Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.	
SLR–SK - 93	Wednesday 16/11/2016	10.30 AM to 01.00 PM	Microbiology	HCT 1.1		

- 9		16/11/2016	to 01.00 PM	147	ner obiology		
Instr	ucti	,	on-I is compuls er any four qu		rom Section-II To	otal Marks: 7	70
			S	Section	I		
Q.1	(a)	Multiple Choice			_		07
	1)	The foundation	for the germ the	eory of di	sease was set down	by	
		a) Robert Koch	_	b)	Ronald Ross	_	
		c) Louis Pasteur	r	d)	Walter Reed		
	2)	Mycoplasmas are	e different from	the other	prokaryotes by		
		a) presence of c walls	hitin in cell	b)	presence of murra	n in cell wall	S
		c) presence of p walls	roteins in cell	d)	absence of cell wa	ll itself	
	3)	Culture medium	used for fungus	s is			
		a) Sabouraud's		,	Nutrient broth		
		c) Nutrient broth	h	d)	Minimal agar		
	4)	The bacteria which also, are known a		row at 000	C but which grow a	t 20°C to 30°	C
		a) Psychrophile			Facultative psychr	ophiles	
		c) Average psyc	chrophiles	d)	Mesophiles		
	5)	Example for DN	A viruses:				
		a) Adeno virus			b) Papova virus		
		c) Herpes virus moisaic	and cauliflower	r	d) All of the abo	ve	
	6)	Penicilin is com	mercially produ	iced by			
		a) P. notatum			P. chrysogenum		
		c) P. citrinum		d)	P. roquefortii		
	7)	Ziehl- Neelson st	tain is a				
		a) Simple stain		,	Counter stain		
		c) Differential s	tain	d)	None of them		
	B)	Define the follow	ing terms:				07

B) Define the following terms:

- 1) Pili
- 2) Pasteurisation
- 3) Barophiles
- 4) Archaebacteria
- 5) Cyanobacteria
- 6) Bacteriophage7) Axenic culture

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Q.2	How are the prokaryotes classified? Add a note on the present used method of classifying the Bacteria.	14
Q.3	What is antagonism? What is its influence in discovery of antibiotics?	14
Q.4	Explain what is numerical taxonomy? How does it influence the classification of biological systems?	14
Q.5	 Answers any two of the following: a) What are the physical methods of sterilization? b) What is Bergy's Manual? What is its significance on biological classification? c) Explain symbiotic associations with suitable examples. 	14
Q.6	 Write short notes on any two of the following a) Egg inoculation b) Differential staining c) Preservation of cultures 	14

Master of Science – I (Biotechnology) Examination: Oct /Nov 2016 Semester – I (New BCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK 94	Friday 18/11/2016	10:30 AM to 01:00 PM	Concept of biochemistry	HCT 1.2	

Instructions: 1) Section-Iis compulsory.

2) Answer any four questions from section-II **Total Marks: 70** Section I Q.1 Rewrite the following sentences by selecting correct answers from given 07 alternative. 1) The pyranose structure of sugar contain_____ number of carbon atoms in its structure. a) eight b) seven d) five c) six 2) Bile salts derived from ______ facilitate digestion of lipids. a) cholesterol b) glycerol c) palmitate d) acetyl COA 3) In Gauchers disease ______ is accumulated in organs and tissues. b) glucocerebroside a) cerebroside c) corticoteroid d) dopamine 4) The sucrose biosynthesis in plants results from condensation of fructose 6 phosphate with the _____ glucose. b) GDP a) ADP d) UDP c) NADP 5) The phosphate and ribose groups are donated by _____ during the biosynthesis of nucleotides. a) PRPP b) orotate d) HGPRT c) hypoxanthine 6) Levels ofb _____ is used as a diagnostic tool for pregnancy. a) leutinizing hormone b) vasopressin c) human chorionic gonadotropin d) somatostation 7) Redox potential is the measure of affinity of a substance for a) neutrons b) protons d) bosons c) electrons

