SHREE SHIVAJI MARATHA SOCIETY'S
Samaj Bhushan Baburao Alias Appasaheb Jedhe
Arts, Commerce and Science College, Shukrawar Peth, Pune.
INTERNAL EXAMINATION

Subject: MB 341-Medical Microbiology II (2016-17) **Total Marks:**

Roll Number: **Class: T.Y.BSc**

Name of the student: **Signature of Supervisor:**

Q.1. Fill in the blanks. **(2 1/2)**

1) The only semi-synthetic antibiotic from the following is ----------.

a) Amoxycillin b) Penicillin c) Streptomycin d) Actinomycin D

2) FMD is a ---------- disease.

a) Contagious b) Non contagious c) Vector borne d) None of the above

3) HIV belongs to ----------.

a) Picornavirus b) Arabovirus c) Retrovirus d) Adenovirus

4) Only DNA virus from the following is----------.

a) HIV b) HBV c) Polio virus d) HAV

5) The Hemagglutination reaction is specifically observed in ----------.

a) HIV b) HBV c) Influenza virus d) HAV

Q.2 Match the following: **(2 1/2)**

A	ANSWERS	B
1)Serum Hepatitis		a)gp 120
2)Oral Polio virus		b)nucleoside analogue
3)Acyclovir		c)Hepatitis B virud
4)Influenza virus		d)Live attenuated virus
5)HIV		e)Neuraminidase

Q.3 State true or false: **(2 1/2)**

1) Reverse transcriptase is not present in HIV virus……..

2) Antigenic drift is seen in Influenza virus…….

3) FMD is seen only in human……

4) Nystatin acts on cell membrane of bacteria…….

5) Polio virus is an Arbovirus……..

Q.4 Answer the following: **(2 1/2)**

1) Differentiate between bacteriostatic and bactericidal effect of drug.

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2) What is combinational chemotherapy?

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3) What are antigens of HIV virus?

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4) What is antigenic shift?

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5) Enlist names of chemotherapeutic agents acting on cell wall.

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Shukrawar Peth Pune- 02
T.Y. B.Sc. Microbiology Internal examination 2016 -17
Semester - 1
MB-332 Genetics and molecular biology I

Name of the Candidate: …… Roll No. : ……
Max. Marks: 10 Time: 40 Min.
Date: Sign of Junior Supervisor:

Q. 1. Choose the Correct Alternative **($2^{1/2}$)**

1.Which of the following molecules serves as an adaptor molecule during protein synthesis ……

a) r RNA b) mRNA
c) t RNA d) t RNA and mRNA

2. In prokaryotes the first amino acid in the polypeptide chain is ……

a) Methionine b) N- methyl Methionine
c) N-formyl Methionine d) All of above

3 Eukaryotic mRNA consists of ……

a) 5' adenosine cap and poly G tail b) 7'adenosine cap and poly A tail
c) 5' adenosine cap and poly A tail d) none of above

4. Types of RNA polymerases found in eukaryotes are ……

a) three b) four
c) one d) two

5. Shine –Dalgarno sequence determines the binding between ……..

a) m RNA and t RNA b) mRNA and ribosome
c) Ribosome and t RNA d) none

Q.2. Match the following **($2^{1/2}$)**

1. DNA polymerase	a. Relaxes the tension produced in the DNA during replication
2. DNA Ligase	b.Bind to single stranded DNA to stabilize it.
3. SSB	c. Transcription
4. RNA polymerase	d. sealing of the gaps during replication
5. Topoisomerase.	e. Addition of nucleotides during replication

Ans: 1……. 2…….. 3……. 4……. 5……..

Q.3. Define the following terms **($2^{1/2}$)**

1. Replication-

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2. Transcription –

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3. Para sexual cycle –

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4. Promoter -

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5. Translation–

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Q. 4. Answer the following **($2^{1/2}$)**

1. Give the formula for finding gene centomere distance in tetrad analysis of neurospora.

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2. Name the enzyme involved in replication of end of chromosomes in eukaryotes

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3. Give the steps of parasexual cycle

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4. Enlist three stop codons.

