

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

Shri Swami Vivekanand Shikshan Sanstha's
**Vivekanand College, Kolhapur (An Empowered Autonomous
Institute)**

Department of Microbiology (UG)
Academic Year 2025-26

B.Sc III Sem V Virology Unit test

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(An Empowered Autonomous Institute)
Department of Microbiology (UG)
Academic Year 2025-2026

B.Sc. III SEM V

Unit test - Virology

NOTICE

Date: 25/09/2025

All the students of B. Sc. III Microbiology are hereby informed that the Unit test for Virology Unit III is scheduled on 27th September, 2025 at 10:00am to 11:00am in class room no. 415. Please be present on time. Attendance is compulsory to all.

Sr.No	Day and Date	Time	Title of topic
1.	Saturday 27/09/2025	10 :00 am to 11:00 am	DSC03MIC32- Virology Unit III


Ms. Apurva T. Patil
Teacher in Charge


Dr. T.C. Gaupale
I/C Head
Department of Microbiology
Vivekanand College, Kolhapur
(Empowered Autonomous)

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Department of Microbiology

B. Sc. III Unit Test I

Date: 27/09/2025

Time: 1 Hour

Marks: 20

Q.1 A. Explain in detail -- Reproduction of T4 Phage

(08M)

Or

Q1.B Explain in detail – Reproduction of Adenovirus.

(08M)

Q. 2 Attempt any Three

(12M)

i. Reproduction of TMV

ii. Repression establishment and repression maintenance by lambda phage

iii. Explain in detail – adsorption and penetration of lambda phage along with integration of phage

genome into host cell chromosome

iv. Explain in detail – biosynthesis of T4 phage reproduction.

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Department of Microbiology (UG)
Academic Year 2025-26

B. Sc III, Semester V

Unit Test I Virology attendance

DATE: 27/09/2025

Sr. No.	Name of Student	Roll no.	Signature
1	Chougule Sakshi Rajesh	8380	<u>Gedangale</u>
2	Mane Sakshi Manohar	8381	Ab
3	Musute Bhagyashree D.	8382	Ab
4	Rathi Sanjana Pavankumar	8383	Ab
5	Akkole Poonam Anil	8384	Ab
6	Bakale Poonam Raju	8385	Ab
7	Dave Dhruv Govind	8386	Ab
8	Divase Tanishka Rahul	8387	Ab
9	Dongare Samruddhi Laxman	8388	<u>Swongare</u>
10	Gurav Gouri Vidyasagar	8389	Ab
11	Jadhav Harshali Uttam	8390	<u>Hidha</u>
12	Jadhav Prachi Ramesh	8391	Ab
13	Jambhale Rajvardhan	8392	Ab
14	Kadam kalyani Prakash	8393	Ab
15	Kadatare Manthan Vinay	8394	Ab
16	Kamble Sanika Nagesh	8395	Ab
17	Karalkar Hardik Arun	8396	Ab
18	Khatib Juyera Ilai	8397	<u>Khatib</u>
19	Kumbhar Rutuja Suresh	8398	Ab
20	Kumbhar Sanika Arjun	8399	Ab
21	Mahadik Rajveer Suraj	8400	Ab
22	Marathe Aradhana Satish	8401	<u>Asm</u>
23	Matre Pooja Shankar	8402	Ab

24	Mullani Sophiya wasimraja	8403	Ab
25	Nirankari Taruna Vishnudas	8404	Ab
26	Parit Amruta Eknath	8405	Ab
27	Patil Achal Bhaskar	8406	Patil
28	Patil Janhavi Ashok	8407	Patil
29	Patil Janhavi Nitin	8408	Ab
30	Patil Mrujala Maloji	8409	Ab
31	Patil Priti Pramod	8410	Patil
32	Patil Swarup Ramchandra	8411	Ab
33	Patil Vidula Manik	8412	Ab
34	Pawar Samiksha Santosh	8413	Patil
35	Pidwani Disha Jairamdas	8414	Ab
36	Pishte Sanika vijay	8415	<u>S.v. pishte</u>
37	Rode Kaveri Ravindra	8416	Ab
38	Shahapure Anirudha Uijaykumar	8417	Ab
39	Shaikh Jiya Ajij	8418	Ab
40	Shaikh Sadiya Shakil	8419	Ab
41	Shetti Omkar Vidyasagar	8420	Ab
42	Shinde Janhvi Nitin	8421	Shinde
43	Suryavanshi Siddhi Satish	8422	Ab
44	Sutar Dhanashree Rajendra	8423	Ab
45	Swami Sanket Kalayya	8424	Ab
46	Teli Prajakta Namdev	8425	Ab
47	Ugave Sanika Kashinath	8426	<u>S.K. Ugave</u>
48	Amane Aditya Avdhut		Ab
49	Patil Sanjyoti Ramchandra		Ab
50	Bamane Durgesh Baban		Ab

Teacher In charge :- Ms. A.T. Patil - 

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Department of Microbiology (UG)
Academic Year 2025-26

B. Sc III, Semester V

Unit Test I Virology Marklist

DATE: 27/09/2025

Sr. No.	Name of Student	Roll no.	Marks out of 20
1	Chougule Sakshi Rajesh	8380	07
2	Mane Sakshi Manohar	8381	Ab
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10	Gurav Gouri Vidyasagar	8389	Ab
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19	Kumbhar Rutuja Suresh	8398	Ab
20	Kumbhar Sanika Arjun	8399	Ab
21	Mahadik Rajveer Suraj	8400	Ab
22	Marathe Aradhana Satish	8401	03
23	Matre Pooja Shankar	8402	Ab

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26	Parit Amruta Eknath	8405	Ab
27	Patil Achal Bhaskar	8406	10
28	Patil Janhavi Ashok	8407	08
29	Patil janhavi Nitin	8408	Ab
30	Patil MrujalaMaloji	8409	Ab
31	Patil Priti Pramod	8410	12
32	Patil Swarup Ramchandra	8411	Ab
33	Patil Vidula Manik	8412	Ab
34	Pawar Samiksha Santosh	8413	09
35	Pidwani Disha Jairamdas	8414	Ab
36	Pishte Sanika vijay	8415	14
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46	Teli Prajakta Namdev	8425	Ab
47	Ugave Sanika Kashinath	8426	15
48	Amane Aditya Avdhut		Ab
49	Patil Sanjyoti Ramchandra		Ab
50	Bamane Durgesh Baban		Ab

Teacher in charge – Ms. A.T.Patil



Name: Sanika Vijay Pishte

Roll No: 8415

Class: B.Sc TY (Micro)

14 classmate

20 Date
Page

Q1

A Reproduction of T4 Phage

- T4 Phage is found in T series of Phage. They
- Show binal symmetry. binal means combination of both icosahedral and helical capsid.
- They divided into 2 type Todd & Teven Phages

- Todd Phage are 4 & 3 Teven Phages.
- They also infect non-motile strain B of E-coli.

They are virulent Phage.

Todd & Teven Phages differ in 2 characters

- Teven Phages contains 5-Hydroxymethyl cytosine instead in cytosine.

Teven phage contains contractile sheath.

Todd Phage lack the contractile sheath.

Particularly T₁ & T₅ Phage.

T4 Phage involve in 5 step of Reproduction.

1) Adsorption

2) Penetration

3) Biosynthesis

4) Assembly

5) Release.

1) Adsorption:

Adsorption means Phage & host cell comes in

contact between each other is called as adsorption.

Phage is non-locomotive so contact betn Phage & host happens random collision.

Receptor for T4 Phage outer membrane protein c

classmate
Date _____
Page _____

Lypopolysaccharide complex on the surface of host cell membⁿ

- Antireceptor for Phage tail fibers.

Classified into 2 Step

① Landing

② Pining

① Landing:

- Naturally in environment tail fibers of Phage folded when they attached to the whisker.

- After they comes in contact with host cell. tail fibers unfolded then they attached to the host cell receptor.

- Unfolding of Phage tryptophan and cofactor like Mg^{2+} & Ca^{2+} is required. interaction reversible, weak & electrostatic.

② Pining:

- After landing tail fiber relax & baseplate comes in contact with host cell wall.

- Pins of baseplate attached to the host cell wall is called as Pining.

- Interaction is irreversible

Star Penetration

2] Penetration:

- As host contains rigid cell wall. whole virus particle can not penetrate into cell. only nucleic acid get inserted into the host cell.

- After initial attachment contractile sheath insert into cell wall & inject DNA into the cell.

- Interaction is irreversible attachment of host & phage cell

3] Biosynthesis:

- Early gene Expression & Protein Production.
- Replication of Phage genome
- Late gene Expression & Protein Production.

- i] Early gene Expression
- Early gene transcribed to produce early mRNA.
 - Leads to formation of protein.
 - they involve two methods
 - formation of immediate early protein
 - formation of ~~delay~~ early protein.
 - for transcription - has RNA polymerase used as Phage but doesn't have own RNA producing protein gene.

- Formation of immediate early protein.
- These protein produced by transcription of immediate early protein.
- Two protein involve
 - Nucleases:
 - This is the enzyme cleave the host DNA.
 - The enzyme make nucleotide when available for Phage replication.

• Subunit modifying protein:

- The specifically modified α -subunit of RNA polymerase
- The transport of ADP-Ribose to α -subunit of RNA Polymerase from NAD.
- Subunit modifying protein RNA polymerase help in replication of Phage ~~Start~~ delay early protein.

• Formation of Delay Early Protein:
These protein produced by transcription of delay early protein.

involve 4 Pathway

- ① Phage enzyme
- ② glycosylation enzyme
- ③ Phage Polymerase & ligase
- ④ enzyme doing Alteration of Phage genome

1] Phage enzyme:
Produce 5-HMC group & found in Phage genome.

2] glycosylation enzyme:
add glucose to 5HMC protect the Phage DNA from host cell endonucleases.

3] Phage Polymerase & ligase
Plays important role in Phage replication.

4] enzyme doing Alteration of Phage genome:
Alteration is occurs at sigma factor & Phage DNA will produces late gene.

2] Replication of Phage genome
by 2 modes.

- 1) Bidirectional mode
- 2) Rolling circle mode

1] Bidirectional:
In this type of replication DNA is separated & replication fork is formed.

- Two strands are synthesised new DNA of phage
- one strand is synthesised continuously called as leading strand
- one strand is synthesised discontinuously called as lagging or okazaki fragment.
- After completion of replication start phase genome reproduction

2] Rolling Circle mode:

- In this type of replication Phage is circularized.
- Phage DNA is circular used for replication
- The nick is formed at specific side on outer membrane. two strands produced 3' OH end & 5' phosphate
- outer strand is used as template strand & complementary bases add to 3' OH end of nicked DNA template
- strands are elongated & form new complementary nucleotide to 3' OH end leading displacement to 5' P group.
- one strand continuously synthesised called leading strand
- one strand discontinuously synthesised called lagging strand or okazaki fragment.
- At the end of the process long continuous chain of multiple DNA is formed called as Concatamers.
- ✓ Adequate amount of DNA is packed in head of virus by Headful cutting mechanism.

4] Assembly:

- Assembly of viruses take place in host cell cytoplasm.

✓ 4) Assembly is start from accumulation of Phage genome & replication.

: Assembly during this process used 4 Pathway

- During this process head form separately & tail fibres, baseplate, tail tube form separately

- Head formation, tail tube formation, baseplate formation & tail fibres formation.

- DNA is packed into Head of virus by Headful cutting mechanism.

✓ 5) Release:

- The Release of viral progeny infect by for 22 min to hour infect by bursting / killing the cell.

- viral progeny infect the killing the cell.

✓ 6) Late gene expression:

- late gene is transcribed to produce late mRNA & translated to produce late protein.

- Late genes are structural protein.

iii) - lambda Phage is linear lambda Phage

- it is template Phage

- Lysogeny occurs by template Phage

- Size of Phage 70-100nm

- dsDNA is genetic material of phage

- No tail & with single tail fiber.

1) adsorption:

means Phage & host cell comes in contact
betn each other is called as adsorption.

- happens random collision.

- Receptor for lambda Phage maltose transport protein

- Antireceptor for lambda Phage J tail protein

2) Penetration:

- As the host contains rigid cell wall, whole virus particle can not penetrate into cell
only nucleic acid get inserted into the host cell.

- After initial attachment contractile sheath
insert into cell wall & inject DNA into
the cell.

- interaction is irreversible attachment of host cell
& Phage

IV Bio synthesis

Early gene expression

- Early gene transcribed to produce early mRNA & leads form of protein.
- they formation of immediate early protein
- formation of delay early protein.

formation of immediate early protein produced by transcription of protein in nucleus.

- They are enzyme cleave the host DNA subunit modifying protein.
- modified α -subunit of RNA polymerase transport of ADP-ribose to α -subunit of RNA polymerase from NAD.

formation of delay protein:

- Phage enzyme: produce 5-HMC group
- glycosylation enzyme: add glucose to 5-HMC
- phage polymerase & ligase: plays important role in phage replication.
- enzyme doing Alteration of phage genome.
- Alteration is occurs at sigma factor & phage DNA produces late gene.

- 2) late gene expression & protein production.
 - late gene transcribed to produce late mRNA & translate to produce late protein
 - late gene are structural protein.

• Replication of Phage genome.

i) Bidirectional mode

- in this type of replication DNA is separated & replication fork is formed.

✓ - Two strand are synthesised new DNA of Phage

- one synthesised continuously called leading
one synthesised discontinuously called lagging
strand.

4

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Department of Microbiology (UG)
Academic Year 2025-26

B.Sc III Sem V Virology Unit test

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(An Empowered Autonomous Institute)

Department of Microbiology (UG)

Academic Year 2025-2026

B.Sc. III SEM V

Unit test - Virology

NOTICE

Date: 7/10/2025

All the students of B. Sc. III Microbiology are hereby informed that the Unit test for Virology Unit I is scheduled on 8th October, 2025 at 10:00am to 11:00am in class room no. 415. Please be present on time. Attendance is compulsory to all.

Sr.No	Day and Date	Time	Title of topic
1.	Wednesday 8/10/2025	10 :00 am to 11:00 am	DSC03MIC32- Virology Unit I



Ms. Pratibha P. Patil

Teacher in Charge



Dr. T.C. Gaupale

I/C Head

Department of Microbiology
Vivekanand College, Kolhapur
(Empowered Autonomous)

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Department of Microbiology

B. Sc. III Unit Test I

Date: 08/10/2025

Time: 1 Hour

Marks: 20

Q.1 A. Describe the ultrastructure and types of capsid and their significance (08M)

Or

Q1.B Plot one step growth experiment and describe its significance (08M)

Q. 2 Write a short note on any Two (08M)

i. Nucleic acid of virus

ii. Viroid

iii. Prion

iv. Envelope of virus

Q.3. Select the correct alternative (04M)

1. Prions cause disease by _____

- a. causing CPEs
- b. inducing misfolding in the proteins
- c. degrading the protein
- d. replicating their own DNA to disrupt cell function.

2. In one step growth experiment, replication occurs during _____

- a. eclipse phase
- b. intracellular accumulation phase
- c. rise period
- d. burst period

3. _____ causes syncytia in RBCs.

- a. Influenza virus
- b. Adenovirus
- c. Hepatitis A virus
- d. Hepatitis B virus

4. Viroids generally infect _____

- a. animals.
- b. bacteria
- c. fungi
- d. plants

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Vivekanand College, Kolhapur(An Empowered Autonomous Institute)

Department of Microbiology (UG)

Academic Year 2025-2026

B. Sc. III (Sem V)

Unit Test Attendance

Date: 08/10/2025

Sr. No.	Name of student	Roll No.	Signature
1	Chougule Sakshi Rajesh	8380	Ab
2	Mane Sakshi Manohar	8381	Ab
3	Musute Bhagyashree D.	8382	Ab
4	Rathi Sanjana Pavankumar	8383	Ab
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26	Parit Amruta Eknath	8405	<u>AmRutap</u>
27	Patil Achal Bhaskar	8406	Ab
28	Patil Janhavi Ashok	8407	<u>Patil</u>
29	Patil Janhavi Nitin	8408	Ab
30	Patil Mrujala Maloji	8409	Ab
31	Patil Priti Pramod	8410	Ab
32	Patil Swarup Ramchandra	8411	Ab
33	Patil Vidula Manik	8412	Ab
34	Pawar Samiksha Santosh	8413	Ab
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46	Teli Prajakta Namdev	8425	Ab
47	Ugave Sanika Kashinath	8426	<u>S.K. Ugave</u>
48	Amane Aditya Avdhut	8438	Ab
49	Patil Sanjyoti Ramchandra	8429	Ab
50	Bamane Durgesh Baban	8437	Ab

PPatil

Ms P. P. Patil
Teacher Incharge

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur(An Empowered Autonomous Institute)

Department of Microbiology (UG)

Academic Year 2025-2026

B. Sc. III (Sem V)

Unit Test Marklist

Date: 08/10/2025

Sr. No.	Name of student	Roll No.	Marks out of 20
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PPatil

Ms P. P. Patil
Teacher Incharge

Gaupale

Dr. T.C. Gaupale
I/C Head

Department of Microbiology
Vivekanand College, Kolhapur
(Empowered Autonomous)

Virology

Unit Test

18
20

Excellent

DOMS	Page No.
Date	/ /

Name :- Sanika Kashinath Ugave

Std :- Bsc-III (Microbiology)

Roll no :- 8426

Date :- 8-10-25

Q.1 Describe the ultra structure & types of Capsid & their significance. — 8 marks

or
plot one step growth experiment & describe its significance.

- Q.2.
- 1) Nucleic acid
 - 2) Virion
 - 3) Pion
 - 4) Envelope

Q.1.

-
- 1) Capsid is a protein coat within which enclosed the genetic material
 - 2) Nucleocapsid - It is combination Nucleic & Capsid it is called Nucleocapsid or genetic material enclosed within the protein coat.
 - 3) Capsid is made up of capsomeres & capsomere is made up of protomeres
Capsid > Capsomere > protomere

4) the scaffold protein which help guide the capsid during its assembly. It is present the misfolding of protein. ~~at~~ provided temporary support.

Types of Capsid

Icosahedral
Capsid

Helical

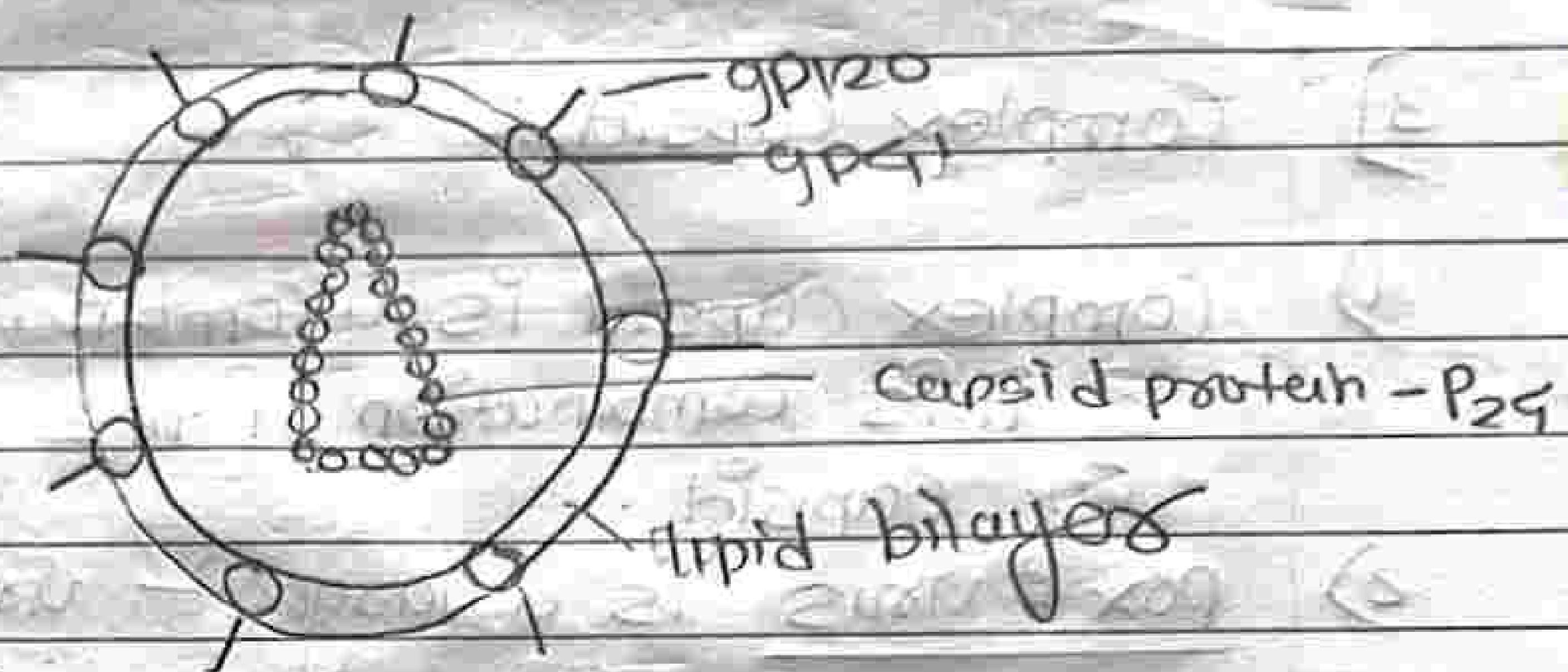
Complex.

1) Icosahedral Capsid :-

- 1) It is observed in the electron microscope.
- 2) It is also called as polyhedron as the capsomeres are arranged to form polyhedron head. 20 equilateral faces with 12 intersect point.
- 3) according to the Caspar & Crick hypothesis, there are three possibilities
 - 1) tetrahedron
 - 2) octahedron
 - 3) icosahedron.
- 4) icosahedron is a most efficient for the packaging of genome as the highly extensive intracellular bonding & low energy.
- 5) based on the protomers. Capsomeres are arranged into the protomers pentamers (5 protomers) & hexamers (6 protomers) which not-conventionally linked to each other.

e.g.:- HIV
it contain

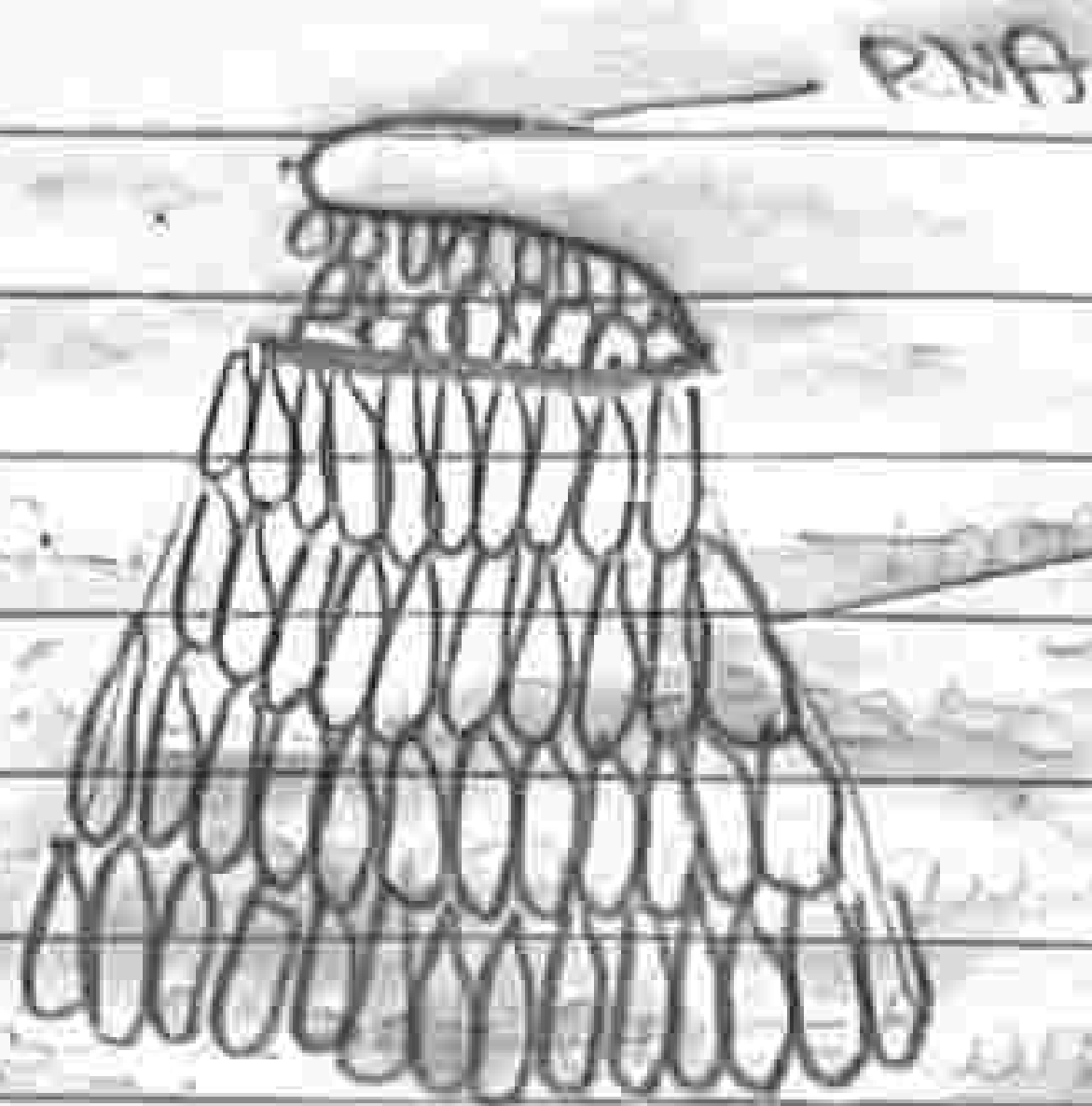
- 1) Causative agent is a AIDS
- 2) it contain reverse transcriptase enzyme
- 3) it is made capsid made up the 1500 capsomeres
- 4) p capsid made up the p24 capsid capsid protein



2) Helical Capsid :-

- 1) the capsid is made up the capsomeres & arranged helically along with axis rotation
- 2) they twisted because one groove is thicker & other is thinner.
- 3) the genome is present in groove around which capsomeres are helically arrange.
- 4) the gene length of capsomere is not much extent beyond the length of genome.
- 5) Eg :-
TMV - capsid is rigid
influenza - capsid is flexible

- 1) TMV contain single stranded positive sense RNA
- 2) capsid is made up the 2130 capsomeres
- 3) per turn of helical coupled 49 nucleotide & 23.2 capsomeres.



3) Complex Capsid :-

- 1) Complex capsid is a combination has the binial symmetry & it is combination of the helical & icosahedral capsid.
- 2) Pox & virus is a largest virus with $200 \times 240 \times 200$ nm in size.
- 3) varicella virus have contain dsDNA with protein in their core.
- 4) Complex Capsid present in T series bacteriophage
 Eg :- T₄ phage having head capsid is a icosahedral & tail is helical.

T₄ Phage :- T₄ series bacteriophage have contain the contractile sheath & 5' hmc.

The capsid is made up 2130 capsomere. The formation of capsid mainly responsible protein is gp23 & gp25.

2n the last page

Q.2.

B &

2) viroid :-

Isolated by T.O. Diener

→ 1) It is first time isolated from potato spindle fibres

→ 2) it is affected the plant

3) It is contain RNA as genetic material with no protein coat

Properties :-

- 1) it is a obligate intracellular parasite
- 2) ~~it is no~~ it contain RNA as genetic material
- 3) It is first time isolated from potato spindle fibre
- 4) ~~It~~ self replicating ability with ~~into~~, cant
- 5) contain Ribozyme enzyme.
- 6) ~~The~~ transfer plant to plant through plasmodesmata.
- 7) it is resistant to UV light & nuclease enzyme.

33 viroids are known

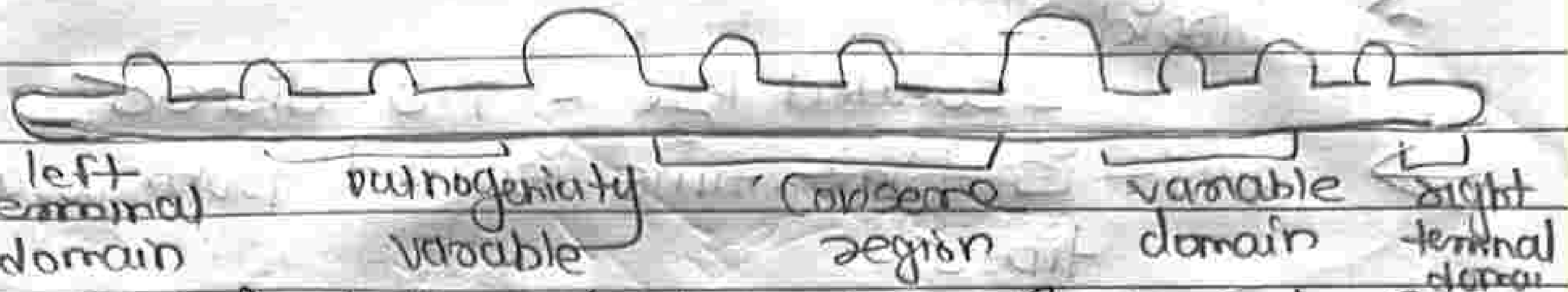
* e.g :- Coconut cadang cadang virus

Symptom :-

- 1) stem necrosis
- 2) deforming the leaves
- 3) death of plant

In human - observed in caused by Hepatitis D

Structure :-



It is first infect the plant enter & use host RNA polymerase for replication. It is replicate by zoological cycle mechanism. & transfer plant to other plant through plasmodesmata.

4

3) prion :-

- 1) It causes the Neurodegenerative disease called transmissible spongiform encephalopathy.
- 2) The scientist griffith gave the hypothesis that this Neurodegenerative disease caused by protein. later stanely gave the name prion.

properties :-

- 1) it is infectious glycoprotein
- 2) ~~It~~ it causes the Neurodegenerative disease such as transmissible spongiform encephalopathy.
- 3) It is ~~not~~ it is caused due to misfolding of protein
 psc - normal protein
 ppsc - scrapie
- 4) it is caused the amyloid folding

5) It is transmitted through the person to person contact, fomite.

6)  not visualized.

~~popc~~

popc - (protein protease resistant protein)

c - cellular.

~~it is~~ it is attached cell membrane by glycosyl phosphatidylinositol anchoring. It is normal form of protein.

prpsc - 1) It is infectious form of prpsc.

It causes the encephalopathy, spongiform disease which ~~is~~ create a hole in brain & appearance like a spongiform.

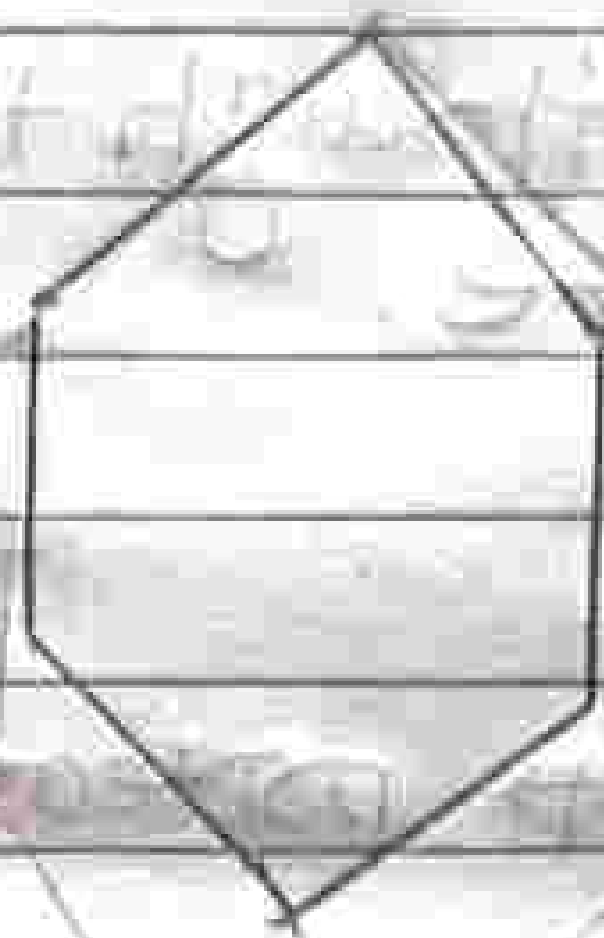
2) it contain more beta ~~pl~~ pletted sheet than alpha

3) fold - amyloid fibrous which have open c terminal for anchoring of other protein.

Structure: ~~is a form of protein~~  

It is transmitted through person to person contact & due to fomes. which causes misfolded of protein is called amyloid fold & causes the disease transmissible spongiform encephalopathy. it contain more beta pletted sheet than alpha.

4



Capsid

Complex

Significance :-

- 1) It is protect genetic material
- 2) help in transfer genetic material

Q3)

1) → b) inducing misfolding in normal protein

2) → b) intracellular accumulation

Eclipse

Packing

occurs in I.A.

3) → d) Hepatitis D

Influenza

Haemagglutination Spike.

4) → d) plant.

Vivekanand College, Kolhapur
(An Empowered Autonomous Institute)

B.Sc. Part- II (Microbiology) (Sem ~~IV~~ **V**) Surprise test
Paper VIII Medical Microbiology- I

Date -: 10/01/2026

Day: Saturday

Time-: 02:30pm – 03:00pm

Total Marks: 10

Q. Multiple Choice Questions.

10 marks

1. Glycoprotein produce in response to antigen are called _____.
A) antibody B) antigen C) toxin D) enzyme
2. When diseases spread rapidly within a short time in a community, it is known as _____.
A) Endemic B) Pandemic C) Epidemic D) Infection
3. A disease-producing organism is called a _____.
A) Pathogen B) Vector C) Fomite D) Antigen
4. Infected individuals that are the source of infection are called _____.
A) Fomites B) Carriers C) Vehicles D) Antigens
5. Inanimate objects involved in the transmission of diseases are called _____.
A) Vectors B) Fomites C) Hosts D) Reservoirs
6. An infection induced by a physician or medical treatment is called _____.
A) Nosocomial infection B) Iatrogenic infection
C) Opportunistic infection D) Congenital infection
7. An infection without symptoms is called an _____.
A) Overt infection B) Covert (Subclinical) infection
C) Acute infection D) Secondary infection
8. Infections that result in pus formation are called _____.
A) Pyogenic infections B) Opportunistic infections
C) Chronic infections D) Latent infections
9. _____ is the ratio of number of deaths due to a given disease to the total number of cases of the same disease (or total population).
A) Morbidity B) Mortality rate C) Incidence D) Prevalence
10. _____ is the period from entry of pathogen into the host body to the appearance of symptoms.
A) Prodromal period B) Incubation period C) Convalescent period D) Latent period



Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR (AN EMPOWERED AUTONOMOUS INSTITUTE)

Department of Microbiology (UG)

Academic Year 2025-2026

Surprise Test Result for BSc II

Date: 10/01/2026

Sr.no	Name of the student	Roll no.	SIGNATURE
1.	Balugade Vaishnavi Shahaji	7896	<u>Balugade</u>
2.	Chougule Sanika Tanaji	7897	AB
3.	Kole Rajanandini Balasaheb	7898	AB
4.	Korane Sakshi Bhaskar	7899	<u>Akorane</u>
5.	Kulkarni Pratiksha Prashant	7900	<u>Kulkarni</u>
6.	Mole Nikita Tanaji	7901	<u>Nmole</u>
7.	More Siya Kailas	7902	<u>More</u>
8.	Nadaf Asiya Dastgir	7903	<u>Asiya</u>
9.	Patil Sanjivani Vishnu	7904	<u>Patil</u>
10.	Patil Shreya Sunil	7905	AB
11.	Pendhari Simran Mahamad	7906	<u>Simran</u>
12.	Pinjari Tasneem Bhola Nadaf	7907	<u>T.B. Nadaf</u>
13.	Raul Gauri Pramod	7908	<u>G.P. Raul</u>
14.	Sabale Aaditi Akaram	7909	<u>A.A. Sabale</u>
15.	Shinde Samruddhi Vijay	7910	<u>S.V. Shinde</u>
16.	Vhanmane Pranali Mhalappa	7911	<u>Vhanmane</u>
17.	Dalvi Janhvi Ananda	7912	AB
18.	Gurav Varsha Tanaji	7913	<u>Gurav</u>
19.	Koli Divya Dilip	7914	<u>Koli</u>
20.	Salunke Vaishnavi Ranjeet	7915	<u>Salunke</u>
21.	Singh Badal Kamalendra	7916	AB
22.	Thanekar Sanika Joytiram	7917	<u>Badal</u>
23.	Vasagade Shreya Jinendra	7918	<u>S.J. Thanekar</u>

24.	Ambale Riya Sunil	7919	AB
25.	Ambale Siddhi Yuvraj	7920	AB
26.	Bele Surbhi Vishal	7921	AB
27.	Bhoje Adesh Chandrakant	7922	AB
28.	Chile Sanket Dattatray	7923	AB
29.	Dalavi Tralokya Nitin	7924	P.N. Dalu
30.	Deshmukh Sanskruti Tanaji	7925	Deshmukh
31.	Ghosarawade Arati Ramachandra	7926	
32.	Goture Amruta Prashant	7927	Amruta
33.	Gutte Tukaram Dattatray	7928	AB
34.	Jamadar Sadiya Ibrahim	7929	Jamadar
35.	Khot Nikita Tanaji	7930	Khot
36.	Khot Vaishnavi Rajaram	7931	AB
37.	Kumbhar Priyanka Dipak	7932	Kumbhar
38.	Kumbhar Samiksha Sanjay	7933	AB
39.	Mali Tanuja Ajit	7934	AB
40.	Parit Haripriya Amar	7935	AB
41.	Parit Priti Anil	7936	PA Parit
42.	Patil Jyoti Suresh	7937	AB
43.	Patil Riya Uttam	7938	Patil
44.	Patil Rutuja Ravsaheb	7939	Patil
45.	Patil Saloni Gajkumar	7940	SPatil
46.	Patil Unmesh Yashwant	7941	AB
47.	Pol Gunjan Vijay	7942	Pol
48.	Satpute Meghashree Sanjay	7943	Satpute
49.	Sutar Shweta Prabhakar	7944	Sutar
50.	Chaturvedi Laxmi Ramesh.	7945	AB
51.	More Pratiksha Anil	7946	AB
52.	Om Rajendra Patil	7976	O. R. Patil
53.	Vijapure Shrndhi Shriniwas	7947	AB

Teacher In charge

Ms. M. M. Nadkarni -

M. M. Nadkarni



Surprise Test Result for BSc II

Date: 10/01/2026

Sr.no	Name of the student	Roll no.	Marks
1.	Balugade Vaishnavi Shahaji	7896	05
2.	Chougule Sanika Tanaji	7897	Ab
3.	Kole Rajanandini Balasaheb	7898	Ab
4.	Korane Sakshi Bhaskar	7899	05
5.	Kulkarni Pratiksha Prashant	7900	03
6.	Mole Nikita Tanaji	7901	04
7.	More Siya Kailas	7902	05
8.	Nadaf Asiya Dastgir	7903	04
9.	Patil Sanjivani Vishnu	7904	01
10.	Patil Shreya Sunil	7905	Ab
11.	Pendhari Simran Mahamad	7906	06
12.	Pinjari Tasneem Bhola Nadaf	7907	05
13.	Raul Gauri Pramod	7908	01
14.	Sabale Aaditi Akaram	7909	02
15.	Shinde Samruddhi Vijay	7910	06
16.	Vhanmane Pranali Mhalappa	7911	06
17.	Dalvi Janhvi Ananda	7912	Ab
18.	Gurav Varsha Tanaji	7913	01
19.	Koli Divya Dilip	7914	05
20.	Salunke Vaishnavi Ranjeet	7915	05
21.	Singh Badal Kamalendra	7916	Ab
22.	Thanekar Sanika Joytiram	7917	01
23.	Vasagade Shreya Jinendra	7918	06

24.	Ambale Riya Sunil	7919	Ab
25.	Ambale Siddhi Yuvraj	7920	Ab
26.	Bele Surbhi Vishal	7921	Ab
27.	Bhoje Adesh Chandrakant	7922	03
28.	Chile Sanket Dattatray	7923	Ab
29.	Dalavi Tralokya Nitin	7924	01
30.	Deshmukh Sanskruti Tanaji	7925	07
31.	Ghosarawade Arati Ramachandra	7926	05
32.	Goture Amruta Prashant	7927	05
33.	Gutte Tukaram Dattatray	7928	Ab
34.	Jamadar Sadiya Ibrahim	7929	08
35.	Khot Nikita Tanaji	7930	05
36.	Khot Vaishnavi Rajaram	7931	Ab
37.	Kumbhar Priyanka Dipak	7932	06
38.	Kumbhar Samiksha Sanjay	7933	Ab
39.	Mali Tanuja Ajit	7934	Ab
40.	Parit Haripriya Amar	7935	Ab
41.	Parit Priti Anil	7936	05
42.	Patil Jyoti Suresh	7937	Ab
43.	Patil Riya Uttam	7938	01
44.	Patil Rutuja Ravsaheb	7939	06
45.	Patil Saloni Gajkumar	7940	02
46.	Patil Unmesh Yashwant	7941	Ab
47.	Pol Gunjan Vijay	7942	06
48.	Satpute Meghashree Sanjay	7943	03
49.	Sutar Shweta Prabhakar	7944	05
50.	Chaturvedi Laxmi Ramesh.	7945	Ab
51.	More Pratiksha Anil	7946	Ab
52.	Om Rajendra Patil	7976	01
53.	Vijapure Shrndhi Shriniwas	7947	Ab

Teacher In charge

Ms. M. M. Nadkarni - *M. M. Nadkarni*



name:- Sadiya Ibrahim Jamadar

Roll No:- 7929.

Date:- 10/01/2026.

sub:- microbiology STD - B.Sc - SY (Sem IV)

suprasetest. - medical microbiology

- Q. 1) Glycoprotein produce and response to antigen are called _____
- 2) when disease spread rapidly within short time in community is known as epidemic.
- 3) disease producing organism is called pathogenic organism.
- 4) infected individual that are source of infection are called pendamic infection
- 5) inanimate object involve in transmission of disease are called Fomite
- 6) infection induced by physician is called _____
- 7) An infection without symptoms are called Entozoonic
- 8) infection that results into pus formation are called Pyogenic infection.

g) mortality is the ratio of no. of death due to the given disease to the total no. of casease of same disease.

1d) incubation is the period from entry of phatogen into host body to apperare of symptoms.



Vivekanand College, Kolhapur
(An Empowered Autonomous Institute)

B.Sc. Part- I (Microbiology) (Sem IV) Surprise test
Paper III Microbial Nutrition-

Date -: 31/01/2026

Day: Saturday

Time-: 02:30pm – 03:00pm

Total Marks: 10

Q. Multiple Choice Questions.

10 marks

1. _____ accounts for about 80–90% of the total weight of a microbial cell.
A) Protein B) Water C) Carbohydrate D) DNA
2. Elements which are needed in large quantities by microorganisms are called _____.
A) Microelements B) Trace elements C) Macronutrients D) Vitamins
3. Potassium is an example of a _____.
A) Microelement B) Macroelement C) Trace element D) Growth factor
4. Manganese is an example of a _____.
A) Macroelement B) Microelement C) Structural lipid D) Major element
5. Organisms that use CO₂ as their primary source of carbon are called _____.
A) Heterotrophs B) Organotrophs C) Autotrophs D) Chemotrophs
6. Bacteria that synthesize energy by the oxidation of organic and inorganic compounds are called _____.
A) Phototrophs B) Chemotrophs C) Autotrophs D) Lithotrophs
7. Bacteria that do not produce oxygen as a byproduct after photosynthesis are called _____.
A) Oxygenic B) Anoxygenic C) Aerobic D) Fermentative
8. Bacteria that produce oxygen as a byproduct after photosynthesis are called _____.
A) Oxygenic B) Anoxygenic C) Anaerobic D) Chemosynthetic
9. _____ bacteria are able to metabolize methane and methanol as a carbon source.
A) Methanogens B) Methanotrophs C) Halophiles D) Nitrifiers
10. When organic compounds serve as electron donors, the organisms are called _____.
A) Lithotrophs B) Organotrophs C) Autotrophs D) Phototrophs



Date:

Sr.no	Name of the student	Roll no.	Signature
1.	Abane Gayatri Kumar	7499	<u>Abane</u>
2.	Airekar Aboli Amol	7500	Ab
3.	Anantpure Shreya Balkrishna	7501	Ab
4.	Bhagat Sanika Satyawar	7502	Ab
5.	Bhoi Darshan Ramesh	7503	Darshan
6.	Chougale Apeksha Rajendra	7504	Apeksha
7.	Chougale Pradnya Chandrakant	7505	Pradnya
8.	Dange Mariya Mohsin	7506	Mariya
9.	Daribe Rutuja Balu	7507	Ab
10.	Dhangar Sanika Balu	7508	Sanika
11.	Gaikwad Dhanashri Anil	7509	Dhanashri
12.	Gaikwad Shubham Chandrashekhar	7510	Shubham
13.	Gondhali Tanvi Pandit	7511	Tanvi
14.	Gotal Vaishnavi Prakash	7512	Ab
15.	Hargule Sanskar Ranjeet	7513	Ab
16.	Jadhav Madhura Mohan	7514	Madhura
17.	Jadhav Pragati Shamrao	7515	P.S.J
18.	Kamble Aniruddh Vinod	7516	Ab
19.	Kamble Shraddha Babaji	7517	Kamble
20.	Kamble Madhura Sandip	7518	Madhura
21.	Karajgi Jyoti Basavraj	7519	Karajgi
22.	Katkar Adiraj Dipak	7520	Adiraj
23.	Kesarkar Riya Amol	7521	Ab

24.	Khot Radhika Sanjay	7522	<u>R. Khot</u>
25.	Kulkarni Hiren Vaibhav	7523	Ab
26.	Kumbhar Harshvardhan Hemant	7524	Ab
27.	Kumbhar Swarupa Shivaji	7525	<u>Kumbhar</u>
28.	Lad Radhika Vijay	7526	<u>Radhika</u>
29.	Lohar Chaitrali Maruti	7528	Ab
30.	Machivale Shruti Santosh	7529	<u>S.S.M</u>
31.	Mane Shrutika Netaji	7530	<u>S.N. Mane</u>
32.	Marathe Sharayu Shailendra	7531	Ab
33.	Minekar Bhavesh Mahesh	7532	Ab
34.	More Atharv Vaibhav	7533	Ab
35.	Mujawar Sufiya Shabbir	7534	S.S.MUJAWAR
36.	Mule Shravani Umesh	7535	<u>Smule</u>
37.	Mutkekar Shweta Laxman	7536	<u>Shweta</u>
38.	Parit Samruddhi Suresh	7537	Ab
39.	Parte Sandhyarani Bajirav	7538	Ab
40.	Pathan Juveriya Muddasar	7539	Ab
41.	Patil Anuradha Krishnat	7540	<u>APatil</u>
42.	Patil Bhakti Sanjay	7541	Ab
43.	Patil Gargi Jitendra	7542	<u>G.J.P</u>
44.	Patil Shravani Shashikant	7543	<u>Patil</u>
45.	Patil Siddhi Vikas	7544	<u>Satil</u>
46.	Patil Prathamesh Rahul	7545	Ab
47.	Patil Pratiksha Hindurav	7546	<u>Pratik</u>
48.	Patil Prerana Sagar	7547	Ab
49.	Patil Reetu Kallappa	7548	<u>Rpatil</u>
50.	Patil Rutuja Sanjay	7549	<u>Rutuja</u>
51.	Patil Shravani Bharat	7550	<u>SPatil</u>
52.	Patil Tanuja Ranjitsinh	7551	<u>Tanuja</u>
53.	Patil Vaishnavi Shankar	7552	<u>Vaishnavi</u>
54.	Patil Aditya Yuvraj	7553	<u>Aditya</u>
55.	Pol Aishwarya Nandkishor	7554	<u>ANPOL</u>
56.	Salokhe Priyadarshani Amar	7555	<u>Salokhe</u>
57.	Sardesai Anjolina Suhas	7556	Ab

58.	Sayyad Akmal Shabbir	7557	<u>Akmal</u>
59.	Shelake Mansi Balaso	7558	<u>Shelake</u>
60.	Shinde Shravani Shivaji	7559	<u>Shravani</u>
61.	Shinde Apeksha Janardan	7560	AB
62.	Shitole Shrushti Sandeep	7561	<u>Shitole</u>
63.	Kamble Pradnya Tukaram	7602	AB

64. Sateshi Siddheshwar Jadhav

65. Raju Tanaji Patil

7596

Jadhav

Rajupatil

Teacher Incharge

Nadkarni

Ms. M. M. Nadkarni



“Dissemination of Education for Knowledge, Science and Culture”

-Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR (AN EMPOWERED AUTONOMOUS INSTITUTE)

Department of Microbiology (UG)

Academic Year 2025-2026

Surprise Test Result for BSc I

Date: 31/01/2026

Sr.no	Name of the student	Roll no.	Signature
1.	Abane Gayatri Kumar	7499	04
2.	Airekar Aboli Amol	7500	Ab
3.	Anantpure Shreya Balkrishna	7501	Ab
4.	Bhagat Sanika Satyawar	7502	Ab
5.	Bhoi Darshan Ramesh	7503	04
6.	Chougale Apeksha Rajendra	7504	08
7.	Chougule Pradnya Chandrakant	7505	02
8.	Dange Mariya Mohsin	7506	03
9.	Daribe Rutuja Balu	7507	Ab
10.	Dhangar Sanika Balu	7508	02
11.	Gaikwad Dhanashri Anil	7509	04
12.	Gaikwad Shubham Chandrashekhar	7510	04
13.	Gondhali Tanvi Pandit	7511	02
14.	Gotal Vaishnavi Prakash	7512	Ab
15.	Hargule Sanskar Ranjeet	7513	Ab
16.	Jadhav Madhura Mohan	7514	02
17.	Jadhav Pragati Shamrao	7515	03
18.	Kamble Aniruddh Vinod	7516	Ab
19.	Kamble Shraddha Babaji	7517	07
20.	Kamble Madhura Sandip	7518	04
21.	Karajgi Jyoti Basavraj	7519	07

22.	Katkar Adiraj Dipak	7520	03
23.	Kesarkar Riya Amol	7521	Ab
24.	Khot Radhika Sanjay	7522	02
25.	Kulkarni Hiren Vaibhav	7523	Ab
26.	Kumbhar Harshvardhan Hemant	7524	Ab
27.	Kumbhar Swarupa Shivaji	7525	04
28.	Lad Radhika Vijay	7526	04
29.	Lohar Chaitrali Maruti	7528	Ab
30.	Machivale Shruti Santosh	7529	02
31.	Mane Shirutika Netaji	7530	02
32.	Marathe Sharayu Shailendra	7531	Ab
33.	Minekar Bhavesh Mahesh	7532	Ab
34.	More Atharv Vaibhav	7533	Ab
35.	Mujawar Sufiya Shabbir	7534	04
36.	Mule Shravani Umesh	7535	05
37.	Mutkekar Shweta Laxman	7536	05
38.	Parit Samruddhi Suresh	7537	08
39.	Parte Sandhyarani Bajirav	7538	09
40.	Pathan JuveriyaMuddasar	7539	03
41.	Patil Anuradha Krishnat	7540	02
42.	Patil Bhakti Sanjay	7541	Ab
43.	Patil Gargi Jitendra	7542	03
44.	Patil Shravani Shashikant	7543	03
45.	Patil Siddhi Vikas	7544	05
46.	Patil Prathamesh Rahul	7545	Ab
47.	Patil Pratiksha Hindurav	7546	05
48.	Patil Prerana Sagar	7547	Ab
49.	Patil Reetu Kallappa	7548	06
50.	Patil Rutuja Sanjay	7549	04
51.	Patil Shravani Bharat	7550	02
52.	Patil Tanuja Ranjitsinh	7551	04
53.	Patil Vaishnavi Shankar	7552	04
54.	Patil Aditya Yuvraj	7553	06
55.	Pol Aishwarya Nandkishor	7554	06

56.	Salokhe Priyadarshani Amar	7555	07
57.	Sardesai Anjolina Suhas	7556	Ab
58.	Sayyad Akmal Shabbir	7557	04
59.	Shelake Mansi Balaso	7558	02
60.	Shinde Shravani Shivaji	7559	05
61.	Shinde Apeksha Janardan	7560	Ab
62.	Shitole Shrushti Sandeep	7561	05
63.	Kamble Pradnya Tukaram	7602	Ab
64.	Sakshi Siddheshwar Jadhav		02
65.	Raju Tanaji Patil		05

Teacher In charge

M. M. Nadkarni

Ms. M. M. Nadkarni



Name :- Samruddhi Suresh parit

Roll No :- 7537

Date :- 31/01/2026

Class :- BSC-I Microbiology

08
10
2

Que

① ✓ 1) water accounts for about 80-90% of total weight of microbial cell
→ B) water

② ✓ 2) few elements which are needed in large quantities are
→ B) Macronutrients

✗ 3) potassium is example of micronutrients
→ B) micronutrients

④ ✓ 4) Manganese is example of micronutrients
→ B) micronutrients

✗ 5) Organisms that use carbon dioxide as a source of carbon are called as oxygenotrophic
→ oxygenotrophic

⑥ ✓ 6) Bacteria synthesises by the oxidation of organic and inorganic compounds such bacteria are called as chemotrophs
→ chemotrophs

7) Bacteria that do not produce Oxygen as by product after photosynthesis are called anoxygenic bacteria
 → B) anoxygenic bacteria

8) Bacteria that produce oxygen as by product after photosynthesis are called oxygenic bacteria
 → A) oxygenic bacteria

9) Methanotrophs Bacteria are able to metabolise methane, methanol etc as carbon source
 → D) Methanotrophs

10) When organic compounds are electron donor then that organism are called as organotrophs,
 → B) Organotrophs



Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR (AN EMPOWERED AUTONOMOUS INSTITUTION)

Department of Microbiology (UG)

Academic Year 2025-2026

Surprise Test Attendance for BSc I

Date: 25/08/2025

Sr.no	Name of the student	Roll no.	Signature
1.	Abane Gayatri Kumar	7499	Ab
2.	Airekar Aboli Amol	7500	Ab
3.	Anantpure Shreya Balkrishna	7501	Shreya
4.	Bhagat Sanika Satyawar	7502	Ab
5.	Bhoi Darshan Ramesh	7503	Darshan
6.	Chougale Apeksha Rajendra	7504	Apeksha
7.	Chougule Pradnya Chandrakant	7505	Ab
8.	Dange Mariya Mohsin	7506	Ab
9.	Daribe Rutuja Balu	7507	Ab
10.	Dhangar Sanika Balu	7508	Sanika
11.	Gaikwad Dhanashri Anil	7509	Ab
12.	Gaikwad Shubham Chandrashekhar	7510	Ab
13.	Gondhali Tanvi Pandit	7511	Ab
14.	Gotal Vaishnavi Prakash	7512	Ab
15.	Hargule Sanskar Ranjeet	7513	Ab
16.	Jadhav Madhura Mohan	7514	Ab
17.	Jadhav Pragati Shamrao	7515	P.S.J
18.	Kamble Aniruddh Vinod	7516	Ab
19.	Kamble Shraddha Babaji	7517	Ab
20.	Kamble Madhura Sandip	7518	Ab



21.	Karajgi Jyoti Basavraj	7519	<u>Karajgi</u>
22.	Katkar Adiraj Dipak	7520	AB
23.	Kesarkar Riya Amol	7521	AB
24.	Khot Radhika Sanjay	7522	AB
25.	Kulkarni Hiren Vaibhav	7523	<u>P</u>
26.	Kumbhar Harshvardhan Hemant	7524	AB
27.	Kumbhar Swarupa Shivaji	7525	AB
28.	Lad Radhika Vijay	7526	<u>Rajad</u>
29.	Lohar Chaitrali Maruti	7528	AB
30.	Machivale Shruti Santosh	7529	AB
31.	Mane Shrutika Netaji	7530	AB
32.	Marathe Sharayu Shailendra	7531	AB
33.	Minekar Bhavesh Mahesh	7532	AB
34.	More Atharv Vaibhav	7533	AB
35.	Mujawar Sufiya Shabbir	7534	AB
36.	Mule Shravani Umesh	7535	<u>Mule</u>
37.	Mutkekar Shweta Laxman	7536	<u>Shweta</u>
38.	Parit Samruddhi Suresh	7537	<u>Samr</u>
39.	Parte Sandhyarani Bajirav	7538	<u>Sandhya</u>
40.	Pathan JuveriyaMuddasar	7539	AB
41.	Patil Anuradha Krishnat	7540	AB
42.	Patil Bhakti Sanjay	7541	AB
43.	Patil Gargi Jitendra	7542	<u>GJP</u>
44.	Patil Shravani Shashikant	7543	AB
45.	Patil Siddhi Vikas	7544	<u>Satli</u>
46.	Patil Prathamesh Rahul	7545	AB
47.	Patil Pratiksha Hindurav	7546	<u>Ppatil</u>
48.	Patil Prerana Sagar	7547	AB
49.	Patil Reetu Kallappa	7548	<u>Prati</u>
50.	Patil Rutuja Sanjay	7549	AB
51.	Patil Shravani Bharat	7550	AB
52.	Patil Tanuja Ranjitsinh	7551	AB
53.	Patil Vaishnavi Shankar	7552	AB
54.	Patil Aditya Yuvraj	7553	AB

55.	Pol Aishwarya Nandkishor	7554	Ab
56.	Salokhe Priyadarshani Amar	7555	As
57.	Sardesai Anjolina Suhas	7556	Ab
58.	Sayyad Akmal Shabbir	7557	Ab
59.	Shelake Mansi Balaso	7558	Ab
60.	Shinde Shravani Shivaji	7559	Shravani
61.	Shinde Apeksha Janardan	7560	Ab
62.	Shitole Shrushti Sandeep	7561	Ab
63.	Kamble Pradnya Tukaram	7602	Ab

64. Raju Tanaji Patil

7596 ~~Rajupatil~~

Teacher Incharge

Ms. S. S. Shaikh - Shaikh



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Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE, KOLHAPUR
(AN EMPOWEREDAUTONOMOUS INSTITUTE)

Department of Microbiology (UG)

Academic Year 2025-2026

BSc I Sem I

Date-25/08/2025

Question Paper for Surprise Test

Instructions: 1) All the questions are compulsory.

2) Figures to the right indicate full marks.

3) Draw neat labelled diagrams wherever necessary.

Time: 50 minutes

Total Marks: 10

Unit II Control of Micro-organisms

Que. 1 Describe in detail use of temperature as a physical agent for control of micro-organisms.



1) Explain the ^{Constructⁿ & working} mechanism of physical agent by using temperature:

1) Dry heat:

① Hot air oven is the instrument used in this process.

Construction.

① Hot air oven has 3 wall with two air spaces. The outer wall is covered with asbestos which prevent radiatⁿ of heat.

② Air is circulated with the help of fan

③ The apparatus is supplied with thermostat temperature recorder timer

④ It is normally operated by 160-180 from 1 to 1.5 hrs

Mechanism :-

⑤ Microbial growth is destroyed by oxidation of cell

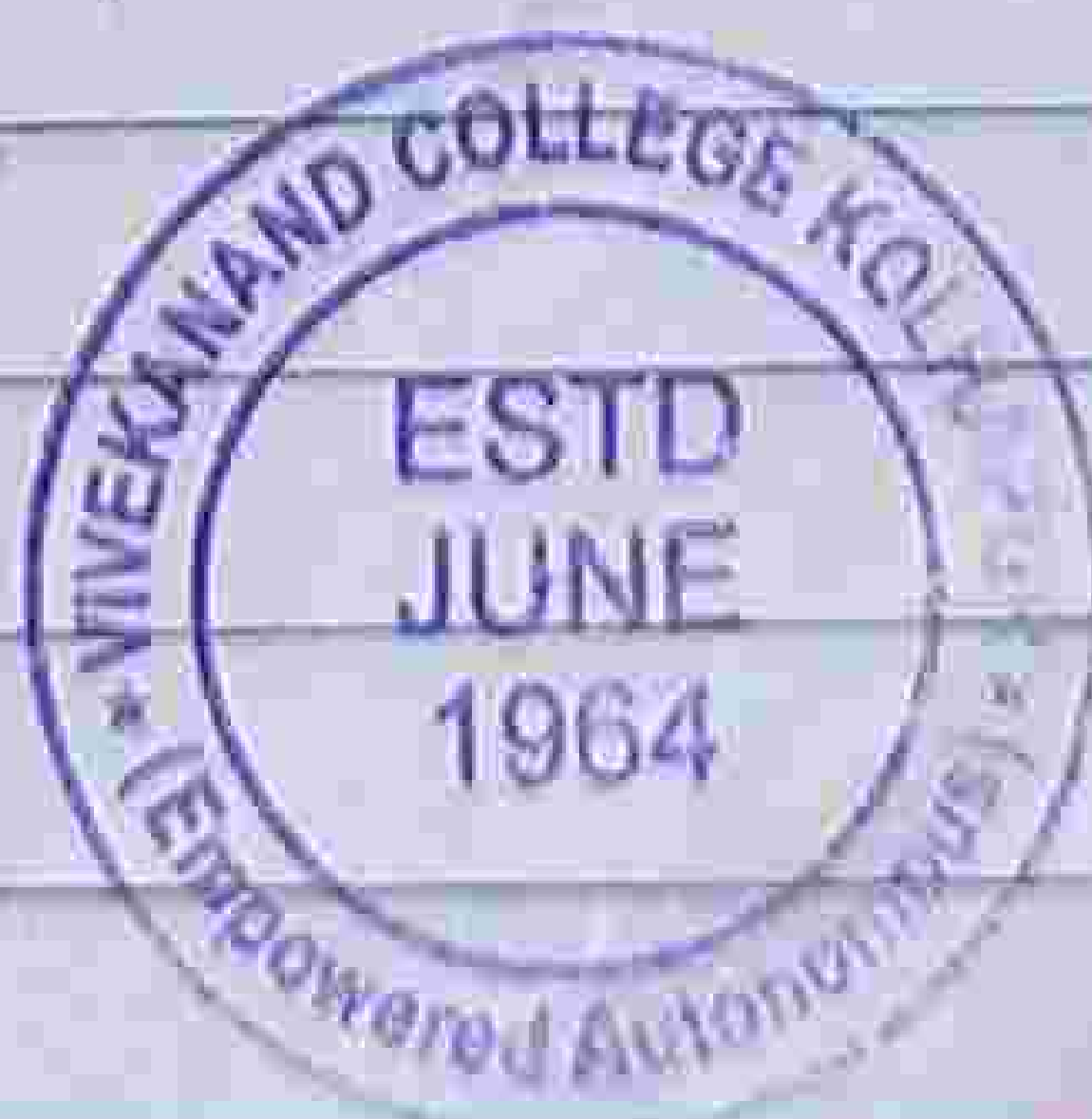
⑥ Constituent and distraction of protein.

Application:-

⑦ for sterilization of thermostable products and for sterilisation of glassware, powdered material and dry objects.

Mode of action :-

⑧ Protein denaturation and coagulation.



- 2) Moist heat :
- principle - steam under pressure
- ① sterilisation of moist heat is achieved by autoclave where it works on principle steam under pressure.

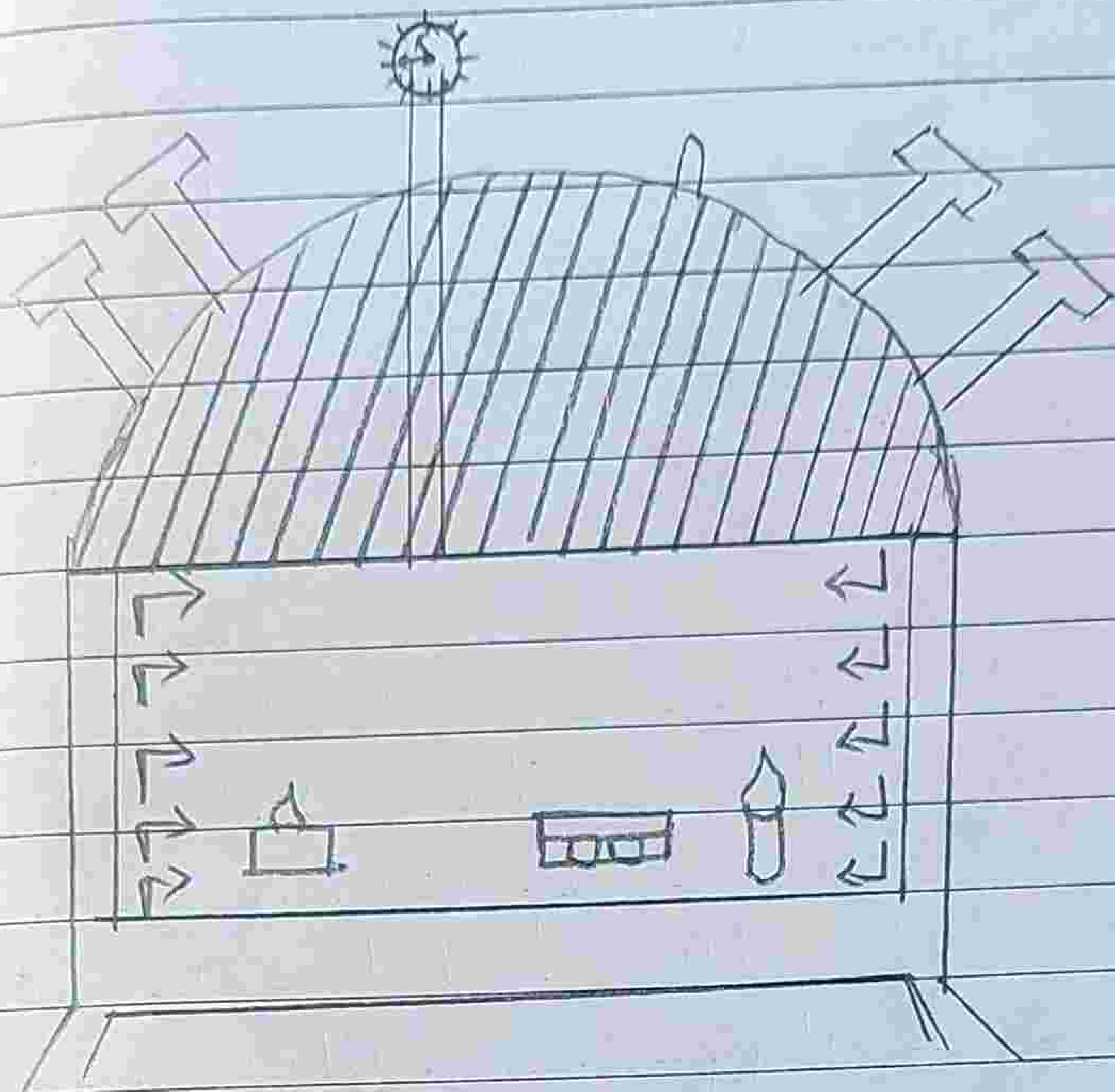
Construction:

- ② It is cylindrical vessel of metal.
- ③ It is double jacketed system.
- ④ It is equipment with devices that permit the chamber filled with saturated steam and maintained at temperature and pressure for given period of time.

Working:

- ⑥ Water is allowed to boil to produce steam.
- ⑦ Air present in chamber is forced out until the chamber is filled with saturated steam.
- ⑧ When the desired temperature & pressure is achieved it is maintained with the help of steam released knob.
- ⑨ Usually it is operated at 121°C for 15 min at 15 lbs.

Steam under pressure	Temperature
0	100.0
5	109.0
10	115.0
15	121.0
20	126.5



Autoclave

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Department of Microbiology (UG)

Academic Year 2025-2026

Surprise Test Result for BSc I

Date: 25/08/2025

Sr.no	Name of the student	Roll no.	Signature
1.	Abane Gayatri Kumar	7499	Ab
2.	Airekar Aboli Amol	7500	Ab
3.	Anantpure Shreya Balkrishna	7501	05
4.	Bhagat Sanika Satyawar	7502	Ab
5.	Bhoi Darshan Ramesh	7503	07
6.	Chougale Apeksha Rajendra	7504	06
7.	Chougule Pradnya Chandrakant	7505	Ab
8.	Dange Mariya Mohsin	7506	Ab
9.	Daribe Rutuja Balu	7507	Ab
10.	Dhangar Sanika Balu	7508	07
11.	Gaikwad Dhanashri Anil	7509	Ab
12.	Gaikwad Shubham Chandrashekhar	7510	Ab
13.	Gondhali Tanvi Pandit	7511	Ab
14.	Gotal Vaishnavi Prakash	7512	Ab
15.	Hargule Sanskar Ranjeet	7513	Ab
16.	Jadhav Madhura Mohan	7514	Ab
17.	Jadhav Pragati Shamrao	7515	05
18.	Kamble Aniruddh Vinod	7516	Ab
19.	Kamble Shraddha Babaji	7517	Ab
20.	Kamble Madhura Sandip	7518	Ab



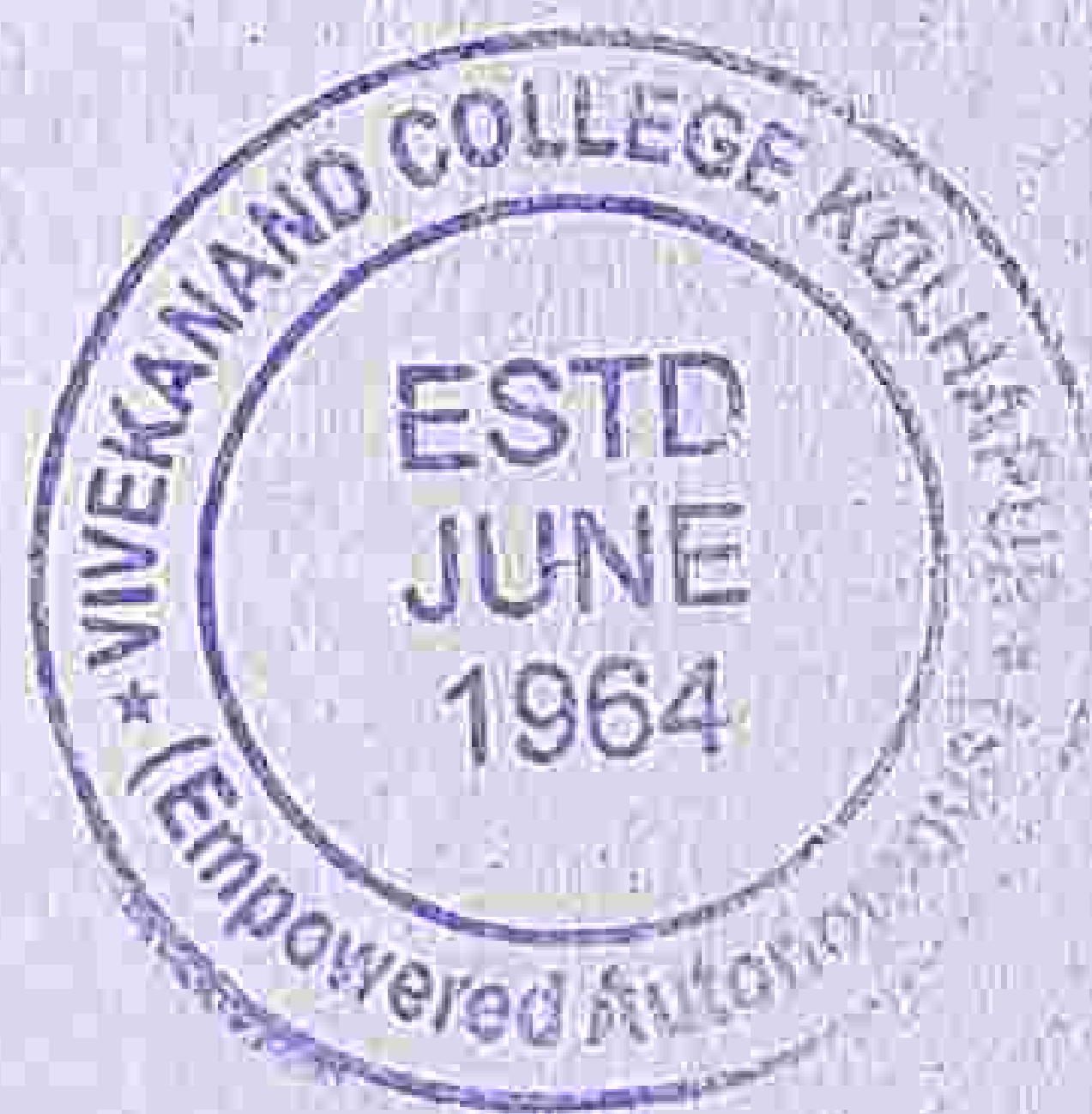
21.	Karajgi Jyoti Basavraj	7519	09
22.	Katkar Adiraj Dipak	7520	AB
23.	Kesarkar Riya Amol	7521	AB
24.	Khot Radhika Sanjay	7522	AB
25.	Kulkarni Hiren Vaibhav	7523	08
26.	Kumbhar Harshvardhan Hemant	7524	AB
27.	Kumbhar Swarupa Shivaji	7525	AB
28.	Lad Radhika Vijay	7526	07
29.	Lohar Chaitrali Maruti	7528	AB
30.	Machivale Shruti Santosh	7529	AB
31.	Mane Shrutika Netaji	7530	AB
32.	Marathe Sharayu Shailendra	7531	AB
33.	Minekar Bhavesh Mahesh	7532	AB
34.	More Atharv Vaibhav	7533	AB
35.	Mujawar Sufiya Shabbir	7534	AB
36.	Mule Shravani Umesh	7535	07
37.	Mutkekar Shweta Laxman	7536	09
38.	Parit Samruddhi Suresh	7537	09
39.	Parte Sandhyarani Bajirav	7538	06
40.	Pathan JuveriyaMuddasar	7539	AB
41.	Patil Anuradha Krishnat	7540	AB
42.	Patil Bhakti Sanjay	7541	AB
43.	Patil Gargi Jitendra	7542	08
44.	Patil Shravani Shashikant	7543	AB
45.	Patil Siddhi Vikas	7544	07
46.	Patil Prathamesh Rahul	7545	AB
47.	Patil Pratiksha Hindurav	7546	05
48.	Patil Prerana Sagar	7547	AB
49.	Patil Reetu Kallappa	7548	06
50.	Patil Rutuja Sanjay	7549	AB
51.	Patil Shravani Bharat	7550	AB
52.	Patil Tanuja Ranjitsinh	7551	AB
53.	Patil Vaishnavi Shankar	7552	AB
54.	Patil Aditya Yuvraj	7553	AB

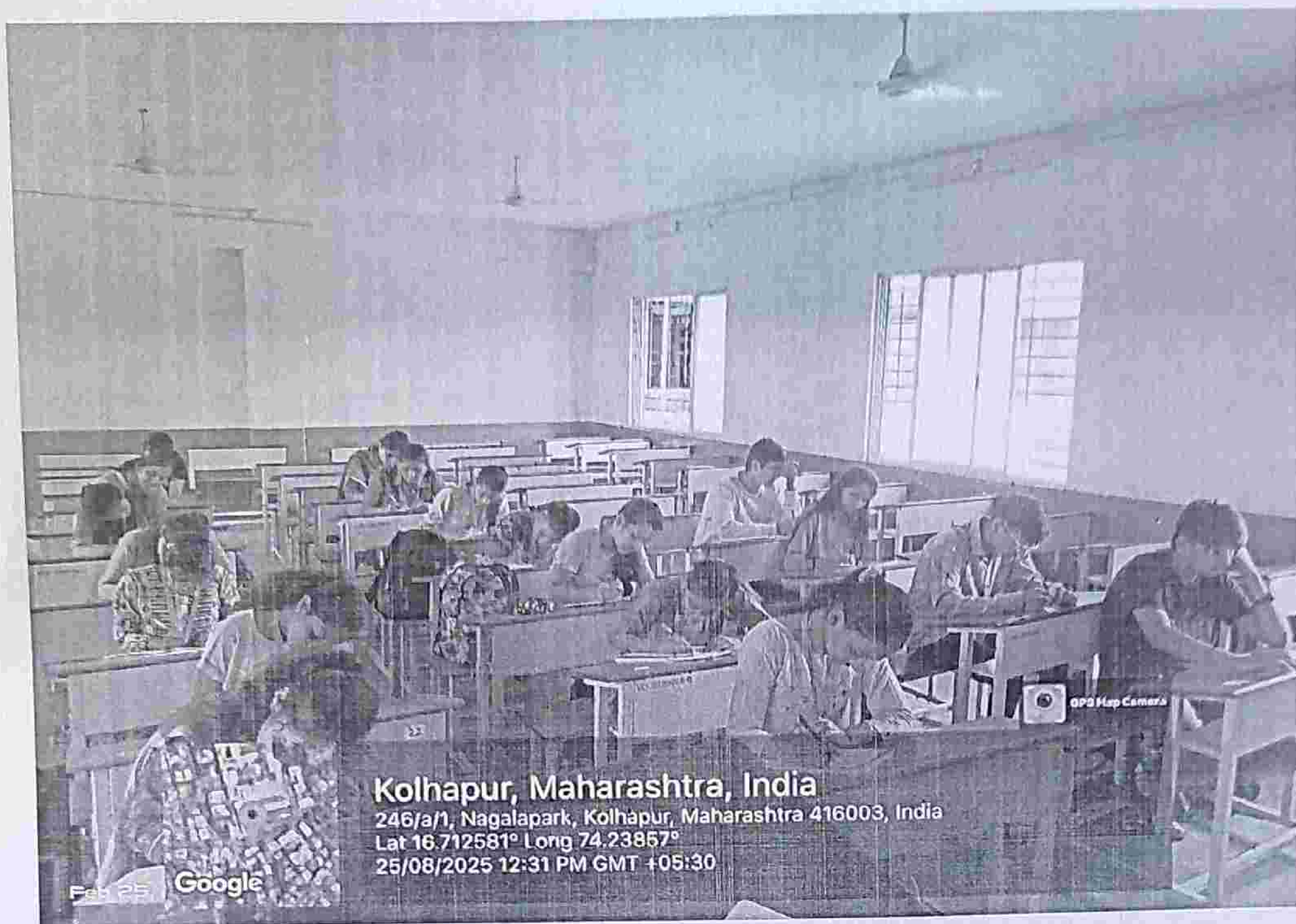
55.	Pol Aishwarya Nandkishor	7554	Ab
56.	Salokhe Priyadarshani Amar	7555	07
57.	Sardesai Anjolina Suhas	7556	Ab
58.	Sayyad Akmal Shabbir	7557	Ab
59.	Shelake Mansi Balaso	7558	Ab
60.	Shinde Shravani Shivaji	7559	08
61.	Shinde Apeksha Janardan	7560	Ab
62.	Shitole Shrushti Sandeep	7561	Ab
63.	Kamble Pradnya Tukaram	7602	Ab

Teacher Incharge

Ms. S. S. Shaikh

Shaikh





B. Sc. I SURPRISE TEST 2025-2026 – 25/08/2025



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Department of Microbiology (UG)

Academic Year 2025-2026

Surprise Test Attendance for BSc III

Date: 29/12/2025

Sr. No.	Name of student	Roll No.	Signature
1	Chougule Sakshi Rajesh	8380	<i>Schougule</i>
2	Mane Sakshi Manohar	8381	<i>Mane</i>
3	Musute Bhagyashree D.	8382	<i>Musute</i>
4	Rathi Sanjana Pavankumar	8383	<i>Sanji</i>
5	Akkole Poonam Anil	8384	<i>Poonam Akkole</i>
6	Bakale Poonam Raju	8385	<i>P.R. Bakale</i>
7	Dave Dhruv Govind	8386	<i>Dave</i>
8	Divase Tanishka Rahul	8387	<i>Divase</i>
9	Dongare Samruddhi Laxman	8388	<i>Dongare</i>
10	Gurav Gouri Vidyasagar	8389	<i>Gurav</i>
11	Jadhav Harshali Uttam	8390	<i>Jadhav</i>
12	Jadhav Prachi Ramesh	8391	
13	Jambhale Rajvardhan	8392	<i>Jambhale</i>
14	Kadam kalyani Prakash	8393	<i>Kalyani</i>
15	Kadatare Manthan Vinay	8394	<i>Kadatare</i>
16	Kamble Sanika Nagesh	8395	<i>Kamble</i>
17	Karalkar Hardik Arun	8396	<i>Karalkar</i>
18	Khatib Juyera Ilai	8397	<i>Khatib</i>
19	Kumbhar Rutuja Suresh	8398	<i>Kumbhar</i>
20	Kumbhar Sanika Arjun	8399	<i>Kumbhar</i>
21	Mahadik Rajveer Suraj	8400	<i>Mahadik</i>
22	Marathe Aradhana Satish	8401	
23	Matre Pooja Shankar	8402	<i>Matre</i>
24	Mullani Sophiya wasimraja	8403	<i>Mullani</i>
25	Nirankari Taruna Vishnudas	8404	<i>Nirankari</i>
26	Parit Amruta Eknath	8405	<i>Amruta Parit</i>
27	Patil Achal Bhaskar	8406	<i>Patil</i>
28	Patil Janhavi Ashok	8407	<i>Patil</i>
29	Patil Janhavi Nitin	8408	<i>Patil</i>
30	Patil Mrujala Maloji	8409	<i>Patil</i>
31	Patil Priti Pramod	8410	<i>Patil</i>
32	Patil Swarup Ramchandra	8411	<i>Patil</i>
33	Patil Vidula Manik	8412	<i>Patil</i>



34	Pawar Samiksha Santosh	8413	AB
35	Pidwani Disha Jairamdas	8414	Disha
36	Pishte Sanika vijay	8415	<u>Surpishle</u>
37	Rode Kaveri Ravindra	8416	AB
38	Shahapure Anirudha Ujjaykumar	8417	J.V. Shahapure
39	Shaikh Jiya Ajij	8418	AB
40	Shaikh Sadiya Shakil	8419	AB
41	Shetti Omkar Vidyasagar	8420	AB
42	Shinde Janhvi Nitin	8421	JNS
43	Suryavanshi Siddhi Satish	8422	<u>Siddhi</u>
44	Sutar Dhanashree Rajendra	8423	AB
45	Swami Sanket Kalayya	8424	<u>Sanket</u>
46	Teli Prajakta Namdev	8425	AB
47	Ugave Sanika Kashinath	8426	<u>Sugave</u>
48	Amane Aditya Avdhut	8438	<u>Aditya</u>
49	Patil Sanjyoti Ramchandra	8429	<u>Sanjyoti</u>
50	Bamane Durgesh Baban	8437	<u>D.</u>



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VIVEKANAND COLLEGE, KOLHAPUR (AN EMPOWERED AUTONOMOUS INSTITUTE)

Department of Microbiology (UG)

Academic Year 2025-2026

BSc III Sem VI

Question Paper for Surprise Test

Instructions: 1) All the questions are compulsory.

2) Figures to the right indicate full marks.

3) Draw neat labelled diagrams wherever necessary.

Time: 60 minutes

Total Marks: 20

Q. 1 Select correct alternative.

(5)

1. _____ of the following best defines an enzyme.

- | | |
|--|---|
| a. Carbohydrate that stores energy | b. Lipid that forms cell membrane |
| c. Biological catalyst that speeds up reaction | d. Nucleic acid that stores genetic information |

2. _____ property of enzyme is true.

- | | |
|---|---|
| a. They are consumed in a chemical reaction | b. They work equally well at all temperatures |
| c. They are highly specific in nature | d. They increase activation energy |

3. The part of enzyme where substrate binds is _____.

- | | |
|--------------|----------------|
| a. apoenzyme | b. active site |
| c. cofactor | d. coenzyme |

4. Enzyme specificity means that an enzyme _____.

- | | |
|--|-----------------------------------|
| a. can catalyze many different reactions | b. works only at high temperature |
| c. acts on the specific substrate | d. can function without substrate |



5. Enzyme are classified mainly on the basis of their _____.

- a. Size
- b. Shape
- c. Type of reaction they catalyze
- d. Source organism

Q. 2 Attempt any one.

(15)

1. Define and describe in detail allosteric enzymes, its properties and models explaining mechanism of actions.
2. Write in detail structure and properties of enzymes.

Name :- Sanika Kashinath Ugare

Roll no :- 8426

Date 29/12/25
classmate

Date
Page

17
20

Suprise test (microbial Biochemistry)

Q.2 define & describe in detailed Allosteric enzyme it's properties & model explaining mechanism of Action.

or
write in detailed & property & structure of enzyme.

Enzyme :- Enzyme are biocatalysts which speed the Rate of biochemical reaction without getting involved into that reaction.

Structure :-



Enzyme are made up the Apoenzyme & Coenzyme or Cofactors. It is also called as Holo enzyme.

Coenzyme are the derivative of Vitamin.

It is the organic part

Cofactors are the contain all metals ion.

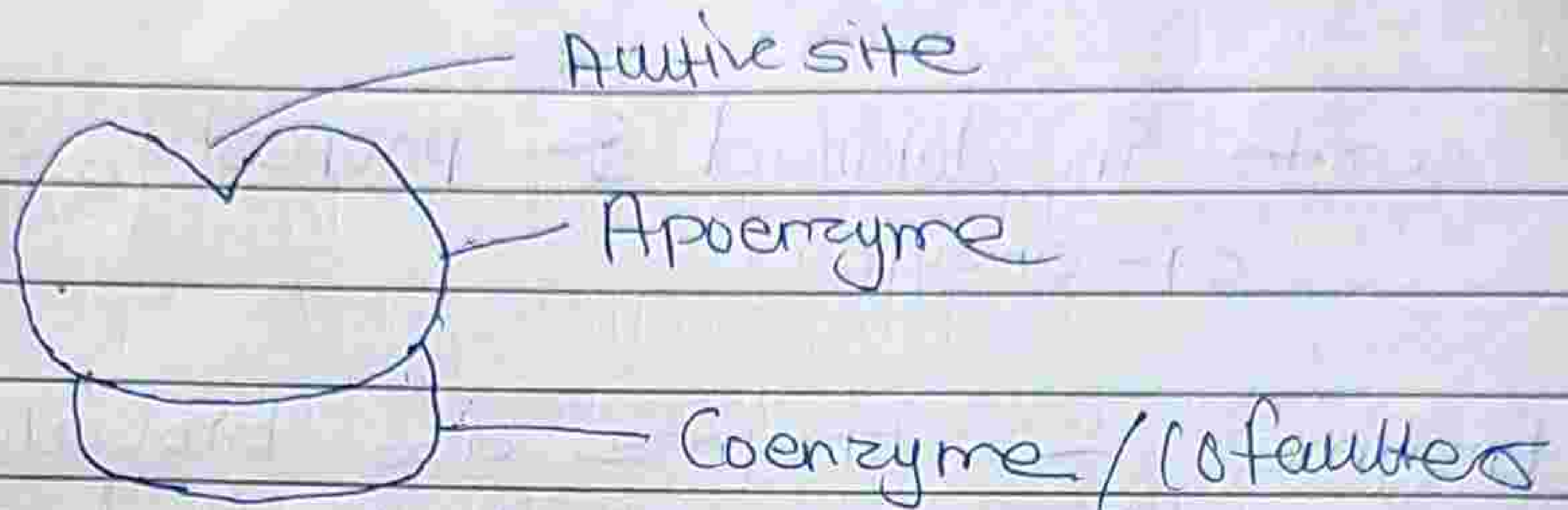
It is inorganic part.

~~Apoenzyme~~ with the help of enzyme
Enzyme helps Substrate converted into the product. For the converting into the product substrate need to passed through high energy level that is transitional state.

enzyme cont in the enzyme, Active site are present. It contain catalytic site where the catalyzation of substrate occurs.

prosthetic group :- it is not hydrolysed easily
it is tightly bound.

Substrate $\xrightarrow{\text{enzyme}}$ product.



without the coenzyme or cofactor enzyme do not work efficiently. For the proper ~~if~~ if the apoenzyme binds covalently to coenzyme / cofactor it makes a complete enzyme. Also called as ~~apo~~ Holoenzyme.

Apoenzyme + Cofactor / Coenzyme $\rightarrow$ Holoenzyme

The two models explain the ~~two~~ two models explain hypothesis about an enzyme :-

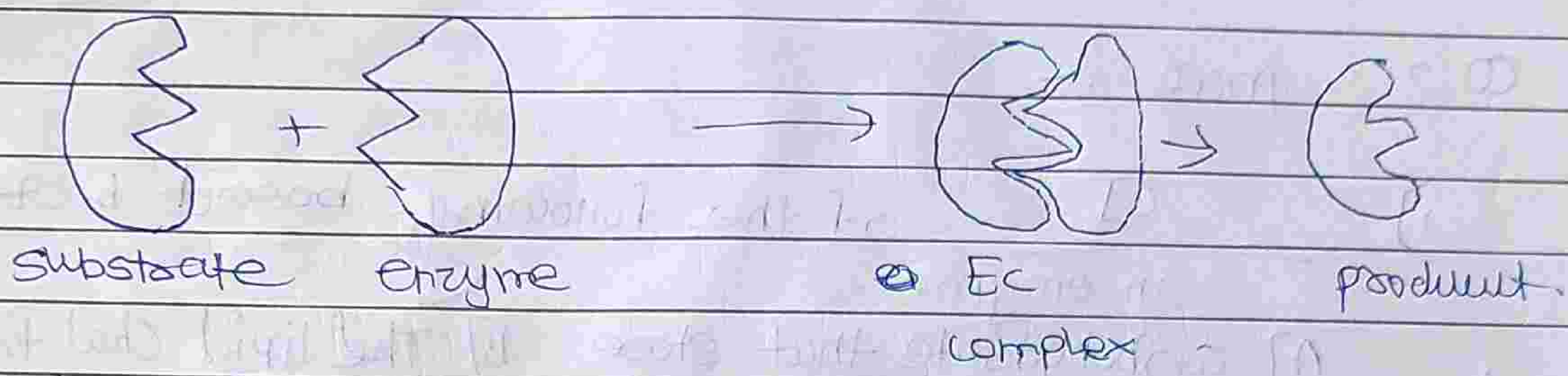
1) lock & key model :-

1) ~~it is from~~ it is given by Emil Fischer.

They told that, 1) Active site present outside in environment. ~~sub specific~~

2) The specific substrate binds to the specific enzyme. The conformational changes occur in substrate not in enzyme.

3) enzyme is rigid, substrate is flexible.



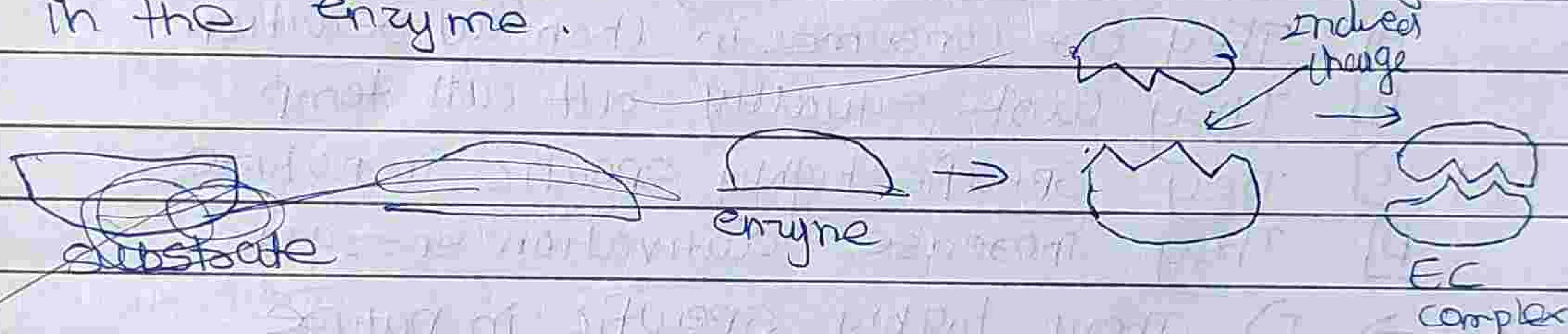
2) Induced fit model :-

— given by Daniel Koshland

— enzyme is flexible

— substrate is rigid

substrate induced the conformational changes in the enzyme.



property :-

1) ~~it is~~ ~~not~~ ~~a~~ ~~biological~~ catalyst — which increases the rate of reaction.

2) it is coloidal in nature

3) Enzyme not passed through semipermeable membrane

4) enzyme are protein in nature

5) It is insoluble

6) Catalytic the reaction. substrate

(no. of moles of product converted into the product in the given time)

7) They are highly specific in nature

8) They help in decreasing activation energy

9) enzyme denatured at high temp & very low temp

Q.2. mca :-

1) Which of the following based best define an enzyme.

- A] carbohydrate that store energy B] The lipid that form cell membrane
C] biological catalyst that speed up ^{chemical} Reaction. D] Nucleic acid that store genetic information.

→ C] Biological catalyst that speed up Chemical Reaction.

2) Which property of enzyme is true

A] They are consume in chemical reaction.

B] They work equally at all temp

C] They ~~specific~~ highly specific in nature

D] They increase activation energy

→ C] They highly specific in nature

3) part of enzyme where substrate bind

a) Apoenzyme b) active site

c) cofactors d) coenzyme

→ b) active site

4) enzyme specificity means that ~~an~~ ^{an} enzyme

a) can catalytic many different reaction

b) works only at high temp

c) acts on the specific substrate

d) can function without substrate

→ c) act on specific substrate.

5) enzyme are classified mainly on the basis of

their 1 Type of reaction they catalysed.

a) size

b) shape

c) Type of Reaction catalysed

d) source org

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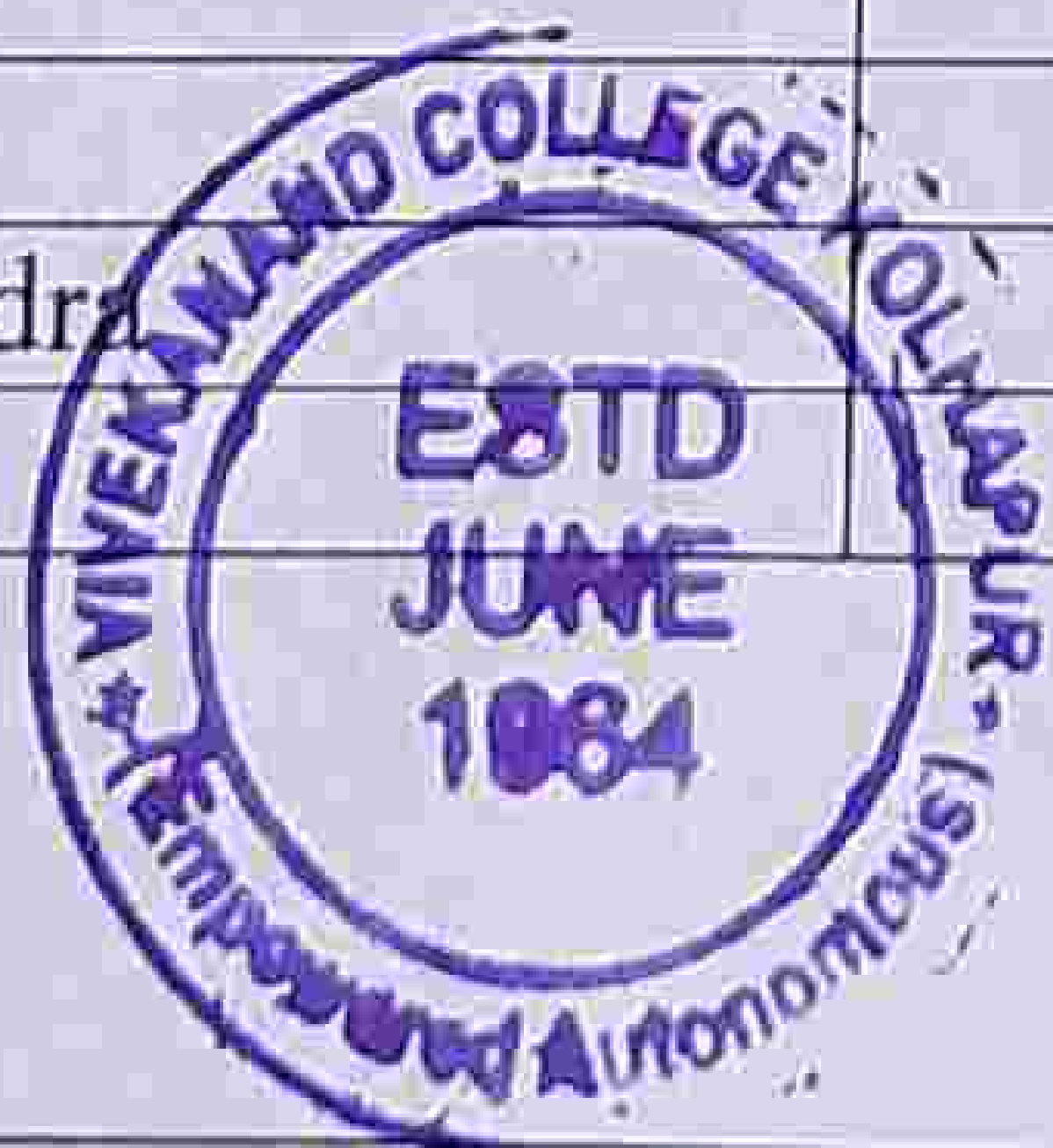
Department of Microbiology (UG)

Academic Year 2025-2026

Surprise Test Marksheet for BSc III

Date: 29/12/2025

Sr. No.	Name of student	Roll No.	Marks out of 20
1	Chougule Sakshi Rajesh	8380	17
2	Mane Sakshi Manohar	8381	13
3	Musute Bhagyashree D.	8382	13
4	Rathi Sanjana Pavankumar	8383	13
5	Akkole Poonam Anil	8384	13
6	Bakale Poonam Raju	8385	13
7	Dave Dhruv Govind	8386	09
8	Divase Tanishka Rahul	8387	12
9	Dongare Samruddhi Laxman	8388	15
10	Gurav Gouri Vidyasagar	8389	12
11	Jadhav Harshali Uttam	8390	14
12	Jadhav Prachi Ramesh	8391	13
13	Jambhale Rajvardhan	8392	11
14	Kadam kalyani Prakash	8393	15
15	Kadatare Manthan Vinay	8394	05
16	Kamble Sanika Nagesh	8395	11
17	Karalkar Hardik Arun	8396	12
18	Khatib Juyera Ilai	8397	18
19	Kumbhar Rutuja Suresh	8398	10
20	Kumbhar Sanika Arjun	8399	14
21	Mahadik Rajveer Suraj	8400	12
22	Marathe Aradhana Satish	8401	12
23	Matre Pooja Shankar	8402	Ab
24	Mullani Sophiya wasimraja	8403	Ab
25	Nirankari Taruna Vishnudas	8404	14
26	Parit Amruta Eknath	8405	15
27	Patil Achal Bhaskar	8406	12
28	Patil Janhavi Ashok	8407	14
29	Patil janhavi Nitin	8408	12
30	Patil MrujalaMaloji	8409	Ab
31	Patil Priti Pramod	8410	14
32	Patil Swarup Ramchandra	8411	08
33	Patil Vidula Manik	8412	Ab

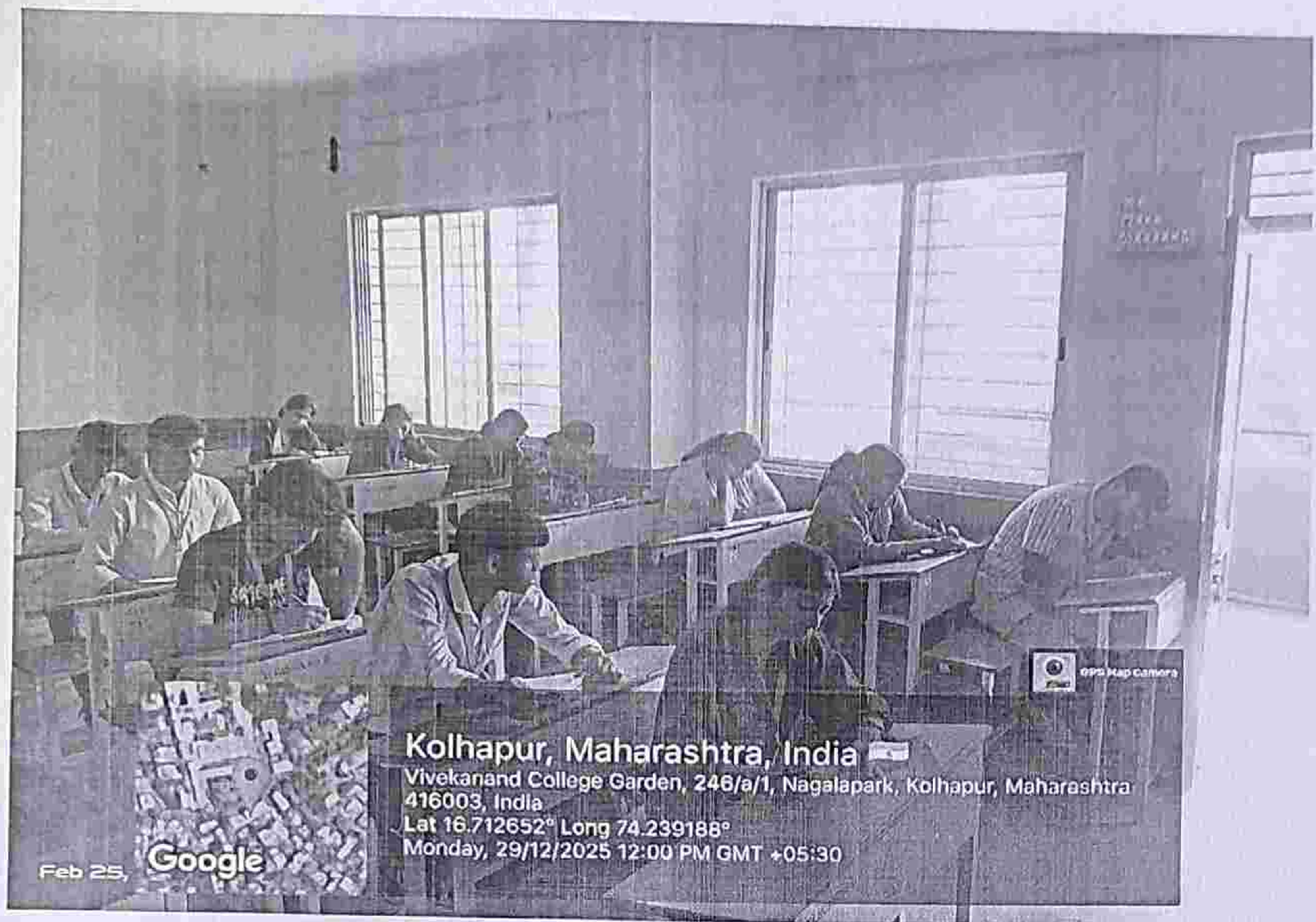


34	Pawar Samiksha Santosh	8413	Ab
35	Pidwani Disha Jairamdas	8414	12
36	Pishte Sanika vijay	8415	12
37	Rode Kaveri Ravindra	8416	12
38	Shahapure Anirudha Uijaykumar	8417	12
39	Shaikh Jiya Ajij	8418	Ab
40	Shaikh Sadiya Shakil	8419	Ab
41	Shetti Omkar Vidyasagar	8420	Ab
42	Shinde Janhvi Nitin	8421	13
43	Suryavanshi Siddhi Satish	8422	07
44	Sutar Dhanashree Rajendra	8423	Ab
45	Swami Sanket Kalayya	8424	12
46	Teli Prajakta Namdev	8425	Ab
47	Ugave Sanika Kashinath	8426	17
48	Amane Aditya Avdhut	8438	05
49	Patil Sanjyoti Ramchandra	8429	12
50	Bamane Durgesh Baban	8437	13

Teacher Incharge-

Ms. S. S. Shaikh -

Shaikh



B. Sc. III SURPRISE TEST 2025-2026 – 29/12/2025