	B) Definitions: 1) Uncoupler 2) Metabolism 3) Secondary messenger 4) Biological energy transducer 5) Redox potential 6) Photophosphorylation 7) Hormone	07
	Section II	
Q.2	Describe in detail 'oxidative phosphorylation'.	14
Q.3	Add a detail account on 'Inborn errors of metabolism'.	14
Q.4	Describe the reactions and regulation of 'glycolysis'	14
Q.5	 Answers any two from the following: a) Explain structure and role of cAMP. b) Illustrate biosynthesis of fatty acids. c) Describe 'dark reactions' of photosynthesis. 	14
Q.6	 Answers any two from the following: a) Describe pancreatic hormones. b) Describe structural levels in protein. Add a note 'Ramchandran plot' c) Write note on 'redox potential.' 	14

07

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 **Semester – I (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 95	Monday 21/11/2016	10.30 AM to 01.00 PM	Inheritance Biology	HCT 1.3	

Instructions:

c) Diploid

- 1) Part-I Question- 1 is compulsory.
- 2) Answer any four questions from Part-II
- 3) Figures to the right indicate full marks.
- 4) Answer to the part I and Part II are to be written in the same

answer booklet only. **Total Marks: 70** Part - I Q.1 A) Rewrite the following sentences by selecting correct answers from given **07** alternative. 1) The length of chromosomes in human is _____. b) 6-8µ a) 4-6µ d) $2-4\mu$ c) $1-2\mu$ 2) A property common to all types of heterochromatin is _____ a) Late Translation b) Late Transcription c) Late Replication d) Late Nuclear Division 3) A cross between individuals with dominant and recessive phenotype is called a) Self cross b) Test cross c) Back cross d) Allele cross 4) The unit of measurement for genetic linkage is a) Centimeter b) Centimorgan c) Kilometer d) Kilobase 5) Minisatellites are located near _____ b) Chromosomes a) Centromeres c) Telomeres d) Acromere 6) Leucoplasts are present in _____ b) Flowers a) Leaves c) Roots d) Pollen 7) Jumbo Macintosh apples is an example of a) Tetraploid b) Triploid

d) Monoploid

	B) Define the following:	07
	1) Law of Independent Assortment	
	2) Epistasis	
	3) Gene Flow Analogous Organia	
	4) Analogous Organs5) Transformation	
	6) Pericentric Inversion	
	7) Position Effects	
	r) Toblion Elitoria	
	Part - II	
	Answer Any Four of the following.	
Q.2	Write in detail about the Mendelian Law's of Inheritance with example.	14
2.2	write in detail doodt the Menderian Edw 3 of Inheritance with example.	1-
Q.3	Describe in detail about the morphology of Chromosome and its Role in Heredity	14
	with a neat labeled diagram.	
2.4	Which a world had discount and the Coignal's Formation and the	1.
Q.4	Which a neat labeled diagram, write a note on Griffith's Experiment and the mechanism of transformation.	14
	incenanism of transformation.	
Q.5	Answers any two from the following:	14
	a) Write in brief about Neodarwinism	
	b) Write in brief about Generalized Transduction	
	c) Write in brief about supplementary Gene Action	
2.6	Waite about notes on any true	1 /
Q.6	Write short notes on any two: a) Microsatellite	14
	b) Competency and various factors affecting competency	
	c) Extra chromosomal Inheritance in chloroplast	
	e) Data emomosoma imeritance in emoropiasi	

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 96	Wednesday 23/11/2016	10.30 AM to 01.00 PM	Biostatistics & Bioinformatics	SCT 1.1	

- 1) Part-I Question- 1 is compulsory.
- 2) Answer any four questions from Part-II
- 3) Figures to the right indicate full marks.
- 4) Answer to the part I and Part II are to be written in the same answer booklet only

		same answer booklet		
			Total Marks:	70
		D 4	T	
2.1	A) D.	Part		07
Q.1		ternative.	electing correct answers from given	U /
	1)		enome information resource	
	1)	a) NCBI	b) PIR	
		c) SIB	d) RCSB	
	2)	The secondary database of protein i	S .	
	Í	a) Swiss prot	b) TrEmbl	
		c) Blocks	d) PDB	
	3)	FASTA was developed by		
		a) Needleman & Wunch	b) Smith & Waterman	
		c) Lipman & Pearson	d) None	
	4)	is one of the prote	ein secondary structure	
		a) helix	b) turn	
		c) sheet	d) All	
	5)	A subset of the population selected population is called	to help make inferences on a	
		a) population	b) inferential statistics	
		c) census	d) sample	
	6)	Which of the following is not a mea	usure of central tendency?	
		a) Mode	b) variability	
		c) median	d) mean	
	7)	It is necessary to find cumulative fr	equencies in order to draw	
		a) histogram	b) frequency polygon	
		c) ogive curve	d) column chart	

