

Vivekanand College Kolhapur
(An Empowered Autonomous Institute)

UG – Department of Biotechnology

Date 04.09.2025

Notice

This is to inform to all students of B.Sc. I Biotechnology that there is arrangement of Internal Exam for Term work for Sem- I for following subjects as follows.

Sr.	Name of the Course/Paper	Date	Marks
1	Biotechnology for H.W I	11/09/2025	10
2	Biochemistry I	12/09/2025	10
3	Microbiology I	13/09/2025	10
4	Microbiology II	15/09/2025	10
5	Bioinstrumentation	16/09/2025	10
6	Plant Science	19/09/2025	10
7	English	21/09/2025	10

The nature of Internal may be Fill in the blank / one word sentence /one sentence one word/ Long note/ Short note.

Time: 2:30 pm to 3:00 pm

Note: - Though the Internals are there the routine theory and practical will be conducted as per scheduled.

Imp. Note: - 1. Syllabus for internal which is to be covered before 26 August 2025

2. There is no concession for the absence in the internal exam and no arrangements of Re-internal as per the guidelines provided from Board of examination

(Mr. S. G. Kulkarni)

HEAD

**DEPARTMENT OF BIOTECHNOLOGY (ENTIRE)
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)**

VIVEKANAND COLLEGE, KOLHAPUR (Empowered Autonomous Institute)

B.Sc. Part- I (Biotechnology entire) (Sem-I)

Internal Examination: Oct-Nov. -2025

Subject Name: Microbiology-I (Introduction to Microbial World)

Day: Saturday

Time: 2.30 pm -3.00 pm

Date: 13/09/2025

Marks: 10 Marks

Que.1.Fill in the blanks. (10)

- 1) Louis Pasteur's famous swan neck flask experiment disproved... Concept.
- 2) The first vaccine developed by Edward Jenner was against.....
- 3) was discovered the causative agent of tuberculosis.
- 4) is regarded as the father of taxonomy.
- 5) Domain includes prokaryotes that often live in extreme environments.
- 6) In the five kingdom classification prokaryotic organisms belongs to.....
- 7) Yeast is classified under the..... Kingdom.
- 8) In the binomial nomenclature the second part of the name denotes.....
- 9) The binomial nomenclature system is also known as.....
- 10) was introduced the practice of antiseptic surgery using carbolic and (phenol).



VIVEKANAND COLLEGE, KOLHAPUR
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Assignment

Seat No. / Roll No. :

Seat No. / Roll No.
In words

02325

Q.1 Fill in the blanks.

प्र. क्र.
Q. No.

1) Louis Pasteur's famous swan neck flask experiment disprooved that theory of spontaneous concept. generation concept

✓ 2) The first vaccine developed by Edward Jenner was against small pox. & chicken pox

✓ 3) Robert Koch was discovered causative agent of tuberculosis.

✓ 4) Carl Linneous is regarded as the father of taxonomy.

✓ 5) Archeabacteria domain includes prokaryotes that obtain live in extreme environment

✓ 6) In the five kingdom classification prokaryotic organisms belongs to bacteria.

✓ 7) Yeast is classified under the fungi Kingdom.

✓ 8) In the binomial nomenclature, the second part of name denotes species

02

Section

Q. No.

Marks

प्र. क्र.
Q. No.

9) The binomial nomenclature system is also known as taxonomy. International

10) Joseph Lister was introduced the practice of antiseptic surgery using carbolic acid (phenol)

~~Joseph Lister~~

Internal Examination

Class - BSc I

Subject - Bioinstrumentation

Marks - 10

Q. 1 Fill in the blanks. (6 M)

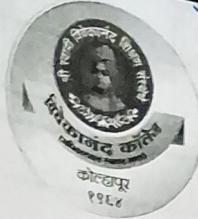
1. In UV-Visible spectrophotometer Deuterium lamp is the source for _____.
2. Beer's law states that _____.
3. In salting out process protein-water interaction _____.
4. _____ is used for separation of much smaller molecules like ribosomes, proteins and viruses.
5. Total magnification achieved by using low power lens is _____.
6. _____ enzyme is used to disrupt bacterial cell wall.

Q. 2 Definition. (4 M)

- a) Numerical aperture
- b) Oil immersion

Name - Aditya Vishwas Patil

BSC F.Y (Biotech Ent)



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. वापूजी सांख्ये

7₂₂ = (08)

VIVEKANAND COLLEGE, KOLHAPUR (An Empowered Autonomous Institute)

Assignment

Student's Sign : Patil

Seat No./ Roll No. : 9152

Seat No./ Roll No.
In words

02477
Bio-Instrument

प्र. क्र.
Q. No.

Q. 1) Fill in the blanks

1) In U-V visible spectrophotometer deuterium lamp is a source of for light

2) Beer's law states that $A \propto L$

3) In salting out process protein-water interaction decreased

4) Ultra High speed centrifuge is used for separation of ~~very~~ much smaller molecules like ribosome, protein and viruses

5) Total magnification achieved by using low powered lens is 100x

6) A lysozyme enzyme is used to disrupt bacterial cell wall.

2	Section	Q. No.									
		Marks									

প. ক.
Q. No.

Q. Definitions.

1) Numerical Aperture

→ Numerical aperture can be defined as the angle produced in between condensor to stage in microscope should always be equal to 1.

NA = Numerical aperture

$$NA = n \sin \theta$$

n = refractive index

$\sin \theta$ = angle produced by condensor.

2) Oil emersion.

→ Oil emmersion ~~is a~~ can be defined as a type of lens or a medium produced which has a refractive index of 1.51. can be called as oil emmersion.

~~In such medium or lens the~~ the cedar wood oil is used to get maximum refraction which leads to clear and enlarged image.

Oil emmersion lens are used as 100 \times of objective lens.

Name - Pooja Sardar Patil



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BSC-I

(Biotech-Entire)

VIVEKANAND COLLEGE, KOLHAPUR.

(Empowered Autonomous)

12/09/2025

SUPPLEMENT

Jr. Supervisor's Sign.:

Students Sign.:

Seat No.:

Seat No. in words:

Suppliment No.:

Biochemistry 18933

Centre

प्र. क्र.
Q. No. 1

Match the pairs.

Ans.

- 1) H-H equation - pH and pK_a value.
- 2) Sucrose - Non-Reducing
- 3) Hot-dilute soup - Glucose
- 4) Maltose. - Non-Reducing
- 5) β - 1,4 glycosidic linkage - cellulose.
- 6) Carbonate buffer - Extracellular
- 7) Stainky Miller - Abiotic form of life.
- 8) Phosphate buffer - Intracellular
- 9) Mutarotation - Hald Haldren.
- 10) Bradford Reagent. - Cu-acetate

12/19/25

02 Section

Q. No.

Marks

प्र. क्र.
Q. No.

1) H-H Equation

Ans.
- pK^a and pK^b value.

2) Sucrose.

- Glucose.

3) Hot - dilute soup

- cellulose

4) Maltose

- Extracellular

5) β -1-4 glycosidic linkage

-

6) Carbonate buffer

-

7) Stainky Miller

(अधिकारपदत्त स्वायत्त)

8) phosphate buffer

- Intracellular

Name:- Darshana Anil Banage.

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- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

1019 hrs.



VIVEKANAND COLLEGE, KOLHAPUR

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Assignment

Student's Sign : DHB

Seat No./ Roll No. :

Seat No./ Roll No.
In words

02900

Sub:- plant science. Std. :- FY BSC Biotech (Entire).

Q. 1

Fill in the blanks.

7 = 8
12 = 10

प्र. क्र.
Q. No.

1] The term taxonomy was coined by Carl Linnaeus.

2] In situ is the conservation of species in their natural habitat.

Q. 2 Short Notes.

1] Write a short note on Economic importance of Algae.

→ ① Sea weeds and some algae are include in supplement diet for vitamins.

② Some Algae are rich in vitamins and minerals.

③ Some countries like Japan, China are eat Red algae for vitamins.

④ Some Algae like Blue green Algae (Nostoc, Anabaena) are helpful for Nitrogen fixation.

⑤ Brown Algae are used in Japan for diet supplement.

⑥ They are used as antibiotics like cholera.

⑦ They are used as biofertilizers.

⑧ They are used in Food industries like cheese, Beer etc.

⑨ They are used against harmful bacteria in water.

02

Section

Q. No.

Marks

2] ① Binomial Nomenclature is the system which give ^{scientific} name to plant or animal.

② They are formed with Genus and species.

③ They are made up from ~~3~~ Genus and species hence they are called as Binomial Nomenclature.

④ It is also called as scientific Nomenclature.

⑤ It is type in italic words.

⑥ When it write the first later should be capital and underline both words.

⑦ eg., Human- Homo sapiens

⑧ This method is very useful for classification of living diversity.

⑨ It reduces the confusion

3

Vivekanand College Kolhapur
(An Empowered Autonomous Institute)

UG – Department of Biotechnology

Date 04.09.2025

Notice

This is to inform to all students of B.Sc. II Biotechnology that there is arrangement of Internal Exam for Term work for Sem- III for following subjects as follows.

Sr.	Name of the Course/Paper	Date	Marks
1	Molecular Biology I	11/09/2025	10
2	Metabolic Pathways I	12/09/2025	10
3	Microbial Genetics	13/09/2025	10
4	Environmental Microbiology	15/09/2025	10
5	English	16/09/2025	10

The nature of Internal may be Fill in the blank / one word sentence /one sentence one word/ Long note/ Short note.

Time: 2:30 pm to 3:00 pm

Note: - Though the Internals are there the routine theory and practical will be conducted as per scheduled.

Imp. Note: - 1. Syllabus for internal which is to be covered before 26 August 2025

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S.G. 5/9/25
(Mr. S. G. Kulkarni)

HEAD

DEPARTMENT OF BIOTECHNOLOGY (ENTIRE)
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Internal Examination
B.Sc. Biotech (Entie), Sem-III
Molecular biology **10 Marks**

1. Define Recon.
2. Who proposed "One gene one polypeptide hypothesis".
3. In Hershey and Chase experiment _____ radioactive isotops were used to label the protein and DNA of bacteriophage.
4. Define "transforming principle" discovered by Frederick Griffith.
5. What is buoyant density?
6. Explain cot curve.
7. Define Tm of DNA.
8. Draw the labelled diagram of nucleosome.
9. Regions of chromatin that are tightly packed and transcriptionally inactive are called _____, while regions that are loosely packed and transcriptionally active are called _____

(2M)



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- शिक्षणमहर्षी डॉ. बापूजी साळुखे

10
10

Student's Sign :

Patil

Seat No. / Roll No. : 9244

Seat No. / Roll No.
In words

Molecular Biology-I02164

VIVEKANAND COLLEGE, KOLHAPUR

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Assignment

प्र. क्र.

Q. No.

Q. 1

Fill in the blanks.

1) Define Recon.

Recon is the unit of DNA, which capable to crossing over or recombination process.

2) Who proposed one gene one polypeptide hypothesis ?

→ Beadon and Tatum proposed one gene one polypeptide hypothesis.

3) In Hershay and chase experiment S^{35} and P^{32} radioactive isotopes were used to label the protein and DNA of bacteriophage.

4) Define Transforming principle discovered by Fredrick Griffith.

According, scientist Fredrick Griffith, the substances or material from heat killed S-strain of Streptococcus pneumoniae convert normal R-strain into S-strain, meance Non-virulent strain converted into virulent strain, which dose cause death to mice, is called transforming principle.



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10
16

- शिक्षणमहर्षी डॉ. वापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR
(An Empowered Autonomous Institute)

Assignment

sub:

Student's Sign :	<i>[Signature]</i>
Seat No./ Roll No. :	9259
Seat No./ Roll No. BSC-II Biotech In words	Entire
Molecular Biology	02203

Que. 1] Fill in the Blanks

1] Define Recon

→ Recon :- It is the smallest part of DNA which undergo crossing over and Recombination in a functional part of cistron.

2] Who propose One gene one polypeptide Hypothesis.

→ Scientist BeadL and Taurum proposed One gene one polypeptide Hypothesis.

3] In Hershey & chase experiment S^{35} and P^{32} radioactive isotopes were used to label the protein and DNA of bacteriophage.

Ans' - Radioactive sulphur (S^{35} isotope) for protein.
Radioactive phosphorous (P^{32} isotope) for DNA

4] Define Transforming principle discovered by Fredrick Griffith

→ Transforming principle - by Fredrick Griffith :-

1] He conclude that some Transforming principle is transferred from Heat-killed S-strain bacteria to R-strain.

2] So, R-strain [Non-virulent] is transformed into virulent S-strain.

3] He used mice for their experiment.

Vivekanand College Kolhapur
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UG – Department of Biotechnology

Date 04.09.2025

Notice

This is to inform to all students of B.Sc. III Biotechnology that there is arrangement of Internal Exam for Term work for Sem- V for following subjects as follows.

Sr.	Name of the Course/Paper	Date	Marks
1	Basics in Genetic Engineering	11/09/2025	10
2	Industrial Biotechnology	12/09/2025	10
3	Enzymology	13/09/2025	10
4	Research Methodology in Biotechnology	15/09/2025	10
5	Animal Tissue Culture	16/09/2025	10

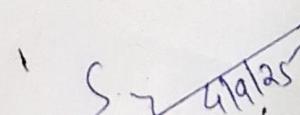
The nature of Internal may be Fill in the blank / one word sentence /one sentence, one word/ Long note/ Short note.

Time: 2:30 pm to 3:00 pm

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(Mr. S.G. Kulkarni)

HEAD

DEPARTMENT OF BIOTECHNOLOGY (ENTIRE)
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Internal Examination

Semester V

Class : BSc III

Subject : Research and methodology in biotechnology

Full in the blanks (6M)

1. ^1H NMR spectroscopy based resonance of _____
2. Interaction between spins of neighbouring magnetic nuclei cause the phenomenon _____
3. In Atomic absorption spectroscopy _____ is used as source of monochromatic radiation
4. Magnetic resonance imaging is the application of _____ spectroscopy
5. Basic two types of vibrations in IR spectroscopy are _____
6. The molecules with _____ stretching are IR inactive

Short notes (4M) Any One.

1. Chemical shift
2. Applications of ESR.



029

VIVEKANAND COLLEGE, KOLHAPUR

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Assignment

Sub - Research methodology

Student's Sign :

Jyoti Yadav

Seat No./ Roll No. : 9389

Seat No./ Roll No.
In words

02430

प्र. क्र.
Q. No.

Q1)

NMR spectroscopy based on resonance of nuclei (MRI)

2) Interaction between spins of neighbouring magnetic nuclei cause the phenomenon spin-spin coupling.

3) In atomic absorption spectroscopy TMS is used as source of monochromatic radiation.

4) Magnetic resonance imaging is the application of NMR (Nuclear magnetic resonance) spectroscopy.

5) Basic two types of vibrations in IR spectroscopy are
1) stretching vibration - Assymetric & symmetric 2) bending

6) The molecules with Asymetrical stretching are IR inactive.



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10
10

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : 

Seat No. / Roll No. : 9324

Seat No. / Roll No. Enzymology
In words

Sem-V 02219

प्र. क्र.
Q. No.

- 1) Proteinic part of enzyme is called as apoenzyme.
- 2) Ligase class of enzyme involved in joining two molecules using ATP.
- 3) Lock and Key hypothesis was proposed by Emil Fischer.
- 4) Enzyme ~~that lowers~~ activation energy.
- 5) Allosteric enzymes shows sigmoid type of curve.
- 6) According to sequential model of allosteric enzyme, confirmational changes in one ~~unit~~ subunit makes similar changes in an adjacent subunit as well as allows binding of second molecule of substrate showing positive co-operativity.
- 7) Inhibitor that binds to only ES complex, forming ternary complex (ESI) known as Un-competitive inhibitor.

VIVEKANAND COLLEGE, KOLHAPUR (Empowered Autonomous Institute)

B.Sc. Part- III (Biotechnology entire) (Sem-V)

Internal Examination: Oct-Nov. -2025

Subject Name: Industrial Biotechnology

Day: Friday

Time: 11.30 am -12.00 pm

Date: 12/09/2025

Marks : 10 Marks

Que. 1. Fill in the blanks. (10)

- 1) are present in the fermentor to avoid vertex formation.
- 2) is an example of inert antifoaming agent.
- 3) Secondary metabolites are produced during phase of growth curve.
- 4) Pilot plant fermentor Liter capacity.
- 5) is an example of dual fermentation.
- 6) The growth phase associated with the production of primary metabolites is termed as
.....
- 7) Fermentation microorganisms should produce Yield by fermentation process.
- 8) is an aeration device.
- 9) technique is used in screening for antibiotic producing organisms.
- 10) Is used as precursor for production of Vitamin B₁₂.



06/10

VIVEKANAND COLLEGE, KOLHAPUR
(An Empowered Autonomous Institute)

Assignment

Student's Sign: Tanuja

Seat No./ Roll No.: 9321

Seat No./ Roll No.
In words

02254

प्र. क्र.
Q. No.

1) Baffles are present in the fermentor to avoid Vortex formation.

2) Silicon compounds is an example of inter antifoam agent.

3) Secondary metabolites are produced during phase of growth curve ~~exponential phase~~ stationary phase.

✓ 4) Pilot plant fermentor have 20,000-50,000 liter capacity (5,00,000 maximum)

✓ 5) is an example of dual fermentation.

6) The Growth phase associated with the production of primary metabolites is termed as idiophase trophophase

✓ 7) Fermentation micro-organisms should produce maximum yield by fermentation process.