It is divided into four stages like prophase, metaphase, anaphase, telophase.

Prophase - It is the longest phase.

In early prophase the chromatin network condenses and resolves into definite number of chromosomes. Initially each chromosome appears as single stranded thin, long chromosome are seen to be composed of two chromatids attached together at centromeres. Chromosomes undergoes dehydration and coiling to become thick and short. The nucleolus and nuclear membrane gradually disappear and hence nucleoplasm, cytoplasm get mixed. Initiation of assembly of mitotic spindle, microtubules, proteinaceous components of cell cytoplasm.

Interphase - It is stage between two successive cell division. It is longest phase of cell cycle during which cell highly active and prepares itself for cell division. The interphase is divisible into three sub-phases as G₁ phase, S phase, G₂ phase.

G₁ Phase - This is also known as first gap period or first gap period growth period. It starts immediately after cell division. Cell performs RNA synthesis (m-RNA, r-RNA, t-RNA). Protein synthesis and synthesis of membranes during this phase.

S Phase - It is synthesis phase in which DNA is synthesized or replicated, so that amount of DNA per cell doubles. Histone proteins are also synthesized during this phase.

G₂ Phase - G₂ is second growth phase during which nuclear volume increases. In volume metabolic activities essential for cell division occur during this phase. Various proteins necessary for cell division are synthesized during this phase, RNA synthesis also occurs during this phase.

Pre-mitotic gap phase

M-phase or period of division

M-stand for mitosis or meiosis

M-phase involves karyokinesis and cytokinesis.

- Karyokinesis is division nucleus into two daughter nuclei.
- Cytokinesis is division of cytoplasm resulting into two daughter cell.

G₂ Phase - Cell organelles take place



Significance of mitosis

- It brings about growth and development in an organism.
- In unicellular organism, it is way of reproduction.
- It is useful in replacement of dead cells, and also help to repair the injuries in multicellular organisms.
- It ensures equal distribution of genetic material and maintains characteristics of species.

2. Short notes

1] Eukaryotic cell

1. Eukaryotic cell have a nucleus enclosed within the nuclear membrane and form large and complex organisms. Protozoa, fungi, plant and animal cell all have eukaryotic cells. They are classified under the kingdom Eukaryota.
 2. They can maintain different environments in a single cell that allows them to carry out various metabolic reactions. This helps them grow many times larger than prokaryotic cell.
- Various characteristics of eukaryotic cells are,
- The cell has mitochondria
 - Flagella and cilia locomotory organs are present.
 - A cell wall is the outermost layer of the eukaryotic cells.
 - The cells divide by a process called mitosis.
 - The eukaryotic cell contains a cytoskeletal structure
 - The nucleus contain single linear DNA which carries all genetic information.



Cytology and Research Technique in Life
Sciences and microbiology, Plant Pathology
and Biofertilizers

(Section-II) OSC-7E

Name: Shevani Popat Rao Aswale

Roll No. 8420

Class: B.Sc III Botany

10
10

Q.1 Attempt any one

Q] What is sterilization? Give different methods of the sterilization.

Sterilization is a procedure used for the elimination of microorganisms.

The maintenance of aseptic condition is essential for successful tissue culture procedure. The need of asepsis requires all culture vessels, media, instrument as well as explant itself be sterilized. All operations is carried out by laminar Air flow sterile cabinet and obvious precaution is lot to share, these cabinets and areas of tissue culture work carried out with other microbiologist and pathologist.

The cabinets for plant tissue culture where should have horizontal air flow from inner side to outer. The sterilization procedures can be grouped under three categories.



1) Preparation of sterile media, containers and small instruments.

maintainance of aseptic condition.

Preparation of sterilise explant material.

Requirements - Instruments

Laminar Air flow cabinet (Supplemented) with UV light, spirit lamp, autoclave, oven, filters.

Chemicals - Alcohol, spirit sodium, hypochloride, calcium hypochloride, 1% benzine water, 0.01% to 1% mercuric chloride, 10% hydrogen peroxide, 1% silver nitrate, antibiotic solution, liquid detergent.

Methods of Sterilization

1] Steam sterilization - The most popular method of the sterilizing culture media and apparatus by autoclaving the material using steam sterilizer. The standard condition for autoclaving media are 121°C temp. with a pressure of 15 lbs for 20 min. Heat penetration is very important in an autoclave. So, large volume with smaller volume must be sterilized for longer period than with smaller volume. The advantage of an autoclave are speed, simplicity and distribution of viruses while disadvantages are change in pH by 0.3 units, chemical reactions can occur resulting loss of activity of media constituents.

2] Dry sterilization - The sterilization of glass ware and metallic instruments can be carried out in a dry heat for 8 hours at 160 to 180°C . Dry glass wares can either be wrapped in aluminium foil, brown paper or cello metal containers to maintain sterility.

3] Aseptic conditions - It is essential that workers hands must be aseptic during work. A wash with detergent followed by spraying 70% alcohol on hands. The laminar air flow cabinets should be sprayed with 70% alcohol or ethanol. It is must that talking in laminar air flow should be avoided.

6

Q.2 Write short notes

1] Role of Quarantine

1. Plant quarantine is defined as rules and regulations declared by government to prevent entry of infected plants & plant material, exotic pests, pathogens and weeds which is harmful to the agriculture or the environment of our country.
2. Plant quarantine is thus designed as a safeguard against harmful pest, pathogens, exotic to a country or region.
3. Plant quarantine measures aim at providing protection to the agriculture of country.
4. These measures are of particular importance and relevance to countries like India whose economy is largely based on agriculture.
5. Provide protection to agriculture of a country.
6. To ensure that harmful pests and diseases do not enter the country.
7. To ensure that only the highest quality, pest free plant or plant material is exported from the country.
8. Agricultural development.



4

Organic farming.

1. As per the definition of USDA organic farming is a system which avoids / largely excludes the use of synthetic inputs, such as fertilizers, pesticides and hormones and feed additives etc.
2. And to the maximum extent feasible rely upon crop rotation, crop residue, animal manures of farm, organic waste, mineral grade rock, additive and biological system of nutrient mobilisation and plant protection.
3. FAO suggested that organic agriculture is unique production, management system which promotes and enhances agro-ecosystem, healthy including biodiversity biological cycles and soil biological activity.
4. This is accomplished by using on farm agronomic, biological and mechanical methods in exclusion of all synthetic off farm inputs.



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Vivekanand College Kolhapur (Autonomous)

DEPARTMENT OF BOTANY
B. Sc. III Semester VI - Paper DSC 1007G
Home Assignment

Total Marks 10

Q.1. Long Question (Attempt any one)

(6 marks)

- 1) Explain in brief mechanism of crossing over.
- 2) Define plant breeding. Give objectives of plant breeding.
- 3) Explain in brief collection and classification of data.

Q.2. Short Note (Attempt any one)

(4 marks)

- 1) Plastid inheritance
- 2) Law of independent assortment
- 3) Sacred groves
- 4) Economic importance of Clove



Head
5/3/23
Department of Botany
Department of Botany
Vivekanand College
Kolhapur



Assignment

10
10

Subtotal

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17
3/10

Name: Kambale Pradnya Shankar

class: B.Sc III (Botany)

Roll No - 8424

Department of Botany

Paper - Dsc 1007 G in Sem - VI

Q.1 Long question (Attempt any one)

2] Define plant breeding. Give objectives of plant breeding.