	B) Define the following:	07
	1) Proteome	
	2) Alignment	
	3) Homology	
	4) Biostatisites	
	5) Variable	
	6) Median	
	7) Chi square test	
	Part –II	
	Answer Any Four of the following.	
Q.2	Write a note on Genome Information Resources.	14
Q.3	Add a note on structural databases of proteins.	14
Q.4	Explain the application of statistics in biology with example.	14
Q.5	 Answers any two from the following: a) Write a note on pairwise sequence alignment b) Add a note on Phylogenetics analysis software's c) Calculate Quartile deviation from the data 11, 12, 20, 16, 18, 30, 44, 40, 50, 46, 62. 	14
Q.6	Answer any two:a) What is Protein structure prediction?b) What is coefficient of variance? Mention its importance.c) Graphical representation of data.	14

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 **Semester – I (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 97	Wednesday 23/11/2016	10.30 AM to 01.00 PM	Clinical Bioinformatics	SCT 1.2	

Instructions:

- 1) Part-I Question- 1 is compulsory.
- 2) Answer any four questions from Part-II
- 3) Figures to the right indicate full marks.
- 4) Answer to the part I and Part II are to be written in the same answer booklet only.

Total Marks: 70

Part - I Q.1 A) Rewrite the following sentences by selecting correct answers from given alternative. also known as drug safety is the pharmacological 1) science relating to the collection, detection, assessment, monitoring, and prevention of adverse effects with pharmaceutical products. a) Clinical trial b) Pharmacovigilance c) CDM d) Pharamcology is an affordable mapping and spatial analysis tool that allows you to easily produce publication-quality thematic maps b) Map Viewer a) Microarray c) Ensemble d) GEO 3) CPT is a registered trademark of the _____ Medical Association. b) Indian a) American c) Australian d) All of above 4) Computation approaches for predication of pathogen-hot protein-protein interactions is a) Motif b) Domain d) All c) Homology 5) _____ resource provides viral and viroid genome sequence data and related information. b) Ensemble a) ViPR c) dbSNP d) OMIM _____ can be used to filter, reformat, or trim your genomic and metagenomic sequence data. b) QPLOT a) HTQC c) PRINSEO d) FASTX 7) R is an language; users typically access it through a command-line interpreter.

a) Object oriented

c) interpreted

b) Structure oriented

d) All

07

	B) Definitions:	07
	1) NGS	
	2) Genome Mapping	
	3) parasitic diseases4) Pharmacoviglance	
	5) Meatabolome	
	6) Comparative genomics	
	7) R scripting	
	Part –II	
	Answer Any Four of the following	
. .	W. i.	4.4
Q.2	Write in details various methods of NGS.	14
Q.3	Explain different types of host pathogen interactions.	14
Q.4	Define clinical trial. Add a note on different stages.	14
Q.5	Answers any two from the following:	14
	a) Add a note on pharmacogenomics.	
	b) Write a note systems biology.	
	c) Explain the Human Genome Project.	
Q.6	Write short notes on any two:	14
-	a) Application of metabolomics	
	b) Ensemble and Mapviewer	
	c) Medical coding	

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 Semester – I (Old CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 98	Wednesday 16/11/2016	10.30 AM to 01.00 PM	Microbiology	I	

Instructions:

