

M. B. Patel Science College

First Internal Exam

Biotechnology

BT-301

Date:- 17/10/2011

Time:- 3:00 PM – 4:30 PM

Total Marks:- 40

Note:

Total No. of Printed Pages:- 02

1. Draw the figure or structure wherever required
2. Numbers on the right side indicating the marks.

Que:-1 A Answer the followings. (Any One)

7

1. Define: Apoptosis. Enumerate its molecular mechanism for Intrinsic Pathway with the help of labeled diagrams.
2. Draw & explain the pathway with proper labeling: "RTK & Ras mediated pathway in *Drosophila* compound eye"
3. Do As Directed:
 1. Write a Brief Note: Caspases
 2. Draw Generalized Pathway for Signal Transduction

B Answer the followings. (Any One)

6

1. Define: Cell Signaling. Draw the labeled diagram for the cell signaling pathway : "Activation For Somatostatin Secretion By Cell"
2. Write Short Notes:
 1. Biochemical Identification of Apoptotic Cell
 2. IAPs

C Give the Full forms of GEF & GAP along with their roles in Signal Transduction.

1

Que:-2 Answer the followings. (Any Two)

14

- 1 Describe in detail the eukaryotic genome organization.
- 2 What is chromosome banding? Describe G, Q, and T banding.
- 3 Describe Leucine zipper and Zink motifs.
- 4 Describe in detail using diagram the eukaryotic DNA packaging.

Que:-3 Answer the followings. (Any Three)

12

- 1 Discuss Holiday model with "U" tube experiment.
- 2 Write a note on LINES & SINES.
- 3 Why is Transduction important as far as its genetics is concerned?
- 4 Explain diagrammatically process of conjugation.
- 5 Give an account on IS 10 element.

☺ ~~ALL THE BEST~~ ☺

M. B. Patel Science College

First Internal Exam

Biotechnology

BT-302

Date:- 18/10/2011

Time:- 3:00 PM – 4:30 PM

Total Marks:- 40

Note:

Total No. of Printed Pages:- 02

1. Draw the figure or structure wherever required
2. Numbers on the right side indicating the marks.

Que:-1

A Explain the followings. (Any One) 8 X 1

1. Describe the YAC vector with its Special Features, Cloning strategy and Application.
2. Write note on replacement vectors

B Answer the followings. (Any One) 5 X 1

1. Write note on Cosmid.
2. Narrate the structure of BAC and explain it.

Que:-2

A Answer the followings. (Any One) 8 X 1

1. Explain Chain Termination Method for DNA Sequencing.
2. Define: Site Directed Mutagenesis. Briefly summarize the PCR based methods of it.
3. Define: Electrophoresis. Explain the principle & methodology for the study of isolated DNA from plant source.

P.T.O.

Page 1 of 2

B Explain the followings. (Any One)

6 X 1

1. How can you solve the dispute between two parents for the authority of the unidentified dead body found from an accident site? Just draw the schematic representation of your method.
2. If the toxin protein from a bacterial origin is having DNA as its target; how can we find the binding site of that protein on DNA? Just draw the schematic representation of the method.

Que:-3 Answer the followings. (Any Two)

6.5 X 2

1. Explain Flat File Format, Sequence Retrieval & Sequence Submission Tools for GenBank.
2. Define Computer. Explain the important characteristics of Computer & draw the basic organization of the computer system.
3. What do you mean by structural database? Explain "Four Level Domain Classification Database" as one of the structural database.
4. Define Internet. Explain about services & applications of Internet.
5. Give the full names & URLs for the followings.
NCBI, EMBL, DDBJ, PIR, PDB, CATH, SCOP

☺ *~~ALL THE BEST~~* ☺

M.B.Patel Science college, C.E.Society, Anand
First internal examination-2011
T.Y.B.Sc (Biotechnology) BT-303