The increase in yield resulted from increased quantum and better management of inputs, such as fertilizers, irrigation water, plant protection and cultural practices, and from improved crop varieties. It is doubtful that the net cropped area can be increased indefinitely, but there is still some scope through double and multiple cropping.

Better environment alone cannot lead to better yields from inferior varieties. Beyond a certain limit, the limit being set by the genetic makeup of the variety. In fact, improving the environment beyond a certain point for any variety may adversely affect its performance.

Plant breeding deals precisely with the above aspect of crop production. It consists of the principles and the methods required for favourably changing the genetic constitution of crop plants. This activity usually produces crop varieties better suited to the conditions, in one or more



aspects than the existing ones. This would explain why Vavilov defined plant breeding as 'plant evolution directed by man.'

objectives of plant breeding :-

Plant breeding aims to improve the various characteristics of plants so that they become more desirable agronomically and economically. Thus, the chief objective of plant breeding is to develop such improved varieties of crop plants that will be commercially successful.

① Higher yields :- Most of the breeding programmes aim at higher crop yields. In fact higher yields will always remain one of the main objectives of breeding programmes. This is achieved by developing more efficient genotypes e.g. hybrid varieties.

② Improved quality :- The quality of a plant product determines its suitability for various uses. Quality is an important aspect for plant breeders. Quality characters vary from one crop to another, e.g. grain size, colour, milling and baking qualities in wheat (*Triticum aestivum*); cooking quality in Rice (*Oryza sativa*) etc.

③ Disease and insect Resistance :- Resistant varieties offer the cheapest, the



most convenient and environmentally safe method of disease and insect management. In some cases, they offer the only feasible means of control. e.g. rusts in wheat. Resistant varieties not only increase product but also stabilise it

④ change in Maturity Duration :- Breeding for early maturing crop varieties or varieties suitable for diff. dates of planting may be an important objectives in many crops. For example, the development of wheat varieties suitable for the late planting has permitted rice wheat rotation.

⑤ Agronomic characteristics :- Modification of agronomic characteristics, such as plant height, tillering, branching erect or trailing habit etc. is often desirable. For example, dwarfness in cereals is generally associated with lodging resistance and fertilizer responsiveness.

⑥ photo and thermo insensitivity :- Development of photoinensitive and thermo-insensitive wheat and photoinensitive rice variety has permitted their cultivation in new areas. Rice is now cultivated in panjab, while wheat is a major rabi crop in west Bengal.



⑦ synchronous maturity :- This feature is highly desirable in crops like mung, (vigna radiata) where several pickings are necessary.

⑧ Non shattering characteristics :-

This feature would be of greater value in a crop like mung where shattering is a major problem in case of many commercial varieties.

⑨ Determinate growth :-

Development of varieties with determinate growth habit is desirable crops like mung, pigeon pea (Cajanus cajan), cotton, (Gossypium spp.) etc.

⑩ Dormancy :-

In some groups of crops, seeds germinate even before harvesting if there are rains at the time of maturity, e.g. mung, barley etc. A period of dormancy in such crops would check the losses due to preharvest rains. But in some crops, it may be desirable to remove dormancy.

⑪ Varieties for new seasons :-

Traditionally, Maize is a kharif crop. But scientists are now able to grow maize as rabi & zaid crops. Similarly mung is now grown as summer crop in addition to the main kharif crop.



⑫ Moisture stress and salt tolerance :-

Development of varieties for rainfed areas and for saline soils would be helpful in increasing crop production in India. The major proportion (ca. 70%) of the cropped area in the country is rainfed. Most of the areas

⑬ Elimination of toxic substances -

Some crops have toxic substances which must be eliminated to make them safe for consumption. For example, Khesari (*Lathyrus sativus*) seeds have a neurotoxin, β -N-oxalyl- γ - β -diaminopropionic acid (BOAA) that causes paralysis of lower limbs. Similarly, brassica oil has erucic acid, which is harmful to human health. Removal of such toxic substances would increase the nutritional value of these crops.



Q.2 short note.

2) Law of independent assortment :-

This law is based on dihybrid experiment. According to this experiment the law can be stated as "The genes of each pair of character separate independently from those of other characters during gamete formation".

Example.

Mendel's crossed varieties of pea plant, that differ for colour and shape of seeds: one variety has yellow colour and round shape ($YYRR$) while other had green colour and wrinkled shape ($yyrr$). The F_1 seeds from cross have yellow colour & round shape ($YyRr$). Here yellow seed colour (Y) is dominant over green seed colour (y) and round seed shape (R). When the F_1 hybrid plants were allowed to self fertilize, the F_2 generation were obtained having 4 kinds of combinations that is yellow and round, yellow and wrinkled. This offspring appears in the ratio of 9:3:3:1.

At the time of formation of gamete in case of F_1 hybrids the allelic pair ($YYyy$) & ($RRrr$) segregate and carry (Yy) and (Rr) & this four genes. A single gamete which carries much also contain a gene for seed shape i.e. either R or r gene. Thus it gives two combinations YR and yr in equal number.

Similarly the gamete which carry the (R) also gives two combinations (YR) (yr) in equal number. When F_1 hybrid undergo self pollination



they resulted into F_2 progeny appearing four kinds of offsprings. In the ratio of 9:3:3:1.

The result obtained in F_2 generation clearly states that during gamete formation, the alleles for colour of seed do not interfere with alleles for shape of seed. Hence two pairs of alleles behave independent for each other.

Parent - Yellow Round \times Green wrinkled

P, $YYRR$ $yyrr$

\downarrow \downarrow \downarrow \downarrow

YR yr

F_1 generation

$YyRr$ (Yellow round)

Selfing of F_1

Male ($YyRr$)

YR Yr yR yr

Female

($YyRr$)

YR Yr yR yr



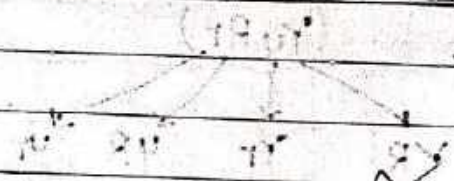
F₂ generation

♂	YR	Yr	yR	yr
♀	YR	Yr	yR	yr
YR	YYRR	YYRr	YyRR	YyRr
Yr	YYRr	YYrr	YyRr	Yyrr
yR	YyRr	YyRr	yyRR	yyRr
yr	YyRr	Yyrr	YyRr	yyrr

- yellow and round - 9
- yellow and wrinkled - 3
- Green and Round - 3
- Green and wrinkled - 1

phenotypic ratio - 9:3:3:1

Genotypic ratio - 1:2:2:4:1:2:1:2:1



[Signature]

Head
Department of Botany
Vivekanand College
Kolhapur



Assignment (Section-II)

DSC-7F: "Plant Biochemistry and stress physiology and Plant systematics and paleobotany".

Q 1 what is fossil? Give different type of fossil.

→ The remains / impression of pre-historic plant/ animal that have hardened into a rock.

- A fossil is an impression, cast original material or track of any animal/plant that is preserved in rock. after the original organic material is transformed / removed.

Types of fossils -

1) compression - Plant parts compressed by particle plant parts preserved of the sediments and the organisms become flattened. and only external structure can be studied.

These plant fossils are 2D imprints of the plants that have been transformed during fossilization. These fossils often retain some organic matter.

2) Impression - Plant body compressed by sediments gives an imprint of it.

Impression fossils are 2D. leave an imprint of the plant material in some fine grained / soft sediment such as clay or silt. once the plant matter decays the impression remains to be fossilised.

