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

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur
(Empowered Autonomous)

"Continuous Internal Evaluation"

Department of Botany

2023-2024

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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

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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Sr. No.	Name of Activity	Date	Page. No.
1	Home Assignment and Internal B. Sc I OE Sem I	13/10/2023	01-19
2	Home Assignment and Internal B. Sc I Major and Minor Sem I	09/10/2023	20-43
3	Home Assignment and Internal B. Sc II Botany Sem III	07/10/2023	44-56
4	Home Assignment and Internal B. Sc II Plant Protection Sem III	09/10/2023	57-63
5	Home Assignment and Internal B. Sc III Botany Sem V	07/10/2023	64-87

Head
Department of Botany

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Department of Botany

"Education for Knowledge, Science, and Culture"
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Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur
(Empowered Autonomous)

"Home Assignment and Internal B. Sc I OE Sem I"

Organized by

Department of Botany

On

13th October 2023

"Education for Knowledge, Science and Culture."

– Shikshanmaharshi Dr. Bapuji Salunkhe

VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany
B. Sc. I (Open Elective)

Date: 13/10/2023

NOTICE

All B. Sc. I (Open Elective) students are informed that the given home assignment must be submitted on or before October 20, 2023. Complete the assignment on full-scape paper, and then submit it in to the Botany department.

13.10.23

Head
Department of Botany

Head
Department of Bo
Vivekanand College
Kolhapur

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) 1964

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

VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.
Department of Botany
B. Sc. I Open Elective Agri based Microenterprises Paper I and II

Date: 13/10/2023

Home Assignment

Q.1 Write short note on (Attempt Any Two) **10(M)**

1. Importance of green pesticide
2. Air Layering
3. Principles of integrated disease management (IDM)
4. Organic Farming

PAGE NO.
DATE / /

09/10

Name:- Akshata Sunil Chavan.
Roll no :- 7401
Class :- B.Sc. I
Div :- B.

Q. Tick the correct following answer.

1) following ------ are plant growth promoters.
a) oxins. b) gebertins
c) cytokinies d) All of the above.

2) ------ are group into plant growth inhibetars
a) Aps b) Ethylene
c) both A & B d) know of this

3) The undisarable change in a food that makes it unsafe for human conjuction is prefered as ---
a) food Decay. b) food spoiage.
c) food lose d) All of the above.

4) potting mixture is prepared by adding soil, sand and composet in the ratio of ---
a) 1:1:2 b) 2:1:2
c) 2:2:2 d) 2:1:1

5) food preservation involves ---
a) increasing shelf life of food
b) Insuring safely for human conjuction.
c) both A & B
d) know of this

PAGE NO.:
DATE :

6) To Avoid contact between the pathogen & saseptible farce is achived by ——
a) protection b) Aexcultion
c) Avoidance d) Resistance.

7) Soils are tipacly composed of ——
a) Air, water b) Minarls
c) organic matter d) All of the above

8) Art of conecting two pices of living plant tissue together is knawn as ——
a) Grafting b) Layering
c) Budding d) cutting

9) —— Type of fertilizer is useful for gardaning
a) urea b) Sodium phosphate
c) DAP d) vermi compost

10) Which is true about organic farming ——
a) we have two fid crop
b) we have to fid soil
c) both a & b
d) Knowone of the above

07

PAGE NO.
DATE / /

·Home Assignment·

10/10

Name :- Akshata Sunil Chavan
Date :- 20/10/23
Subject :- O.E Botany Agri based Microenterprises paper I & II
Roll no :- 7401
std :- BSC FY

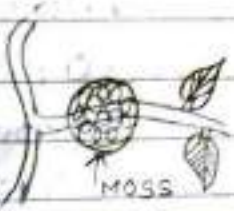
Q.1 Short notes

1) Importance of green pesticide.
1) They are environmentally friendly.
2) It is ecofriendly.
3) They are target specific
4) They are not deterious to non target organism.
5) They are use in small amount and dicompose quickly.
6) It is naturally occur in compound derrived from living organism for production.
7) They are cost efficient and chief as compare to chemical fertilizers.
8) They do not devlop resistance.
9) They can not contaminate water resources.
10) They do not shows adverse effects on plant growth.
e.g. → seed viability & cooking quality of grain.
11) They do not lead to bioaccumulation & biomagnification.
12) Less expensive and easily available.

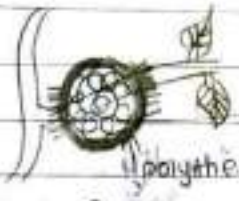
PAGE NO.:
DATE / /

2) Air Layering.

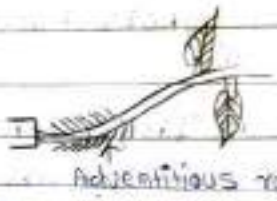
① Stem should be girdled



② Girdle is covered with soil rounding & then with moss



③ Ball of moss should be tied with thread & wrapped with polythene film/bag & tied at both ends.



④ At this stage air layering showing adventitious roots & removed from mother plant & ready for potting

1) This method is also known as Chinese layering or Macottage or Gootee.

2) It is one of the oldest techniques of vegetative propagation.

3) Usually 1-2 years old long woody branch is suitable for making air layers.

4) In the preparation of air layer, first the leaves from the basal part of the selected branch are removed.

6) Then the strip of the outer bark layer of about 1.5 cm wide below the nodal region is removed.

6) Such girdle or ring interrepts the downward transport of food material & growth regulating substances.

7) The ring is then covered with a ball of soil mixture containing equal parts of soil and durg manure.

8) This ball of soil is then covered with moist sphagrum mass and the entire region with ball is then wrapped with polythene strips or sheet.

9) The covering of polythene strips, keeps the rooting medium moist and allows the gaseous exchange for respiration As the polythene strips are transparent the developing roots are visible through them.

10) The layer with soil ball is separated from the parent plant. then the polythene strip is removed & the layer is planted in pot or nursery bed in a shady.

11) Cool place until is fully established & shows additional growth.

12) Large number of plants of horticultural importance are commercially propogated by air layering method.

13) e.g. ficas elastica (Indian Rubber), Jatropha, Lagerstroemia, Mussaenda, clerodendron.

Date :- 20/10/2020.

Name :- Aarati Sanjay Chorage.

Roll No :- 7402

Subject :- Botany (C.F)

Exam :- Internal Exam.

07/10

Q. Tick the correct alternate.

1) following ____ are plant growth promoters.
A) Auxins
B) Gibberlins
C) Cytokinins
D) All of the above
→ D) All of the above

2) ____ are group into plant growth inhibitors
A) Abscisic Acid
B) Ethylene
C) Both A and B.
D) None of these.
→ C) Both A and B.

3) the undesirable change in a food that makes it unsafe for human consumption is prefered as
A) food DK
B) food spoilage
C) food loss
D) All of the above.
→ B) food spoilage.

4) potting mixture is prepared by adding soil, sand and compost in the ratio of ____
A) 1:1:2
B) 2:1:2
C) 2:2:2
D) 2:1:1
→ D) 2:1:1

5) food preservation involves
A) increase in shelf life of food
B) ensuring safely for human consumption

C) Both A and B
D) None of these

→ C) Both A and B

6) To avoid contact between the pathogen and susceptible Host is achived by ____
A) Protection
B) Exclusion
C) Avoidance
D) Resistance

→ D) Resistance

7) Soils are tipically composed of ____
A) Air, water
B) Minerals
C) Organic matter
D) All of the above

→ D) All of the above

8) Art of connecting two pices of living plant tissue together is known as ____
A) Grafting
B) layering
C) Budding
D) Cutting

→ A) Grafting

9) ____ type of fertilizer is useful for gardening
A) Urea
B) Sodium phosphate
C) DAP.
D) Vermi Compost.

→ B) Sodium phosphate

10) Which is true about organic farming ____
A) we have two feed crops
B) we have to feed soil
C) Both A and B
D) None of the above

→ C) Both A and B.

Home Assignment

- Name :- Aarade Sanjay Chorage
- Subject :- Botany (O.E)
- Roll No :- 7402
- Point :- Air layering

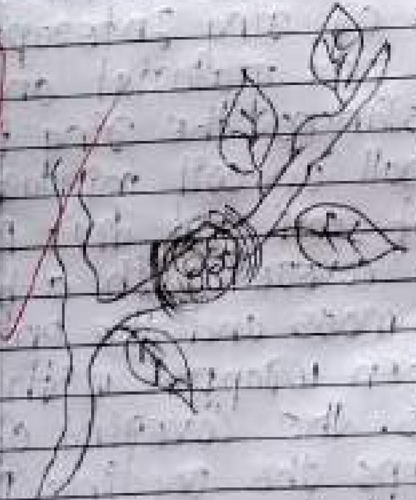
10/10

this method is also known as chinese layering or mocottage or Gootee. It is one of the oldest techniques of vegetative propagation of plants usually 1-2 years old long woody branch is suitable for making air layers. In the preparation of air layers 1st leaves from the basal part of the selected branch are removed. then the strip of the outer bark layer of about 2.5 cm wide. below the nodal region is removed such girdle or ring Interupts the downward tears part of food material and growth requiating substances. the ring is then covered with a ball of soil mixture containing equal parts of soil and dung Manure. this ring is then covered with a ball of soil moist spagnum moss and the entire region with ball is then wrapped with polythene strips or sheets. the Covering of polythene strips or keeps the rooting medium moist and allows the gaseous exchange for respiration. As the polythene strips are transparent the developing roots are visible.

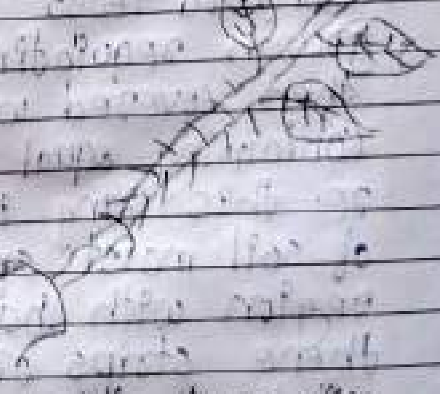
through them. the air layering is carried out during rainy season when the humidity in the atmosphere is high and temperature is moderate. depending upon the nature of the species sufficient roots are formed within 4 to 8 weeks then the layer is separated from the parent plant in the 2 or 3 stages to reduce the shocks at separation.

1. stem should be girdled.

2. Girdle is covered with soil cowdung and them with moss



3. Ball of moss should be tied thread & wrapped with polythene bag tied at both end



4. at this stage air layering showing adventitious roots are removed from mother plant and ready for planting.

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VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany

Date: 13/10/2023

NOTICE

All B. Sc. I (Open Elective) students have been informed that an internal test based on paper I and paper II will be held on October 20, 2023, in your classroom starting at 1.10 p.m. Attendance is necessary.

Head
Department of Botany

13.10.23

Head
Department of Botany
Vivekanand College
Kolhapur

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous)
ESTD JUNE 1964

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

BSc. I Botany Theory Attendence

Date :

(OE) PP

Time :

Prof. Name

Sign

Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign
7401		7485		7510		7535					
7402		7486		7511		7536					
7403		7487		7512		7537					
7404		7488		7513		7538					
7405		7489		7514		7539					
7406		7490		7515		7540					
7407		7491		7516		7541					
7408		7492		7517		7542					
7409		7493		7518		7543	A.R.S				
7410		7494		7519		7544					
7411		7495		7520		7545					
7412		7496		7521		7546					
7413		7497		7522							
7414		7498		7523							
7415		7499		7524							
7416		7500		7525							
7417		7501		7526							
7418		7502		7527							
7433		7503		7528							
7434		7504		7529							
7435		7505		7530							
7436		7506		7531							
7437		7507		7532							
7438		7508		7533							
7439		7509		7534							

VIVEKANAND COLLEGE KOLHAPUR (M.S.) ESTD JUNE 1964 Reaccredited Autonomous

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc I Open Elective

20/10/2023

Internal Exam

Sr No.	Roll No.	Name of the Students	Sign
1.	7401	Akshata Sunil Chavan	
2.	7402	Aarati Sanjay Chorage.	
3.	7403,	Niranjan Sanjay Kadam	
4.	7404	Akshata Avinash Kamble	
5.	7405	Sadyalim, Shyam. Kamble	
6.	7406	Sneha Mahadev Khandekar	
7.	7407		
8.	7408	Sanika Sambhaji Malvekar	
9.	7409	Sakshi Sudesh Mane.	
10.	7410	Atharva Santosh Mirgal	
11.	7411	Pruthviraj Yuvraj Mole	
12.	7412		
13.	7413	Akif Salim Patvekar.	
14.	7414		
15.	7415	Samruddhi Ramchandra Powar.	
16.	7416		
17.	7417		
18.	7418		
19.	7433	Chinaben Vinodbhai Bariya	
20.	7434	Ketan Keraba Kemba	
21.	7435	Ratndip Rajaram Kamble	
22.	7436		
23.	7437	Vaishnavi Tanaji Lavhate	
24.	7438	Dhananjay Anandrao Patil	
25.	7439	Yash Mahadev Pawar	
26.	7485	Poonam Anil Akkole	
27.	7486		
28.	7487	Dwagesh Bamane	
29.	7488		
30.	7489	Tanishka. Rahul. Divase	

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1963

31.			
32.	7490		
33.	7491	Archita chandrakant Ghanunge	Anita
34.	7492	Samruddhi . D. Gole	[signature]
35.	7493	Gouri . V. Gurav	[signature]
36.	7494	Prachi Ramesh Jadhav	Jadhav
37.	7495	Kalyani P Kadam	Kalyani
38.	7496	Manthan Kadaram	[signature]
39.	7497		
40.	7498	Sanika Kamble	Kamble
41.	7499	Hardik Karatkar	[signature]
42.	7500	Jiyeia Ilai Khatib	Khatib
43.	7501	Rutuja Suresh Kumbhar	Kumbhar
44.	7502	Raiveer Mahadik	R.S.M.
45.	7503	Sanjana Dattatray Mane	Smane
46.	7504	Aradhana Satish Marathe	[signature]
47.	7505	Pooja Shankar Mohire	[signature]
48.	7506	Taruna Vishnu Nirankari	[signature]
49.	7507	Janhavi Nitin patil	Janhavi
50.	7508		
51	7509	Priti Pramod Patil	[signature]
52	7510		
53	7511	Samiksha Santosh Pawar	SSP
54	7512	Disha . Jairamdas . Pidwani	Disha
55	7513	Sanika Vijay Pishte	S.V.Pishte
56	7514	Suraj Rama Ranbhare	[signature]
57	7515	Kaveri Ravindra Rode.	[signature]
58	7516	Aniruddha U. Shahapure	U.shahapure
59	7517	Jiya A. Shaikh	Shaikh
60	7518	Sadiya . S. Shaikh	Shaikh
61	7519		
62	7520	Siddhi Suryavanshi	[signature]
63	7521	Dhanashree Rajendra . Sutar	Sutar
64	7522		
65	7523	sanika - k. ugare	S K ugare
66	7524		
67	7525		
68	7526	Vaishnavi Madhukar Biradar	[signature]
69	7527		
	7528		