- 1) Section -I is compulsory.
- 2) Answer any four questions from Section -II

Total Marks: 70 Section-I Q.1 A) Rewrite following sentences by using correct option. 07 1) Influenza virus binds to ______ of the host cell membrane. b) Sialic acid receptor a) Omp c) Polysaccharides d) Glycoproteins 2) Electron microscope was discovered by __ b) Robert Hook a) Ernst Ruska c) Stanley d) Michael Tswett 3) The number of ascospores in an ascus of Ascomycetes is . . b) 8 d) 16 c) varies with species 4) A variant of bacterial strain with biochemical and physiological differences is called as a) Morphovar b) Biovar c) Serovar d) None of these 5) In Gram's staining method, can be used as a secondary a) Gram's iodine b) Safranine d) Both (b) and (c) c) Basic fuchsin 6) A protein called as Bacteriorhodopsin is produced by a) Alkalophiles b) Barophiles c) Halophiles d) Metallophiles 7) Archaebacteria show _____ linkage between fatty acids and glycerol molecules of cell membrane. a) Ether b) Ester c) Covalant d) Ionic B) Define the following terms: 07 1) Lytic phage 2) Selective culture medium 3) Mycotoxin 4) Piezophiles 5) Differential staining method 6) Primary cell culture

7) Transmission electron microscope

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	Section-II				
Q.2	Give a brief account of photosynthetic bacteria.	14			
Q.3	Write in detail about different methods to control micro-organism.	14			
Q.4	Describe lytic cycle of viruses by using the examples of T_4 phage and $\Phi X174$ phage.				
Q.5	Write shorts notes any TWO of the following:	14			
	a) Give the difference between dry heat sterilization and moist heat sterilizationb) Scanning electron microscopyc) Halophiles				
Q.6	Write short notes on any TWO of the following:	14			
	a) PHYLIP Softwareb) Magnetotactic bacteriac) Multiplication of Influenza virus.				

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 Semester – I (Old CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK Friday 10:30 A to		10:30 AM to 01:00 PM	Concept of biochemistry	II	

Instructions: 1) Section -I is compulsory. 2) Answer any four questions from Section -II **Total Marks: 70** Section-I Q.1 A) Rewrite the following sentences by selecting correct answers from given **07** alternative. 1) The fatty acid which contains cis double bonds are called a) Saturated Fatty Acid b) Unsaturated Fatty Acid d) Simple Fatty Acid c) Complex Fatty Acid 2) In C4 Plants the carbon were temporarily fixed by the enzyme of a) PEP Carboxylase b) Rubisco c) Carboxylase d) Carboxyl dehydrogenase 3) The Adenine is bonded with Thymine by b) Covalent Bond a) Ionic Bond c) hydrogen Bond d) Phosphodiester Bond 4) Riboflavin is sensitive to _____ a) Heat b) Temperature c) Light d) All Above 5) Hylaurinic acid is example of _____ a) Monosaccharide b) Disaccharide c) Oilgosaccharide d) Polysaccharide 6) Xanthine is a derivative of a) Purine b) Pyramidine c) Sugar d) Fatty acid 7) Carotene is the _____ pigment a) Assesory b) Photosynthetic c) biotin derived d) Dissolving factor

	B) Define the following terms:	07
	 Glycolysis Phosphorylation Respiration β-Oxidation Catabolism Spermatogenesis Ligand 	
	Section-II	
Q.2	Explain C3 pathway involved in dark reaction of photosynthesis. Add a note on Rubisco enzyme.	14
Q.3	What are the phytohormones? Explain in details synthesis, transportation, and physiological role of Auxin.	14
Q.4	Describe in detail enzymatic steps involved in glycolysis. Add a note on it's energetic.	14
Q.5	 Answer any TWO of the following: a) Explain different types of DNA. Explain Why B from of DNA is common. b) Explain the Gluconeogenesis pathway c) Explain Light Reaction involved in Photosynthesis 	14
Q.6	 Write short notes on any TWO of the following: a) C4 pathway b) Intracellular Receptors c) Redox potential and Phosphorylation potential 	14

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 **Semester – I (Old CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 100	Monday 10.30 AM to 01.00 PM		Inheritance Biology	III	

Instructions:

1) Section -I is compulsory.