3) Petrification - In this type of fossil both internal and external structure is preserved.

organic material becomes a fossil due to replacement of the original matter and filling of the original matter and pore space with minerals like $CaCO_3$, $MgCO_3$, Fe , $CaCO_3$ etc.

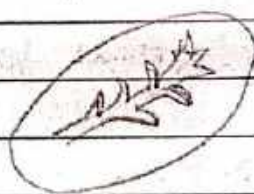
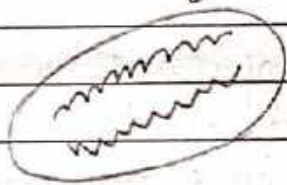
It is a 3D fossil. petrified wood is a



4) Mould and cast - Mould and cast fossils are 3D⁴⁹ that sometimes retain organic material; these fossils are formed when sediment fills in an empty space in the plant (cast) or by surrounding the plant itself before the plant decays (moulds). These fossils to record outside features of the plant but do not reveal cellular information.

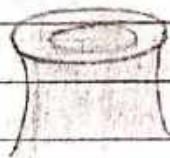
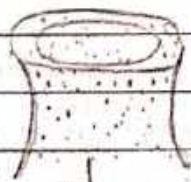
- casts are formed when sediment/mineral precipitates and fill these moulds. A cast is a positive image identical in symmetry to the original. as a general rule. If a shell has been dissolved away you must likely have a mold.

→ Coal ball - Type of concretions varying in shape coal balls were formed in carboniferous period swamps and coal balls preserve a remarkable record of the microscopic tissue structure of carboniferous swamps and moss plants.



① Compression Fossil

② Impression / Imprint fossil



Destroy original material and minerals
Fill up the space

③ Mold and casts

cavity
minerals enter the cavity and become solidified.

③ - Petrified fossil -
 SiO_2 $MgCO_3$ FeS



Q 2) short note — Herbarium.

- A herbarium is a collection of preserved plant specimen and associated data used for scientific study.
 - The specimens may be whole plants or plant parts; these will usually be dried and mounted on a sheet of paper but, depending upon the material may also be stored in boxes or kept in alcohol or other preservative.
 - The making of herbaria is an ancient phenomenon at least six centuries old although the techniques have changed little and has been an important step in the transformation of the study of plants from a branch of medicine to an independent discipline.
 - Commensurate with the need of identify the specimen, it is essential to include in a herbarium sheet as much of the plant as part as possible.
 - Herbaria have long been essential for the study of plant taxonomy, the study of geographic distribution, and the stability of nomenclature.
 - specimen housed in herbaria may be used to catalogue or identify the flora of an area.
 - Herbaria also preserve a historical record of change in vegetation over time.
- In some cases, plants become extinct in one area or may become extinct altogether. In such cases specimens preserved in a herbarium can represent the only record of the plants original distribution.

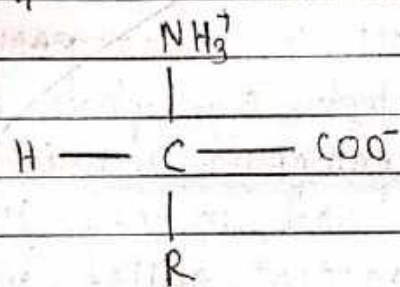


1) Physical and chemical properties of amino acids.

→ Physical properties of amino acids -

- 1) Amino acids are crystalline in nature.
- 2) They are colourless, ~~testes~~ tasteless (Tyrosine). Some are sweet (glycine) and bitter.
- 3) They are soluble in water or hot water, slightly soluble in alcohol, insoluble in ether.
- 4) Melting point is high i.e. about 200°C .
- 5) Except glycine all amino acids possess optical activity due to presence of asymmetrical carbon atom.
- 6) The amino acids have zwitter ion's property - The word zwitter (German word) means hybrid. Amino acids are hybrid molecules in the sense they have both positive and negative charges or groups together. So they are also called dipolar ions.

77



Zwitterine ion state in electric field it will not go to +ve and -ve electrode. That means they become electrically neutral.

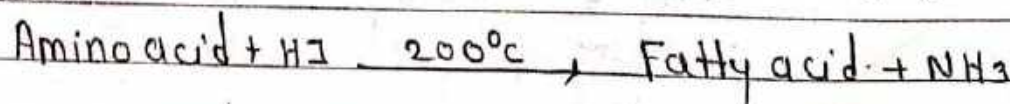
B) Chemical properties -

1) Oxidative decamination test - Amino acid contains NH_2 group, it is easily removed by oxidation. This process is called an oxidative decamination test.



2) Formation of fatty acid -

When amino acids are heated with hydroiodic acid at 200°C the amino group is eliminated and they form fatty acids.



Subject Wise Student Blank Marks Entry

Session: MAY-JUNE 2023

Stream: B.Sc.

Standard: B.SC. - SY

Semester: SEM - IV

Print Date : 17-06-2023

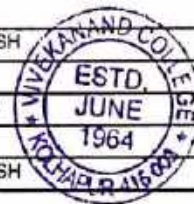
Subject: BOTANY (DSC-1007D)

Sub-Subject: CIE

Max Marks: 30

Page No :Page 1 of 1

SrNo	PRN	SeatNo	GRNs	StudentName	Marks
1	2021037274	527449	2953864	BHISE RAVIRAJ NEMAJI	24
2	2021037254	527450	2953708	BHURKE SWARA SAGHIN	24
3	2021036982	527451	2950303	CHOTHE SAKSHI NANDAKUMAR	21
4	2021036996	527452	2953576	GORE INDRAJA VITTHAL	28
5	2021037001	527453	2952387	Jadhav Jyoti Hanumant	26
6	2021037007	527454	2952430	KAMBLE ANUSHKA AMAR	24
7	2021037012	527455	2950085	KAMBLE ROHAN BHAGWAN	27
8	2021037263	527456	2953787	KAPURAKAR PRATHMESH SURESH	26
9	2021037020	527457	2949952	Kharade Kedar Sanjay	25
10	2021037022	527458	2949879	ABHISHEK LENIN KODNAIK	24
11	2021037023	527459	2953297	KOLI MAYUR LAHU	23
12	2021037024	527460	2949900	KOLI NIKITA UTTAM	24
13	2021037264	527461	2953796	KOLI PALLVI RAJU	26
14	2021037253	527462	2953758	KOLI PREETI DEEPAK	27
15		527464	2891056	KOTHAVALA ALISHA TANAJI	20
16	2021037272	527465	2953856	LAHADE BABU MAHADEV	25
17	2021037247	527466	2953729	MAGAR MANASI AMIT	29
18	2021037041	527467	2953395	MANE AMAN PRALHAD	26
19	2021037043	527468	2950079	MANE GANESH SHIVAJI	24
20	2021037044	527470	2950108	MANE SHWETA DATTATRAY	22
21	2021037046	527471	2953308	MIRAJE MANOJ ARUNKUMAR	23
22	2021037047	527472	2953345	MOHITE AVADHOOT VIJAYANAND	23
23		527473	3006242	MULLA NAMIRA MANSUR	22
24	2021037278	527474	2953904	MULLANI TABSUM ZAKIRHUSE	26
25		527475	3006127	NADAF SANIYA YUNUS	24
26	2021037059	527476	2953569	PATIL JANHAVI JAGDISH	21
27	2020037261	527477	2546595	OMKAR VIJAY PATIL	28
28	2021037252	527478	2953757	PATIL SHUBHADA GANESH	28
29	2021037067	527479	2950296	Patil Snehal Yalgonda	25
30	2021037084	527481	2953546	SAVAIRAM ARPITA SANJAY	25
31	2021037086	527483	2950173	ADITYARAJ SACHIN SHINDE	28
32	2021037088	527484	2953293	Shinde Shruti Ravindra	20
33		527485	3005975	SUTAR TEJAS DILIP	28
34		527486	2526123	TAMAICHIKAR NILAM NARENDRA	22
35	2021036975	527488	2950336	BARALE POOJA JYOTIRAM	25
36	2021036978	527489	2849916	CHAVAN ARCHANA MAHADEV	27
37	2021036984	527490	2953250	CHOUGALE PRATIKSHA JAYSING	27
38	2021037193	527491	2953584	DEVANE VAISHNAVI RAJESH	29
39	2021036992	527492	2952407	DUBEY SAKSHI RAJKUMAR	24
40	2021036995	527493	2950268	Gavali Nikita Sarjerao	26
41	2021036997	527494	2950300	GOSAVI PRADNYA SAKHARAM	26
42	2021036999	527495	2951490	GURAV SMITA RAJENDRA	26
43	2021037270	527496	2953619	KADAM PRASAD CHANDRASHEKHAR	21
44	2021037010	527497	2953373	Kamble Prathmesh Shrirang	21
45	2021037013	527498	2953368	KAMBLE SHRUSHTI PRAKASH	25
46	2021037016	527499	2949937	KATAKE SAYALI KIRAN	24
47	2021037031	527500	2949939	KUMBHAR RASIKA ANNASO	26
48	2021037032	527501	2949842	Kumbhar Sanika Sanjay	27
49	2021037034	527502	2953474	KUMBHAR SHWETA PRAKASH	24
50	2021037042	527503	2950293	Mane Anuradha Avinash	25
51	2021037048	527504	2950106	SAYALI SANDEEP MORE	26
52	2021037050	527505	2952424	MUTHE ADITYA DNYANESHWAR	27
53	2021037052	527506	2950368	NAGAONKAR AKASH UDAY	23



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Internal Exam

B. Sc. II, Sem. IV

Paper IV (Section I and II)

Date: 25/04/2023

NOTICE

All students of B. Sc. II are hereby informed that, their offline Internal Exam of Botany Paper IV (Section I and Section II) is going to be held on 27/04/2023 from 2.45 to 3.30 pm in your respective classrooms. Exam consists of 10 MCQ 5 questions from section I and 5 questions form section II. Exam is Compulsory and it will not repeated again.



D. T. Dangat
25/4/23
Dr. B. T. Dangat
Head of the Department of Botany
Vivekanand College
Kolhapur

Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Home Assignment

B. Sc. II, Sem. IV Paper IV - Section -I

"Plant Anatomy"

Total Marks 10

Date: 23/03/2023

Q.1 Attempt **any one** of the following.

(6M)

1. Explain primary Structure of Monocotyledon and Dicotyledon Stem.

OR

2. What is tissue system? Explain in brief epidermal tissue system.

OR

3. What is plant adaptation? Explain in detail the Xeric adaptation.

Q.2 Attempt **any one** of the following.

(4M)

1. Mangrove biology.

2. SAM.

3. Types of Adaptation.



A. Jangal
Head -
Head - 23.3.23
Department of Botany
Vivekanand College
Kolhapur



Name: Gayatri Chandrakant Tope
Roll No: 7981
subject: Botany.
Paper: IV
section: I

Q.17

17 Explain primary structure of Monocotyledon and Dicotyledon stem?

→ The monocotyledon stem is differentiated into distinct swollen nodes and internodes. The stem is usually cylindrical and unbranched. It terminates into an inflorescence. The space between two nodes, i.e. the internode.

- The example of Monocotyledon stem Maize. All the characters essential to study the primary structure of a monocotyledon stem can be observed in the transverse section passing through the internodal region of Maize stem.

The transverse section passing through the internodal region of Maize stem also shows the three tissue system, i.e. the epidermal, fundamental and vascular.

1] Epidermal tissue system:-
Epidermal the outermost



my

- vascular bundle is completely surrounded by such a sheath of sclerenchyma fibers. it is called fibrous vascular bundles.

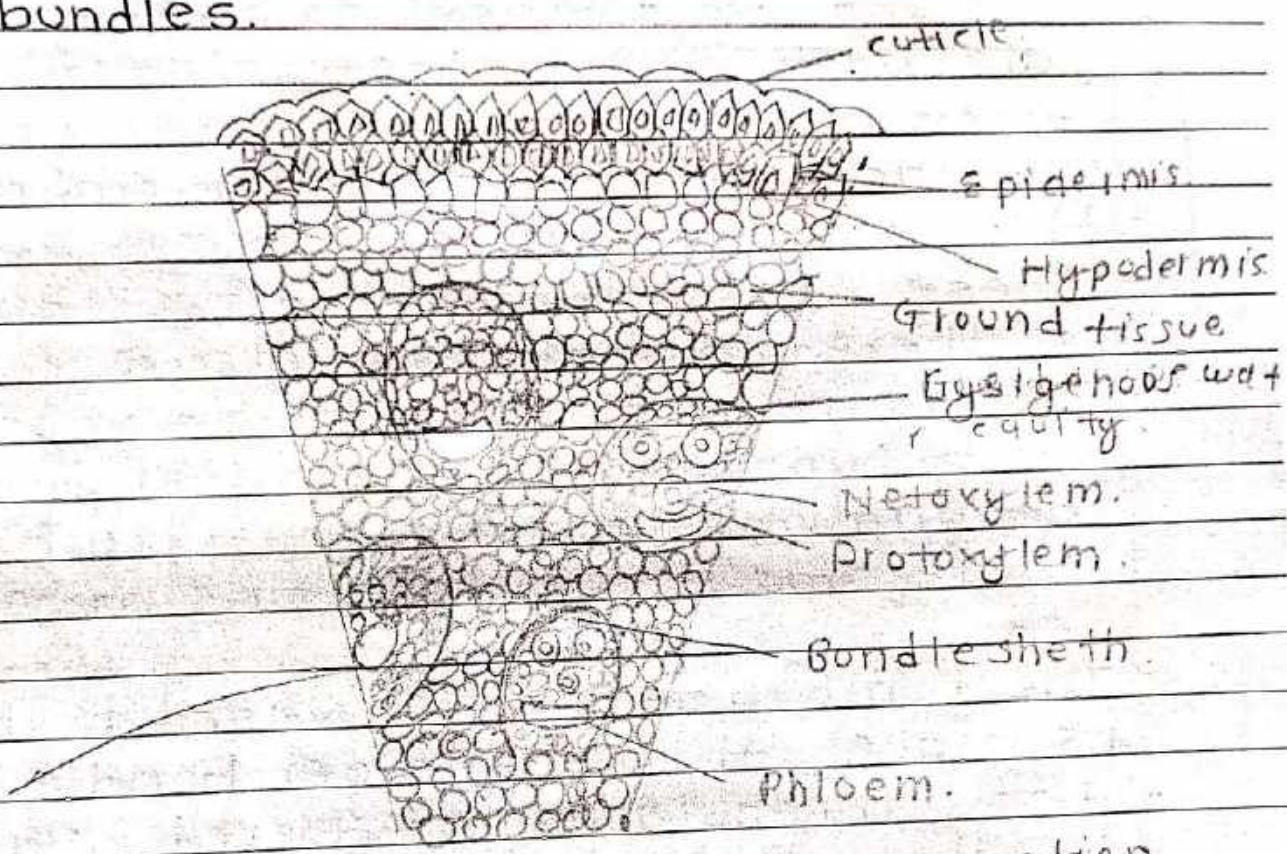


Fig:- Maize stem: transverse section showing primary structure.