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

70	7529	Misba. A. Dafedar -	
71	7530	Shaheen Shabbir Desai	
72	7531	Prerana Shivaji Disale	
73	7532	Tanishka Manoj Ghorpade	
74	7533	Prajwal Mohan Jadhav	
75	7534		
76	7535	Vaishnavi Ramesh Kumbhare	
77	7536		
78	7537	Tanvi Kiran Malang.	
79	7538	Abhinandan Babaso Patil	
80	7539	Sakshi Prakash Patil	
81	7540	Ziya M. Shafik Pendhari	
82	7541		
83	7542	Amruta Subhash Rawool	
84	7543		
85	7544	Ankit Deepak Sawant	
86	7545		
87	7546		
88			
89			
90			

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VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany

B. Sc. I Open Elective Agri based Microenterprises Paper I and II

Date: 20/10/2023

Q.1 Tick the correct alternatives. **(20M)**

1. Following.....are plant growth promoters
   a) Auxins b) Gibberlins c) Cytokinins d) All of the above

2. .....are grouped into plant growth inhibitors
   a) Abscisic acid b) Ethylene c) Both a and b d) None of these

3. The undesirable change in a food that makes it unsafe for human consumption is preferred as.....
   a) Food decay b) Food spoilage c) Food loss d) All of the above

4. Potting mixture is prepared by adding soil, sand and compost in the ratio of.....
   a) 1:1:2 b) 2:1:2 c) 2:2:2 d) 2:1:1

5. Food preservation involves .....
   a) Increasing shelf life of food b) Ensuring safely for human consumption
   c) Both a and b d) None of these

6. To avoid contact between the pathogen and susceptible host is achieved by.....
   a) Protection b) Exclusion c) Avoidance d) Resistance

7. Soils are typically composed of.....
   a) Air,Water b) Minerals c) Organic matter d) All of the above

8. Art of connecting two piece of living plant tissue together is known as.....
   a) Grafting b) Layering c) Budding d) Cutting

9. ..... type of fertilizer is useful for gardening
   a) Urea b) Sodium phosphate c) DAP d) Vermicompost

10. Which is true about organic farming
    a) We have to feed crop b) Both a and c
    c) We have to feed soil d) None of the above

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc I Sem. I Open Elective

CIE Mark sheet

Sr. No.	Roll No.	Internal 10M	Home Assignment 10M	Total Marks 20M
1.	7401	09	10	19
2.	7402	07	10	17
3.	7403	09	10	19
4.	7404	09	06	15
5.	7405	09	10	19
6.	7406	07	09	15
7.	7407			
8.	7408	08	09	17
9.	7409	08	10	18
10.	7410	07	08	15
11.	7411	08	09	17
12.	7412			
13.	7413	09	07	16
14.	7414	10	10	20
15.	7415	09	09	18
16.	7416	08	09	17
17.	7417			
18.	7418			
19.	7433	09	10	19
20.	7434	09	09	18
21.	7435	09	09	18
22.	7436			
23.	7437	07	09	16
24.	7438	09	10	19
25.	7439	08	10	18
26.	7485	08	09	17
27.	7486	07	09	16
28.	7487	08	10	18
29.	7488	07	10	17

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

30.	7489	09	10	19
31.	7490	09	10	19
32.	7491	08	08	16
33.	7492	10	09	19
34.	7493	09	09	18
35.	7494	09	10	19
36.	7495	10	09	19
37.	7496	07	09	16
38.	7497	08	09	17
39.	7498	10	09	19
40.	7499	08	10	18
41.	7500	09	09	18
42.	7501	10	09	19
43.	7502	08	10	18
44.	7503	09	07	16
45.	7504	09	10	19
46.	7505	08	05	13
47.	7506	08	09	17
48.	7507	09	08	17
49.	7508			
50.	7509	08	09	17
51	7510	08	09	17
52	7511	07	08	15
53	7512	09	09	18
54	7513	08	08	16
55	7514	07	09	16
56	7515	08	09	17
57	7516	07	10	17
58	7517	09	09	18
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65	7524	07	10	17
66	7525	07	10	17
67	7526	08	09	17
68	7527	08	09	17

69	7528	07	10	17
70	7529	08	10	18
71	7530	07	10	17
72	7531	10	09	19
73	7532	10	10	20
74	7533	07	08	15
75	7534	07	09	16
76	7535	09	09	18
77	7536	08	10	18
78	7537	09	09	18
79	7538	07	09	16
80	7539	09	09	18
81	7540	09	08	17
82	7541			
83	7542	08	10	18
84	7543	08	09	17
85	7544	08	09	17
86	7545	07	09	16
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88				
89				
90				

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Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur
(Empowered Autonomous)

"Home Assignment and Internal B. Sc I Major and Minor Sem I"

Organized by

Department of Botany

On

09th October 2023

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Date: 09/10/2023

NOTICE

B.Sc. I (Botany) students hereby informed that, please write down the given assignments of Section I and Section -II on separate full-scape papers and submit it on or before Saturday dated 14/10/2023. This is compulsory to all students.

Head
Department of Botany

HEAD
DEPARTMENT OF BOTANY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous)
ESTD JUNE 1964

Education for Knowledge, Science and Culture.

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur.

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Date: 09/10/2023

NOTICE

All the students of B.Sc. I (Major/Minor Botany) hereby informed that, please write down the given assignments of Section I: 'Basics in Botany' and Section II: 'Plant Morphology' on separate full-scape papers and submit it on or before Saturday dated 14/10/2023. This is compulsory to all students.

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

09.10.23

Head,
Department of Botany

Head
Department of Botany
Vivekanand College
Kolhapur

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

B. Sc. I, Sem. I (NEP 2020)

Section I: DSC "Plant Morphology"

Assignment

Total Marks: 10

Q.1 Rewrite the following sentences by choosing the correct alternative. (2marks)

i) Clinging roots are found in - ----------.

a) Onion b) Potato c) Orchid d) Zinger

ii) ----------is known as highly modified, condensed shoot specialized for sexual reproduction.

a) Root b) Flower c) Stem d) Fruit

Q. 2 Attempt any two shortnotes. **(8 marks)**

i) Modifications of stem

ii) Parts of Typical flower

iii) Define inflorescence and describe various types of cymose inflorescence

iv) Calyx and Corolla

****

Assignment Result out of 10

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

BSc I Botany Theory Attendence

Date

Major and Minor

Time

Prof. Name

Section - II . Plant Morphology

Roll No.	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign
7356	09	7381	10	7424		7456	10	7481	10		
7357	10	7382	10	7425		7457	08	7482	08		
7358	10	7383	10	7426		7458	10	7483	09		
7359		7384	10	7427	10	7459	09	7484	06		
7360	09	7385	10	7428	10	7460	10	7547	09		
7361	09	7386		7429	09	7461	09	7548	10		
7362	10	7387	08	7430	10	7462	06	7549	09		
7363	10	7388	10	7431	09	7463	10	7550			
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7365	09	7390	09	7440	07	7465		7552	10		
7366	10	7391		7441		7466		7553	10		
7367	09	7392		7442	09	7467		7554	10		
7368	10	7393	10	7443	10	7468		7555	10		
7369	10	7394	06	7444	10	7469		7556	10		
7370		7395	10	7445	10	7470		7557	09		
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7373	10	7398	09	7448		7473		7560	09		
7374	09	7399	10	7449		7474		7561	09		
7375	09	7400		7450	10	7475					
7376	08	7419	09	7451	07	7476					
7377	09	7420	10	7452	10	7477					
7378		7421		7453	09	7478					
7379	09	7422	09	7454	10	7479	10				
7380		7423		7455	09	7480	08				

HEAD
DEPARTMENT OF BOTANY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

10/10 Perfect

GoodLuck | Page No. 1 | Date

Name :- Vira Sachin Khot
Standard :- BSc - FY
Roll No :- 7447
Subject :- Botany Assignment

Section I : DSC" Plant Morphology

Q-1 Rewrite the following sentences by choosing the correct alternative.

1) Clinging roots are found in - - - - -
a) onion b) Potato c) Orchid d) zinger
Clinging roots are found in Orchid

1

2) - - - - - is known as highly modified, condensed shoot specialized for sexual reproduction.
a) Root b) Flower c) stem d) Fruit.
Flower is known as highly modified, condensed shoot specialized for sexual reproduction.

1

Q-2 Attempt any two short notes
iv) Calyx and Corolla

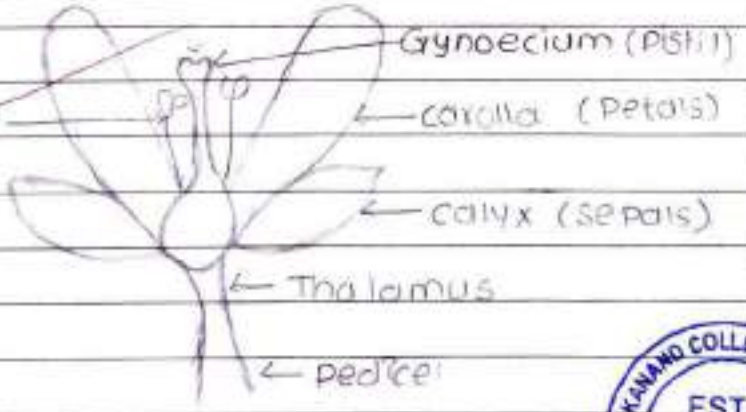


Fig. Typical Structure of Flower

- It is male reproductive whorl of flower.
- A single unit is known as stamen.
- Stamen having 3 parts:-

Fig:- Stamen

i) Anther lobe:- It is bilobed. It consist microspore mother cell which develope haploid pollen grain.

ii) Connective Tissue:- Connect filament and anther lobe.

iii) Filament:- They connect to floral whorls.

4) Gynoecium:-
- It is essential whorl of flower
- It is 2nd innermost whorl called Gynoecium.
- Single unit of Gynoecium is known as carpel or pistil.

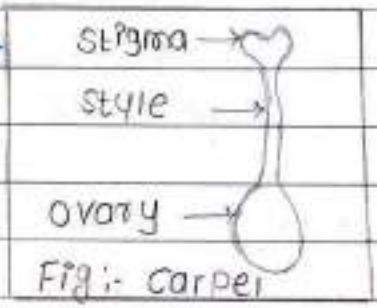


Fig:- Carpel

- It represent female reproductive whorl.
- It produce female gamet, i.e egg
- They consist of 3 parts:-
  1) Stigma 2) Style 3) Ovary
- Ovary consist of ovule.
- Sigma is landing site of pollen grain.
- Ovary is either uniovulate or multiovulate e.g
  1) Uniovulate:- Mango
  2) Multiovulate:- Tomato.

Poonam

10/10 Sayali

Assignment (II)

2

Name-: Sayali Ashok Patil.
College Name: Vivekanand College, Kolh
Std-: B.Sc-I Div-: B
Roll No.: 7460
Sub-: Botany

Q. 1. Rewrite the following sentences by choosing the correct alternative.

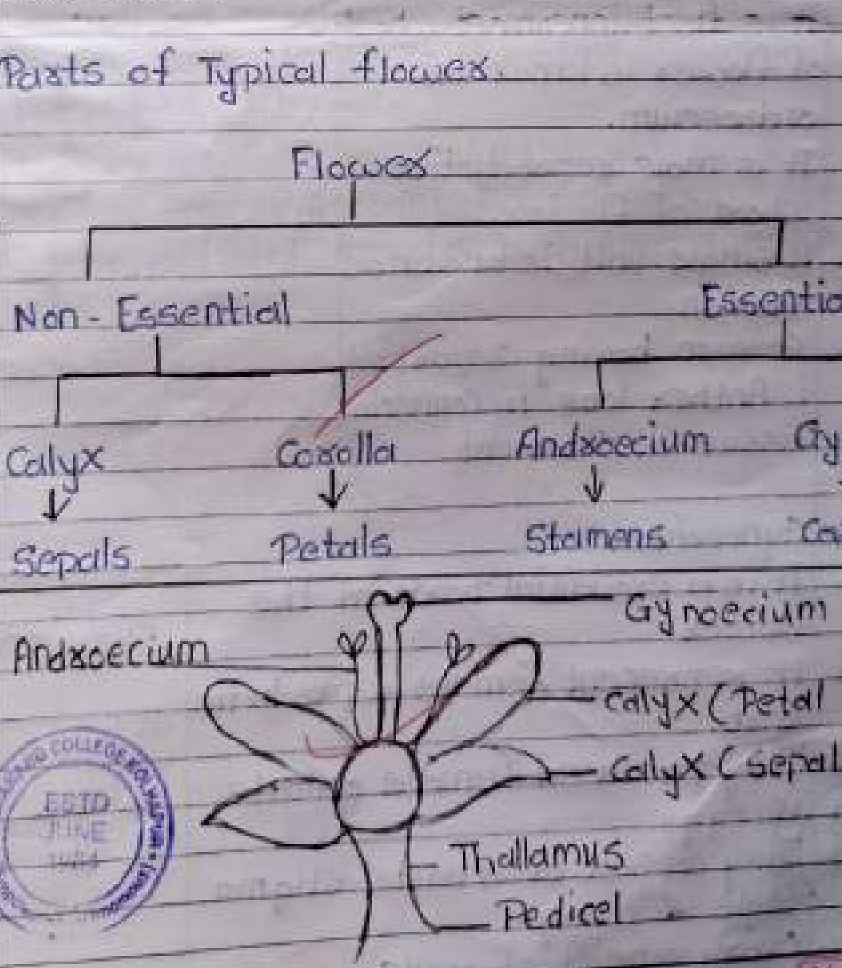
(1) i. Clinging roots are found in orchid

(1) ii. Flower is known as highly modified, condensed shoot specialized for sexual reproduction.

Q. 2. Shortnotes

ii. Parts of Typical flower.