2) Answer any four questions from Section -II **Total Marks: 70** Section-I Q.1 A) Rewrite the following sentences by selecting correct answers from given 07 alternative. 1) Different forms of a gene that exist whit in a population are termed as _____ a) Pairs b) Alleles c) Hybrides d) Genotype 2) Balbiani rings are found in _____ Chromosomes.a) Polytene _____ b) Lampbrush c) Cytoplasmic d) Heterozygous 3) In bacterial conjugation ______ is carried by the male or the donar strain. a) H-factor b) C-factor d) T-factor c) F-factor 4) The merger of Darwinian theory and population genetics is termed as a) Hardy Weinberg equilibrium b) Neodarwinism c) Speciation d) Allellism 5) LINES and SINES are the nonviral retrotransposons found in a) Invertebrates b) Protozoa c) Bacteria d) Vertebrates e) involves charges in whole set of chromosomes. a) Aneuploidy b) Euploidy c) Trisomy d) Monososmy 7) _____ discovered that E.coli cells can exchange genetic material through the process of Conjugation a) Zinder, Lederberg b) Lederberg, Tautam c) Mendel d) Morgan

	B) Define the following terms: 1) Allele 2) Aneuploidy 3) Transformation 4) Genetic polymorphism 5) C-value 6) Genetic Linkage 7) Inheritance	07
0.1	Section–II	1.4
Q.2	Explain why Mendel used pea plant as an experimental material.	14
Q.3	What are chromosomal aberrations? Comment on its types.	14
Q.4	Write a note on the types of transduction method for gene transfer.	14
Q.5	Answer any TWO of the following:a) What is population genetics? Write its significance.b) Write a note on the SINES and its relationship with Alu sequences.c) What is gene mapping? Explain.	14
Q.6	Write shorts note on any TWO of the following:a) Neo-Darwinism.b) Gene transfer methods.c) Lampbrush chromosome.	14

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 Semester – I (Old CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 101	Wednesday 23/11/2016	10.30 AM to 01.00 PM	Biostatistics & Bioinformatics	IV	

Instructions:

- 1) Part- I Question 1 is compulsory.
- 2) Answer any four questions from Part-II
- 3) Figures to the right indicate full marks.

4) Answer the Part-I and Part-II are to be written in same answer Booklet only. **Total Marks: 70** Part-I Q.1 A) Rewrite the following sentences by selecting correct answers from given 07 alternative. 1) is one of the protein information resource. a) NCBI b) PIR c) DDBJ d) EBI 2) The primary database of protein is _____ b) TrEmbl a) Swiss prot c) Both a & b d) None 3) BLAST is sequence alignment tool a) Multiple b) pairwise c) both & b d) None _____ is one of the homology modeling method a) Parsimony b) likelihood c) neighbor joining d) All 5) A set all possible data values for a subject under consideration is called a) descriptive statistics b) a sample c) a population d) statistics 6) The number of occurrences of a data value is called a) The class limits b) The frequency c) The cumulative frequency d) Ogive 7) An organization of observed data into tabular form in which classes and frequencies are used is called _____ b) the pie chart a) the bar chart c) the histogram d) frequency polygon

	B) Definitions:								07
	1) Genome								
	2) MSA								
	3) Global alignment								
	4) Constant								
	5) Mean								
	6) Histogram								
	7) Population								
				Sect	ion–I	T			
	Answer any four of the	follow	ing.	5000	1011 1	-			
Q.2	Write a note on nucleotide sequence databases.							14	
		2							
Q.3	Add a note on methods o	f seque	nce a	lıgnme	ent.				14
Q.4	Define table. Explain the components of table.							14	
o =									
Q.5	Answer any TWO of th		_						14
		n) Write a note on composite databases.							
	b) Add a note on homolec) Obtain median for the			_					
	c) Obtain median for the	- 10110v	villg (iaia					
	Marks	20	9	25	50	80	40		
	No. of students	6	4	16	7	2	8		
Q.6	Write shorts note on an		of t	he foll	owing	g:			14
	a) Application of phylog	_							
	b) Advantages & disadvantages of standard deviation								
	c) Types of distribution	in prob	abilit	tv.					

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 Semester – II (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 102	LR-SK- Thursday 10.30 AM		Cell Biology	V	

Instructions: 1) Section – Lis compulsory

instructions.		3) All questions carry equal4) Figures to the right indi	 Answer any four questions from Part–II All questions carry equal marks. Figures to the right indicate full marks. Draw neat and labeled diagram. Total Marks: 70 					
Q.1			on $-\mathbf{I}$ selecting correct answers from given	07				
	1)	The main function of Centrosome	is					
	,	a) Secretion	b) Osmoregulation					
		c) Protein Synthesis	d) Formation of Spindle fiber					
	2)	is a type of adherin	g junction between animal cells					
	,	a) Tight junction	b) Gap junction					
		c) ATP	d) GTP					
	3)	The first men to observe live cell	under microscope was					
	,	a) Robert Hooke	b) Leeuwenhoek					
		c) Schleiden	d) Virchow					
	4)	The nucleus was first described b	y					
		a) Robert Brown	b) Robert Hooke					
		c) Weismann	d) Nageli					
	5)	Cell theory was proposed by						
		a) Beadle and Tatum	b) Robert Hooke					
		c) Schleiden and Schwann	d) Leeuwenhoek					
	6)	Protoplasm found inside the nucle						
		a) Amyloplast	b) Nucleopalsm					
		c) Cytoplasm	d) Elaioplast					
	7)	Plasmo-desmata occurs in						
		a) Plants	b) Animals					
		c) Bacteria	d) All of the above					

	B) Define the following terms:	07
	1) Cell Theory	
	2) Cell-Cell Interaction	
	3) Blastulation	
	4) Mitosis	
	5) Lysosomes	
	6) Desmosomes7) Integrins	
	7) megms	
	Section – II	
	Answer any four of the following	
Q.2	Explain Cell Adhesion Molecules (CAMs) with suitable example and working principle.	14
Q.3	Add a note on Structure, working of Motor protein with suitable example.	14
Q.4	Add a brief note on structural organizations of eukaryotic cells.	14
Q.5	Answer any TWO of the following:	14
	a) Cell cycleb) Structural organization and functions of Mitochondria and chloroplastc) Secondary messenger	
Q.6	Write shorts note on any TWO of the following:	14
	a) Embryonic development in frogb) Role of IP3 and calcium in Voltage gated channelsc) Hormones and growth factors in Cell differentiation	

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 **Semester – II (New CBCS)**

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 103	Saturday 19/11/2016	10.30 AM To 01.00 PM	Enzyme Technology	VI	

- 1) Section-I is compulsory.
- Answer any four questions from Section –II
 All questions carry equal marks.
 Figures to the right indicate full marks.

		5) Draw neat and labeled di	iagraı	n.	
				Total Marks: 70	
		Conti	ion– I		
Λ1	A) D.				07
Q.1	,	ewrite the following sentences by Iternative.	seieci	ing correct answers from given	U /
			aia of	hastorial call yyall is	
	1)	An enzyme which brings about ly			
		a) Amylase	,	Lysozyme	
		c) Trypsin	a)	Lipase	
	2)	Allosteric enzymes regulate the fo			
		a) Feedback inhibition	b)	Non-competitive inhibition	
		a) Feedback inhibitionc) Competitive inhibition	d)	Repression-derepression	
	3)	Covalent modification of an enzyment dephosphorylation of residue	me usi	ually involves phosphorylation	
		a) Serine	b)	Proline	
		c) Hydroxylysine	/	Hydroxyproline	
	4)	In competitive inhibitors			
	1)	a) Decrease the Km	h)	Decrease the Vmax	
		c) Increase the Km	,	Increase the Vmax	
			/		
	5)	The CK isoenzyme present in mus			
		a) BB	,	MB	
		c) MM	d)	None of these	
	6)	The model of action the anticance competitive inhibition on	_	methotrexate is through its strong	
		a) Dihydrofolate		Thymidine synthase	
		reductase	,	J	
		c) thymidine kinase	d)	adenylate cyclase	
	7)	The cooperativity for hemoglobin	is		
	.,	a) 1	<u>b)</u>	·	
		c) 2.8	d)		
		,	,		

	B) Define the following terms:	07
	1) Specific activity	
	2) Ribozyme	
	3) Transition state 4) Engage angine oring	
	4) Enzyme engineering5) Steady state enzyme kinetics	
	6) Active site	
	7) Modulators	
	Section-II	
Q.2	Illustrate the factors affecting catalytic efficiency of enzymes. Add a note on ribozyme.	14
Q.3	Write an assay on metabolic engineering.	14
Q.4	Explain in detail structure function relationship of enzyme Na +K+ ATPase.	14
Q.5	Describe various types of inhibition with their kinetics.	14
Q.6	Answer any TWO of the following:	14
	a) Explain in detail structure function relationship of enzyme Aspartate	
	Transcarbomylase	
	b) Derive Line Michaelis Menten equation. Add a note on signification of Km and Vmax.	
	c) Explain Line weaver Burk plot. Add a note on Characteristics of enzymes.	
	d) Explain Scat chard plot. Add a note on enzyme repression.	

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 Semester – II (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 104	Tuesday 22/11/2016	10.30 AM To 01.00 PM	Molecular Cell Processing	VII	

Instructions:

- 1) Section-I compulsory.
- 2) Answer any four questions from Section-II.
- 3) Figures to the right indicate full marks.

4) Answer to the Section I and Section II are to be written in the same answer book. **Total Marks: 70** Section- I Q.1 A) Rewrite the following sentences by selecting correct answers from given **07** alternative. statement is true of DNA damage. 1) a) Most DNA damage is

b) All DNA damage results in

diseases as cancer c) All DNA damages is caused by physical, chemical or biological agents

diseases as cancer

d) Most DNA damage is advantages to the cell 2) One complete helical turn of Z form of DNA has nucleotides. a) 9 b) 10 c) 11 d) 12 3) _____histone protein seals the nucleosome. a) H1 b) H2A d) None of these c) H2B 4) Lactose operon has structural genes. a) Lac z, Lac y, Lac-a b) Lac z, Lac c, Lac-y c) Lac x, Lac y, Lac-Z d) Lac z, Lac y, Lac-b 5) The first step in translation is

a) Transfer of amino acid
b) Initiation of synthesis to t-RNA
c) Activation amino acid
d) None of these site on DNA is responsible for binding of enzyme RNA polymerase during transcription process. a) Operator b) Promoter c) Regulator d) Enhancer 7) The type of mutation most commonly associated with exposure to UV light a) Thymine dimerization
b) Base deamination
c) Depurinization
d) Base deletion

	B) Define the following terms:	07
	1) Okazaki fragments	
	2) Primary transcript	
	3) Replication fork	
	4) Cot curve	
	5) Replicon	
	6) Solenoid	
	7) Heterochromatin	
	Section-II	
Q.2	Explain in detail about replication in prokaryotes and DNA proof reading with a	14
	neat labeled diagram.	
Q.3	Write a note on base excision and recombination repair with a neat labeled	14
	diagram.	
. .		
Q.4	Describe the process of translation in prokaryotes and add a note on inhibitors of	14
	translation.	
Q.5	Explain in detail packing and organization of eukaryotic genome with a neat	14
Q.J	labeled diagram.	17
	aboled diagram.	
Q.6	Answer any TWO from the following:	14
•	a) Explain about Cot curve.	
	b) Write a note on different types of RNA.	
	c) Write about holiday model of recombination.	

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 Semester – II (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 105	Thursday 24/11/2016	10.30 AM to 01.00 PM	Immunology & Immune Techniques	VIII	

Instructions:

- 1) Part- I, Question 1 is compulsory.
- 2) Answer any four questions from Part-II.
- 3) Figures to the right indicate full marks.
- 4) Answer to the Part I and Part II are to be written in the same answer book only.

Total Marks: 70

		n	. •
o 1	4 \ D		ert– I
Q.1		e ·	selecting correct answers from given
		ternative.	
	1)	Passive Immunisation is done by	using
		a) Immune sera	b) Readymade antibodies
		c) Pooled sera	d) All of these
	2)	is normal	l flora of skin.
	,	a) Staphyloccus epidermidis	b) Staphylococcus aureus
		c) Propionibacterium acne	d) All of these
	3)	nlavs a maior	r role in mounting immune response to
	0)	antigens in the blood stream.	r role in mounting immune response to
		a) Spleen	b) Bone marrow
		c) Lymphnode	d) Thymus
	4)	Most abundant class of immunog	lobulin in body is
	,	a) Ig M	b) Ig G
		c) Ig A	d) Ig D
		, ,	, G
	5)	Rhodamine is used in	
		a) Immuno-fluoresence	b) ELISA
		c) Agglutination	d) Complement fixation
	6)	Class I MHC molecules, peptide	binding cleft is formed by
		domains.	
		a) $\alpha 1$ and $\alpha 2$	b) $\alpha 1$ and $\alpha 3$
		c) $\alpha 1$ and $\beta 2$	d) $\alpha 2$ and $\alpha 3$
	7)	Rheumatoid arthritis	autoimmune disease.
	,	a) Organ-specific	b) Organ non-specific
		c) Hemolytic	d) None of these

07

	B) Definitions:	07
	 Give difference between primary and secondary immune response. Define Apoptosis and necrosis 	
	3) Give functions of cytokines	
	4) Define anaphylaxis and atopy	
	5) Isograft and allogaft	
	6) Give examples of Live attenuated and killed vaccines	
	7) Give types of antigens.	
	Part–II	
	Answer any four of the following.	
Q.2	Write an account on mechanism of autoimmunity.	14
Q.3	Write an account on mechanism of T cell mediated immunity.	14
Q.4	Explain cytosolic pathway of antigen processing and presentation.	14
Q.5	Answer any TWO:	14
	a) Structure and function of MHC I molecule.	
	b) Explain Radioimmunoassay and Immunofluorescence test.	
	c) General structure, cultural characters, life cycle, pathogenicity, laboratory	
	diagnosis prophylaxis of Influenza virus.	
Q.6	Answer any TWO:	14
	d) Immunogical basics of graft rejection	
	e) Explain secondary lymphoid organs with its function.	
	f) Explain mechanism of tumor evasion of immune system.	

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 Semester – II (Old CGPA)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 106	Thursday 17/11/2016	10.30 AM to 01.00 PM	Cell Biology	I	

Instructions:

c) Both a & b

- 1) Part- I, Question 1 is compulsory.
- 2) Answer any four questions from Part-II.
- 3) Figures to the right indicate full marks.
- 4) Answer to the Part I and Part II are to be written in the same answer booklet only.

Total Marks: 70

A) R	ewrite the following sentences by	y selecting correct answers from given
al	lternative.	
1)	lack the cell	wall
	a) Plant cell	b) Animal cell
	c) Bacterial cell	d) All
2)	Capsule is found in	cell
	a) Bacteria	b) Plant
	c) Animal	d) None
3)	Diffusion is typ	pes of membrane transport
	a) Passive	b) Active
	c) Both a & b	d) None
4)	are involved	in intracellular trafficking
	a) Endoplasmic reticulum	b) Golgi bodies
	c) mitochondria	d) both a & b
5)	Actin is major component of	
	a) Microfilament	b) Microtubule
	c) Both a & b	d) None of these
6)	Cell growth occurs in	phase
	a) Interphase	b) prophase
	c) metaphase	d) anaphase
7)	Hormones are involved in	Type of cell signaling.
	a) Paracrine	b) Autocrine

d) None of these

	B) Definitions:	07
	1) Lysosome	
	2) Cilia	
	3) Vesicle	
	4) Kinesin	
	5) Cyclin	
	6) G-protein7) Integrin	
	7) megim	
	Part – II	
	Answer any four of the following.	
Q.2	Write a note on different models of cell membrane.	14
Q.3	Explain in detail the structural organization of prokaryotic cell.	14
•		
Q.4	Define microfilament. Add a note on its structure and function.	14
Q.5	What is cell cycle? Write a note on phases of cell cycle.	14
Q.6	Answer any TWO:	14
~	·	
	a) Write a note on cell interaction.b) Write a note on cell adhesion and extracellular matrix	
	c) Explain the passive transport.	
	e) Explain the passive transport.	
Q.7	Write sorts notes any TWO:	14
	a) