

Vivekanand College Kolhapur (Autonomous)

Dept. of Biotechnology (Entire)

Date 07.11.2022

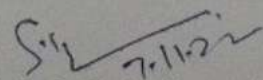
## Notice

Hereby informed to all students of B. Sc. I Biotechnology (Entire) that there is arrangement of Internal Exam Term work for Sem.I for following subjects as follows.

Sr.	Name of the Course/Paper	Date
1	DSC-A-1331-Chemistry	
2	DSC- A-1332-Biochemistry	14/11/2022
3	DSC-A- 1333- Plant Science	
4	DSC-A-1334- Biotech fr Human Welfare-I	21/11/2022
5	DSC-A-1335- Computer & Intro to Bioinformatics	
6	DSC-A-1336- Biotechniques & Instrumentation	15/11/2022
7	DSC- A- 1337-Microbiology	16/11/2022
8	DSC-A-1338- Biotech fr Human Welfare-II	19/11/2022
9	AECC-1339- English fr Communication	22.11.2022

The nature of Internal may be Fill in the blank / one word sentence / one sentence one word/ Oral (Marks for Internal -15M) Time:- At respective subject lecture.

**Note:-** Though the Internals are there the routine theory and practicals are conducted as per scheduled.

  
(Mr.S.G.Kulkarni)

Head

Department of Biotechnology (Entire)  
Vivekanand College, Kolhapur (Autonomous)



Vivekanand College Kolhapur (Autonomous)

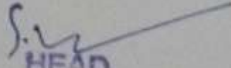
Dept. of Biotechnology (Entire)

Academic Year 2022-23

**Continuous Internal Evaluation 2022-23**

Sr. No.	Evaluation Activity
1	One word answer
2	Fill in the blanks
3	One sentence answer



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



Shruti Nitin Chikalkar

17-04-2023

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

28403

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

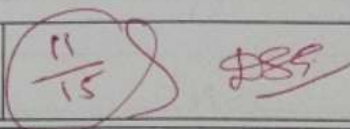
Shruti Nitin  
Chikalkar

Suppliment No. :

Roll No. : 9107

Class : Biotech (entire)

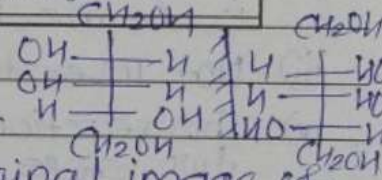
Signature  
of  
Supervisor



Subject : Chemistry

Test / Tutorial No. : Internal Exam

Div. : Biotech (entire) FY

- 1) Define an Enantiomer eg - 
- Which images are considered is called a -  
Which images are not considered with original image of  
each other is called non-superimposable image of mirror  
or Enantiomer are non-impossible images.
- 2) Define Diastereomers  
which images are considered one superimposable mirror  
images or are called diastereomers
- 3) Which instrument is used to determine the polarity  
Polarimeter is used
- 4) What is meant by functional isomerism  
Functional isomerism -  
The same molecular formula but different  
structural formula / functional group.
- 5) Which intermediate is formed in  $S_N1$  reaction and  
state its hybridization

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

28345

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# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

08/15  
\$88

Suppliment No. : \*

Roll No. shrutika Anant Bowadekar

Class Biotech(entire) FY.

Subject: chemistry

Test / Tutorial No.: Internal exam

Div. :

1) Define an inanshomer

→ When two molecules are mirror images of each other is called as inanshomer.

2) Define an Diastereomer

→ When two molecules are not mirror image of each other but having same structural formula is known as Diastereomer.

3) Which instrument is used to determine the polarity.

→ Polarimeter, ~~Polarisomer~~ Polarisomer

4) What is meant by functional isomerism.

→ When two molecules having same molecular formula but different structural formula, called functional isomerism.



Name!- Ketan Avinash Patil  
class :- Biotech (entire) F.Y

10  
15

18

Page No. \_\_\_\_\_  
Date \_\_\_\_\_

Q. Multiple choice question.

1. Azolla caroliniana is the smallest pteridophyte.
2. The lichen growing on soil are called as Terricoles.
3. In brown algae the result of 4 meiotic division is in the form of \_\_\_\_\_

Q.2 short note.

1. Double fertilization:-

fertilization it is process of sexual reproduction which occurs after pollination & germinating that is fusion of male gamete with female gamete to form a diploid zygote. Double fertilization is complex fertilization mechanism in angiosperm. The process involve fusing female gametophyte with two male gametes. It begins when pollen grains attach to the stigma of the carpel. which is female reproductive structure of a flower pollen grains takes the moisture and begins to germinate forming a pollen tube that extend towards the body

Name: Pratiksha Dattatray Patil  
 Std: B.Sc Biotech (Ent.)-FY  
 Sub: Botany

Q.1] Multiple Choice questions:

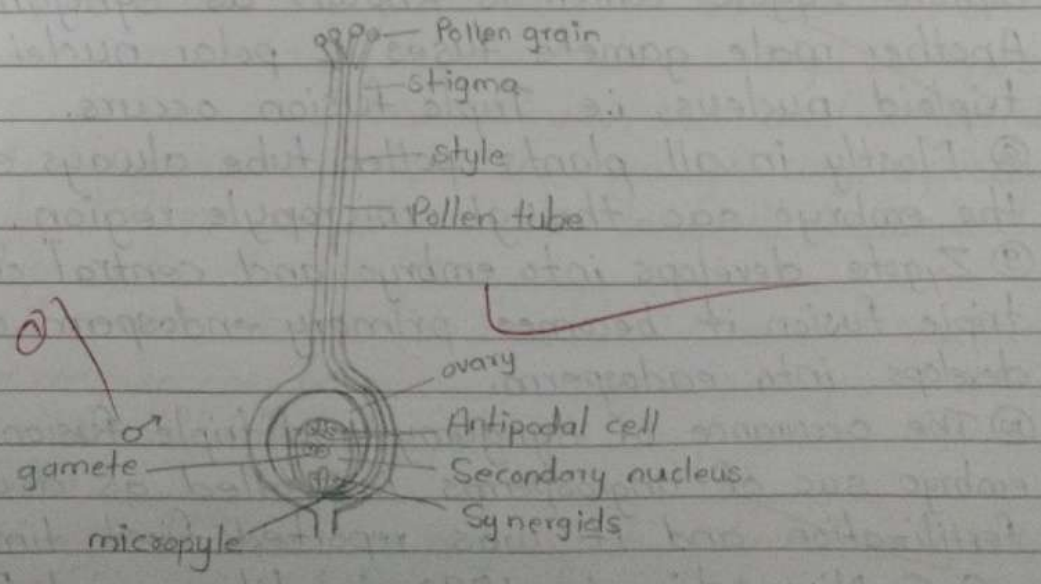
- i) Azolla caroliniana is the smallest pteridophytes.
- ii) The lichens growing on soil are called as terricolous.
- iii) In Brown algae the reserved food material is in the form of Laminarin and Mannitol.

Q.2] Write a short note:

i) Write a short note on any one of the following double fertilization or dry dehiscent fruit or Liverworts.

Write short note: Double fertilization.

→





Name:- Isha Jagdish GURAV  
Std:- Bsc Biotech(Centre) 1st yr  
Sub:- Plant Science

Page No. 15

Date

### Q. Multiple Choice Questions:-

- 1] Azolla is the smallest Pteridophyte.  
- etc.
- 2] The lichens grow on soil are called as Terricoles.
- 3] In brown algae there is a food material is in the form of Laminarin + Mannitol.

### Q. Short Notes:-

a] Double Fertilization:-

→ Def<sup>n</sup>:- The fusion of one male gamete with egg & that of another male gamete with secondary nucleus is known as 'Double Fertilization'.

a] It is characteristic feature of Angiosperms.

b] It is discovered by Nawaschin in the liliaceous plants like Lilium & Fritillaria.

i] Fertilization mainly involves 2 types:-

a] Syngamy:- It is the fusion of haploid male gamete with haploid female gamete (egg) which results in zygote formation. Generative.

b] Triple fusion:- It is the fusion of second haploid male gamete with diploid sec. nucleus which forms (PEN).

Education for Knowledge, Science and Culture.

-- Shikshanmaharshi Dr. Bapuji Salunkhe

**Vivekanand College, Kolhapur (Autonomous).**

**Department of Biotechnology Entire**

**B.Sc I Biotechnology Entire – Plant Science Internal Exam Marks**

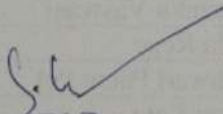
Marks – 15 M

Sr No	Name of the Students	Roll No	Internal Exam Marks (Assignment)
1	Samiksha Shital Kothale	9120	10
2	Samrudhee Anil Talekar	9144	12
3	Arya Heramb Pednekar	9152	13
4	Krishna Gajanan Kureed	9121	14
5	Shravani Kailash Bhambure	9105	12
6	Vaishnavi Santosh Dhavan	9108	13
7	Shruti Sandip Kanekar	9118	14
8	Samrudhi Sanjay Mahind	9123	13
9	Triveni Pundlik Birje	9106	13
10	Kaumudi Prasad Phope	9132	14
11	Sanika Sambhaji Jadhav	9111	12
12	Mayuri Madhukar Shinde	9142	12
13	Mansi Koravi	9119	15
14	Omkar Santosh Thakare	9146	14
15	Yashwardhan Kawathekar	9149	14
16	Shridhar Sagar Patil	9153	10
17	Shreyash Harish Bam	9103	11
18	Shrutika Anant Bawadekar	9104	13
19	Yashika Vaswani	9154	13
20	Sela Rege	9138	12
21	Eshwari Parsu Pol	9135	12
22	Ajay Kate	9122	11
23	Shruti Nitin Chikhalkar	9107	15
24	Sophiya Saleem Mestri	9124	14
25	Pratiksha Dattatray Patil	9148	15
26	Isha Jagdish Gurav	9110	12
27	Namrata Vinayak Pilai	9134	13
28	Sucheta Ranjeet Parit	9159	14



29	Swati Pravin Pawar	9131	14
30	Sanmati Rajabhau Navaghane	9125	12
31	Neha Laxman Patil	9128	14
32	Nayan Amar Pinjare	9133	15
33	Manasvi Sagar Vharkat	9147	11
34	Samiksha Chandrakant Sawant	9140	15
35	Shambhavi Dhananjay Joshi	9113	12
36	Kiran Balkrushna Tashildar	9145	14
37	Chetan B. Patil	9150	10
38	Pratik Kamble	9155	14
39	Pratik Adagonda Patil	9129	14
40	Arvind Bhoja Kalel	9115	14
41	Niraj Rajgonda Patil	9151	11
42	Dhanshri Narendra Ranjane	9137	14
43	Teertha R. Kamat	9116	12
44	Bhakti Kishor Gonugade	9109	15
45	Manish Babaso Kumbhar	9156	10
46	Aashish Tukaram Patil	9126	15
47	Shreya Mohan Ambekar	9102	10
48	Shreya Suresh Patil	9130	12
49	Viraj Sawant	9141	12
50	Ritesh Borgave	9158	11
51	Soundarya Umesh Shirodkar	9143	12
52	Preeti Daniel Kale	9114	10
53	Alisha Nazir Jamadar	9112	12
54	Prathmesh. A. Kamble	9117	12
55	Ketan Avinash Patil	9157	10
56	Swayambhu Sachin Patil	9101	10
57	Salokhe Harshdeep Suhas	9139	11



  
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 DEPARTMENT OF BIOTECHNOLOGY (ENTIRE)  
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" ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार "

-शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

7 1/2  
15

Signature  
of  
Supervisor

Suppliment No. : Neha Laxman Patil

Roll No. : 28

Class : Bsc. biotech [entire]

Subject : Biotech For Human-Welfare - II

Test / Tutorial No. : Internal

Div. : fy

Q 1) Define stem cell.

→ - Stem cell is a biological cells.

✓ - It is undifferentiate / unspcilsed cells.

Q 2) Give one example of Stem cell progenitor.

→ 1) Skim cells 2) progenitor cells.

Q 3) Write down any two gene transfer methods used in gene therapy.

→ 1) Micminjection.

✓ 2) Electroporation.

Q 4) Nancy is a example of transgenic Sheep how

✓ How produces AAT ( $\alpha$ -1 antitrypsin) in her milk.

Q 5) state electroporation method of gene transfer.

→ In electroporation method the electric shock

✓ is provided.



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## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

### SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

Roll No. : Ganmati Rajabhau  
Navghane  
Class : BSc Biotech (entire)

Subject : Human Welfare II

Test / Tutorial No. : Internal

Div. : FY

1) Define stem cell

stem cells are the undifferentiated (unspecialized cells) which can be differentiate into specific type of cells

2) Give one example of stem cell progenitor

Blast cells :- are invo. that involved in generation of B & T lymphocyte for immune responses

3) Write down any two gene transfer methods used in gene therapy

→ (1) Microinjection, (2) electroporation

(3) infection by liposomes / Lipofection

4) Nancy is an example of transgenic sheep who produces human AAT (α<sub>1</sub>-antitrypsin) in her milk.

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## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

7 1/2  
15

Signature  
of  
Supervisor

Suppliment No. : Neha Laxman Patil

Subject : Biotech For Human-Welfare - II

Roll No. : 28

Test / Tutorial No. : Internal

Class : Bsc. biotech [entire]

Div. : Fy

Q.1) Define stem cell.

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1/2 - It is undifferentiate / unspcilsed cells.

Q.2) Give one example of stem cell progenitor.

→ 1) Skim cells 2) progenitor cells.

Q.3) Write down any two gene transfer methods used in gene therapy.

→ 1) Microinjection.

1 2) Electroporation.

Q.4) Nancy is a example of transgenic sheep.

1 How produces AAT ( $\alpha$ -1 antitrypsin) in her milk.

Q.5) State electroporation method of gene transfer.

→ In electroporation method the electric shock is provided.



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## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

### SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

Roll No. : Shombhavi D. Jashi

Class : Biotechnology Entire (Fr) Div. : -

Subject : Biotechnology for Human Welfare

Test / Tutorial No. :

Div. : -

1) What do you mean by biotechnology?

→ Biotechnology is a branch helps in technology, to helps in daily life improve & healthy. eg - disease diagnosis, production of insect resistant plant, production of crops, food

2) The term biotechnology was coined by

→ Karl erelky

3) give any two branches of biotechnology

→ 1) Industrial biotechnology  
2) Medical Biotechnology

4) Yellow colour code refers to \_\_\_\_\_ biotechnology

→ Food and nutrient

5) The colour code for environmental biotechnology is

→ Grey colour

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## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

### SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

8 1/2  
15

Subject : Biotechnology & Human  
welfare I

Roll No. : Samudhree. Anil. Talekar

Test / Tutorial No. :

Class : Bsc. Biotechnology (entire)

Div. : FX

6/26/2020  
Calypso

1] What do you mean by biotechnology?  
→ The technology which utilised of biology system, a living organism to develop or to create various products.

2] The term biotechnology was coined by Karney

3] Give any two branches of biotechnology

① Industrial biotechnology

③ Marine biotechnology

② Biomimetic biotechnology

④ Environmental biotechnology.

4] Yellow colour code refers to food and nutrition biotechnology.

5] The colour code for environmental biotechnology is Grey

6] Protein modification can be done by using Transgenic engineering.



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# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

11/15

Signature  
of  
Supervisor

Suppliment No. :

Subject : Biotechnology for Human  
Welfare I

Roll No. : Viraj J. Sawant

Test / Tutorial No. :

Class BSc : Biotechnology (entire)

Div. : FY

- 1) What do you mean by biotechnology?  
→ Collective use of biochemistry, microbiology & engineering science for human welfare is called biotechnology.
- 2) The term biotechnology was coined by  
Karl Eäsky
- 3) Give any 2 ~~tran~~ branches of biotechnology
  - 1) Forensic
  - 2) Criminalistic
  - 3) Food & nutrition
- 4) Yellow colour code refers to ~~to~~ Food & nutrition biotechnology
- 5) The colour code for environmental biotechnology is ~~grey~~ grey

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SUPPLIMENT

7  
15

Signature  
of  
Supervisor

Suppliment No. :

Subject : Biotechniques and  
Instrumentation

Roll No. : Kiran Balkrushna Tashildar

Test / Tutorial No. :

Class : Bsc. Biotech (Entire)-I

Div. : Biotech (Entire) -I

Q1 Fill in the blanks

1) The numerical aperture increase with increase in refractive index Angular aperture.

2) The full form of HEPA

→ High efficiency particulate air

3) In an electromagnetic wave the electric and magnetic field are perpendicular to each other

4) The choosen filter in spectroscopy visible to the colour of the solution being tested

5) Inbetween Infrared rays and x-rays which one has highest length UV rays.

6) In single beam spectrometer disperses the light into component



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15

Signature  
of  
Supervisor

Subject : Instrumentation

Suppliment No. :

Test / Tutorial No. :

Roll No. : Yashovardhan. Kewatturkar

Div.: BSc BIOTECH [ENT] FY

Class :

Q1 Fill in the blanks

① The Numerical aperture increase with increase in  
→ Angle of incidence of light.

② State the full-form of HEPA Filter  
→ High Efficiency Particulate Air Filter.

③ In an electromagnetic wave the Electric and  
magnetic field are perpendicular to each other  
ie 90°

④ The chosen filter in spectroscopy is complementary to the  
colour of solution being tested  
→ Complementary.

⑤ In between Infrared waves and X-rays which one  
has highest wave length.  
→ Infrared waves

$c = \nu \lambda$

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## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

9  
15

Signature  
of  
Supervisor

Subject : Biotechniques &  
Instrumentation

Suppliment No. :

Roll No. : Samiksha Chandrakant  
Sawant

Test / Tutorial No. :

Class

: BSc-I Biotech entire

Div. : BSc-I Biotech entire

1. The numerical aperture increase with increase in refractive index.

2. State the full form of HEPA

HEPA - High Efficiency Particulate Air

3. In an electromagnetic wave the electric & magnetic fields are parallel to each other.

4. The chosen filter in spectroscopy is different to the colour of the solution being tested.

5. In bet<sup>n</sup> infra red rays & X-rays which one has highest wavelength?

- Infra-red ray X-rays has highest wavelength

6. In single beam spectrophotometer monochromator disperses the light into its component wavelength.

The electrical potential of reference electrode is 1.2V



Shri Swami Vivekanand Shikshan Sanstha's  
**VIVEKANAND COLLEGE KOLHAPUR (AUTONOMOUS)**  
 B.Sc.Part I Biotechnology (Entire)  
 Internal Marks 2022-23

English

Sr No	Roll No.	Student Name		
1	9101	AIWALE SWAYAMBHU SACHIN	Absent	
2	9102	* AMBEKAR SHREYA MOHAN	13	
3	9103	BAM SHREYASH HARISH	13	
4	9104	* BAWADEKAR SHRUTIKA ANANT	13	
5	9105	* BHAMBURE SHRAVANI KAILAS	12	
6	9106	* BIRJE TRIVENI PUNDALIK	13	
7	9107	* CHIKALKAR SHRUTI NITIN	12	
8	9108	* DHAVAN VAISHNAVI SANTOSH	12	
9	9109	* GONUGADE BHAKTI KISHOR	12	
10	9110	* GURAV ISHA JAGDISH	12	
11	9111	* JADHAV SANIKA SAMBHAJI	12	
12	9112	* JAMADAR ALISHA NAJIR	13	
13	9113	* JOSHI SHAMBHAVI DHANANJAY	12	
14	9114	* KALE PREETI DANIEL	12	
15	9115	KALEL ARVIND BHOJA	13	
16	9116	* KAMAT TEERTHA RAJ	12	
17	9117	KAMBLE PRATHMESH AMAR	Absent	
18	9118	* KANEKAR SHRUTI SANDIP	12	
19	9119	* KORAVI MANSI BAJARANG	12	
20	9120	* KOTHALE SAMIKSHA SHITAL	12	
21	9121	* KURUD KRISHNA GAJANAN	13	
22	9122	KUTE AJAY DADASAHEB	13	
23	9123	* MAHIND SAMRUDHI SANJAY	12	
24	9124	MESTRI SOPHIYA SALEEM	12	
25	9125	* NAVGHANE SANMATI RAJABHAU	12	
26	9126	PATIL AASHISH TUKARAM	13	
27	9127	* CANCELED		
28	9128	* PATIL NEHA LAXMAN	12	
29	9129	PATIL PRATIK AADAGONDA	12	
30	9130	* PATIL SHREEYA SURESH	12	
31	9131	* PAWAR SWATI PRAVIN	12	
32	9132	* PHOPE KAUMUDI PRASAD	13	
33	9133	* PINJARE NAYAN AMAR	13	
34	9134	* CANCELED		
35	9135	* POL ESHWARI PARSU	12	
36	9136	* CANCELED		
37	9137	* RANJANE DHANASHRI NARENDRA	12	
38	9138	* REGE SELA AJINKYA	Absent	
39	9139	SALOKHE HARSHDEEP SUHAS	13	
40	9140	* SAWANT SAMIKSHA CHANDRAKANT	13	
41	9141	SAWANT VIRAJ JAYDEEP	12	
42	9142	* SHINDE MAYURI MADHUKAR	12	
43	9143	* SHIRODKAR SOUNDARYA UMESH	12	
44	9144	* TALEKAR SAMRUDHEE ANIL	12	
45	9145	* TASHILDAR KIRAN BALKRUSHNA	12	
46	9146	THAKARE OMKAR SANTOSH	13	
47	9147	* VHARKAT MANASVI SAGAR	13	
48	9148	* PATIL PRATIKSHA DATTATRAY	12	
49	9149	* KAVATHEKAR YASHOVARDHAN	12	
50	9150	PATIL CHETAN BALKRISHNA	13	
51	9151	PATIL NIRAJ RAJGONDA	12	
52	9152	* PEDNEKAR ARYA HERAMB	12	
53	9153	PATIL SHRIDHAR SAGAR	12	
54	9154	* DAMODAR VASWANI YASHIKA	12	
55	9155	KAMBLE PRATIK DASHRATH	12	Health issue
56	9156	KUMBHAR MANISH BABASO	13	
57	9157	PATIL KETAN AVINASH	13	
58	9158	BORGAVE RITESH MAHAVIR	12	
59	9159	* PARIT SUCHETA RANJEET	12	

- semi -



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

Vivekanand College Kolhapur (Autonomous)

Dept. of Biotechnology (Entire)

Date 07.11.2022

## Notice

Hereby informed to all students of B. Sc. II Biotechnology (Entire) that there is arrangement of Internal Exam Term work for Sem.III for following subjects as follows.

Sr. No.	Name of Course / Paper	Date
1	DSC-1345 C Genetics	14/11/2022
2	DSC-1346 C Biophysics and Enzymology	15/11/2022
3	DSC-1347 C Metabolic Pathways	16/11/2022
4	DSC-1348 C Ecology	17/11/2022
5	DSC-1349 C Molecular Biology - I	18/11/2022
6	DSC-1350 C Plant Tissue Culture	19/11/2022

The nature of Internal may be Fill in the blank / one word sentence / one sentence one word/Oral ( Marks for Internal -15 M)

**Note:-** Though the Internals are their the routine theory and practicals are conducted as per scheduled.

Time: 11:30 to 12:00



(Mr. S. G. Kulkarni)

Head

Department of Biotechnology (Entire)  
Vivekanand College, Kolhapur (Autonomous)



" ज्ञान, विज्ञान आणि सुसंस्कार यांच्याही शिक्षण प्रसार " श्री. बापूजी साठुखे  
 - शिक्षणमंत्री डॉ. बापूजी साठुखे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

**SUPPLIMENT**

Suppliment No. : - Roll No. : Kamble Seema Shivaji Class : Bsc II Biotech (Entire)	Signature of Supervisor : Subject : Molecular biology interrial Test / Tutorial No. : 4 Div. : Bsc II
--	--

- 1] The term 'cistron', recomb, muton' is coined by Benzer.
- 2] RNA as a genetic material was discovered by A Greger & G shramn.
- 3] Kat-curve analysis was developed by Lyda.
- 4] The purity analysis of DNA can be done by checking its concentration, pureness.
- 5] clapper is histone acts as linking agent for a DNA in a nucleosome.
- 6] Ribose sugar is common intermediate in purine denovo's synthesis.
- 7] ~~aspartic acid~~ Cysteine amino acid is required for pyrimidine denovo's synthesis.

“ ज्ञान, विज्ञान आणि सुरांस्कार यांसाठी शिक्षण प्रसार ”  
- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

## VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

9  
15

Signature  
of  
Supervisor

Suppliment No. :

Roll No. : Pratiksha Baban Jagatap

Class : BSC. Biotech (Ent.) II

Subject : Molecular biology

Test / Tutorial No. : Internal Exam

Div. : BSC. Biotech (Ent.) II

Q1. The term cistron, Recon, Muton is coined by benzer

Q2 RNA as a genetic material was discovered by Girer and Schramm

3. ~~Who~~ Cot curve analysis was developed by Ray britton and anderson 1/2

4. The purity analysis of DNA capit. can be done by cissium chloride density centrifuge

5. ~~H<sub>2</sub> protein~~ histon act as linking agent for DNA in a Nucleosome

6. Inosinate monophosphate (IMP) is common intermedia in purin denovo synthesis

7. Aspartate amino acid is required for ~~py~~ pyrimidin denovo synthesis



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥  
- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

29852

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

**VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)****SUPLIMENT**Signature  
of  
Supervisor

Subject: EBT

Test / Tutorial No.:

Div.:

Suppliment No. :

Roll No. : 9211

Class : Biotech. Entire S.Y.

 $\frac{10}{15}$ 

- 1] Boiling is a physical method of water purification.
- 2] ~~is a physical method of water purification~~
- 3] ~~The full form of PAN is Peroxy Acetyl Nitrate.~~
- 4] ~~Malathion is an example of organophosphate pesticide.~~
- 5] ~~Mercury poisoning causes ~~ataxia~~ Minamata disease to humans~~
- 6] ~~Los-Angeles is a reducing smog.~~
- 7] ~~The unit associated with ozone analysis is called Dobson.~~
- 8] ~~The first research institute of toxicology in India is~~
- 9] ~~Temporary hardness is due to the presence of dissolved bicarbonates of calcium & magnesium.~~

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

Ganikar Uttam Kote

Roll No. :

9224

Class :

B sc -II Biotech (entire)

Subject : Environmental Biotechnology

Test / Tutorial No. :

Div. :

- ① - - - is the physical method of water purification.
- ② The full form of PAN is - -
- ③ - - - is an example of organophosphate pesticide
- ④ Mercury poisoning causes - - - diseases to humans.
- ⑤ - - - is reducing smog
- ⑥ The unit associated with ozone analysis is called -
- ⑦ The first research institute of toxicology in India is -
- ⑧ - - - hardness is due to the presence of dissolved bicarbonates of calcium & magnesium.
- ⑨ - - - is the process in which chemicals transfer from lower trophic level to higher trophic level in food chain.
- ⑩ The water body becomes over enrich with nutrients leading to plantae-ful growth of plants is called - - -
- ⑪ - - - protocol is for ozone protection.
- ⑫ The substances which causes mutation is called - - -
- ⑬ In COD other than potassium dichromate - - - can be used as a strong chemical oxidising agent.



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंके

29995

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

**VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)****SUPPLIMENT**11  
15Signature  
of  
Supervisor

Subject: Environmental Biotechnology.

Test / Tutorial No.:

Div.:

Suppliment No.:

Roll No. : 9210

Class : B.Sc. Biotech (Ent) II.

1) UV radiation (UV18) is the physical method of water purification.

2) The full form of PAN is Phosphorus Acetyl Nitrate.

3) DDT is an example of organophosphate pesticide.

4) Mercury poisoning causes Minamata disease to humans.

5) L smog is a reducing smog.

6) The unit associated with ozone analysis is called Dobson unit (DU).

7) The first research institute of toxicology in India is Industrial Toxicology Research Centre.

Vivekanand College Kolhapur (Autonomous)

Dept. of Biotechnology (Entire)

Academic Year 2022-23

**Notice**

Date 27.04.2023

Hereby informed to all students of B. Sc.I, II,III Biotechnology (Entire) that there is arrangement of Internal Exam Term work for Sem.II,IV,VI for following subjects as follows.

Sr. No.	Name of Subject/Paper	Date
1	DSC-B-Chemistry	19.04.2023
2	DSC-B-Biochemistry	20.04.2023
3	DSC-B-Animal Science	21.04.2023
4	DSC-B-Statistics	24.04.2023
5	DSC-B-Computer	25.04.2023
6	DSC-B- Cell Biology	26.04.2023
7	DSC-B-Microbiology	27.04.2023
8	DSC-B- <del>Physics</del> Developmental Biology	28.04.2023



Sr. No.	Name of Subject/Paper	Date
1	DSC-1345D Immunology	02.05.2023
2	DSC-1346D Advances in Cell Biology	03.05.2023
3	DSC -1347D Plant Biochemistry	04.05.2023
4	DSC -1348D Environmental Biotechnology	06.05.2023
5	DSC-1349D Molecular Biology II	08.05.2023
6	DSC-1350D Animal Tissue Culture	09.05.2023

**HEAD**

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



Sr. No.	Name of Subject/Paper	Date
1	DSE-1355-F Advances in Genetic Engineering	17.04.2023
2	DSE-1356-F Food and Microbial Biotechnology	18.04.2023
3	DSE- 1357-F Application of Biotechnology in Health	19.04.2023
4	DSE-1358-F Bioinformatics	20.04.2023

The nature of Internal may be multiple-choice / Fill in the blank / one word sentence / one sentence /one word.

Time: 11:30 to 12:30

12:30 onwards Routine



(Mr.S.G.Kulkarni)

HEAD

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

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

$\frac{15}{15}$

Signature  
of  
Supervisor

Suppliment No. : Teertha Raj Kamat

Roll No. : 9116

Class : F.Y Biotech [ENT]

Subject : Basics in Cell Biology

Test / Tutorial No. : Internal Exam

Div. : F.Y

1) Define Plasma membrane

- Plasma membrane or cell membrane or Plasmalemma is a thin, elastic, semipermeable living membrane which serves as the boundary for inner cytoplasm of organelles

2) Give 2 ex of peripheral proteins.

- Spectrin

Ankyrin

3) Fluid Mosaic model of PM was proposed by Singer and Nicolson

4) Lysosomes is known as 'suicidal bag of cell'

5)  $\text{Na}^+$  Glucose transporter is an ex of secondary active transport.

6) What is active transport & name types of active transport.

- The movement of molecules or ions from region of low concentration to region of high concentration. It is uphill movement which requires energy and special transport proteins.



# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT  $\frac{9}{15}$

Signature  
of  
Supervisor

Suppliment No. shrutika Anant Bawadekar

Subject: Basics in cell Biology

Roll No. : 9104

Test / Tutorial No. : Internal

Class : F.Y. Biotech (Entire)

Div. :

1. Define plasma membrane

outermost membrane present in cell which provides mechanical support or shape to the cell. It is semi-permeable or permeable to

2. Give two examples of peripheral protein.

3. Fluid mosaic model of plasma membrane was proposed by Singer and Nicolson.

4. lysosomes is known as suicidal bag of cell.

5. sodium, glucose transporter is an example of secondary active transport

Shruti Nitin Chikalkar

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांच्याशी शिक्षण प्रसार ॥

- शिक्षणसंस्था डॉ. बापूजी साबुळे

28937

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

$\frac{18\frac{1}{2}}{15}$

Roll No. : 9107

Class : Biotech (entire) FY

Subject : Basics in cell Biology

Test / Tutorial No. : Internal exam

Div. :

1) Define Plasma membrane?

Plasma membrane semi fluid in nature, plasma membrane is a boundary of cell, which decide shape of cell and which present in prokaryotic cells and Eukaryotic cells. Plasma membrane is viscous, transparent fluid.

2) Give two examples of peripheral proteins.

1) spectrin

2) Ankyrin

3) Fluid Mosaic model of plasma membrane proposed by Singer and Nicolson

4) Lysosome is known as suicidal bag of cell.

5) Not, Glucose transporter is an example of secondary active transport.

6) What is active transport and a name the types of active transport.

→ Active transport is movement of molecule region of lower conc. to higher conc. (uphill movement)



Name -

29175



Signature of Jr. Super.

## विवेकानंद कॉलेज, कोल्हापूर (स्वायत्त)

या विभागाच्या प्रयोग परीक्षा

परीक्षेच्या

Practical Examination in,

Bio - statistics.

Examination

at the

Bsc. Biotech (Entire) Py.

उमेदवाराचा आसन क्रमांक

(Candidate's Seat No.)

19111

विभाग

(Section)

Bio - statistics

2+3

10/15

### उमेदवारांना सूचना

1. प्रश्न काळजीपूर्वक वाचा आणि त्याप्रमाणे विचारलेला प्रयोग करा.
2. उपकरणांच्या वापराबाबत तुम्हांला काही माहीत नसेल तर परीक्षक किंवा प्रयोगशाळा सहाय्यक यांना तुम्हाला मदत करण्याविषयी विनंती करा.
3. कोणताही विद्युत्प्रयोग करण्यापूर्वी, प्रत्यक्ष पुरविलेली सर्व उपकरणे आणि सर्व 'कनेक्शन' नीट पाहून घेऊन संबंधित कामाची नीटनेटकी कार्ययोजना करण्याची नितांत आवश्यकता आहे आणि ह्या नंतर पुढे काम चालू करण्याविषयी परीक्षकांची परवानगी मिळविणे आवश्यक आहे.
4. सर्व निरीक्षणे कोटकवजा तक्त्यात भरावी. मधल्या सर्व गणना आणि निर्णय हे शक्य तितक्या सुवाच्यपणे आणि स्पष्टपणे नोंदविलेले असणे हे हितावह आहे.
5. प्रारंभिक किंवा अंतिम निरीक्षणात संख्यावाचक आकडे एकावर एक लिहू नयेत. जर लिहिलेला कोणताही आकडा नको असेल तर त्यावर एक रेष ओढून पाहिजे असलेला आकडा त्याच्याजवळ लिहा. प्रयोगशाळेतून बाहेर पडण्यापूर्वी आपले टेबल चांगल्या स्थितीत आहे याची खात्री करा.

### INSTRUCTIONS TO CANDIDATES

1. Read the question carefully and perform the experiment as required.
2. If there be anything the apparatus that you do not know, ask the examiner or the laboratory assistant to help you
3. Before doing any electrical experiment, it is absolutely essential that you make a neat working sketch of all apparatus actually provided and of the necessary connection and obtain the examiner's permission to proceed.
4. Express all observations in a tabular form. It is also desirable that all intermediate calculations and results should be entered as neatly and clearly as possible
5. No numerical figures should be written over either in the preliminary or final observations. If any figure is thought to be discarded it should be run through and the desired figure written near to it.
6. Please see that your table is in good order before you leave the laboratory.

(येथून लेखनास सुरवात करा.) (Begin writing here.)

प्र. क्र. Q. No.	Class	Frequency	L.C.F
Q.1	30-40	12	12
	40-50	17	12 + 17 = 29
	50-60	24	29 + 24 = 53
	60-70	30	53 + 30 = 83
	70-80	27	83 + 27 = 110
	80-90	15	110 + 15 = 125
	90-100	5	125 + 5 = 130

29239



Signature of Jr. Super.

## विवेकानंद कॉलेज, कोल्हापूर (स्वायत्त)

Shambhavi Dhananjay Joshi वा विषयांश प्रयोग परीक्षा  
परीक्षका

Practical Examination in BSE - FY Examination

at the BSE I (Biotech Entire)

Biostatistics

उमेदवाराचा आसन क्रमांक  
(Candidate's Seat No.)

913

विभाग  
(Section)

$\frac{12+3}{15} = \frac{15}{15}$

### उमेदवारांना सूचना

- प्रश्न काळजीपूर्वक वाचा आणि त्याप्रमाणे विचारलेला प्रयोग करा.
- उपकरणांच्या वापराबाबत तुम्हांला काही माहीत नसेल तर परीक्षक किंवा प्रयोगशाळा सहाय्यक यांना तुम्हाला मदत करण्याविषयी विनंती करा.
- कोणताही विद्युत्प्रयोग करण्यापूर्वी, प्रत्यक्ष पुरविलेली सर्व उपकरणे आणि सर्व 'कनेक्शन' नीट पाहून घेऊन संबंधित कामाची नीटनेटकी कार्ययोजना करण्याची नितांत आवश्यकता आहे आणि ह्या नंतर पुढे काम चालू करण्याविषयी परीक्षकांची परवानगी मिळविणे आवश्यक आहे.
- सर्व निरीक्षणे कोटकवजा तत्क्यात भरावी. मधल्या सर्व गणना आणि निर्णय हे शक्य तितक्या सुवाचपणे आणि स्पष्टपणे नोंदविलेले असणे हे हितावह आहे.
- प्रारंभिक किंवा अंतिम निरीक्षणात संख्यावाचक आकडे एकावर एक लिहू नयेत. जर लिहिलेला कोणताही आकडा नको असेल तर त्यावर एक रेष ओढून पाहिजे असलेला आकडा त्याच्याजवळ लिहा. प्रयोगशाळेतून बाहेर पडण्यापूर्वी आपले टेबल चांगल्या स्थितीत आहे याची खात्री करा.

### INSTRUCTIONS TO CANDIDATES

1. Read the question carefully and perform the experiment as required.
2. If there be anything the apparatus that you do not know, ask the examiner or the laboratory assistant to help you
3. Before doing any electrical experiment, it is absolutely essential that you make a neat working sketch of all apparatus actually provided and of the necessary connection and obtain the examiner's permission to proceed.
4. Express all observations in a tabular form. It is also desirable that all intermediate calculations and results should be entered as neatly and clearly as possible
5. No numerical figures should be written over either in the preliminary or final observations. If any figure is thought to be discarded it should be run through and the desired figure written near to it.
6. Please see that your table is in good order before you leave the laboratory.

(येथून लेखनास सुरवात करा.) (Begin writing here.)

प्र. क्र.  
Q. No.

Q1) Draw Histogram for the data

class	-	30-40	40-50	50-60	60-70	70-80	80-90	90-100
		12	17	24	30	27	15	5



Vivekanand College  
 Kolhapur  
 Department of Biotech  
 Internal Exam  
 sem-2

22-23

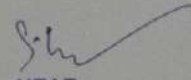
Sr No	Roll No.	Student Name	Chem	Biochem	Animal Science	Biostat	Computer	Cell Bio	Micro	Dev Biology	Eng
1	9101	AIWALE SWAYAMBHU SACHIN	Ab	Ab	Ab	Ab	Ab	Ab	Ab	Ab	Ab
2	9102	AMBEKAR SHREYA MOHAN	08	08			08	06	06	06	13
3	9103	BAM SHREYASH HARISH	08	09			13	06	06	06	13
4	9104	BAWADEKAR SHRUTIKA ANANT	08	13			12	09	06	06	13
5	9105	BHAMBURE SHRAVANI KAILAS	08	08			15	06	06	06	15
6	9106	BIRJE TRIVENI PUNDALIK	06	09			12	06	06	07	13
7	9107	CHIKALKAR SHRUTI NITIN	11	13			15	14	11	09	15
8	9108	DHAVAN VAISHNAVI SANTOSH	10	13			15	12	08	10	15
9	9109	GONUGADE BHAKTI KISHOR	09	13			13	14	14	10	15
10	9110	GURAV ISHA JAGDISH	06	11			12	09	06	06	15
11	9111	JADHAV SANIKA SAMBHAJI	08	09			12	10	06	08	15
12	9112	JAMADAR ALISHA NAJIR	07	07			10	06	06	06	15
13	9113	JOSHI SHAMBHAVI DHANANJAY	07	12			15	15	06	10	15
14	9114	KALE PREETI DANIEL	07	11			15	06	06	06	15
15	9115	KALEL ARVIND BHOJA	06	06			15	06	06	06	15
16	9116	KAMAT TEERTHA RAJ	08	14			14	15	13	10	15
17	9117	KAMBLE PRATHMESH AMAR	Ab	Ab			Ab	Ab	Ab	Ab	15

18	9118	KANEKAR SHRUTI SANDIP	06	12			10	11	08	10	12
19	9119	KORAVI MANSI BAJARANG	06	07			10	15	06	07	12
20	9120	KOTHALE SAMIKSHA SHITAL	06	09			12	06	06	06	12
21	9121	KURUD KRISHNA GAJANAN	08	13			10	08	06	11	13
22	9122	KUTE AJAY DADASAHEB	06	09			12	09	06	06	13
23	9123	MAHIND SAMRUDHI SANJAY	06	09			15	11	06	06	12
24	9124	MESTRI SOPHIYA SALEEM	07	11			15	06	06	09	12
25	9125	NAVGHANE SANMAT, RAJABHAU	12	14			15	15	13	14	12
26	9126	PATIL AASHISH TUKARAM	11	12			14	06	06	06	13
27	9127	CANCELED							canceled	06	
28	9128	PATIL NEHA LAXMAN	08	11			15	12	06	06	12
29	9129	PATIL PRATIK AADAGONDA	07	09			14	10	06	06	12
30	9130	PATIL SHREEYA SURESH	06	12			15	14	08	09	12
31	9131	PAWAR SWATI PRAVIN	07	13			15	15	11	11	12
32	9132	PHOPE KAUMUDI PRASAD	12	08			15	13	06	07	13
33	9133	PINJARE NAYAN AMAR	11	13			15	15	11	11	13
34	9134	PIRAI NAMRATA VINAYAK									
35	9135	POL ESHWARI PARSU	06	11			10	06	06	08	12
36	9136	CANCELED							canceled		
37	9137	RANJANE DHANASHRI NARENDRA	07	07			14	08	06	08	13
38	9138	REGE SELA AJINKYA	06	13			15	06	07	08	12
39	9139	SALOKHE HARSHDEEP SUHAS	06	06			08	07	06	11	13
40	9140	SAWANT SAMIKSHA CHANDRAKANT	12	13			15	15	11	11	12
42	9142	SHINDE MAYURI MADHUKAR	09	10			12	09	07		12
43	9143	SHIRODKAR SOUNDARYA UMESH	06	14			10	07	06	06	12
44	9144	TALEKAR SAMRUDHEE ANIL									



41	9141	SAWANT VIRAJ JAYDEEP	06	09			12	06	06	08	12
42	9142	SHINDE MAYURI MADHUKAR	09	10			12	09	07		12
43	9143	SHIRODKAR SOUNDARYA UMESH	06	14			10	07	06	06	12
44	9144	TALEKAR SAMRUDHEE ANIL	09	08			15	08	06	07	12
45	9145	TASHILDAR KIRAN BALKRUSHNA	11	12			13	14	09	07	12
46	9146	THAKARE OMKAR SANTOSH	08	11			12	08	06	06	13
47	9147	VHARKAT MANASVI SAGAR	06	06			10	06	06	06	13
48	9148	PATIL PRATIKSHA DATTATRAY	10	11			15	12	06	06	12
49	9149	KAVATHEKAR YASHOVARDHAN MADANMOHAN	11	13			15	14	13	12	15
50	9150	PATIL CHETAN BALKRISHNA	06	12			15	11	06	11	13
51	9151	PATIL NIRAJ RAJGONDA	06	10			15	07	06	08	12
52	9152	PEDNEKAR ARYA HERAMB	10	09			15	13	10	06	12
53	9153	PATIL SHRIDHAR SAGAR	06	08			15	13	07	07	12
54	9154	DAMODAR VASWANI YASHIKA	11	13			12	13	06	11	15
55	9155	KAMBLE PRATIK DASHRATH							Ab		Ab
56	9156	KUMBHAR MANISH BABASO	07	08			10	06	06	10	13
57	9157	PATIL KETAN AVINASH	06	08			12	09	06	12	13
58	9158	BORGAVE RITESH MAHAVIR	11	10			14	12	06	10	15
59	9159	PARIT SUCHETA RANJEET	12	13			14	08	06	11	12



  
 HEAD  
 DEPARTMENT OF BIOTECHNOLOGY (FRT15)  
 W. P. SAWANT COLLEGE, RAJUR  
 COVERED AUTHORITY

## Molecular Biology.

- ① The term cistron, exon, muton is coined by Benzecou.
- ② RNA as a genetic material was discovered by Gierer and Schramm.
- ③ Gel Coarse analysis was developed by Fay Britten and Eric Davidson.
- ④ The purity analysis of DNA can be done by checking its  $A_{200} = 1.8 A_{280}$ .
- ⑤ H1 histone act as linking agent for DNA for a nucleosome.
- ⑥ UMP is common intermediate in purine de novo synthesis.
- ⑦ Aspartate Amino Acid is required for Pyrimidine de novo synthesis.
- ⑧ Aspartate transcarbamylase is the multisubunit allosteric enzyme required in Pyrimidine biosynthesis.
- ⑨  $\lambda$  phage virus is discovered by Emmer Lederberg.
- ⑩ Tus protein is required for termination in Eukaryotes.
- ⑪ primer in DNA replication in Prokaryotes is synthesized by RNA primase.



26988

॥ ज्ञान, विज्ञान आणि सुरक्षेकर यांच्याशी शिक्षण प्रसार ॥  
- शिक्षणपद्धती डॉ. बापूजी साठुंबे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT  $\left(\frac{11}{15}\right)$

Signature  
of  
Supervisor

Subject: Microbiology

Test / Tutorial No.: Sem II Internal

Suppliment No.: Nayan Amar Pnjure

Roll No.: 9133

Class: F.Y. B.Sc Biotech [Entire]

Div.:

- 1) The temperature range for growth of psychrophiles is  $0^{\circ}\text{C}$
- 2) Reagent used in indole production test is Kovac's reagent
- 3) Subsequent infection by the same pathogen in host is termed as re-infection.
- 4) Diauxic growth curve is characterised by double growth cycle consisting of two exponential phases separated by
- 5) MacConkey's agar contains sodium taurocholate component as a selective agent.
- 6) Organisms requiring complex nutrients / growth factors for their growth are fastidious organisms.
- 7) When droplets smaller than  $0.1\text{ mm}$  evaporate they form droplet nuclei.

29803

॥ श्री. स्वामी विवेकानंद शिवालय संस्था कोल्हापूर ॥  
- धामरुगी अ. अ. कोल्हापूर

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

11  
15

Signature of Supervisor

Subject: Microbiology - II

Test / Tutorial No.: Internal exam (Sem - II)

Suppliment No.: Samiksha Chardakant Sawant

Roll No.: 9140

Class: BSc I Biotech entire

1. ~~The temp range for growth of Psychrophiles is  $15-20^{\circ}\text{C}$~~
2. ~~The temp reagent used in indole production test is Kovac's reagent (p-dimethyl amino benzaldehyde + Butanol + HCl)~~
3. ~~Subsequent infection by the same pathogen in host is termed as reinfection.~~
4. ~~~~Diauxic~~ Diauxic growth is characterized by double growth cycle consisting of 2 exponential phases separated by lag phase.~~
5. ~~Macleodkey's agar contains Sodium taurocholate component as selective agent.~~
6. ~~Organisms requiring complex nutrients / growth factors for their growth are fastidious organisms.~~
7. ~~When droplets smaller than 0.1 mm evaporates they form droplet nuclei.~~



# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

08  
15

Suppliment No. : Shreeya Suresh Patil.

Roll No. : 29

Class : FY. [BSc. Biotech Entire]

Signature  
of  
Supervisor

Subject : Microbiology

Test / Tutorial No. : Internal Exam.

Div. :

- Q1. The temperature range for growth of psychrophiles is 0-20°C.
- Q2. Reagent used in indole production test is Kovacs reagent. Kovacs
- Q3. Subsequent infection by the same pathogen in host is termed as reinfection.
- Q4. Diauxic growth is characterised by double growth cycle consisting of two exponential phases separated by lag phase.
- MacConkey's agar contains Na-taurocholate component as a selective agent.
- Organisms requiring complex nutrients / growth factors for their growth are Carbohydrates (sugars)

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Keishna Gajanan Kurud

Suppliment No. :

Roll No. : 9101

Class : B.Sc. Biotechnology (Ent) FY.

Signature  
of  
Supervisor

Subject : Chemistry.

Test / Tutorial No. : Internal exam.

Div. :

Q1 Define enantiomers:

→ Enantiomers are the compounds that are the mirror images of each other. i.e. when placed in front of each other they give mirror images of each other.

Q2 Define diastomers

→ Diastomers are the compounds that are ~~not~~ not the mirror images of each other. i.e. when placed in front of each other they do not form a ~~mirror~~ mirror image.

Q3 Which instrument is used to determine the polarity?

→

Q4 What is meant by functional isomerism?

→ Functional isomerism is when two compounds have same structure but their functional groups differ.



28389

श्री स्वामी विवेकानंद शिक्षण संस्था कोल्हापूर  
- विभागाध्यक्ष डॉ. अश्विनी वांगडे  
Shri Swami Vivekanand Shikshan Sanstha Kolhapur

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Suppliment No. : Shambhavi Jashi  
Roll No. : 9113  
Class : BSc Biotech (ent) FY

Signature  
of  
Supervisor

*(Signature)*  
15/15

Subject : Chemistry

Test / Tutorial No. : Internal exam

Div. :

Q.1. Define Enantiomer.

⇒ an atom or molecule, or group attached to same side of carbon-carbon double bond. called Enantiomer.

Q.2. Diastereomer :- Define

⇒ a group of atom or molecule attached to different side of carbon-carbon double bond called Diastereomer.

Q.3. Which instrument used to determine the polarity.

⇒ polarimeter.

Q.4. What is meant by functional isomerism.

⇒ a group of functional atom are mirror image of each other called functional isomerism.

Q.5. Which Intermediate is formed in SN1 reaction? & states its hybridisation.

⇒ carbocation is intermediate formed.

Sanika Sambhaji Jadhav

28392

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's  
**VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)**

SUPPLIMENT

Signature of Supervisor

08/13

Suppliment No. :

Subject : Chemistry

Roll No. :

311

Test / Tutorial No. : Internal exam

Class :

Bsc. Biotech (Entire) - I.

Div. :

1) Define Enantiomer.

→

Chiral atoms or groups are mirror image of each other, but not superimposable are called Enantiomers.

2) Define Diastereomer.

→

In the stereoisomer are not mirror image of each other & not superimposable are called diastereomers.

3) Which instrument is used to determine the polarity.

→

4) What is meant by functional isomerism.

→ same molecular formula but different structural formula is called as functional isomerism.

5) Which intermediate formed in  $S_N1$  reaction, & state its hybridization.

→ Carbocation intermediate formed in  $S_N1$  reaction.

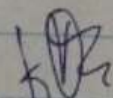


B.Sc. I Entire Biotechnology  
Internal examination  
Subject: Chemistry (sem-II)

Sr. No.	Roll No.	Name	Mark.
①	9102	Miss. Shreya Ambekar	08
②	9103	Mr. Shreyash Bam	08
③		Miss. Shrutika Bawadekar	08
④	9105	Miss. Shravani Shambure	08
⑤	9106	Miss. Triveni Birje	06
⑥	9107	Shruti Chikalkar	11
⑦	9108	Vaishnavi Dhavan	10
⑧	9109	Bhakti Gonugade	09
⑨	9110	Isha Gurav	06
⑩	9111	Sanika Jadhav	08
⑪	9112	Alisha Jamadar	07
⑫	9113	Shambhavi Jashi	07
⑬	9128	Neha Patil	08
⑭	9114	Preeti Kale	07
⑮	9115	Arvind Kale	06
⑯	9126	Ashish Patil	11
⑰	9125	Sanmati Navghane	12
⑱	9129	Sophia Mestri	07
⑲	9123	Samrudhi Mahind	06
⑳	9122	Ajay Kute	06
㉑	9121	Krishna Kurud	08
㉒	9120	Samiksha Kothale	06
㉓	9118	Shruti Kanekar	06
㉔	9116	Teertha Kamat	08
㉕	9154	Yashovardhan Kawathekar	11
㉖	9159	Niraj Patil	06
㉗	9141	Viraj Sawant	06
㉘	9156	Manisha Kumbhar	07
㉙	9157	Ketan Patil	06
㉚	9135	Eshwari Pol	06
㉛	9137	Phanashri Ranjane	07
㉜	9109	Boragave Reteish	11

33	9150	chetan patil	06
34	9146	omkar Thatare	08
35	9129	Pratik Patil	07
36	9139	Harshdeep salotke	06
37	9142	Mayuri shinde	09
38	9130	shreya patil	06
39	9131	swati Pawar	07
40	9153	Yashika Vasvani	11
41	9138	Sela Rege	06
42	9140	samiksha sawant	12
43	9145	Kiran Tahaldar	11
44	9144	Samrudhi Talekar	09
45	9132	Kaumudi phope	12
46	9145	soundarya shirodkar	06
47	9147	manasi Vhurkat	06
48	9152	Arya pednekar	10
49	9148	Poojika Patil	10
50	9159	Sucheta parit	12
51	9133	Nayan pinjare	11
52	9153	shridhar patil	06
53	9119	Manishi Kooni	06



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





Signature of Supervisor \_\_\_\_\_  
"ज्ञान, विज्ञान आणि सुरंकार यांसाठी शिक्षण प्रसार"  
शिक्षण माफी परमपूज्य डॉ. बापूजी साबुळे  
Shri Swami Vivekanand Shikshan Sanstha Kolhapur's  
**VIVEKANAND COLLEGE, KOLHAPUR**

CLASS Blotech (Ent) 5Y DIV \_\_\_\_\_

ROLL NO. 9203  
SUBJECT Immunology

SUPPLEMENT NO. \_\_\_\_\_

TEST / TUTORIAL NO. 12/15

Q1 Total or relative resistance shown by all members of species to a pathogen is called as species immunity

1. Vaccination is an example of artificial active immunity

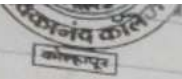
3. IgG antibodies cross placental barriers.

4. Serum collected from the person recovering from a particular infectious disease contains high amount of antibodies for the specific antigen causing that disease is called

5. A group of soluble non-toxic glycoprotein produced in small amount by all cells of the body in response to the virus interferon

Name the protein which have ability to bind C-protein of pneumococci CRP

Circulating immature cells of the mononuclear phagocytic system are called as monocytes



Shri Swami Vivekanand Shikshan Sanstha Kolhapur's  
**VIVEKANAND COLLEGE, KOLHAPUR**

Pooja Tatyasa Davkare

CLASS Bsc Biotech sr (ent) DIV. \_\_\_\_\_ ROLL NO. 9205

SUPPLIMENT NO. \_\_\_\_\_ SUBJECT Immunology

TEST / TUTORIAL NO. \_\_\_\_\_

~~15~~  
15

1 Total or relative resistance shown by all members of species to a pathogen is called specific innate immunity.

2 Vaccination is an example of Artificial Active immunity.

3 IgG Antibody cross placental barriers.

4 serum collected from person recovering from particular infectious disease contains high amount of antibodies for spe. Ag causing that disease is called convalescent serum.

5 group of soluble non-toxic glycoprotein produced in small # by all cells of ~~of~~ body in response to <sup>virus</sup> ~~body~~ called interferon.

6 Name to protein which have ability to <sup>C-PRN</sup> Pneumococci  
CRP - c-reactive protein

7 circulating immature cells of the mononuclear phagocytic system are called as monocyte.



Name - Sourabh Sambhaji Bhalmare

Roll No - Date - 23/04/2023

॥ ज्ञान, विद्या आणि सुखकार्य यांच्याची सेवा ॥  
- विद्यालयाची सं. बापूजी साखुंबे

29965

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPLIMENT  $\frac{12}{15}$

Signature  
of  
Supervisor

Suppliment No. : Internal Examination

Subject : Environmental Biotechnology

Roll No. : 9253

Test / Tutorial No. : -

Class : BSc - Biotech (Entire) - II

Div. : -

## Distillation

- 1) i) ~~Boiling-water~~ is the physical method of water purification.
- ii) ~~Clark's method / sodium hydroxide method.~~
- 2) The full form of PAN - Peroxyacetyl nitrate.
- 3) Dichlorodiphenyl is an example of organophosphate pesticide.  
0 ~~Trichloroethane (DDT)~~
- 4) Mercury poisoning causes opium-  
morphan disease to humans.  
0
- 5) London smog is a reducing smog.
- 6) The unit associated with ozone analysis is called Dobson unit.
- 7) The first research institute of toxicology in India is Industrial Toxicology Research Centre (ITCR)
- 8) Temporary hardness is due to the presence of dissolved bicarbonate of Ca and Mg.

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

Subject: EBT

Test / Tutorial No.: Internal exam (Sem IV)

Div.:

Suppliment No.: I

Roll No.: 9202

Class: Biotech int (SY)

7  
15

NAME - NISH SUBHASH BHOSALE.

- i. Distillation is the physical method of water purification.  
\* UV treatment
- ii. The fullform of PAN is Peroxis acet
- iii. is an example of Organo phosphate pesticide
- iv. Mercury poisoning causes kidney, lung, liver deases to human.
- v. London smog is a reducing smog
- vi. The first research institute of toxicology in india is IA (ITRC) Lucknow.
- vii. Temporary hardness is due to the presence of dissolved bicarbonates of calcium & magnesium



Tanay P. Kumade

॥ ज्ञान, विद्या आणि सुसंस्कार यांचाही विकास प्रसार ॥  
- शिक्षणमंत्री डॉ. बाळूजी साठुंबे

29862

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

$\frac{9}{15}$

Suppliment No. :

Roll No. : 8228

Class : BSc. Biotech. Ent. Sy.

Signature  
of  
Supervisor

Subject : EBT

Test / Tutorial No. :

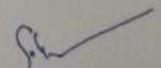
Div. :

- 1) Distillation is the physical method of water purification.
- 2) The full form of PAN is Paraoxy Acetal Nitrate Nitrate.
- 3) DDT is an example of organophosphate pesticide.
- 4) Mercury poisoning causes minimata diseases to humans.
- 5) London smoke reducing smoke.
- 6) The unit associated with ozone analysis is called Dobson unit.
- 7) The 1<sup>st</sup> research institution of toxicology is Industrial Toxicology Research Centre [ITRC].
- 8) Temporary Hardness is due to presence of dissolve <sup>5 carbonate</sup> calcium magnesium.

Shri Swami Vivekanand Shikshan  
**VIVEKANAND COLLEGE KOLHAPUR (AUTONOMOUS)**  
 B.Sc Part II Biotechnology (Entire)  
 Internal Exam sem IV

Sr No	Roll No.	Student Name	Immunology	Advances in Cell Bio	Plant Biochemistry	Environmental Biotechnology	Molecular Biology - II	Animal Tissue Culture
1	9201	* Adiv Prachi Jotiba	06	06	10	06	06	06
2	9202	* Bhosale Nisha Subhash	09	06	06	07	06	06
3	9203	* Bugate Sejal Sharad	12	11	14	06	08	10
4	9204	* Chougule Ajay Malagonda	06	06	06	06	06	06
5	9205	* Davkare Pooja Tatyaso	15	13	14	15	06	11
6	9206	* Desai Vaishnavi Sanjay	06	06	06	06	06	06
7	9207	* Dharmadhikari Niyati Narayan	06	06	09	06	06	06
8	9208	* Dhenge Tanvi Shirish	09	06	13	06	06	06
9	9209	* Dixit Radhaika Milind						
10	9210	* Dixit Sakshi Pradip	13	11	12	11	07	09
11	9211	* Ghule Uma Sanjay	11	13	12	10	09	13
12	9212	* Hadgal Rutuja Tanaji	06	06	07	06	06	06
13	9213	* Hajgude Sakshi Mukesh	15	09	11	07	07	06
14	9214	* Hikadi Arati Ravindra	07	06	08	08	06	08
15	9215	* Jagatap Pratiksha Baban	13	15	14	13	15	13
16	9216	* Kadam Neha Krushnat	14	12	13	12	06	09
17	9217	* Kadam Suraj Santosh	15	13	12	12	07	10
18	9218	* CANCELED						
19	9219	* Kamble Anushka Sandip	10	06	07	07	06	06
20	9220	* Kamble Seema Shivaji	06	07	09	08	06	10
21	9221	* Kathare Sakshi Anil ALIAS Atmaram	06	08	10	07	06	09
22	9222	* Kesarkar Omkar Balaso	09	06	08	07	06	06
23	9223	* Khanapure Ammar Abdulgafar	07	06	12	11	06	07
24	9224	* Kole Sanika Uttam	12	09	09	11	06	06
25	9225	* Kolekar Arya Ramchandra	15	11	15	11	09	12
26	9226	* Kulkarni Aarya Dhananjay	15	14	15	12	08	11
27	9227	* Kulkarni Pranav Sanjeev	11	06	06	06	06	06
28	9228	* Kurade Tanaya Prafulla	10	06	11	09	06	08
29	9229	* Lavhate Prachi Suresh	06	06	12	06	06	06
30	9230	* Lohar Pranjal Parashuram	06	06	07	05	06	06
31	9231	* Makandar Fardin Mahamadhanif	06	06	09	09	06	06
32	9232	* Mane Mohit Sunil	06	06	06	07	06	06
33	9233	* More Ankita Shrikant	06	07	07	08	06	06
34	9234	* Notani Disha Santosh	14	13	12	13	07	12
35	9235	* Patil Gayatri Bhaurao	10	07	13	07	06	10
36	9236	* Patil Mrunal Babaso	06	06	09	06	06	06
37	9237	* Patil Pruthviraj Amar	06	06	06	09	06	06
38	9238	* Patil Saloni Suhas	13	15	14	13	09	12
39	9239	* Patil Vaishnavi Vilas	10	06	10	09	06	06
40	9240	* Patil Vaishnavi Manohar	06	06	10	06	06	07
41	9241	* Patil Yuvradnyi Prakash	06	06	08	06	06	06
42	9242	* Rane Simran Vinod						
43	9243	* Sawant Bramhali Vakil	06	10	09	07	06	08
44	9244	* Shinde Sayali Yashwant	06	06	08	10	06	06
45	9245	* Teware Pranoti Sadashiv	07	06	06	06	06	06
46	9246	* Tibile Siddhi Sunil	07	08	11	08	06	08
47	9247	* Vedpathak Aditi Atul	08	09	10	09	07	06
48	9248	* Veer Samruti Santosh						
49	9249	* Vichare Ashwini Raghunath	06	06	08	06	06	06
50	9250	* Yadav Om Mohan	11	07	11	09	06	06
51	9251	* Yadav Shruti Subhash	07	07	06	06	06	06
52	9252	* Zirange Pankaj Sunil	11	08	14	13	06	08
53	9253	* Bhatmare Sourabh Sambhaji	08	09	11	12	06	07



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



- ① The PCR was 1st time invented by ---
- ② The main drawback of Taq polymerase is ---
- ③ --- is a collection of total genomic DNA from a single organism
- ④ --- enzyme is linked to 2° antibody in immunological screening of library.
- ⑤ --- probe is used in real time PCR which has fluorophore & quencher.
- ⑥ --- is the 1st plasmid to be engineered which produced somatostatin as a fusion product in E. coli.
- ⑦ --- is a natural method of gene transfer.
- ⑧ The non-transformed cells shows --- colored colonies in blue-white screening.
- ⑨ SYBER Green dye binds to ---
- ⑩ HART technique is used for ---

Name: Gayatri Kaghurath

06  
10

॥ ज्ञान, विज्ञान आणि सुरसंस्कार वांसादी शिक्षण प्रसार ॥  
- शिक्षणमहर्षी डॉ. बापूजी साबुंबुखे

28365

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

Roll No. : 9201

Class : T.Y (ENT)

Subject : Advance in Genetic Engg

Test / Tutorial No. :

Div. :

- ① The PCR was first time invented by K. Miller
- ② The main drawback of Taq polymerase is it don't have proof reading / exonuclease activity.  
don't have 3' → 5' exonuclease
- ③ Genetic library <sup>or Gene lib</sup> is a collection of total genomic DNA from a single organism.
- ④ HRP Enzyme is linked to 2<sup>o</sup> Ab in immunological screening of lib.
- ⑤ Radioactive prob is used in RT-PCR which has Hungar & Quincher.
- ⑥ iBRR First the plasmid to be engg to which produces as fusion product in E. coli



Maithili VIKRANT

07  
10

॥ ज्ञान, विज्ञान आणि सुरसंस्कार यांसाठी शिक्षण प्रसार ॥  
- शिक्षणमहर्षी डॉ. बापूजी साळुंके

28384

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. :

Roll No. : 9245

Class : T. Y ( Biotech Entire)

Subject : *Advances in Genetic Engineering*

Test / Tutorial No. : *Internal Exam*

Div. :

Q.1. The PCR was first time invented by

✓  
1/2

→ Kary Mullis

Q.2. The main drawback of Taq polymerase is

✓

→ Low fidelity fidelity

Q.3. \_\_\_\_\_ library is a collection of Total genomic DNA from a single organism.

✓

→ Genomic Library

Q.4. \_\_\_\_\_ enzyme is linked to 2° antibody in Immunological screening of libra

✓

→ HRP / Alkaline Phosphatase

Sabira. Nijam. Athanikar

08  
10

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांचाही शिक्षण प्रसार ॥  
- शिक्षणमहर्षी डॉ. बापूजी साहूंचे

28364

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature  
of  
Supervisor

Suppliment No. : -

Roll No. : 9303

Class : TY Biotech entirrecty

Subject : Advances in G.E.

Test / Tutorial No. : Internal Exam

Signature

1] The PCR was first time invented by Kary Mullis.

2] The main drawback of taq polymerase is that it has less fidelity.

3] Genomic library is a collection of total genomic DNA from a single organism.

4] HRP-conjugate enzyme is linked to secondary antibody in immunological screening of library.

5] Tagman probe is used in real time PCR with which has fluorophore and quencher molecule.

6] pSOM-I is the first plasmid to be engineered which produced stomatostatin as a fuge fusion product in E.coli.



Name: Medinee. Prasanna Shah.

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांचाही विकास प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

28327

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Suppliment No. :

Roll No. : 9238

Class : TY Biotech (Entire)

Signature  
of  
Supervisor

Subject: Food Microbiology & Biotech  
nology

Test / Tutorial No. : Internal Exam

Div. :

The fermented product formed due to coagulation of protein in presence of organic acid produced by bacteria is called Cheese.

Koji fermentation is the example of  $\alpha$ -amylase production.

Uncertainty in GMOs are explained in the of Guidelines.

Primary root of infection of Aspergillosis to human is via air (spores).

Beers are divided into 2 basic types as Ales & Lager (~~Top~~ fermentation from top & fermentation from bottom).

If keeping out of micro-organism is the basis principle is used as preservative factor, then pro is called as Asepsis.

Namrata Dharmagonda Patil.

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥  
- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

28358

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's  
**VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)**

**SUPPLIMENT**

Signature  
of  
Supervisor

Subject : Food and microbial  
Technology  
Test / Tutorial No. : Internal Examination  
Div. :

Suppliment No. :

5  
10

Roll No.

Class

9331

Bsc. Biotech (ent) TY

1. The fermented product form due to coagulation of protein in presence of organic acid produced by bacteria is called cheese.
2. Koji fermentation is the example of solid state fermentation.
3. Uncertainty in GMO's are explained in the form of genetic modification.
4. Primary route of infection of aspergillosis to human is via inhaling.
5. Beers are divided into two basic types as
  - 1) Lager - Bottom fermentation - In this HOPES added in the
  - 2) Ales - Top fermentation - In this type HOPES are added in begining

In keeping out of microorganism is the basic principle used as preservative factor then process is called as sterilization



Name :- Ekata Hemant Kamble

Date :- 12/4/2023

28419

॥ श्री. विद्या ज्ञानि सुरेन्द्रकाजी गोसावी शिक्षण संस्था ॥  
- शिवायगुणी अ. अणुजी संजुळे

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

05  
10

Signature  
of  
Supervisor

Subject : Food and Microbial Biotechnology

Test / Tutorial No. : Internal exam

Div. : -

Suppliment No. : -

Roll No. : 9216

Class : T.Y [B.Sc Biotech [entire]]

1] The fermented product formed due to coagulation of protein in presences of organic acid produced by bacteria is known as cheese.

2] koji fermentation is the example of solid state fermentation

3] Uncertainty in GMO's are explained in the form of stain improvement

4] Primary root of infection as of Aspergillaceae to human is via contaminated food or water

5] Beer are divided into two basic types as top fermented as lagers & bottom fermented as Ales

Names: Aniket Balasahab Kadam

॥ ज्ञान, विज्ञान आणि सुरक्षितार यांसाठी शिक्षण प्रसार ॥  
- शिक्षणमहर्षी डॉ. बापूजी साहूजी

28078

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's  
**VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)**

**SUPPLIMENT**

Signature of Supervisor

Suppliment No. :

07  
10

Roll No. : 9215

Class : B.Sc. Biotech (Entire) III

Subject : Application of Biotechnology in Health  
Test / Tutorial No. : Internal Examination  
Div. :

Q-1. In severe combined immunodeficiency patients there is deficiency of enzyme.

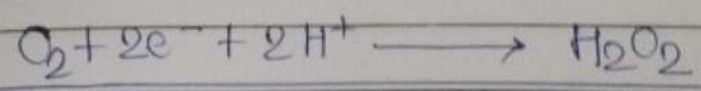
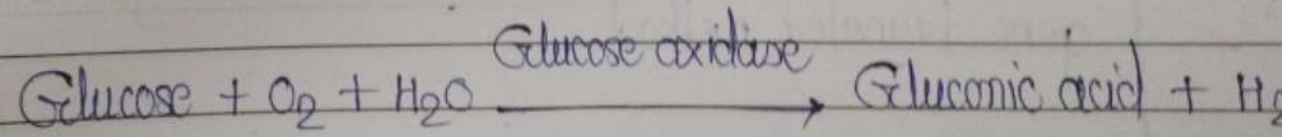
OX

Q-2. Body of the National institute of health clears proposals on experiments for gene therapy.

OX

3. ~~Potentiometric~~ Amperometric Biosensor  
Biosensors are based on movement of electron.

4. State the reaction that occurs in Glucose Biosensor.





Name - Mrinali Shabaji Kambale.

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांच्यासाठी विभाग प्रचार ॥

- शिक्षणपट्टी डॉ. बापूजी साळुंके

28072

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

SUPPLIMENT

Signature  
of  
Supervisor

Subject: Application of biotechnology  
in health.

Test / Tutorial No.: Internal Examination

Div.: -

Suppliment No. : -

Roll No. : 9217

Class : T.Y Entire.

04  
10

Q.1

In sickle cell anemia patient their deficiency of enzyme.

of

Q.2

body of the national Institute of health proposals on experiments for gene therapy.

of

Q.3

Ex-vivo Biosensor are based on movement of electron. Amperometer

1

Q.4

state the reaction that occurs in glucose bio-sensor.  
 $\rightarrow$  GOD (glucose converts)  $\rightarrow$  GOD.

of

Anchal Awalkar.

॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साबुंबे

28318

Shri Swami Vivekanand Shikshan Sanstha Kolhapur's

# VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

## SUPPLIMENT

Signature of Supervisor

Subject: Application of Biotechnology in Health.

Test / Tutorial No.: Internal Exam.

Div.:

Suppliment No.:

Roll No. : 9804

Class : Ty Biotech. Entire

05  
10

Q1) In Saver~~care~~ combine immunodeficiency patient there is deficiency of \_\_\_\_\_ enzyme.

→ Alpha-1 antitripsin. (AAT)

Q2) ROAC Body of the national institute of Health clears proposals on experiments for gene therapy.

Q3) Amperometer biosensor are based on movement of electrode.

Q4) State the reaction that occurs in glucose biosensor.

○ X Amplifier → processor → Display.