Flower
- Non-Essential
  - Calyx → Sepals
  - Corolla → Petals
- Essential
  - Androecium → Stamens
  - Gynoecium → Carpels



Parts of Typical Flower

In flower there are 4 parts are present
1. Calyx 2. Corolla 3. Androecium 4 Gynoecium

1. Calyx :- Outermost whorl of flower is known as calyx.
- Sepal is single unit of calyx.
- It protect essential whorls in bud condition.
- It is green in colour so it carries photosynthesis.

2. Corolla :- Second most outermost whorl of flower is known as corolla.
i. Petal is single unit of flower.
ii. They product the reproductive whorl.
iii. They attract insect :- pollination purpose.

3. Androecium :-
i. It is first innermost whorl of flower is known as androecium.
ii. It is male reproductive whorl of flower.
iii. A single unit is known as stamen.
iv. Stamen having 3 parts :- i. Anther lobe ii. Connective tissue iii. Filament

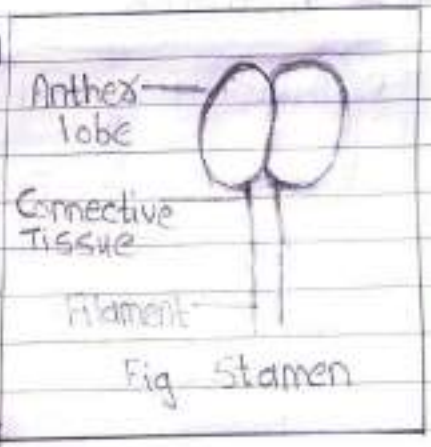


Fig Stamen

4. Gynoecium :-
i. It is a essential parts of the flower.
ii. It represent female reproductive verb.
iii. They produced female gamete is egg.
iv. They consist of 3 parts stigma, style & ovary.
v. Ovary consist of ovule.

Fig Carpel

iv. Calyx and corolla.
Calyx and corolla are the parts of flowers.

1. Calyx :
i. Calyx is non-essential part of flower.
ii. It is outermost whorl of flower is known as calyx.
iii. Sepal is a single unit of calyx.
iv. Functions of calyx are :
1. To protect essential whorls in bud condition.
2. They are green in colour and it carries photosynthesis.

2. Corolla :
i. Corolla also is a non-essential part of flower.
ii. It is second most outermost whorl of flower is known as corolla.
iii. Single unit of corolla is petals.
iv. Functions of corolla :
1. They protect reproductive whorl.
2. They are important for pollination because they attract insects with bright colours.

4

9/10

B.Sc-F.Y

Assignment-(2) Roll No. 3365

Section I: DSC "plant Morphology"

Q i) Fitting the blanks.

ii) clinging roots are found in orchid

iii) flower is known as highly modified, condensed shoot speciosized for sexual reproduction.

Q. 2) Write short notes

ii) parts of typical flower

→ parts of flower-

1) pedicel - stock of the flower
2) sessile - flower without stock
3) Thalamus - base of the flower

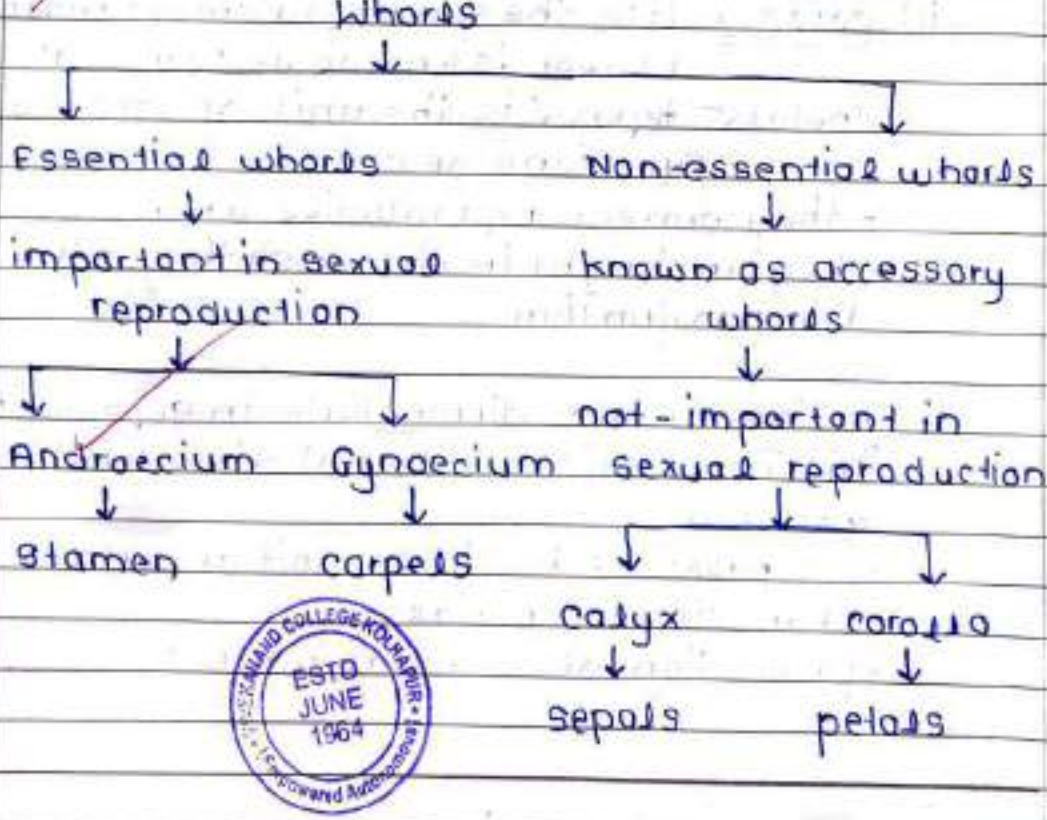
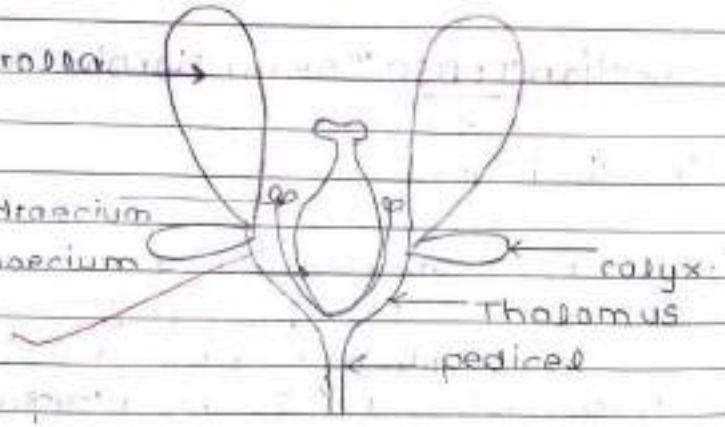


diagram of the typical flower.



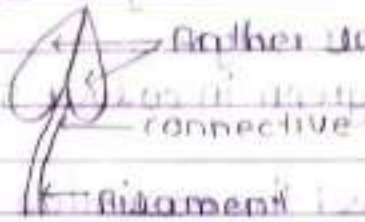
i) calyx - it is the outermost whorl of the flower is known as 'calyx'
- 'Sepal' is the single unit of calyx
- function of calyx -
- To protect the essential whorl in bud condition
- they are green in colour so it carries photo-synthesis.

ii) corolla - it is the second outermost whorl of the flower is known as 'corolla'
'petals' ~~'tepals'~~ is the unit of corolla
- functions of corolla
- they protect reproductive whorls.
- they are bright in colour so they attract insects for pollination.

iii) perianth do not differentiate in sepals & petals.
- morphologically do not differentiate in calyx & corolla.
- 'Tepals' is the single unit of perianth
- function of perianth.
- protection of essential whorls.

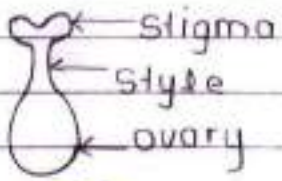
Essential whorls.

- Androecium: 'It is the innermost whorl of the flower specially designed for male sexual reproduction'
  - A single unit of androecium is called as 'Stamen'



  - Anther lobe consists of microspore mother cell which develops pollen grains.
  - connective tissue connects filament & anther lobe
  - filament is connects to the thalamus.

- Gynoecium: 'It is the essential whorl of the flower'.
  - it is specially designed for female reproductive whorl.
  - It consists of three parts. Stigma
    - style
    - ovary
  - Ovary consists ovules.
  - 'Carpel' is the single unit of gynoecium.



iv) calyx & corolla

→ - calyx & corolla are the non-essential whorls that not important in sexual reproduction.
- it is also known as 'Accessary whorls'

i) calyx - it is the outermost whorl of the flower
- 'sepals' is the single unit of flower
- function of calyx -
- they are green in colour so it carries photosynthesis
- they protect the essential whorls in bud condition.

ii) corolla - it is the second outermost whorl of the flower.
- 'petals' is the single unit of flower.
- function of corolla -
- they are attracts insects for pollination due to bright in colour.
- protection of essential whorls.

Diagram ?

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

B. Sc. I, Sem. I (NEP 2020)

Section I: DSC "Basics in Botany"

Assignment

Total Marks: 10

Q.1 Rewrite the following sentences by choosing the correct alternative. (2marks)

i) In *Nostoc*, ---------- performs nitrogen fixation and reproduction.

a) Akinetes b) Heterocyst c) Root nodules d) Bead cells

ii) ----------are a group of plants that produce naked seeds.

a) Angiosperms b) Gymnosperms c) Pteridophytes d) Bryophytes

Q. 2 Attempt any two shortnotes. (8 marks)

i) Evolutionary history of plants

ii) Characteristics of Division Thallophytes

iii) *Nostoc*

iv) Economic importance of Bryophytes

****

Internal Assessment out of 10

32

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

BSc. I Botany Theory Attendence

Date

Major and Minor

Time

Prof. Name

Section - 1

Sign

Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign
7356	10	7381	08	7424		7456	10	7481	09
7357	09	7382	09	7425		7457	09	7482	10
7358	10	7383	06	7426		7458	10	7483	09
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7379	10	7422	10	7454	10	7479	10		
7380		7423		7455	10	7480	08		

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

HEAD
DEPARTMENT OF BOTANY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

:- Assignment :-

:- Section I : DSC " Basics in Botany " :-

Name - Nilakshi Suresh Devakate.
Sub. - Botany (Minor) Roll no. - 7363

Q.1] Rewrite the following sentences by choosing the correct alternative. (2 Marks)

i] In Nostoc, ____ performs nitrogen fixation and reproduction.

Ans. In Nostoc Heterocyst performs nitrogen fixation and reproduction.

ii] ____ are a group of plants that produce naked seeds.

Ans. Gymnosperms are a group of plants that produce naked seeds.

Q.2] Attempt any two shortnotes. (8 Marks)

iii] Nostoc -

i] Nostoc are filamentous and unbranched. Numerous filaments are found in a gelatinous mass as a colony. The colonies may be big as an egg. The filament consists of a chain of cells, which appear like a bead. They are called trichomes.

ii] Cells are oval, spherical or cylindrical.

iii] Some of the cells in the filament are differentiated, they are called heterocyst. They are sites for nitrogen fixation. Nitrogenase enzymes fixes nitrogen.

iv] Each filament is covered in a mucilaginous sheath, which is a protective

called in them.

STUDENT'S NAME		TOTAL MARKS OBTAINED
CLASS	SUBJECT	
ROLL NO.	DATE	

and retains water. They are colonies are of different shapes, sizes and colours. They are mostly greenish or bluish-green in colour and also have red-brown or yellow-green colour.

v] Cell have various pigments. Cells contain Chlorophyll, phycocyanin (blue) and phycoerythrin (red) are also present.

vi] Inner cytoplasm contain incipient nucleus or a nuclear body. DNA is whithout histones.

vii] Nostoc reproduce vegetatively or asexually by spore formation.

viii] The vegetative reproduction is by fragmentation. Small colonies can grow attached to a large colony and later form separated colonies.

ix] The cytoplasm of a cell is defferenciated into ulter coloured due to peripherally arranged chromoplast and inner clear cytoplasm.

x] They are found mainly in freshwater as free-living colonies or attached to rocks, tree trunks or at the bottom of lakes.

iv] Economic importance of Bryophytes -

I] Medicinal Uses -

i] Bryophytes have many uses in medicine and there is a lot of evidence from ancient time.

ii] The extraction of dried Sphagum is used to treat acute haemorrhage and eye infections.

iii] Polytrichum was used for kidney and gall bladder stones.

iv] Sphagnum is the distillate form of peat-tar and was used to treatment of skin disease and peat-tar was also used as an antiseptic.

III] In Research -

i] Bryophytes have many contributions to genetics like Mosses and liverworts are used in research.

IV] Packing Material -

i] For packaging fragile materials like glassware dried mosses were an excellent choice

ii] The water retention property of bryophytes makes them a good choice for the transhipment of living materials.

IV] As Food -

i] Animals and birds use mosses as a good source of food.

ii] Mosses are consumed by the many like, Arctic Bison and Alpine vertebrates reindeer caribou, musk ox, arctic geese, lemmings, rodents.

V] As Indicator plant -

i] Bryophytes can indicate the acidity and basicity of the soil.

ii] Polytrichum indicates the acidity of the soil

iii] Tortella can indicate lime and bases of the soil.

VI] Potential source for Antioxidants -

Marchantia paleacea, Marchantia linearis, and conocephalum conicum are potentially important sources of bioactive materials that can be effective in the prevention of cells from oxidative damage which leads to aging and carcinogenesis.

VII] Households Uses -

As absorbent -

i) A layer of sphagnum is used in hiking boots for cushioning the foot and absorbing moisture and odour.

ii) Dry sphagum is used in diapers and in cradles to keep babies clean and warm.

iii) It is also used to make beddings, matthemsses, cushions and pillows by stuffing mosses into coarse linen sacks.

viii) Decorative Materials.

i) Decorative materials are one of the most important economic use of bryophytes like Dicranum scoparium used for forming banks of green.

ii) In-shop window displays, Rhytidiadelphus loreus as green carpets, and Hylocomium splendens for decorating women's hats.

10/10 Regular

GoodLuck | Page No. 1 | 42
Date

Name :- Vira Sachin Khot
Standard :- BSc - FY
Roll No :- 7447
Subject :- Botany Assignments

Section I : DSC "Basics in Botany"

Q-1 Rewrite the following sentences by choosing the correct alternative.

i) In Nostoc, ----- performs nitrogen fixation and reproduction.
a) Akinetes (b) Heterocyst
c) Root nodules d) Bead cells

→ In Nostoc heterocyst performs nitrogen fixation and reproduction. (1)

ii) ---- are group of plants that produce naked seeds.
a) Angiosperms (b) Gymnosperms
c) Pteridophytes d) Bryophytes.