DATE – 19/10/11
TIME---3 PM to 4.30 PM

MARKS-40

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- Q1** **Attempt Any Two** **(6x2=12)**
- 1 Enlist all the factors affecting enzyme activity. And write a note on effect of pH and temperature on enzyme activity.
 - 2 Define inhibition. Write a detail note on inhibition in which Km value increases without changing Vmax.
 - 3 Derive M-M equation and explain it with M-M plot.
 - 4 Define followings with suitable examples.
 - Allosteric enzymes
 - Isoenzymes
 - Holoenzymes
 - Kcat
 - Units of enzyme activity.
- Q2** **A Attempt Any Two** **12**
- 1 Give: pay off phase of Glycolysis along with its balance sheet
 - 2 Explain β - oxidation of Palmitoyl Co-A.
 - 3 Explain: Decarboxylation of Amino Acid.
 - 4 Give De Novo pathway for pyrimidine biosynthesis.
- B Give complete Urea Cycle.(compulsory)** **4**
- Q3** **Attempt Any Two** **12**
- 1 Give an account on Chemiosmotic theory.
 - 2 Explain mechanism for phosphorylation of ADP as proposed by binding change hypothesis.
 - 3 Write a note on Complex-I of ETC
 - 4 Define the following terms:
 - Oxidative phosphorylation
 - Bioenergetics
 - Standard free energy

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ALL THE BEST

M.B.Patel Science College
First Internal Test
T.Y.B.Sc.
BT-304
Immunology and Virology

Date: 20/10/2011
Time: 3.00-4.30 p.m.

Total Marks: 40
no. of pages : 01

	Marks
Q-1(a) Attempt any two	08
I. Enlist the basic enzymes included in ELISA and explain ELISA diagrammatically	
II. Discuss prozone phenomenon diagrammatically	
III. Give comparative account on RIA and ELISA	
Q-1 (b) Attempt any one	06
I. Give a role of Spleen and importance of spleen in human body	
II. Diagrammatically discuss role of Thymus in human body	
Q-2 (a) Attempt any one	05
I. Discuss role of various APC in T-cell development	
II. How does NK cells distinguish between cell and non cells Ag.	
Q-2 (b) Attempt any one	08
I. In mature B-cell IgM and IgD have antigenic specificity? How?	
II. How does an activated B-cell differentiate	
Q-3 (a) Attempt any one	07
I Explain the process of infection of virulent phages with respect to its molecular mechanism	
II Enlist different methods of viral assays and explain hemagglutination in detail	
Q-3 (b) Attempt any one	06
I Symmetry of viruses	
II Viruses as a connecting link between animate and inanimate objects	

BEST OF LUCK

M.B.Patel Science College
First Internal Test
T.Y.B.Sc.
BT-305

Environmental and Industrial Biotechnology

Date: 21/10/2011
Time: 3.00-4.30 p.m.

Total Marks: 40
no. of pages : 01

	Marks
Q-1(a) Attempt any one	07
I. Discuss sterilization of media.	
II. Discuss the carbon sources used as an raw material for fermentation process	
Q-1 (b) Attempt any two	07
I. Solvent extraction	
II. Decanters	
III. Stirrer gland and bearing	
Q-2 (a) Attempt any two	12
I. Define Biometallurgy and explain the mechanism used for copper bioleaching	
II. Write a note on Superbug	
III. Write the principle and applications of Biosensors	
Q-3 (a) Attempt any two	14
I. Define Biodiversity and explain the steps used for conservation of biodiversity.	
II. Define Air pollution and explain methods used to control air pollution.	
III. Give an account on Total organic carbon and trickling filter .	

BEST OF LUCK

No. of pages : 1

M. B. PATEL SCIENCE COLLEGE, ANAND
Ist Internal Exam
BT- 306, Animal and Plant biotechnology

Date :22/10/11

Time : 3 to 4:30 pm

Total Marks :40

- Q -1** Attempt the following questions (**ANY TWO**) **14**
- a) What is hybridoma technology? Explain monoclonal antibody production using hybridoma technology.
 - b) What is the importance of defined media? Explain serum containing media in detail.
 - c) Explain the various culture methods in detail.
- Q -2 A** What do you mean by a transgene. Give its example. (**compulsory**) **01**
- Q -2 B** Attempt the following questions (**ANY TWO**)
- a) Give a detailed account on the various methods of development of herbicide resistant transgenic plants. **06**
 - b) Discuss the methods and genes required for the construction of transgenic plant having improved protein and starch quality. **06**
 - c) Write the importance, application and scope of agricultural biotechnology. **06**
- Q-3 A** What is a molecular map? (**compulsory**) **01**
- Q-3 B** Write **any two** of the following questions **12**
- a) Explain in detail the various Strategies for gene inhibition.
 - b) Describe in detail the procedure for RAPD and RFLP, also enumerate the differences between the processes.
 - c) Discuss the process of AFLP markers and its advantages.
 - d) Describe the inducible expression system using an example.

.....All the best.....