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5. Give the function of Helicases during replication

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First Term Internal Assessment (2016-17) Class: T.Y.B.Sc
MB – 333: ENZYMOLOGY
Date:
Name Of the Student: ……. …… Sign of Supervisor:

Q.1 Choose Correct alternative. **2 1/5 MKS**

1) CMC is a …….. [ ]

a) Cation exchanger b) Anion exchanger
c) Both d) None of the above.

2) EDTA does one of the following function in protein purification. [ ]

a) Dialysis b) Removes traces of heavy metal ions
c) Cell lysis d) None of the above

3) Allosteric enzyme is …….. [ ]

a) Specific binding group b) Requires proteolytic cleavage
c) Multiple binding sites d) Different enzyme catalyzing same reaction

4) Substrate for an enzyme Aldolase [ ]
a) DHAP b)G-3_P
c) Fructose 1,6 di phosphate d) None of the above

5) Salting in and Salting out phenomenon occur in……. [ ]
a) Salt precipitation b) Solvent precipitation
c) Isoelectric precipitation d) none of the above

Q.2 State true or False. **2 1/5 MKS**

1) In gel filtration chromatography larger proteins are eluted late…….....
2) Lysozyme can be used for cell fractionation method …….
3) Iron is a Prosthetic group of heme enzymes ……
4) Adsorption chromatography is not purification method based on electric charge present on the enzyme……
5) Regulation of enzyme is done at the level of enzyme activity and enzyme synthesis…..……

Q.3 Define **2 1/5 MKS**

1. Specific activity of enzyme

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2. Turn over number of enzyme

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3) Isoelectric pH…….
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4) Feed Back inhibition……..
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5) Feed Back Repression …….
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Q.4 Answer the following. **2 1/5 MKS**

1) Michaelis Menten Hyperbolic curve with equation

2) Lineweaver Burke Plot with equation equation

3) Hanes Plot with equation

4) Eadie-Hofstee Plot with

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Second Term Internal Assessment **Class: T.Y.B.Sc**

MB: Metabolism (2016-17) **Date:**

Name Of the Student: **Sign of Supervisor:**

Q.1 Choose Correct alternative **2 1/2 Mks.**

1) When Keq =1,then ΔG^0 is …… . [ ]
a) Negative b) Positive
c) Zero d) positive or negative

2) Transpeptidation of existing peptidoglycan takes place in the step…….. [ ]

a) cytoplasmic space b)membrane step
c) periplasmic step d) none of the above

3) $ATP+H_2O \longrightarrow ADP+Pi, \Delta G^0 =$……kcal/mol [ ]

a) +7.3 kcal /mol b) – 7.3 kcal/mol

c) +10.3 kcal/mol d) –10.3 kcal/mol

4) Cytochrome …….. &…….together constitute as cytochrome oxidase [ ]

a) a, c1 b) a ,a_3

c) a, b d) c1,b

5) The sugar nucleotide involved in glycogen synthesis in bacteria is [ ]

a) CDP-glucose b) ADP-glucose
c) UDP-glucose d) GDP-glucose

Q.2 State whether true or false **2 1/2**

1) Living cells are never at equilibrium with their surroundings.…….
2) Beta oxidation of fatty acids takes place in cytoplasm.……
3) phosphocreatin is found in muscles of vertebrates ……..
4) In substrate level phosphorylation , substrate or breakdown product of a substrate is phosphorylated during the course of intermediary metabolism……..…….
5) Chemiosmotic coupling hypothesis was given by D.Boyer…….

Q.3 Define **2 1/2**

1.Flavoproteins……

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2.High energy compounds…….....

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3.Free energy……..

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4.Substrate level phosphorylation

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5. Pyrophosphate cleavage……..…….....

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Q.4) Answer the following **2 1/2 Mks**

1) State second law of thermodynamics...

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2) Enlist high energy compounds……..

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……...

3) Describe properties of ATPase……..

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4)How many complexes are present in ETC?

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5) Name the theories of ATP formation..

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Internal Assessment September 2016-2017

Semester –I **MB:334 Immunology (Marks : 10)**

Class T.Y.B.Sc

Name of the Candidate : …….. Roll No……

Date: …….. **Sign Of Junior Supervisor…….**

Q.1 Multiple Choice Question. . 2 1/2 Mks

i)……..is used for passive immunity.

a) Antiserum b) Hapten c) Antigen d) Toxin

ii) ……is an example of secondary lymphoid organ.

a)Brain b) Thymus c) Spleen d)Bone marrow

iii) …… is a pentameric Immunoglobulin.

a) IgG b)IgD c)IgM d)IgA

iv) Negative phase was found in …….. immunity.

a) Passive b) Active c)Hertz d) Local

v) …… Is an antibodies involved in allergic type reaction.

a) IgG b) IgA c) IgE `d) all the above

Q.2 State wheather the following statements are true or false . 2 1/2 Mks

a)T cells are not responsible for antibody production. (-------)
b) The classical pathway is activated by antigen and antibody complex. (-------)
c) IgE type antibodies can cross through placenta. (-------)
d) NK cell get activated in ADCC mechanism. (-------)
e) Idiotypic antigen are present in the constant region of antibody. (-------)

Q.3 Define . **2 1/2 Mks**

1) Antigen……

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……

2) Immunity……

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……

3)Inflammation ……

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……

4)Complement ……

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……

5) Hapten……

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……

Q.4 Match the following. **2 1/2 Mks**

Sr.No.	A group	Answer	Sr.No.	B group
1	Plasma cell		a	Increased body temp
2	Iso antigen		b	*Factor D and H*
3	Phagocytosis		c	Antibodies
4	Hyptothalamus		d	Blood grouping
5	Alternative complement system		e	Macrophages

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Second term internal assessment 2016-17

Subject: Immunology

Class: T.Y.B.Sc **Date:**

Roll Number: …… **Total marks: 10**

Name of the student:…… **Signature of Supervisor:**

Q.1: Choose the correct alternative. **($2^1/_2$)**

1) Cleft of MHC class I molecule can bind antigen of -------- amino acid.
a) 8-20 b) 5-10
c) 20-30 d) 30-40

2) Skin transplant is the example of ----------.
a) Isograft b) Allograft
c) Autograft d)Xenograft

3) ----------antibody is produced in primary response.
a) IgG b) IgM
c) IgA d) IgG & IgM

4) CD_4 is made up of ----------domain.
a) Three b) five
c) four d)Two

5) --------antigen is present in blood group B person.
a) A b) B
c) A&B d) None of these

Q.2 State whether True or false. **($2^1/_2$)**

1) Duffy is most common Blood group system. (----)
2) Cytosolic pathway is known as CD_4 pathway. (----)
3) Graft rejection is mostly found in alloantigen. (----)
4) In Bombay blood group H antigen is present on the surface of RBC. (----)
5) NK cells are get activated in ADCC. (----)

Q.3 Match the following. **($2^1/_2$)**

	A		B
1	Primary immune response	a	Alpha Beta heterodimer
2	TCR	b	Galactosyl transferase
3	Expression B antigen	c	Mixed lymphocyte reaction
4	CD_8	d	IgM
5	GVH reaction	e	30-38 KD

1)…….. 2)…….. 3)…… 4)…… 5)……

Q.4 Explain the following term. **($2^1/_2$)**

1) Cytokine. ----------

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2) Cross matching. ----------

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3) HDN ----------

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4) ADCC----------

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5) Isograft . ----------

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Shukrawar Peth Pune- 02
T.Y. B.Sc. Microbiology Internal examination 2016 -17
Term - 1
Fermentation Technology I

Name of the Candidate: ..... **Roll No. : .....**
Max. Marks: 10 **Time: 40 Min.**
Date: **Sign of Junior Supervisor:**

Q. 1. Choose the Correct Alternative $(2^{1/2})$

1. The Placket -Burman design for media optimization allows evaluations of X-1 variable by X Experiments where X must be in multiples of .....

a) 4 b) 2

c) 3 d) 1

2. The component of CSL found to yield penicillin G is .....

a) Hydroxy phenyl acetic acid b) Phenoxy acetic acid

c) Phenyl acetic acid d) none of above

3. In response surface optimization the axis of contour plots are.....

a) Independent variables b) Experimental variables

c) Dependant variables d) none of above

4. The type of feedback inhibition seen in overproduction of lysine is .....

a) Concerted b) Cooperative

c) Sequential d) Cumulative

5. The use of response surface optimization is to .....

a) Identify key independent variable b) Determine optimum level

c) a and b d) None

Q.2. Match the following $(2^{1/2})$

1. Kinoshita	a. Lysine Production
2. Auxotroph mutant	b. Production of heterologous protein
3. Analogue resistant Mutant	c. Altered permeability
4. *C.glutamicum*	d. Gradient plate Technique
5. Recombinant DNA technology	e. *Glutamic acid producer*
	f. Cumulative inhibition

Ans: 1..... 2..... 3..... 4..... 5.....

Q.3. Define the following terms

1. Auxotroph- $(2^{1/2})$

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2. Feedback repression –

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3. Feedback inhibition –

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4. Prototroph -

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5. Revertant mutant –

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Q. 4. Answer the following

1. Give the full form and role of ATCC $(2^{1/2})$

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2. Objectives of strain improvement.

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3. Give the full form of NCIM.

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4. Types of media optimization.

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5. Pathway for lysine production.

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ShukrawarPeth Pune- 02
T.Y. B.Sc. Microbiology Internal examination 2016 -17
Term - II
Fermentation Technology II

Name of the Candidate: ..... Roll No. : .....
Max. Marks: 10 **Time: 40 Min.**
Date: **Sign of Junior Supervisor:**

Q. 1. Choose the Correct Alternative **($2^{1/2}$)**

1. .....bacterium is used to produce vinegar.

a) Lactobacillus bulgaricus b) Acetobacter aceti

c) Eremothecium ashbyii d) Bacillus coagulance

2. ..... is used commercially as chelating and sequestering agent.

a) Lactic acid b) Citric acid

c) Acetic acid d) Glutamic acid

3. .....and ..... are used in the production of acetic acid.

a) Acetobacter and Gluconobacter b)Gluconobacter and Bacillus

c)Acetobacter and Corynebacter d)Corynebacter and Bacillus

4. ..... is an enzyme complex used for the conversion of lignocellulosic residue.

a) Cellulase b) Protease

c)Lipase d) Pectinase

5. .....bacterium is used in production of Vitamin B_{12}

a) Eremothecium ashbyii b) Candida albicans

c) Acetobacter aceti d) Propionibacterium freundenreichii

Q.2. Match the following **($2^{1/2}$)**

1. Lactic acid	a. Vit.B_{12}
2. Riboflavin	b. *Lactobacillus bulgaricus*
3.Glutamic acid	c. Riboflavin
4. Cobalamine	d. *C.glutamicum*
5. *Eremothecium ashbyii*	e. Vit.B_2

Ans: 1..... 2..... 3..... 4..... 5.....

Q.3. Define the following terms

1. Define submerged fermentation- $(2^{1/2})$

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2. Enlist the substrates utilized as raw materials in solid state fermentation.

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3. Enlist producers of riboflavin

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4. Write the uses of citric acid

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5. Enlist the factors governing submerged culture

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Q. 4. Answer the following

1. Define solid state fermentation $(2^{1/2})$

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2. What are advantages of SSF over submerged fermentation.

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3. Give significance of solid state fermentation.

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4. Write recovery of riboflavin.

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5. Write uses of Vit.B_{12}.

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Shukrawar Peth Pune- 02
T.Y. B.Sc. Microbiology Internal examination 2016 -17
Term - 1
Food and Dairy Microbiology

Name of the Candidate: …… Roll No. : ……...
Max. Marks: 10 Time: 40 Min.
Date: Sign of Junior Supervisor:

Q. 1. Choose the Correct Alternative **($2^{1/2}$)**

1. …… is used for dye reduction test

a) Resazurine b) Bromophenol blue

c) Methylene blue d) Both a and c

2. HTST pasteurization requires …….

a) 72^0C, 15 seconds b) 63^0C, 20 seconds

c) 63^0C, 30 minutes d) 135^0C, 2-5 seconds

3. Yellow color of cow milk is due to …… pigment present in milk.

a) β Carotene b) Riboflavin

c) Retinal d) Xanthophyll

4. …… causes Red colour in milk.

a) *Serratia marscences* b) *Pseudomonas synxantha*

c) *Pseudomonas aeruginosa* d) *Staphylococcus aureus*

5. Q fever is caused by ……..

a) *Enterococcus faecalis* b) *Coxiella burnetti*

c) *Brucella abortus* d) *Mycobacterium bovis*

Q.2. Match the following **($2^{1/2}$)**

1. Mastitis	a. Ropiness of milk
2. *Alcaligens viscolactis*	b. 0.1 % fat
3. Skimmed milk	c. BTB
4. FGM	d. Rancid flavour
5. Lipolysis of lipids	e. *Pseudomonas syncynea*
	f. membrane around fat globules

Ans: 1……. 2…….. 3……. 4……. 5……..

Q.3. Define the following terms . **($2^{1/2}$)**

1. Tonned milk-

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2. Stormy fermentation –

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3. Operation Flood –

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4. Sweet curdling –

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5. Clean milk –

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Q. 4. Answer the following. **($2^{1/2}$)**

1. Give the full form and role of NDDB

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2. Define milk and give its constituents.

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3. Enlist different milk borne infections with their causative agents.

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4. Explain any 2 physicochemical properties of milk.

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5. Give principle of Phosphatase test.

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Shukrawar Peth Pune- 02
T.Y. B.Sc. Microbiology Internal examination 2016 -17
Agricultural and Environmental Microbiology Term - II

Name of the Candidate: …… Roll No. : ……...
Max. Marks: 10 Time: 40 Min.
Date: Sign of Junior Supervisor:

All the questions are compulsory
Each question carries half mark

Q. 1. Choose the Correct Alternative **($2^{1/2}$)**

1. Which of the following entomopathogenic fungi causes white muscardine disease in insects……

a) *Beauveria bassiana* b) *Gliocladium*
c) *Trichoderma harzianum* d*) Metarhizium anisopliae*

2. In most nitrogen fixing bacteria reduced ……. acts as an electron donor.

a) Platoquinone b) Plastocyanine
c) Ferredoxin d) Cytochrome

3. …… is the lowest pest population that will cause economic damage.

a) Economic threshold b) Economic injury level
c) Economic damage level d) None of these

4. …… are the genes encoding enzymes involved in the fixation of atmospheric nitrogen.

a) Nod genes b) Nif genes
c) Gln D genes d) Nod D genes

5. Insect resistant *Bt* crops are developed by cloning the genes isolated from ……..

a) *Agrobacterium rhizogenes* b) *Agrobacterium tumefaciens*
c) *Bacillus thuringiensis* d*) Pseudomona fluorescense*

Q.2. Match the following **($2^{1/2}$)**

1. Lipochitooligosaccharides	a. Nif gene
2. *Azotobacter*	b. Nod factor
3. PHA	c. Control of nematode disease
4. *Bacillus anthracis*	d. Bioplastic
5. *Pasteuria penetrans*	e. Free-living N_2 fixer
	f. Bioweapon

Ans: 1……. 2…….. 3……. 4……. 5……..

Q.3. Do as directed **($2^{1/2}$)**

1. Name the two ores used for bioleaching of copper.
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……..

2. Write the name of pigment involved in root nodules of symbiotic N_2 fixers.
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……

3. True or False
Clostridium is a non-symbiotic, anaerobic, N_2 fixing bacteria _____

4. Fill in the blank
Tularemia is caused by _____

5. Give mode of action of *Bt* toxin.
……
……

Q. 4. Answer the following. **($2^{1/2}$)**

1. Define Biochip and give its components.
……
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……

2. Define Biocontrol agent and write 2 examples of it.
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3. Define Bioleaching and give its various types.
……
……

4. What is biodegradable plastic?
……
……

5. Give the components of enzyme Nitrogenase complex and write their role.
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