- The outer few layers of ground tissue system are thick walled generally sclerenchymatous.
- These layer are continuously forming a ring in the region next to epidermis. called hypodermis.
- The remaining region of the ground tissue internal to hypodermis shows presence of only pith cells.



- cells which are thin walled and arranged with many intracellular space.
- In green young stem some of parenchyma cells next to hypodermis are with chloroplasts, and are green in colour.
 - The vascular bundles remain embedded in this parenchymatous tissue.
 - These vascular bundles are irregularly scattered in the ground tissue.
 - The vascular bundles in the region next to hypodermis i.e. outer part of ground tissue towards periphery, are smaller in size and more crowded.
 - The number of smaller vascular bundles is higher than the larger bundle.
 - The irregularly scattered vascular bundles together, form a type of stele called atactostele.

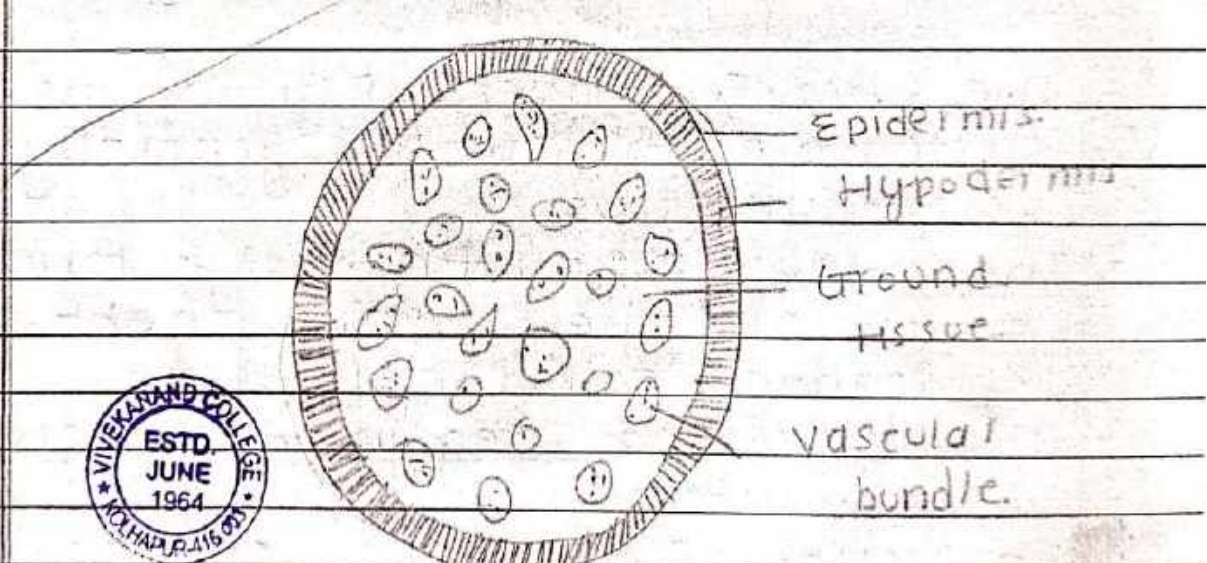
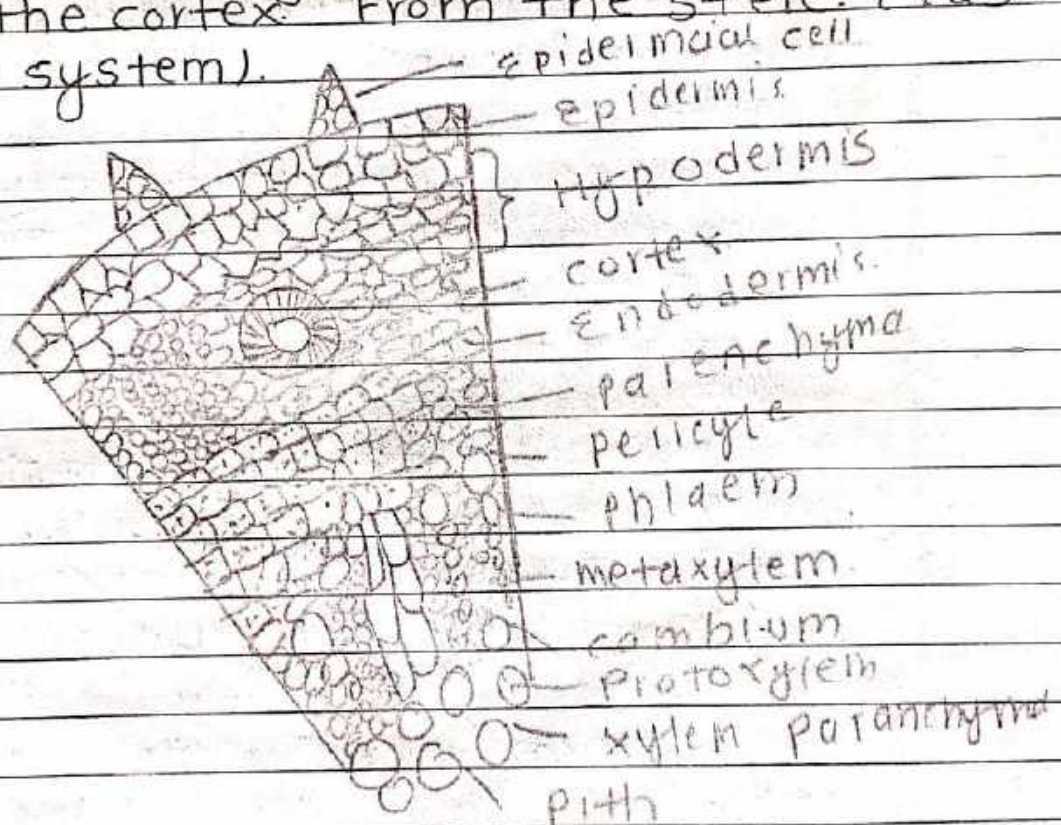


Fig: Noize stem-transverse section (Diagrams)

- The second region is composed of few layer of parenchymatous cell, they are thin walled and loosely arranged.
- The last region of the cortex is made up of a layer of compactly arranged barrel-shaped parenchymatous cells called the starch sheath.
- The chloroplast is present in this layer the photosynthetic product is stored in this region in the form of starch, so it is called starch sheath.
- innermost layer of cortex and delimits the cortex from the stele (vascular system).



∴ vascular region (stele):-



- 1) Protoderm :- gives rise to the epidermis of the plant.
- 2) Procambium :- given rise to vascular tissue.
- 3) Ground meristem :- given rise to endodermis, pericycle, cortex, medulla and pith.

* Apical cell Theory :-

- According to this theory the apical meristem consist of a single apical cell and this cell is interpreted as the structural and functional unit of apical meristem. The cell is very large and is shaped like an inverted pyramid.
- The apical cell is tetrahedral. In shape and has three or four cutting faces among which single face is directed upward and the rest point downward.
- The side of apical cell that is directed upward is triangular or square in shape and forms a part of the outer surface of shoot apex.
- According to this theory the tissue of a plant body originate from a mass of meristem where the following three histogen can be.



thin walled living cell. They are arranged end to end and are without intercellular spaces. Epidermis shows presence of epidermal hairs or trichomes which is mainly multicellular. epidermis is protective in function. The part next to epidermis composed of cortex region

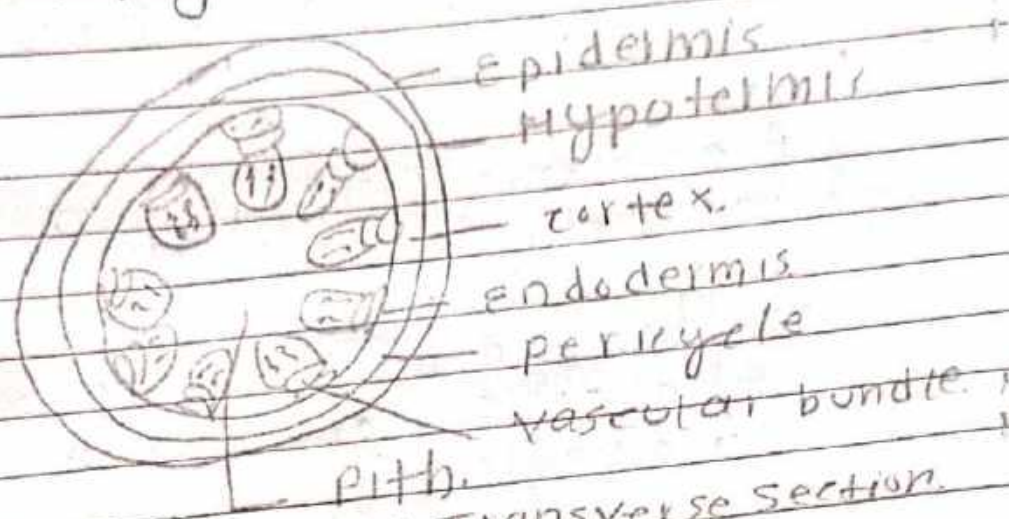


Fig 1 - Sunflower: Transverse Section of intermedial region of young stem.

- b) cortex:-
- The region possesses extra-stelar ground tissues.
 - The first zone just internal to the epidermis is composed of collenchyma consisting of some 4 or 5 layers collenchyma give mechanical support to the herbaceous young stem.



[Signature]
 Head
 Department of Botany
 Vivokanand College
 Kolhapur

251

Education for Knowledge, Science and Culture."
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE (AUTONOMOUS),
KOLHAPUR.

Department of Botany

Date: 23/03/2023

NOTICE

All B. Sc. II Students hereby informed that, you have to submit the given assignment (Paper IV section I and II) on or before 3/04/2023. Write down the assignment on full-scape and submit to the Botany department.

Mangal
Head
23.3.23
Head
Department of Botany
Vivekanand College
Kolhapur



Vivekanand College, Kolhapur (Autonomous)

Department of Botany

Home Assignment

B. Sc. II, Sem. IV Paper IV - Section -II

“Plant Metabolism”

Total Marks 10

Date: 23/03/2023

Q.1 Attempt any one of the following.

(6M)

1. Describe the different factors favours seed dormancy.

OR

2. Explain in brief symbiotic nitrogen Fixation.

Q.2 Attempt any one of the following.

(4M)

1. Methods of Breaking seed dormancy.

2. Properties of enzyme

[Signature]
 Head - 23/3/23
 Department of Botany
 Department of Botany
 Vivekanand College
 Kolhapur



Department of Botany
Home Assignment

Name :- Rohan B. Kamble

Roll No :- 7833

Paper - IV Section :- II

Que. 1 Describe the different factors Favour seed dormancy

Dormancy of seeds results from one or a combination of several different factors which are described below

1. Seed coats Impermeable to water

- The seeds of certain plant especially those belonging to the families Leguminosae, Malvaceae, Convallaceae, Salanaceae have very hard seed coats which are impermeable to water

- The seeds remain dormant in the soil until the impermeable layer of testas decay by the action of soil micro-organisms.

2. Seed coats Impermeable to oxygen

- In many plants such as xanthium many grasses and some members of the family compositae the dormancy of seeds results from the impermeability of the seed coats to oxygen.

3. Mechanically Resistant seed coats

- The seeds of certain weeds such as pigweed (Amaranthus), Capsella, Alisma etc - remain dormant because their hard seed-coats prevent any appreciable expansion of the embryo.



4. Immaturity of the Embryo

- In many plants e.g. orchids, Ginkgo biloba
The seed dormancy results from the immaturity of the embryos which fail to develop fully by the time the seeds are shed. In such cases the seeds germinate only after a period of rest during which the development of embryos in the seeds is completed.

5. Need for after-repining in dry storage

- The seeds though containing fully developed embryos are dormant when they are harvested.
- They require no special treatment to overcome this dormancy and germinate if kept under dry storage conditions at normal temp. for about of few weeks to several months.
Eg. Barley, oats, wheat

6. Germination Inhibitors

- The dormancy of seeds results due to the presence of certain germination inhibitors either in some parts of the seeds such as a testa endosperm and embryo.
• Eg. Coumarin, phthalids, Ferulic Acid, Abscisic Acid, Perisporic Acid,

7. Chilling (low temp) Requirement

- In certain plants such as a apple, rose, Peach etc. the seeds remain dormant after low-temp or chilling requirement for germination.



Light sensitive seeds

- In many species the germination of the seeds is affected by light resulting in seed dormancy such light sensitive seeds are called as photoblastic
- The seeds which require the light for germination called as positively photoblastic
- Eg : Lettuce, Peppergrass, Tabacco, Tomato
- The seeds their germination is inhibited by light is called as negatively photoblastic
- Eg. Nigella, Helleborus



Que-2 Properties of enzymes.

The enzymes are relatively large molecules having high molecular weight and do not pass through the cell memb. Majority of the enzymes are proteins and made up of one or more polypeptide chains.

- 1 All enzymes are proteins combined with other chemical groups except RNA molecules, Enzymes are large globular molecules having three dimensional structure.
- 2 Enzymes increase the velocity of biochemical ~~re~~ reaction. Enzymes remain unchanged or unaffected qualitatively or quantitatively at the end of the reaction.
- 3 For a biocatalytic activity an enzyme it must be with its natural structure and there should be no denaturation. Thus the primary, secondary, tertiary and quaternary structures of the catalytic protein are essential for their catalytic action on the substrate.
- 4 Enzymes are sensitive to heat and pH. Most of the enzyme functions actively at neutral pH of the reaction. At very high temp, enzymes become inactive due to denaturation.
- 5 Enzymes accelerate rate of reaction without altering equilibrium of the chemical reaction.



B. Sc. II PP

Sem. IV (Section I)

Marksheet (Home Assignment)

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

B.Sc. Part-II Plant Protection

Section-I

(Sem. IV)

Date:

Prof. Name:

Time:

Sign.

Roll No.	Sign.	Roll No.	Sign.	Roll No.	Sign.	Roll No.	Sign.
7867	10	7877	10	7887	10	7897	09
7868	10	7878	10	7888	10	7898	10
7869	05	7879	10	7889	09	7899	10
7870	09	7880	10	7890	10	7900	10
7871	10	7881	10	7891		7901	10
7872		7882	10	7892	10	7902	09
7873	10	7883	09	7893	06	7903	10
7874	10	7884	05	7894		7904	10
7875	10	7885	10	7895			
7876	10	7886	10	7896	10		



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Vivekanand College, Kolhapur (Autonomous).

Department of Botany

Home Assignment

B.Sc.-II (Plant Protection), Semester- IV

DSC- 1011D2, Section-I "Weed Science"

Total Mark: 10

Date: 06/04/2023

Attempt any one of the following long question

[06]

- 1) Describe gross morphology, reproduction, ecology, dispersal and management in *Portulaca oleracea*.
- or
- 2) Describe parasitic, aquatic, poisonous and noxious weeds with examples.
- or
- 3) What is weed management? Explain in brief Mechanical methods of weed management

Attempt any one of the following short note

[04]

- 1) Management of *Parthenium hysterophorus*
- or
- 2) Glyphosate
- or
- 3) Give the characteristics of weeds
- or
- 4) Rat



[Signature]
 Head Head
 Department of Botany
 Department of Botany College
 Kolhapur

Name:- Pooja Jyotiram borale
Roll No:- 7867

(10/10)

Home Assignment
"Weed Science"

Q.1 Attempt any one of the following long questions

3) What is weed management? Explain in brief Mechanism method of weed management.

Ans: Weed control aims to only putting down the weed present in field by some kind to physical, or chemical means while weed management is a system approaches where, by while weed management, where by whole and use planning, is done in advanced to minimize the weed growth.

- weed control method are grouped into cultural, chemical, physical and biological
- Every method of weed control has its own advantages and disadvantage.
- No single method is successful under all weed situations.

* Mechanical methods:-

- mechanical or physical method of weed management control are being employed everywhere man began to grow crop.
- The mechanical methods includes hoeing, hand weeding, mowing, burning, ploughing, flooding and mulching



B. Sc. II PP

Sem. IV (Section II)

Marksheet (Home Assignment)

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

B.Sc. Part-II Plant Protection

Date:

(Sem. IV)

Time:

Section II

Prof. Name:

Sign.

Roll No.	Sign.	Roll No.	Sign.	Roll No.	Sign.	Roll No.	Sign.
7867	10	7877	10	7887	10	7897	10
7868	10	7878	10	7888	10	7898	9
7869	05	7879	10	7889	10	7899	10
7870	10	7880	10	7890	10	7900	10
7871	10	7881	10	7891	0	7901	10
7872		7882	10	7892	10	7902	10
7873	10	7883	10	7893	10	7903	10
7874	10	7884	05	7894		7904	10
7875	10	7885	10	7895			
7876	10	7886	10	7896	10		



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Department of Botany

Home Assignment

B.Sc.-II (Plant Protection), Semester- IV

DSC- 1011D2, Section-II "Insect Pest"

Total Mark: 10

Date: 06/04/2023

Attempt any one of the following long question

[06]

- 1) Write a note on scientific name, marks of identification, life cycle, nature of damage and management practices of sugarcane – White grub.
or
- 2) Explain the classification of insecticides based on the mode of entry
or
- 3) Define insect pest. Give in brief classification of insect pest

Attempt any one of the following short note

[04]

- 1) Gram Pod Borer
or
- 2) Plant origin Insecticide
or
- 3) Causes for insects to assume as pest status



P. Jangal
Head
Head
Department of Botany
Vivekanand College
Kolhapur

Name:- Pooja Jyotiram barate $\frac{10}{10}$
Roll:- 7867

Home assignment.
Insect pests.

Q.1 Attempt any one of the following long questions.

2) Explain the classification of insecticides based on the mode of entry.

Ans:- classification of insecticides on mode of entry:-

(A) stomach poison:-

* characteristics:-

usually applied against chewing insect pest.

Also applied by mixing in food

Apply by mixing in attractant.

Available in formulations - sprays, dust, dips

* pre requisites for stomach poison:-

should not damage the foliage

should be insoluble in water.

should be inexpensive

should be stable.

* Example

Inorganic Compounds:- Sodium Fluoride, Borax, Paris green, lead arsenate.



OPEN BOOK TEST (B.Sc.III)

23

Saturday, 01/10/2022

Name

Sign

1. Poochi Prashant Moskar
- 2) Shital Balu Godake
- 3) Sakshi Jaykumar Patel.
- 4) Pashmi Rajendra Kumbhe
- 5) pradnya chankar kumbhe

~~Prashant~~
~~Shital~~
~~Sakshi~~
Pashmi
Pradnya

~~Pradnya~~

(Dr. Priya D. Patil)



open book - Test ⁸/₁₀ Pragnya

Date - 1/10/2023

Q1 mcq —

1) Robert Hook coined the term cell.

- A) Galio
- B) Robert Hooke
- C) Rudolf Virchow
- D) Camilio Golgi

2) Cell theory fail to explain

- A) How new cell arise.
- B) living organisms are made up of cell.
- C) cell's come in various shapes and sizes
- D) all of the above

3) _____ is an example of comma shape Bacteria.

- A) Bacillus
- B) mycoplasma
- C) spirillum
- D) vibrio

4) _____ cells are weak with organis nucleus and organelle.

- A) Bacteria
- B) mycoplasma
- C) eukaryotic
- D) prokaryotic

5) Ribosomes are also called as _____

factories.



Name - kamble pradnya shankar.
Open book test

9/2
10
91
Date - 01/10/2022

Q.1 MCQ

1) Robert Hooke coined the term cell.

A) Galilio

B) Robert hooke

C) Rudolf vitchow

D) Camilio golgi

2) Cell theory fail to explain How new cells arise

A) How new cells arise

B) Living organism are made up of cells

C) Cells come in various shapes & sizes.

D) All of the above.

3) Vibrio is an example of comma shaped Bacteria.

A) Basillus

B) Mycoplasm

C) spirillum

D) Vibrio

4) Eukaryotic cells are with organized nucleus and organelles.

A) Bacteria

B) Mycoplasma

C) eukaryotic

D) prokaryotic

5) Ribosomes are also called as protein factories.

A) lipid

B) protein

C) Carbohydrate

D) phopolipids



Date :

Section A1 sem - I

Time :

Prof. Name :

Sign :

	Roll no	Sign	Roll	Sign	Roll	Sign	Roll	Sign	Roll	Sign	Roll	Sign
1	7354		7397		7438	09	7479	06	7522		7565	08
2	7355	08	7398		7439	08	7480	06	7523	09	7566	08
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15	7370	08	7411		7552	08	7494	08	7537	09	7580	08
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23	7378		7419	09	7460	06	7502	07	7545	09	7588	07
24	7379		7420	08	7461	08	7503		7546	07	7589	
25	7380		7421	06	7462	08	7504	08	7547	08	7590	10
26	7381	08	7422	09	7463	08	7505	09	7548	06	7591	05
27	7382	09	7423	08	7464	09	7506	08	7549	05	9592	07
28	7383	07	7424	09	7465	08	7507	08	7550		7593	
29	7384		7425	05	7466	09	7508	10	7551		7594	
30	7385		7426	09	7467	06	7509	08	7552		95	
31	7386		7427	09	7468	08	7510	08	7553	08	96	10
32	7387	06	7428	10	7469	07	7512		7554	08	97	09
33	7388	09	7429		7470	10	7513	08	7555	10	98	08
34	7389	07	7430	08	7471	09	7514	07	7556	08		
35	7390	08	7431	10	7472		7515	07	7557	07		
36	7391	09	7432		7473	08	7516	07	7558			
37	7392	08	7433	08	7474	06	7517	08	7559	07		
38	7393	06	7434	08	7475	07	7518	07	7560	08		
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40	7395	07	7436	09	7477	09	7520	09	7562	05		
41	7396	09	7437		7478	07	7521	09	7564	09		

7235-08

7600-05

* Backlog paper - 7165 09



Home Assignment



65

Name - Yash Dilip Shelar

Class - BSc I

Div - B

Roll No - 7448

Sub - Botany

25
10

Paper I - Biodiversity in microbes, algae & fungi

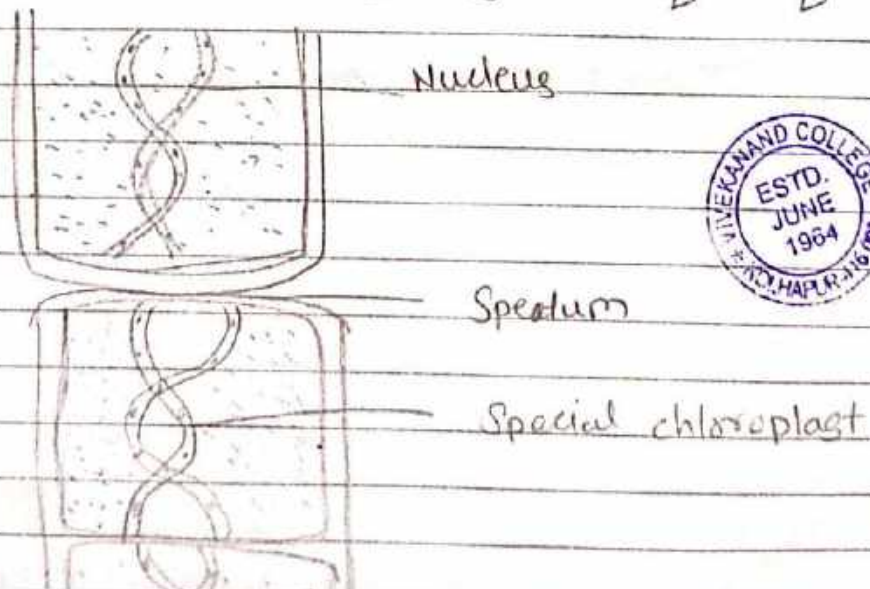
Q1. Attempt any one of following (long type)

- 1] Describe reproduction of Spirogyra

Spirogyra reproduces by vegetative, sexual & asexual methods -

Vegetative reproduction -

- 1] It occurs mainly by a process called fragmentation
- 2] Under favorable condition of growth the walls of adjacent cell dissolve thereby causing breakage of the filament
- 3] After fragmentation the vegetative filament develops into a new filament where each fragment undergoes multiple division & elongation from filament



B. Sc. I (Sem. I) Marksheet (Home Assignment) 56
(Sec. II)

Vivekanand College, Kolhapur (Autonomous)

Botany: B.Sc. - I

Sem. I (Sec. II)

Date :

Time :

Prof. Name :

Sign :

	Roll no	Sign	Roll	Sign	Roll	Sign	Roll	Sign	Roll	Sign	Roll	Sign
1	7354	Ab	7397	Ab	7438	26	7479	23	7522	Ab	7565	27
2	7355	27	7398		7439	26	7480	22	7523	29	7566	24
3	7356	Ab	7399	Ab	7440	21	7481	26	7524	25	7568	27
4	7357	Ab	7400	25	7441	23	7482	26	7525	27	7569	
5	7358	25	7401	26	7442	27	7483	Ab	7526	29	7570	
6	7359	26	7402	19	7443	Ab	7484	25	7528	28	7571	25
7	7361	24	7403	Ab	7444	26	7485	23	7529	27	7572	27
8	7362	24	7404	25	7445	26	7486	25	7530	29	7573	26
9	7363	30	7405	27	7446	23	7487	21	7531	23	7574	
10	7364	29	7406	25	7447	25	7488	25	7532	28	7575	28
	7365	27	7407	26	7448		7489	24	7533	27	7576	27
12	7366	25	7408	30	7449	26	7490	29	7534	27	7577	24
13	7367	23	7409	17	7450	28	7491	28	7535	22	7578	25
14	7368	28	7410	20	7451	28	7492	25	7536		7579	23
15	7370	27	7411	Ab	7552	26	7494	26	7537	19	7580	24
16	7371	29	7412	25	7453	27	7495	25	7538	30	7581	27
17	7372	29	7413	26	7454	29	7496	29	7539	29	7582	29
18	7373	28	7414	25	7455	25	7497		7540	29	7583	
19	7374	25	7415	24	7456	27	7498	27	7541	26	7584	
20	7375	Ab	7416	15	7457	29	7499	25	7542	27	7585	23
21	7376	Ab	7417	28	7458	27	7500	26	7543	Ab	7586	24
22	7377	25	7418	23	7459	26	7501	26	7544	23	7587	23
23	7378	Ab	7419	27	7460	22	7502		7545	28	7588	25
24	7379		7420	27	7461	28	7503	Ab	7546	24	7589	
25	7380	Ab	7421	25	7462	26	7504	24	7547	26	7590	27
26	7381	27	7422	26	7463	27	7505	28	7548	24	7591	22
27	7382	29	7423	23	7464	28	7506	27	7549	21	9592	
28	7383	25	7424	29	7465	26	7507	25	7550		7593	
29	7384	Ab	7425	21	7466	26	7508	30	7551		7594	
30	7385		7426		7467	23	7509	27	7552		7596	30
31	7386		7427	27	7468	27	7510	26	7553	24	7597	27
32	7387	22	7428	28	7469	25	7512	Ab	7554	25	7598	28
33	7388	25	7429	Ab	7470	30	7513	26	7555	27	7601	
34	7389	16	7430	26	7471	28	7514	26	7556	24	7665	
35	7390	25	7431	28	7472	Ab	7515	27	7557	24	7600	
36	7391	26	7432	Ab	7473	28	7516	26	7558			
37	7392	25	7433	23	7474	22	7517	27	7559	25		
38	7393	22	7434		7475	24	7518	24	7560	27		
39	7394	26	7435	24	7476	26	7519		7561	28		
40	7395	24	7436	26	7477	27	7520	28	7562	22		
41	7396	28	7437	Ab	7478	25	7521	27	7564	26		

- Back



"Bryophytes,
Pteridophytes &
Gymnosperm"
Paper Ist.

Name:- ROHIT . J. GHETE

Div:- B Roll no:- 7558

Std:- B.S.C . I

Sub:- Botany .

$\frac{07}{10}$

Q1. Attempt any one of the following

1. Give general characters of Pteridophytes.

→ General characters of Pteridophytes are as follows.

1) They are mostly herbaceous growing at moist & shady place.

2) Azolla is smallest pteridophytes & Alsophials is tallest pteridophyte fern.

3) The plant body is well differentiated as a sporophyte.

4) Body is divided into root, stem & leaves.

5) Root system is adventitious.

6) leaves are of 2 types - i) scaly
ii) foliage

7) In foliage leaves, leaves are microphylls (single nerved) & megaphylls. megaphylls leaves are large & contain multiple vein

8) Pteridophytes have sporophytic leaves.

9) Pteridophytes have well developed vascular system

10) Cambium is absent in pteridophytes cambium is responsible for the secondary growth of plants.

11) Stem is branched as Monopodial, dichotomous

12) Xylem is mainly composed of trachids.

13) Phloem is composed of sieve. cells & or companion cells.

14) Pteridophytes shows wide range of speciation & evolution.

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