→ Gymnosperms are a group of plants that produce naked seeds (1)

Q-2 Attempt any two short notes.

i) Evolutionary history of plants
ii) Characteristics of Division Thallophytes.
iii) Nostoc
iv) Economic importance of Bryophytes

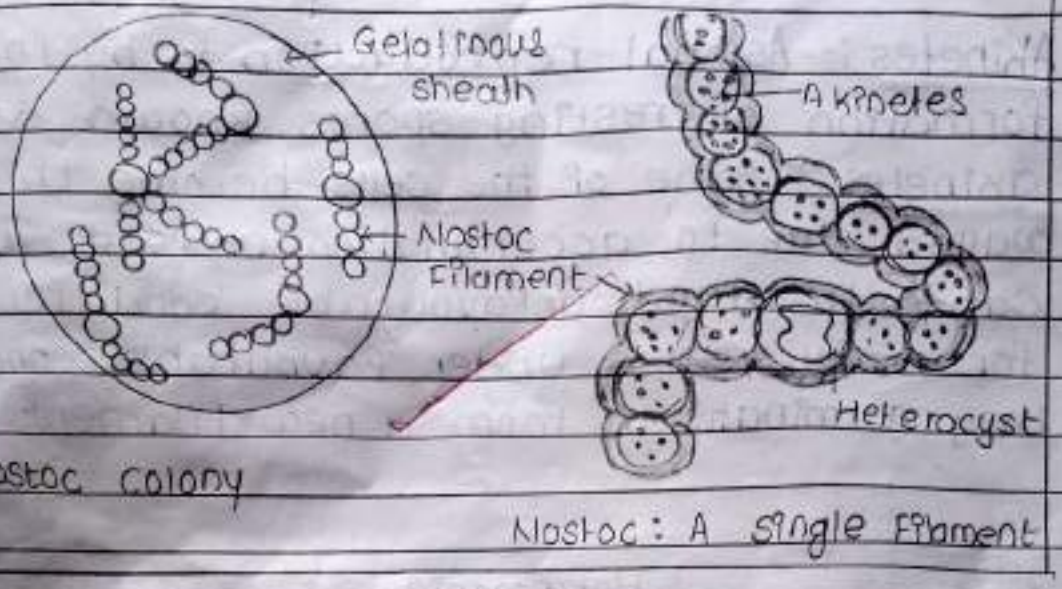
Poonam

3) Nostoc :-

Nostoc is a terrestrial or fresh water aquatic blue-green alga. It grows widely in ponds, pools revers, streams, road side puddles, moist soil and rocks. It usually found in paddy field. It is endophytic, i.e found inside the thallus of Anthoceras, pockets of Azolla and coralloid roots of cycas.

Vegetative structures

1) Nostoc thallus is found in the form of spherical ball like colony. Nostoc balls are bluish green in colour.
2) Nostoc colony is gelatinous with many straight or twisted filaments.
3) A number of rounded cells arranged in a chain or in beaded form are known as trichome, which is surrounded by its gelatinous sheath is called filament.
4) All vegetative cells in the filament are uniform in size and shape.
5) Some cells of filament are larger in size and thick-walled heterocysts
6) Heterocysts are generally terminal or intercalary
7) Heterocyst perform function of nitrogen fixation and reproduction
8) Under unfavorable conditions, some cells of filament become enlarged and covered by thick cell called akinetes. They perform functions of reproduction and storage of food.
9) It reproduces by vegetative and asexual method.



Life cycle :

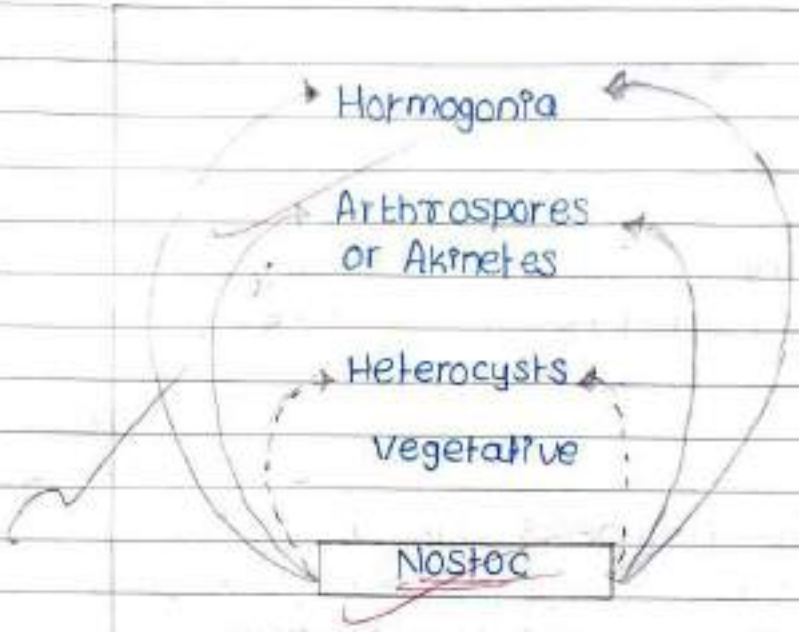
- Nostoc reproduces only by vegetative means sexual reproduction is totally absent. The vegetative reproduction takes place by the following methods :-

1) Fragmentation :- The trichome may break into different fragments due to physical, physiological or other factors, with each part of capable of developing into a new trichome.

2) Hormogonia :- The trichome may break into small multicellular fragments due to degeneration of intercalary vegetative cells or due to appearance of intercalary heterocyst. These fragments are called hormogonia or hormogones. These fragments are further developed into new trichomes by repeated cell divisions.

3) Heterocyst :- Rarely the heterocyst behave as resting spores. On germination it develope into new trichome.

4) Akinetes :- Asexual reproduction is by the formation of resting spores known as akinetes. Some of the cells become thick-walled due to accumulation of food. They can with stand unfavourable conditions for many years. Under favourable condition, they germinate to form a new filament.



ii) Characteristics of Division Thallophyta.
The various organisms present under the division Thallophyta posses the following features.

1) They do not possess a definite body structure like other higher plants.
2) The plant body is not differentiated into stems, leaves and roots. In them.
3) They are normally present in wet regions as they lack a vascular system and true roots that can help in the transportation of minerals & water.

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

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur
(Empowered Autonomous)

"Home Assignment and Internal B. Sc II Botany Sem III"

Organized by

Department of Botany

On

7th October 2023

"Education for Knowledge, Science and Culture."

Shikshanmaharshi Dr. Bapuji Salunkhe

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Date: 07/10/2023

NOTICE

All the students of B.Sc. II are hereby inform that Internal exam based on Paper DSC 7C (Section I and II) will be held on 11th Oct. 2023 in your classroom no.42 at 3.00 pm. Attendance is compulsory.

07.10.23

Head
Department of Botany

Head
Department of Biology
Vivekanand College
Kolhapur

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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

Shri Swami Vivekanand Shikshan Santha's

Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany
B. Sc. Part II Semester III (Internal Exam)
Attendance Sheet 2023 – 2024

Date: 11/10/2023

Sr. No.	Roll Call	Name of the Students	Signature
1	7892	Vrushali Shivaji Ekshinge	Vrushali
2	7907	Shreya Bajirao patil	Shreya
3	7848	Divya Sanjay Gaikwad	Gaikwad
4	7853	Arpita Ashok Harsha	Harsha
5	7846	Prabodhini Raju Dindayal	P.R.Dindayal
6	7803	Manasvi Anil Mali	Manali
7	7856	Rutuja Tanaji Jasud	Jasud
8.	7847	Ankita Rangarao Dinde	A.R.D
9.	7860	Anjali Hemant Khanvilkar	Akhanvilkar
10.	7906	Rutuja Sardar Patil	R.S.Patil
11	7843	Vaishnavi Vinod Abkarge	V.V.Abkarge
12.	7832	Pratibha Varun kumble	P.V.K.
13.	7815	Namrata Nagesh Patil	Npatil
14	7809	Madhavi Vijay Nalavade	Nalavade
15.	7872	Diksha Devadatta Parulekar	D.P.
16.	7870	Aabida Altaf Mujawar	A.Mujawar
17.	7877	Suhani Sadashiv patil	S.S.P.
18.	7876	Sharwari Yuvraj Patil	S.Patil
19.	7890	Heena Shafik Bagwan	H.Bagwan
20.	7894	Mudita Satyapriy Karumakar	M.S.K
21.	7880	Mushfira Balu Shaikh	M.B.
22.	7810	Ashiya Riyaj Nayakwadi	A.Nayakwadi
23.	7903	Rutuja Mhatarba Mandekar	R.Mandekar
24	7904	Sayali Pundlik Johar.	S.P.Johar
25.	7833	Rohini Balaso Karale	R.B.Karale
26.	7889	Sarika Vishnu Chougule	S.V.Chougule
27.	7896	Sadiya Zakirhusen kazi	S.Z.Kazi
28.	7889	Gayatri Anil Awate	G.Awate

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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Shri Swami Vivekanand Shikshan Santha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

B. Sc. Part II Semester III (Internal Exam)

Attendance Sheet 2023 – 2024

Date: 11/10/2023

Sr. No.	Roll Call	Name of the Students	Signature
01.	7910	Niharika Deepak Sonawane	
02	7925	Sanika Sanjay Kamble	
03	7905	Pradnya Rajendra Patil	
04	7895	Siddhi Sanjay Katkar.	
05	7899	Shruti Milind Kundale	S.M.Kundale
06	7893	Afsin Javed kaji	
07	7898	Saniya Salim Attar	
08	7913	Krishka Bharat Vora.	
09	7859	Simran Anil Jewrani	
10	7842	Sai. A. Vaze	
11	7814	Manyata S Patil	
12	7912	Priyanka J. Unhale.	
13	7926	Sonam B. Dongare	
14	7927	Dhanshri U. Kashid	
15	7911	Aditi V. Suryawanshi	
16	7845	Sanika vishnu chougule	
17.	7879	Savali Shivaji Prabhu	
18.	7849	Nikita Nandkumar Gaikwad	
19	7817	Samruddhi Sanjay Patil	
20	7867	Sanika Sagar Majgavkar	
21	7917	Nirjara Shivaji Todakar	
22	7860	Mansi Sunil Gurav	
23.	7914	Mahek Vinod Wadhwa	
24.	7873	Avantika Arun Patil	
25	7858	Ishwari Pradeep Kachare	
26.	7865	Anjali vijay Lad	
27.	7924	Sanika Pradeep Chavan	
28.	7823	Ayesha Aslam Shaikh	
29.	7923	Iqra Hidayat Maneg	

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

GoodLuck

BOTANY INTERNAL EXAM

12/20

Name- Sammed A. Patil
Roll No. 7875
Std. BSC SY (II)
date - 11/10/2023.

* TAXONOMY, EMBRYOLOGY & PLANT PHYSIOLOGY *

Q.1) rewrite the following sentenses by choosing app. alternatives.

① The handbook was written on related subject is known as reference book
a) manuals
b) flora
c) monographs
d) refrence book.
→ d) refrence book ✓

② A microspore mother cell forms on Ovule
a) an ovule.
b) an embryo sac.
c) a pollen sac
d) pollen grains.
→ a) an ovule. ✓

③ The recent information about taxon is given by journals
a) book
b) flora
c) refrence book
d) Journals
→ d) Journals ✓

④ Microsporogenesis occurs in Anther.
a) Ovule
b) egg
c) Anther
d) ovary
→ a) ovary c) Anther ✓

⑤ e-flora is known as electric flora
a) electric flora
b) electronic flora
c) elastic flora
d) electrostatic flora.
→ a) electric flora

⑥ water is an universal solvent.
a) solute
b) solvent
c) Acid
d) electrostatic flora.
→ b) Solvent

⑦ catalyase enzyme is required to develop ion carrier complex
a) Kinase
b) catalyse
c) dehydrogenase
d) phophatase
→ b) catalyse

⑧ connecting link bet". glycolysis & krb cycle is Acetyl co-A.
a) oxaloacetate
b) P.E.P
c) pyruvate
d) Acetyl - CO.A
→ d) Acetyl - CO.A

GoodLuck | Page No.
Date

(9) during photosynthesis CO_2 is taken in
a) oxygen is taken in
b) CO_2 taken in.
c) CO_2 given out
d) O_2 is taken & CO_2 is given out.
→ b) CO_2 is taken in

(10) Glycolysis is also known as EMP Pathway.
a) EMP pathway
b) TCA pathway
c) carbon sequestration
d) ECA cycle.
→ a) EMP pathway

12

GoodLuck | Page No. | Date

Botany Internal Exam.

14/20

Name :- Yogesh Balu Shelke.
Roll No: 7882
Date :- 11/10/2023
BSC-SY, Paper-III

Q.1 Rewrite the following sentences by chossing appropriate alternative.

1) The handbook was written an related subject is known as -----
a) Mannuals b) Flora
c) monographs d) Reference book.

→ d) Reference book

2) A microspore mother cell forms -----
a) An ovule b) An embryosac
c) a pollen sac d) Pollen grain

→ d) Pollen grain

3) The resent imparmation abaut taken is given by.
a) Book b) Flora
c) reference book d) Journal

→ d) Journal

GoodLuck | Page No.
Date

4) microspore geneses occurs in---
a) ovule
b) egg
d) Anther
d) ovary

→ c) Anther
2

5) E-flora is known as ----
a) Electric flora
b) Electronic flora
c) Elastic flora
d) Electrostatic flora

→ b) Electronic flora

6) Water is an universal -----
a) Solide
b) solvent
d) acid
d) Electrostatic flora.

→ b) solvent
1/2

7) ..... enzyme is require to develop ion carrier complex.
a) kianase.
b) catalase
c) Dehydrogenasase
d) phosophate.

→ b) catalase
1

8) Connecting link between glycolysis & krebs cycle is .....

a) oxalacetate
b) PEP
c) pyruvate
d) acetyl CoA

→ ~~Pyruvate~~ d) acetyl CoA

9) During photosynthesis .....

a) oxygen is taken in
b) CO_2 taken in
c) CO_2 given out
d) O_2 is taken & CO_2 is given out

→ b) CO_2 taken in

10) Glycolysis is also known as.....

a) EMP pathway
b) TCA pathway
c) Carbon sequestration
d) ECA cycle

→ a) EMP pathway

14

50

Vivekanand College, Kolhapur (Autonomous)

Department of Botany

B. Sc. II, Sem. III

Paper III (Section I and II)

Taxonomy, Embryology and Plant Physiology

Home Assignment

Total Marks : 10

Q. 1. Fill in the blanks [2M]

1. Kranz anatomy is shown in.....
2. The embryo sac or female gametophyte develops from.....

Q. 2. Attempt **any one** of the followings. **(Long type)** [8M]

1. Explain the Passive uptake of minerals.
2. Give a definition of Microsporogenesis and Explain it in detailed.
3. Explain Glycolysis with its schematic representation.

****

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VIVEKANAND COLLEGE, KOLHAPUR (EMPOWERED AUTONOMOUS)

B.Sc. Part- II (Botany) (Sem-III) Internal Exam Oct –Nov -2023-2024

Paper III - Course Code: DSC 1007 C

Section – I & II: "Taxonomy, Embryology and Plant Physiology "

Date: 11/10/2022 Marks : 20 M (Each question carry 2M)

Q. 1. (A) Rewrite the following sentences by choosing appropriate alternatives

1. The handbook was written on related subject is known as .....
   A) Manuals B) Flora C) Monographs D) Reference Book

2. A microspore mother cell forms ----------.
   A) An Ovule B) An Embryo Sac C) A Pollen Sac D) Pollen Grains

3. The recent information about taxon is given by.....
   A) Book B) Flora C) Reference Book D) Journals

4. Microsporogenesis occurs in .....
   A) Ovule B) egg C) Anther D) Ovary

5. e-flora is known as .....
   A) Electric Flora B) Electronic Flora C) Elastic Flora D) Electrostatic Flora.

6. Water is an universal.....
   A) Solute B) Solvent C) Acid D) Electrostatic Flora.

7. ..... enzyme is required to develop ion- carrier complex.
   A) Kinase B) Catalase C) Dehydrogenase D) Phosphatase

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

HOME ASSIGNMENT

09/10

Name:- Mushfira Balu Shaikh.

Roll no:- 7880

Sub:- Botany. (BSc II).

Q1. Fill in the blanks:-

1) Kranz anatomy is shown in C4 plants.

2) The embryo sac or female gametophyte develops from within the ovule.

Q.2 Long answer.

3. Explain Glycolysis with its schematic representation

Ans:- Glycolysis :-

During glycolysis one molecule of glucose get broken down into two molecules of pyruvic acids.

1) The glycolysis means lysis or breakdown of glycogen found in muscle cells.

2) Enzymes responsible for glycolysis are present in cytoplasm hence glycolysis takes place in cytoplasm and it is common pathway for both aerobic and anaerobic respiration.

3) The reactions of glycolysis were initially worked by three German scientists Embden, Mayerhof and Parnas hence this pathway is also known as EMP pathway.

4) Glycolysis can be divided into two parts :- a) Preparatory phase and 2) Pay off phase (conversion of intermediate 3-phosphoglyceral dehyde)

b) Pay off-phase (conversion of 3-phosphoglyceraldehyde into pyruvic acid).

Mechanism:

I) Phosphorylation: Any sugar that has to enter into the glycolysis must ~~first~~ undergo phosphorylation (i.e addition of phosphate group) In this process ATP participates and denotes a phosphate group

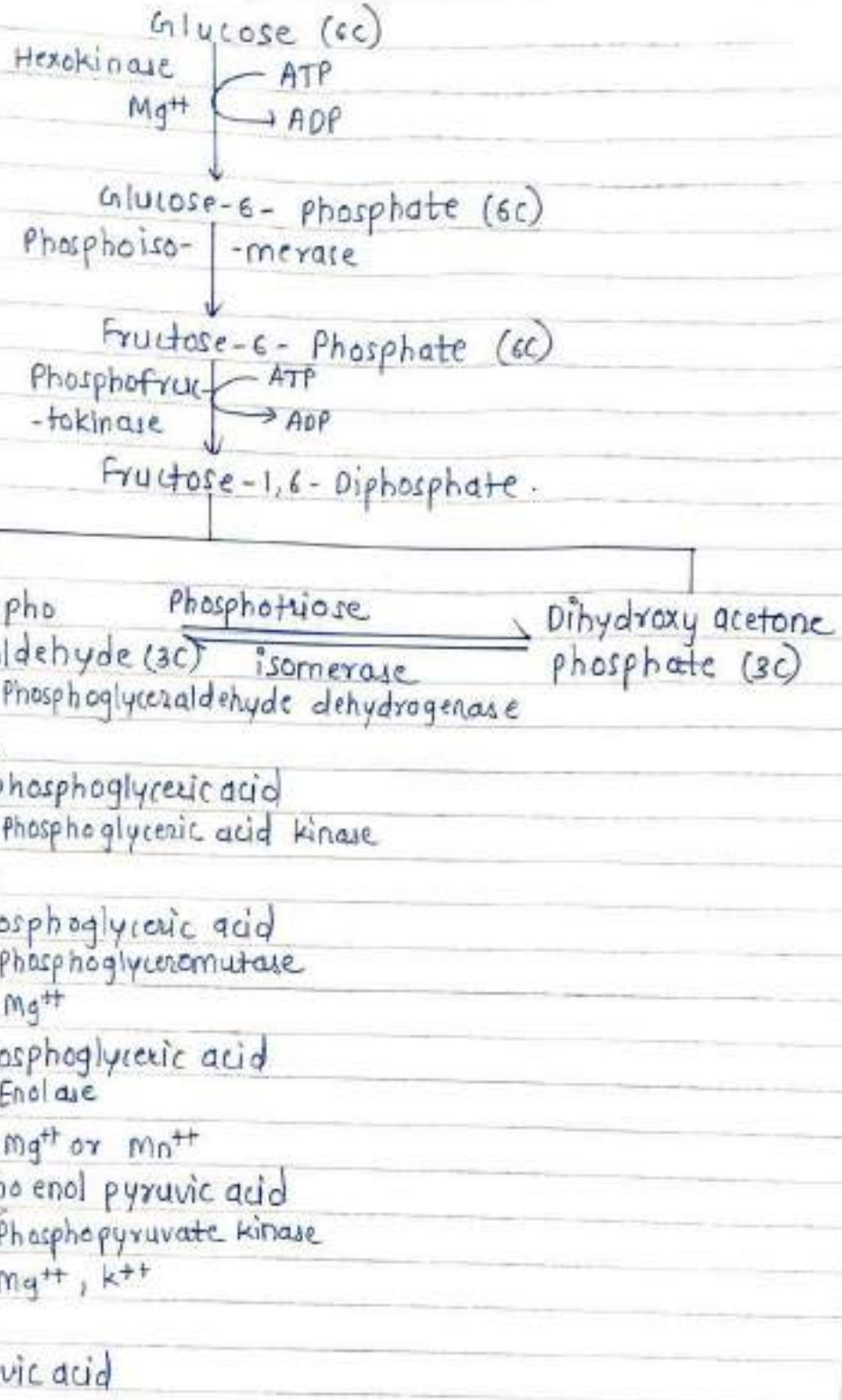
One glucose molecule undergoes phosphorylation in presence of an enzyme hexokinase with Mg^{++} as cofactor to form Glucose-6-Phosphate.

II) Isomerization: Glucose-6-phosphate isomerises into fructose-6-phosphate under the influence of the phosphoglucoisomerase Fructose 6-phosphate may be produced from fructose directly when the later is available.

III) Formation of fructose-1,6-diphosphate: This is a key reaction in the initial breakdown of glucose Fructose-6-phosphate utilizes a molecule of ATP to get converted into fructose-1,6-diphosphate under the influence of the enzyme phosphofructokinase Reaction requires Mg^{++} reaction as cofactor.

IV) Cleavage of fructose-1-6-diphosphate, further reactions in glycolysis begin with the breaking up of fructose 1,6-diphosphate in two molecules of triose in presence of enzyme Aldolase.

1) 97% of fructose 1-6; diphosphate gets converted into glyceraldehyde 3 phosphate while 3% will change into dihydroxy acetone phosphate (DHAP) Dihydroxy-acetone phosphate isomerises into glyceraldehyde and phosphate under the influence of the enzyme phosphotriose isomerase PGAL and DHAR are 3 carbon compound hence, from now accounting for hexose each reaction has to be doubled.



Schematic representation of Glycolysis.

3. Glyceraldehyde-3-phosphate is oxidized (hydrogen removed) with the help of an enzyme phosphoglyce-raldehyde dehydrogenase to form 1,3-diphosphoglyce-ric acid. Inorganic phosphate and NAD participate in this reaction where NAD get reduced to $NADH_2$

3. 1,3-diphosphoglyceric acid get converted into 3-phosphoglyceric acid and one of the phosphate group released is accepted by ADP to synthesize a molecule of ATP. Reaction is catalyzed by enzyme phosphoglyceric kinase and it requires cofactor Mg^{++}.

4. 3-phosphoglyceric acid get converted into 2-phosphoglyceric acid in presence of enzyme phosphe-glyceromutase.

5. 2-Phosphoglyceric acid (2PGA) get converted into phosphoenol pyruvic acid (PEP) in presence of enzyme enolase and Mg^{++} ions as cofactor.

6. PEP molecules undergoes dephosphorylation to form pyruvic acid. The energy rich phosphate group is removed from PEP which is accepted by ADP.

With the formation of pyruvic acid the reactions of glycolysis come to end. One molecule of pyruvic acid is produced from every triose, hence for hexose it should be two molecules of pyruvate.

09

VIVEKANAND COLLEGE, KOLHAPUR [AUTONOMOUS]

Home Assignment

17 10 2023

09/10

Name = Namrata Nagesh Patil.
Standard = BSC - II [sem III]
Roll No = 7815 Division = B
Subject = Botany [Paper - III]

Q1 Fill in the blanks.

1] Kranz anatomy is shown in C4 plants

2] The embryo sac or Female gametocyte develop from ovule.

Q2

1] Explain the Glycolysis with the Schematic Representation

→ Glycolysis =

- During Glycolysis One molecule of glucose get broken down into Two molecules of Pyruvic acid

Glycolysis = Glyco = Glucose
lysis = break down.

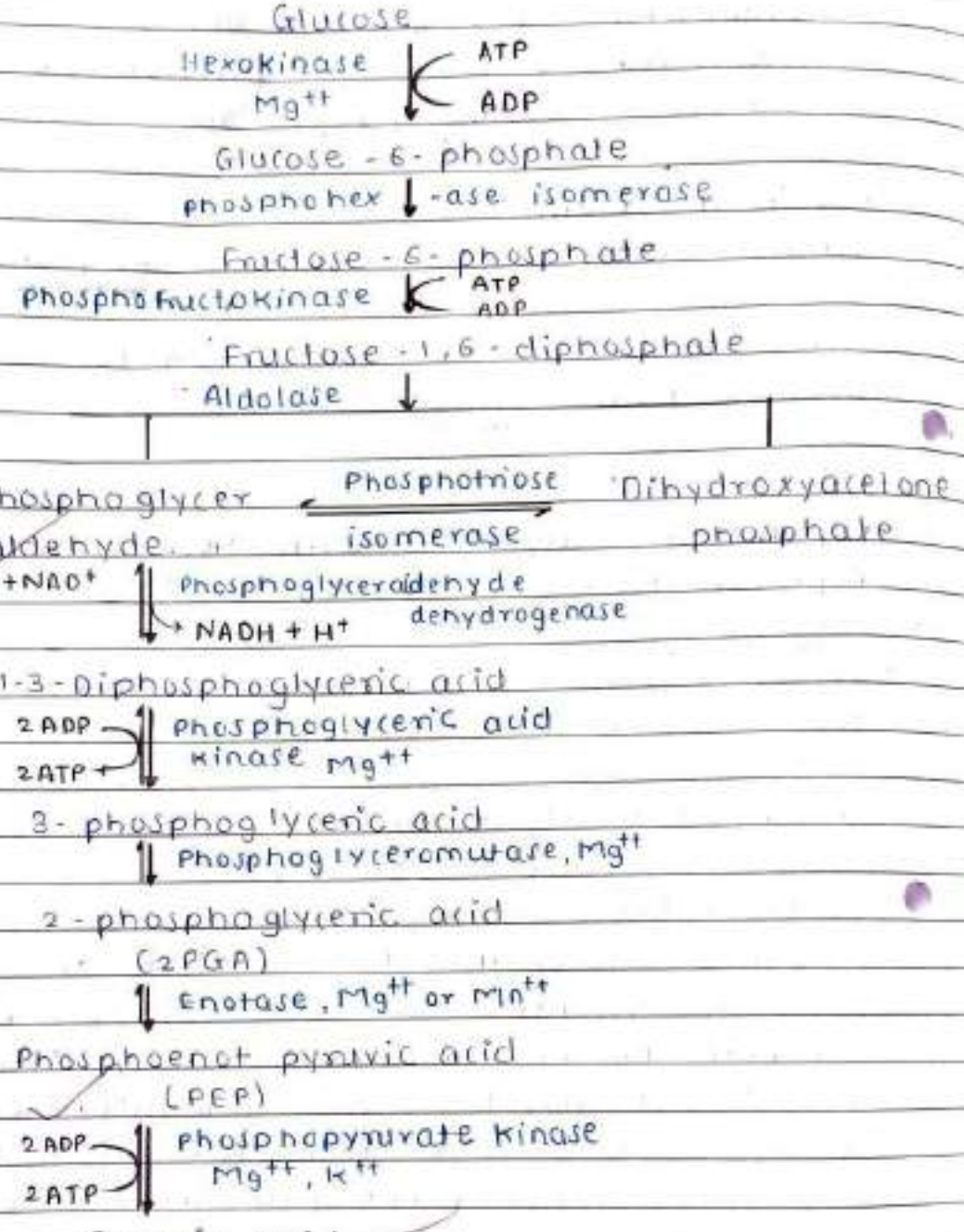
i.e breakdown of Glycogen found in muscle cell

- Enzyme responsible for Glycolysis are present in cytoplasm Hence and It is common pathway for both Aerobic and Anaerobic respiration
- Reaction of Glycolysis were initially worked by 3 german scientist Embden, Meyerhof and Parnas hence this pathway is also called EMP pathway
- During Glycolysis there are 2 phase =

a] Preparatory phase =
Conversion of glucose and fructose molecule to common intermediate 3 phosphoglyceraldehyde

b] Pay off phase =
Conversion of 3-phosphoglyceraldehyde into pyruvic acid.

⊙ Schematic Representation of Glycosis =



⊙ Mechanism =

A] Phosphorylation :-

Any sugar that has in glycolysis must be first undergoes phosphorylation (ie addition of phosphate group). One glucose molecule undergoes phosphorylation in presence of enzyme hexokinase with Mg^{++} cofactor to form Glucose - 6 - phosphate.

e] Isomerization :
Glucose - 6 - phosphate isomerises into fructose - 6 phosphate under influence of phosphoglucoisomerase.

f] Isome formation of Fructose 1-6 diphosphate -
This is key reaction in initial breakdown of glucose, fructose 6-phosphate utilise a molecule of ATP to get converted into fructose 1-6 diphosphate under the influence of enzyme phosphofructokinase reaction require Mg^{++} ions as co-factor

g] cleavage of fructose - 1-6 diphosphate :
Breaking up of fructose 1,6 diphosphate into 2 molecules of Triose in presence of enzyme Aldolase.

I] 97% of fructose 1.6 diphosphate get converted into glyceraldehyde - 3 - phosphate
3% will change into dihydroxyacetone phosphate (DHAP) It isomerises into glyceraldehyde 3 phosphate under the influence of enzyme phosphotriose isomerase PGAL and DHAP are 3 carbon compound Hence from now accounting for hexose each reaction has to be doubled

II] Glyceraldehyde 3phosphate is oxidized (H^+ atom removed) with help of enzyme phosphoglyceraldehyde dehydrogenase to form 1,3-diphosphoglyceric acid Inorganic phosphate & NAD participate in this reaction where NAD get reduced to $NADH_2$

III] 1,3-diphosphoglyceric acid get converted into 3 phosphoglyceric acid and one of phosphate group released is accepted by ADP to synthesis a molecule of ATP. Reaction is catalysed by enzyme phospho-glyceric kinase and it required co-factor Mg^{++}

IV] 3 phosphoglyceric acid $\xrightarrow{\text{Phospho-glyceromutase}}$ 2-phospho-glyceric acid

V] 2-phosphoglyceric acid (2PGA) get converted into phosphoenol pyruvic acid (PEP) in presence of enzyme enolase and Mg^{++} ions are as cofactor. A water molecule released from 2PGA.

VI] PEP i.e phosphoenol pyruvic acid molecule undergoes dephosphorylation (i.e remove of phosphate group) to form pyruvic acid. These energy rich phosphate group is removed from PEP which is accepted by ADP to produce ATP molecules. This reaction is catalyzed by enzyme pyruvate kinase with Mg^{++} and K^{++} ions as cofactors.

8

The Glycolysis, end with the formation of pyruvic acid. One molecules of pyruvic acid is produced for every triose, hence for hexose it should be 2 molecule of pyruvate.

09

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

BSc. II Botany Theory Attendence

Date

Assignment Marks. (out of 10)

Time

Prof. Name

2023-2024

Sign

Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign	Roll No	Sign
7790	09	7815	09	7840	09	7865	07	7890	09	7915	07
7791	09	7816	09	7841	08	7866	07	7891	06	7916	07
7792	07	7817	09	7842	08	7867	08	7892	10	7917	08
7793	08	7818	09	7843	09	7868	09	7893	08	7918	09
7794	09	7819	08	7844	09	7869	09	7894	09	7919	07
7795	09	7820	09	7845	09	7870	09	7895	09	7920	09
7796		7821	06	7846	09	7871	09	7896	10	7921	07
7797	09	7822	05	7847	09	7872	09	7897	07	7922	09
7798	10	7823	05	7848	09	7873	09	7898	07	7923	06
7799	09	7824	09	7849	09	7874	09	7899	09	7924	
7800	09	7825	09	7850	09	7875	09	7900	09	7925	07
7801	09	7826	08	7851	09	7876	09	7901	09	7926	09
7802	09	7827	08	7852	08	7877	09	7902		7927	09
7803	09	7828	05	7853	07	7878	09	7903	08	7928	
7804	09	7829	09	7854	09	7879	09	7904	09	7929	
7805	09	7830	09	7855	09	7880	09	7905	09	7931	06
7806	08	7831	07	7856	09	7881	09	7906			
7807	09	7832	09	7857	07	7882	09	7907	08		
7808	08	7833	09	7858	09	7883	09	7908	08		
7809	09	7834	09	7859	09	7884	09	7909	07		
7810	09	7835	09	7860		7885	09	7910	07		
7811	09	7836	09	7861	09	7886	09	7911	09		
7812	09	7837	07	7862	08	7887	08	7912	09		
7813	09	7838	09	7863	09	7888	09	7913	09		
7814	09	7839	09	7864	08	7889	10	7914	09		

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Vivekanand College, Kolhapur
(Empowered Autonomous)

"Home Assignment and Internal B. Sc II Plant Protection Sem III"

Organized by

Department of Botany

On

9th October 2023

"Education for Knowledge, Science and Culture."

– Shikshanmaharshi Dr. Bapuji Salunkhe

VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany

Date: 09/10/2023

NOTICE

All B. Sc. II (Plant Protection) students are informed that the given home assignment must be submitted on or before October 16, 2023. Complete the assignment on full-scape paper, and then submit it in to the Botany department.

Head
Department of Botany

Head
Department of Botany
Vivekanand College
Kolhapur

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Vivekanand College, Kolhapur (Empowered Autonomous)
Department of Botany

Academic Year 2023-24

B. Sc. II Plant Protection Home Assignment Presenty

Sr. No.	Roll No.	Name of the Student	
1	7830	AIVALE POOJA BIRDEV	Aivale
2	7831	CHAVAN AISHWARYA VISHNU	Chavan
3	7832	KAMBLE PRATIBHA VARUN	
4	7833	KARALE ROHINI BALASO	Karale
5	7834	KHADAKE PRADNYA ANANDA	Khadake
6	7835	KOLEKAR PRATHMESH DILIP	
7	7836	PAL MANALI ACHCHELAL	मनाली पाल
8	7837	PATIL OM CHANDRAKANT	
9	7838	POWAR AISHWARYA BABASO	
10	7839	SANIKA VISHNU CHOUGALE	
11	7840	SHINDE SAIRAJ JAYWANT	
12	7841	VARUTE OMKAR SAMBHAJI	
13	7842	VAZE SAI ABHIJIT	Vaze
14	7818	SHRUSHTI PATIL	
15	7942	Owes A- Momin	

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VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany

Date: 09/10/2023

Plant - Protection

Home Assignment

Q.1 Write short note on (Attempt Any Two) (10 Marks)

1.Organic Farming

2.Cultural methods of Plant Protection

3. Symptoms of Plant Diseases

4. Little Leaf of Brinjal

Name - Pooja Birudev Aivale
Subject - Plant protection [Sec-I & II]
Roll no - 7830

Q.1] Write short notes:

2] Cultural methods of plant protection :-

Cultural methods - Tillage, crop rotation, trap crops, fertilizers applications.

1. Tillage -

Ploughing / flooding during summer season exposes hibernating stages of insect pests inside the soil stages like eggs, larvae, pupae of some insects are found hidden deep inside the soil. These are exposed to their natural enemies & hot sun due to tillage operation tilling under crop debris in fall also helps in destroy habitat for many over wintering insects & plant pathogens there by reducing their population in following year. Tillage can also be used to control weeds, and is most successful when done on a warm day when dom weeds will willt & die quickly. Annual & biannual weeds without extensive tap roots & perminal seedling are readily destroy by tillage The younger the weeds, the easier it is to control.

2. Crop rotation -

Different plant have different nutritional needs & are susceptible to different pathogen & pests if a farmer plants the exact same crop in same place in every year, as is common in conven

tional farming, plant continually draws the same nutrients out of the soil pests & disease happily make themselves a permanent home as their prefered food source is guaranted to control pests & disease farmers increases application of chemical fertilizers & pesticides to keep yield high. Rotation of crop with non-host crop helps in reduction of incidence of soil borne disease rotation of vegetable crop & other annual helps to control many insects & disease such as club root on crucifers. crop rotation helps return nutrient to soil without synthetic input. The practice also work to interupt pest & disease cycle, improve soil health by increasing biomass from different crops roots structure & increase biodiversity on the farm.

3. Trap crops -

Trap plants are effective for some insects such as flee beetle on cole crops plants a speciese / varieties of plant of that insects prefer to feed on near / within the crop to be protected the insect will mainly feed on the trap plants & this will minimize damage to the main crop. Remove & destroy trap crops if they become severely infested so the insects do not move over on to the desired crop. Alternatively, treat the trap plants with recommended insecticide.

4. Application of fertilizers -

Plant nutrition can influence pest damage fertilizers elements [nitrogen, phosphorous, potassium]

GoodLuck | Page No.
Date

can have direct/indirect effect on pests incidence high level of nitrogen can increase disease susceptibility & the incidence of pests such as mites & aphids proper balanced fertilization encourages healthy plant that will better tolerance to & opportunity to overcome pest damage.

4. Little leaf of Brinjal

- Causal organism - phytoplasma like organism/ PLO
- Host - Solanum melongena
- Distribution - Throughout India & shrilanka.
- Symptoms -
  - The main symptom comprises production of every short leaves
  - The petioles are reduced in size
  - Leaves become narrow, soft, smooth, yellowish & internodes of stem are shortened
  - A large no of axillary buds grow into short branches with small leaves
  - The plant assumes bushy appearance
  - Affected plant do not produce flower.
- Disease cycle & transmission -

Little leaf is caused by phytoplasm. Causal organism of little leaf also infect the other solanaceous plants like chilli, Tomato &

Datura. when brinjal is grown near by, the phyto plasma is transmitted to the brinjal through the vector: Hishimonus phycitis

- Control measures / Disease managements:

1. Distruction of infected plant parts
2. Avoid cultivating alternative host like chilli, pepper
3. Provide adequate space between while planting
4. Adjust sowing time to avoid insect vector peak season
5. Heat treatment is also used to reduce the disease spread
6. Use of insecticides to control the population of vector.

HOME ASSIGNMENT

Name : Aishwarya Vishnu Chavan.
Roll no : 7831
Subject : Plant Protection.
Division : B
Class : B.SC II SEM : III
Date : 17th oct 2022

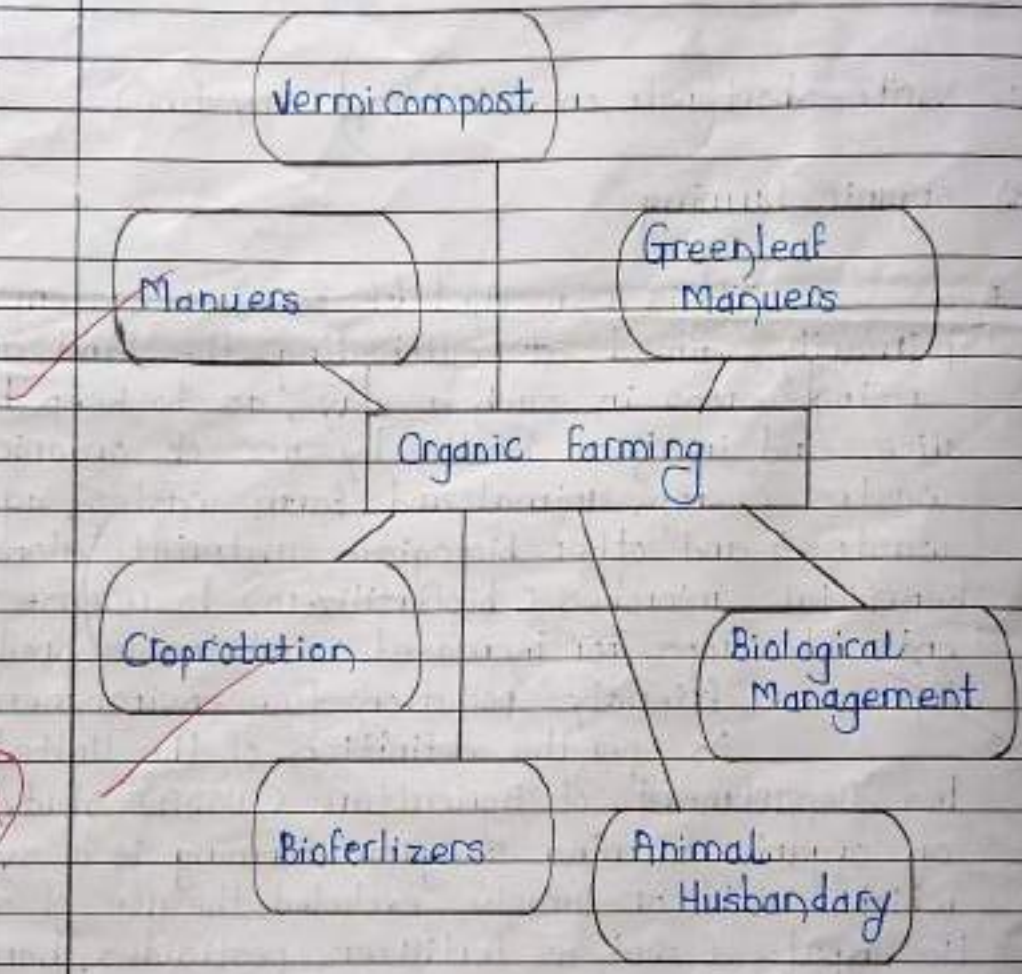
Que1 : Write short note on. (Attempt Any two)

1) organic farming

→ It is a method of farming system which primarily aimed at cultivating the land and rising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological material along with beneficial microbes (biofertilizers) to release nutrients to crops for increased sustainable production in an eco friendly pollution free environment.

As per the definition of the United states Department of Agriculture (USDA) study team on organic farming "organic farming is a system which avoid or largely excluded the use of synthetic inputs (such as fertilizer, pestisides, harmones, feed addivities etc.) and to the maximum extent fesible rely upon crop rotations, crop residues, animals manuers, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection."

FAO (Food and Agriculture organization of the United Nations) suggested that organic agriculture is a unique production management system which promotes and enhace agro eco-system help, including biodiversity, biological cycles and soil biological activity and this is accomplished by using on farm agronomic, biological and mechanical methods in exclusion of all synthetic off farm inputs".



4) Little Leaf of Brinjal

→ Causal organism : Phytoplasma like organism/MLO
Host : solanum melongena
Distribution : Throughout India and srilanka

Symptoms :-

- The main sympton comprise production of very short leaves
- The petioles are reduced in size.
- leaves become narrow, soft, smooth, yellowish and and Internodes of the stem are short.
- A large no. of axillary buds grow into short branches with small leaves.
- The plant ~~issues~~ assumes a bushy apperance. Affected plants do not produce flowers.

Disease cycle and transmission :

Little leaf is caused by phytoplasma. Causal organism of little leaf also infects the other solanaceous plants likes chilli, Tomato and Datura. when brinjal is grown nearby, the phytoplasma is transmitted to the brinjal through the vector Hishimonusphycities.

Control measures / Disease Management :

1. Destruction of infected plant parts
2. Avoid cultivating alternative host like chilli pepper etc.
3. provide adequate space in between while planting.
4. Adjust sowing time to avoid the insect vector peak season.
5. Heat treatment is also used to reduce the disease spread

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Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur
(Empowered Autonomous)

"Home Assignment and Internal B. Sc III Botany Sem V"

Organized by

Department of Botany

On

7th October 2023

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

"Education for Knowledge, Science and Culture."

– Shikshanmaharshi Dr. Bapuji Salunkhe

VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany

07.10.23

NOTICE

All B.Sc. II (Plant Protection) students have been informed that an internal test based on paper I DSC 1012C2 (Sections I and II) will be held on October 13, 2023, in your classroom starting at 3 p.m. Attendance is necessary.

07.10.23

Head
Department of Botany

Head
Department of Botany
Vivekanand College
Kolhapur

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc II Plant Protection

13/10/2023

Internal Exam

Sr No.	Name of the Students	Roll No.	Sign
~~7830~~ 1	Pooja Birudev Aivale	7830	Aivale
~~7831~~ 2.	Aishwarya Vishnu Chavan	7831	Achavan
3.	Pratibha Varun Kamble	7832	Pk.
4.	Rohini Balaso Karale	7833	Rkarale
5.	Pradnya Ananda Khadake	7834	Pradnya
6.	Prathamesh Dilip Kalekar	7835	Kalekar.
7.	Manali Achchelal Pal	7836	मनाली पाल
8.	Om Chandrakant Patil	7837	Patil
9.	Aishwarya Babaso Powar	7838	ABP
10.	Soniko Vishnu Chougule	7839	Schougule
11.	Sairaj Jaywant Shinde	7840	
12.	Omkar Sambhaji Varute	7841	Ovarute
13.	Sai. Abhijit. Vaze	7842	SAvaze
~~14.~~	~~Manali Achchelal Pal~~	~~7836~~	~~मनाली पाल~~
14.	Patil Sustei Shrikant	7818	Spatil
15.	Momin Owes A.	7942	

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Dr. Lubdha A. Kagale Alubdhak

Dr. Mrunalini Nilesh Desai. Desai

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VIVEKANAND COLLEGE (EMPOWERED AUTONOMOUS), KOLHAPUR.

Department of Botany

B. Sc. II Plant Protection Sem. III Section I

Date: 13/10/2023

Q.1 Tick the correct alternatives. **(10M)**

1. Pod borer is a common insect pest found on.....
   a) Gram b) Soybean c) Sugarcane d) Rice

2. Fruit type of Brinjal is.....
   a) Drupe b) Berry c) Aggregate d) Simple

3. The botanical name of the Gram is.....
   a) *Cicer arientum* b) *Sorghum vulgare* c) *Oryza sativa* d) *Cajanus cajan*

4. Adsali cultivation practice is applied for.....
   a) Sugarcane b) Turmeric c) Brinjal d) Rice

5. First genetically modified plant produce in 1982 was.....
   a) Transgenic Tobacco b) Transgenic Maize
   c) Transgenic Tomato d) Transgenic Cotton

6. The botanical name of Rice is.....
   a) *Arachis hypogea* b) *Sorghum vulgare* c) *Triticum aestivum* d) *Oryza sativa*

7. Co-86032 is the variety of ..... crop.
   a) Jowar b) Sugarcane c) Soybean d) Rice

8. Botanical name of Mango is.....
   a) *Mangifera indica* b) *Sorghum vulgare* c) *Triticum aestivum* d) *Oryza sativa*

9. Crop rotation is.....method of plant protection
   a) Cultural b) Mechanical c) Physical d) Legal

10. Following.....is a physical method of plant protection
    a) Trap crops b) Tillage
    c) Heat and Soil Solarization d) Use of fertilizers

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Department of Botany

B. Sc. II Plant Protection Sem. III Section II

Date: 13/10/2023

Q.1 Tick the correct alternatives. **(10M)**

1. Wheat rust and Sorghum rust diseases are mainly caused by.....

a) Virus b) Fungus c) Bacteria d) Algae

2. In TMV, genetic material is.....

a) SS RNA b) DSRNA c) SSDNA d) DSDNA

3. Which factors are responsible for spreading of plant diseases?

a) Air b) Birds c) Rainfall d) All of the above

4. Oily spot of Pomegranate is caused by.....

a) MLOs b) *Xanthomonas axonopodis* c) *X.curi* d) PPLOs

5. Phytoplasmas are transmitted by vectors like.....

a) Leaf hoppers b) Aphids c) Jassids d) Butterflies

6. Little leaf of Brinjal is.....

a) Viral b) Fungal c) Bacterial d) Phytoplasmal

7. Red rust in tea is caused by.....

a) Virus b) Fungus c) Bacteria d) Algae

8. A specialized penetration structure in Fungi is known as.....

a) Appresoria b) Ectodesmata c) Stomata d) Conidia

9. Citrus canker is caused by.....

a) Virus b) Viroid c) Bacteria d) Fungus

10. Factors affecting on fungal infection are.....

a) Temperature b) Humidity c) Wind d) All of the above

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc II Plant Protection

CIE Mark sheet

Sr. No.	Roll No.	Name of the Students	Internal Marks		Home Assignment Marks (10)	Total Marks (30)
			Sec I (10)	Sec II (10)		
1	7830	AIVALE POOJA BIRDEV	06	07	09	22
2	7831	CHAVAN AISHWARYA VISHNU	09	09	09	27
3	7832	KAMBLE PRATIBHA VARUN	09	09	09	27
4	7833	KARALE ROHINI BALASO	08	09	09	26
5	7834	KHADAKE PRADNYA ANANDA	05	08	09	22
6	7835	KOLEKAR PRATHMESH DILIP	09	09	09	27
7	7836	PAL MANALI ACHCHELAL	06	09	10	25
8	7837	PATIL OM CHANDRAKANT	09	10	08	27
9	7838	POWAR AISHWARYA BABASO	06	10	10	26
10	7839	SANIKA VISHNU CHOUGALE	09	09	08	26
11	7840	SHINDE SAIRAJ JAYWANT	09	09	10	29
12	7841	VARUTE OMKAR SAMBHAJI	09	09	10	28
13	7842	VAZE SAI ABHIJIT	09	09	10	28
14	7818	SRUSHTI PATIL	09	10	08	27
15	7942	Owes A. Momin	10	05	08	23

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany
Internal Exam

B. Sc. III, Sem. V

Paper V (Section I and II)

Date: 13/10/2023

NOTICE

All students of B. Sc. III are hereby informed that, their offline Internal Exam of Botany Paper V (Section I and Section II) is going to be held on 18/10/2023 from 1.30 to 2.00 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 repeat again.

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Head 13.10.23
Department of Botany
Vivekanand College
Kolhapur

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

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc. III Internal examination

Paper V (section I and II)

Date 18/10/2023

Sr.No.	Roll NO.	Name of the Student	Sign
1	8373	DEVANE VAISHNAVI RAJESH	
2	8374	KADAM PRASAD CHANDRASHEKHAR	
3	8375	KAMBLE PRATHMESH SHRIRANG	
4	8376	KAMBLE SHRUSHTI PRAKASH	
5	8377	Kharade Kedar Sanjay	
6	8378	MUTHE ADITYA DNYANESHWAR	
7	8379	NAGAONKAR AKASH UDAY	
8	8380	NAIK SHIVAM VIJAY	
9	8381	PATIL NEERAJ DEEPAK	
10	8382	SADOLKAR SOHAM SATISH	
11	8383	SHEVALE YOGIRAJ SHIVAJI	
12	8384	VADGAONKAR PRASAD SUBHASH	
13	8477	Rushikesh Vijay Wadar.	
14	8393	Vaishnavi V. Patil	
15	8394	Trupti T. Chougale	

VIVEKANAND COLLEGE KOLHAPUR (EMPOWERED AUTONOMOUS) ESTD JUNE 1964

Name:- Prasad. Chandrashekhar Kadam. Rollno:- 8374

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Internal Examination

B. Sc. III, Sem. V Paper DSE7E1

"Cytology and Research techniques in Life Sciences and Microbiology, Plant Pathology and Bio fertilizer"

Tick the correct alternative

9/10

1. Arrange cell cycle sequence?

1. G_1, S, M, G_2 2. S, M, G, G_2

3. G_1, S, G_2, M 4. G_2, M, S, G_1

2 ---------- are called as protein factories.

1. SER 2. RER

3. Ribosomes 4. Lysosomes

3. The principle of chromatography is .....

1. Inoculation 2. Adsorption

3. Isolation 4. Pure culture

4. Which type of radiation is commonly associated with microwave ovens and radio waves, and does not have enough energy to ionize atoms or molecules?

1. Gamma radiation 2. X-rays

3. Non-ionizing radiation 4. Alpha radiation

5. Isolation of Pure culture refers to.....

1. Purification of culture 2. Introduction of inoculum

3. Separation of a single colony 4. To grow microorganisms on a surface

6. Host of red rot of sugarcane disease is ----------

1. *Saccharum officinarum* 2. *Cicer arietinum*

3. *Sorghum bicolor* 4. *Allium cepa*

VIVEKANAND COLLEGE KOLHAPUR ESTD JUNE 1964 (Empowered Autonomous)

7. A pathogen often develops resistance against.....

1. Systemic fungicides 2. Pests

3. Fumigants 4 Dust

8. Symbiotic nitrogen fixing cyanobacteria are absent in ----------

1. Enthusiasts 2. Azolla

3. Cycas 4. Gnetum

9. ..... is an intervening layer that unites the primary walls of 2 adjacent cells.

1. Middle Lamella 2. Plasma

3. Tonoplast 4. 2° cell wall.

10. Mycorrhiza is a.....

1. Long thin root. 2. Association of root and fungus

3. Root like underground stem 4. Parasitic root

Prasad Subhash Vadgaonkar Roll no. 8384 72

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Internal Examination

B. Sc. III, Sem. V Paper DSE7E1

"Cytology and Research techniques in Life Sciences and Microbiology, Plant Pathology and Bio fertilizer"

Tick the correct alternative

9
10

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VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

Date: 13/10/2023

NOTICE

All B. Sc. III Students hereby informed that, you have to submit the given assignment Paper V (section I and II) and Paper VI (section I and II) on or before 18/10/2023. Write down the assignment on full-scape and submit to the Botany department.

Head
Department of Botany
Vivekanand College
Kolhapur
18.10.23

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous)
ESTD JUNE 1964

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

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc. III Home Assignment

Paper V (section I and II)

Sr.No.	Roll NO.	Name of the Student	Sign
1	8373	DEVANE VAISHNAVI RAJESH	
2	8374	KADAM PRASAD CHANDRASHEKHAR	
3	8375	KAMBLE PRATHMESH SHRIRANG	
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12	8384	VADGAONKAR PRASAD SUBHASH	
13	8477	Rushikesh Vijay. Wadar.	R.V. Wadar
14	8493	Vaishnavi V. Patil	
15	8494	Trupti T. Chougale	

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Name - Trupti Tukaram Chougale.
B.Sc - III , Sem V
Roll No -
Department of Botany.

12/20

Home Assignment.

Cytology and Research techniques in life sciences and microbiology , Plant Pathology and Bio Fertilizer.

Q. 2. Endoplasmic reticulum -

Endoplasmic reticulum is a complex network of tubular membranes exclusively present in the cytoplasm of the eukaryotic cell.

① The endoplasmic reticulum traspires in two forms : a type with a ribosome studdes surface and another with a smooth surface.

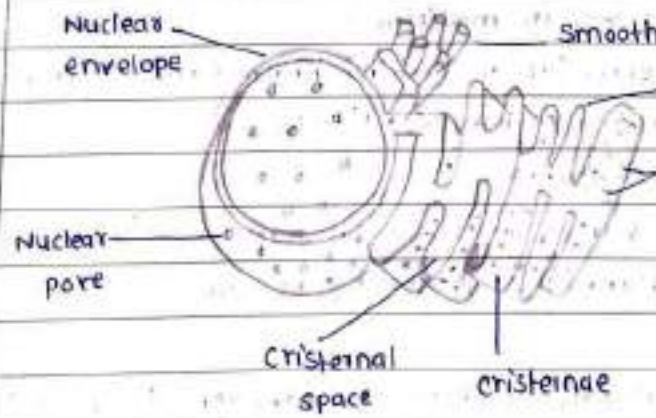
② The latter is called the smooth endoplasmic reticulum and the former , is called the rough endoplasmic reticulum.

③ These membranes form continuous folds, eventually form Joining the outer layer of the nuclear membrane.

④ Except for sperm cells and red blood cells , the endoplasmic reticulum is observed in every other type of eukaryotic cell.

⑤ Rough Endoplasmic Reticuhum has ribosomes embedded within its structure, giving a rough appearance.

⑥ The smooth endoplasmic reticulum does not have these ribosomes , hence appearing smooth.



Structure of endoplasmic reticulum.

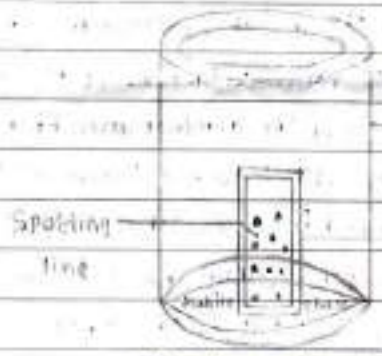
3) Thin layer chromatography-

Thin layer chromatography is a technique used to isolate non-volatile mixtures. The experiment is conducted on a sheet of aluminium foil, plastic, or glass which is coated with a thin layer of adsorbent material. The material usually used is aluminium oxide, cellulose, or silica gel.

On completion of the separation, each component appears as spots separated vertically. Each spot has a retention factor (R_f) expressed as:

$$R_f = \frac{\text{dist. travelled by Sample}}{\text{dist. travelled by solvent.}}$$

The factors affecting retardation factors are the solvent system, amount of material spotted, adsorbent and temperature. TLC is one of the fastest, least expensive, simplest and easist chromatography technique.



Thin layer chromatography.

4) Applications of radioactive isotopes.

① Radioactive isotopes in medicine:

Iodine-131 is effective in locating brain tumors and in determining liver and thyroid activity.

② In nuclear power plants:

Uranium-235 is used as a fuel in nuclear reactors of nuclear power plants for generating electricity.

③ In Industries:

Tritium, a radioactive isotope of hydrogen, is used to identify the leaks in underground water pipes.

④ They are used to study the function of fertilisers for different plants.

GoodLuck

⑤ They are used to study wear and tear of piston rings and of gears in engines and then in the study of suitable lubricant for their preventation.

⑥ Radioisotopes have role in management of malignancies.

① ^{131}I is used for treatment of thyroid cancer.

⑤ Radioactive material is impregnated into body in form of beeds or needles or either as surface applicants.

5) classification of plant diseases based on crops.

6) Red Rot of Sugarcane:

1) It is a serious and destructive disease of sugarcane.
2) First reported in 1893 from Java (Indonecia)
3) In India 1st reported in 1901 in Andhra Pradesh.
4) Disease epidemic occurred in 1989 - 1940 in UP and Bihar.
5) Disease is soil and seed borne.

Symptoms of Red Rot sugarcane:

① Appear after rainy season when plant growth stop and sugar formation start.

② The earliest sysmptoms are the yellowing and drooping of the upper leaves (near the tip).

③ Later the infected stems shrivel.

④ The rind looses the bright colour and become wrinkled.

⑤ Cane becomes light weight and can be easily broken.

⑥ Longitudinal reddening of the normally white internal tissue with intermingled transverse white spot of the internodes.

⑦ A discoloration, that may extend through many joints of the stalk.

⑧ Disease blood red lesions with dark margins develop on the leaves.

⑨ In late season, dark dot like structure, velvety in texture appear in the shriveled areas near the nodes and on the internodes.

8) Spread plate method.

It is used for evenly spreading cells to ensure growth of the isolated separate colonies. further, it can be used for serial dilutions. The spread plate method is used for enrichment, enumeration and screening and selection of microorganisms.

1) onto the agar media, with the help of a sterile spreader, inoculate the clinical specimen where we spread the bacteria gently on the whole culture media surface.

2) This is done by rotating the plate while spreading it backwards and forword. Refrain from allowing the spreader to touch the edges of the plate.

3) Substitute the lid and ensure the plate is standing in an upright position for drying (10-15 minutes)

4) Now incubate the spread agar plate at the optimum temperature with the lid at the base. (inverted).

The biggest advantage of a spread plate method is that the morphology of the isolated bacteria can be seen vividly.

The only disadvantage is that sometimes fungal colonies may grow.

① pipette bacterial sample onto surface of agar plate

② spread sample evenly over surface

③ colonies grow on surface

Spread plate Method.

76

12/20

Name :- Vaishnavi Vikramsinh Patil
BSC III, Sem V
Roll No :- 8393
Department of Botany.

Home Assignment
Cytology & Research techniques in life science & microbiology, plant pathology & Bio fertilizer.

Q2 Endoplasmic reticulation.

endoplasmic reticulum is a complex network of tubular membranes exclusively present in the cytoplasm of the eukaryotic cell.

① the endoplasmic reticulum transpires in two forms a type with a ribosome-studded surface & another with a smooth surface.

② The latter is called the smooth endoplasmic reticulum & the former, is called the rough endoplasmic reticulum.

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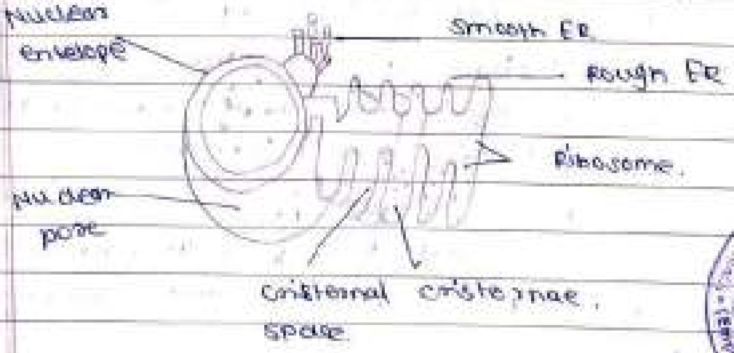

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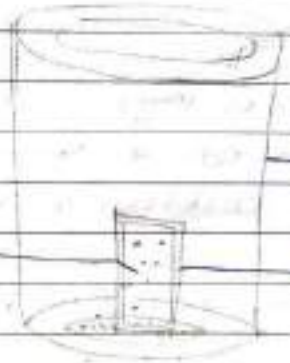

Thin layer chromatography

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Page No.
Date

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① Pipette bacterial sample onto surface of agar plate.

② spread sample evenly over surface

③ Colonies grow on surface

Spread plate method

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24 **B. Sc. III, Sem. V Paper DSE7E1**

"Cytology &Research Technique In Life Sciences &Microbiology, Plant Pathology & Biofertilizer "

Internal examination Result

Sr.No.	Roll NO.	Name of the Student	Home Assignment	Internal Exam.	Total marks
1	8373	DEVANE VAISHNAVI RAJESH	16	10	26
2	8374	KADAM PRASAD CHANDRASHEKHAR	18	09	27
3	8375	KAMBLE PRATHMESH SHRIRANG	13	09	22
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10	8382	SADOLKAR SOHAM SATISH	12	09	31
11	8383	SHEVALE YOGIRAJ SHIVAJI	14	09	23
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14	8493	PATIL VAISHNAVI VIKRAMSINH	12	05	17
15	8494	CHOUGALE TRUPTI TUKARAM	12	05	17

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

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

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany
Internal Exam

B. Sc. III, Sem. V

Paper VI (Section I and II)

Date: 13/10/2023

NOTICE

All students of B. Sc. III are hereby informed that, their offline Internal Exam of Botany Paper VI (Section I and Section II) is going to be held on 19/10/2023 from 1.30 to 2.00 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 repeat again.

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

13.10.23

Head
Department of Botany
Vivekanand College
Kolhapur

Education for Knowledge, Science and Culture."
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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc. III Internal examination

Paper VI (section I and II)

Date 19/10/2023

Sr.No.	Roll NO.	Name of the Student	Sign
1	8373	DEVANE VAISHNAVI RAJESH	
2	8374	KADAM PRASAD CHANDRASHEKHAR	
3	8375	KAMBLE PRATHMESH SHRIRANG	
4	8376	KAMBLE SHRUSHTI PRAKASH	
5	8377	Kharade Kedar Sanjay	
6	8378	MUTHE ADITYA DNYANESHWAR	
7	8379	NAGAONKAR AKASH UDAY	
8	8380	NAIK SHIVAM VIJAY	
9	8381	PATIL NEERAJ DEEPAK	
10	8382	SADOLKAR SOHAM SATISH	
11	8383	SHEVALE YOGIRAJ SHIVAJI	
12	8384	VADGAONKAR PRASAD SUBHASH	
13	8477	Rushikesh Vijay Wadar.	
14	8493	Patil Vaishnavi V.	
15	8494	Chougule Trupti T.	

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

Roll No-: 8993

Vaishnavi Vikramsinh Patil

Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Internal Examination

10/10

B. Sc. III, Sem. V Paper DSE7E2

"Plant Biochemistry and Stress Physiology, Plant Systematics and Paleobotany"

Teak the correct alternative

1. Amino acids are building blocks of ---------

1. Protein
2. Lipid
3. Carbohydrate
4. Fats

2. Primary structure of protein represents ----------Sequence of Amino acid.

1. Twisted
2. Sheet
3. Helical
4. Linear

3. Fruit ripening hormone is .....

1. ABA
2. Ethylene
3. GA
4. Cytokinin

4. ..... is the deteriorative changes occur in plant leading to death.

1. Vernalin
2. Thigmotropisin
3. Polioplasiw
4. Senescence

5. Fats and Oils are ----------Lipids

1. Simple
2. Compound
3. Derived
4. Raw

6. *Mangifera indica* is the example of Family ----------

1. Anacardiaceae
2. Fabaceae
3. Apiaceae
4. Rubiaceae

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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc. III Home Assignment

Paper VI (section I and II)

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VIVEKANAND COLLEGE KOLHAPUR (An Empowered Autonomous) ESTD JUNE 1964

GoodLuck | Page No. | Date

Name - Trupti Tukaram Chougale
B.Sc III, Sem.V
Roll No -
Department of Botany

12/20

Home Assignment

" Plant Biochemistry and stress physiology, Plant Systematics and Paleobotany.

Q. 3

Secondary Structure of protein -

Secondary structure of protein refers to local folded structures that form within a polypeptide due to interactions betn atoms of the backbone.

① The proteins do not exit in just simple chains of polypeptides.

② These polypeptides chains usually fold due to the interaction betn the amine and carboxyl group of the peptide link.

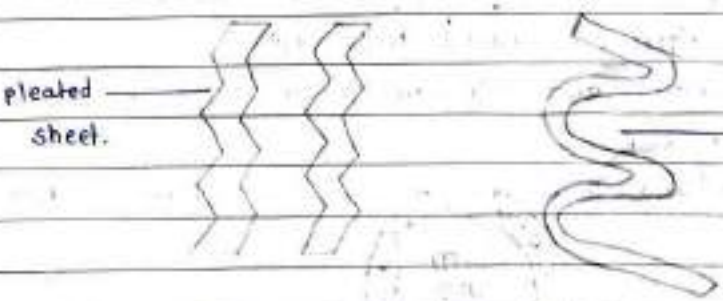
③ The structures refers to the shape in which a long polypeptide chain can exist.

④ They are found to exist in two different types of structures α- helix and β- pleated sheet structures.

⑤ This structures arises due to the regular folding of the backbone of the polypeptide chain due to hydrogen bonding betn -CO group and -NH groups of the peptide bond.

⑥ However, segments of the protein chain may acquire their own local fold, which is much simpler and usually takes the shape of a spiral an extended shape or a loop. These local folds are termed secondary elements and form the proteins Secondary structure.

3



Secondary protein structure.

a) α- Helix

α- Helix is one of the most common ways in which a polypeptide chain forms all possible hydrogen bonds by twisting into a right-handed screw with the -NH group of each amino acid residue hydrogen-bonded of the -co of the adjacent turn of the helix. The polypeptide chains twisted into a right-handed Screw.

b) β- pleated sheet-

In this arrangement, the polypeptide chains are stretched out beside one another and then bonded by intermolecular H-bonds. In this structure, all peptide chains are streched out to nearly maximum extension and then laid said by side which is held together by intermolecular hydrogen bonds. The structure resembles the pleated folds of drapery and therefore is known as β- pleated sheet.

5) Economic Importance of family Fabaceae.

Many plants belonging to this family are economically useful.

① The plants of this family are unique and have root nodules which contain nitrogen-fixing symbiotic bacteria, capable of transforming atmospheric nitrogen into fixed nitrogen or ammonia.

② pulses like gram, moong, soya bean are the main Source of food.

③ mulethi plant is known for its medicinal value.

④ Soya bean and groundnuts are used to extract oil that is used for cooking.

⑤ Sunn hemp is the source of timber and fibre.

⑥ Indigofera is used to make dye.

⑦ Sesbania and Trifolium are the source of fodder of livestock feed.

⑧ Lupin and Sweet pea are known as ornamental plants.

GoodLuck

Date

6) Importance of Botanical garden.

① It is a place where there is an assemblage of living plants maintained for botanical teaching and research purpose.

② Botanical gardens are important for their records of local flora.

③ Botanical gardens are important for research and Botanical gardens provide facilities for the collection of living plant materials for botanical studies.

④ Botanical gardens also supply seeds and materials for botanical investigations.

⑤ The development of Botanical gardens in any country is associated with its history of civilization, culture, heritage, Science, art, literature and various other social and religious expressions.

⑥ Botanical gardens besides possessing an outdoor garden may contain herbaria, research laboratory, greenhouses and library.

⑦ Botanical gardens are not only important for botanical studies, but also to develop tourism in the country.

7) Evidences from photochemistry.

① photochemistry is a fundamental process of planetary atmospheres integral to habitability and atmospheric evolution.

② To date, no direct detection of photochemical products has been confirmed in an exoplanet atmosphere, pre JWST era.

③ In this talk, we present the 1st strong evidence of photochemistry menifested sulfur species in the atmosphere of the irradiated giant exoplanet WASP-39b, as revealed by the data from the JWST Transiting Exoplanet early release Science program.

④ we perform a suite of photochemical models that can robustly produce the sulfur feature seen in JWST transmission spectra of WASP-39b, previously referred as mystery molecular absorber.

⑤ we detailed the chemical pathways and find the sensitivity of the sulfure feature makes it an ideal tracer of heavy element

enrichment for giant Planets.

⑧ finally, we discuss the potential observable features at ultraviolet and mid infrared wavelengths and how it opens a new avenue for characterising atmospheres and inferring the giant exoplanet formation.

8) IUCN -

The IUCN is a global union composed of both government as well as civil society organisation. [Internation Union for conservation of nature)

① It works in the domain of Sustainable development and also recommends measures to tackle the depletion of resources.

② It works to conserve the various species of flora and fauna.

③ Its members includes States, non-governmental organizations, indigenous peoples' organisations, experts, government agencies etc.

④ established in 1948, the IUCN has the tools and knowledge repository to help the world conserve nature and ensure sustainable development.

⑤ when it was first set up in fontainebleau, it was the first international cooperation and provide scientific knowledge and tools to aid conservation action.

⑥ It is established the IUCN Red list of threatened species in 1964.

⑦ It also played a huge role in the formation of major international conventions such as the Ramsar convention on wetlands, the convention on international trade in endangered species, the world Heritage convention and the convention on Biological diversity.

⑧ In 1992, in light of the growing environmental concerns, the united Nations granted official observer status of the IUCN.

⑨ currently, the IUCN is the biggest and most diverse environmental network.

Name - Vaishnavi Vikramsinh Patil
BSc III, sem V
Roll No:- 8393
Department of Botany

12/20

Home Assignment
Plant Biochemistry & Stress physiology, Plant systematics & paleobotany.

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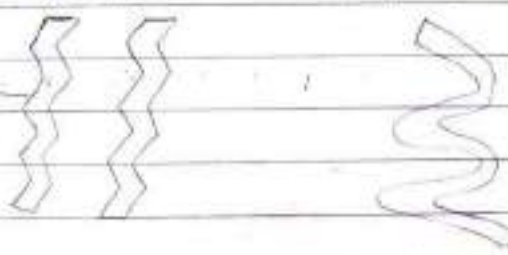

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Vivekanand College, Kolhapur (Empowered Autonomous)

Department of Botany

Academic Year 2023-24

B. Sc. III, Sem. V Paper DSE7E2

"Plant Biochemistry and Stress Physiology, Plant Systematics and Paleobotany"

Internal examination Result

Sr.No.	Roll NO.	Name of the Student	Home Assignment	Internal Exam.	Total marks
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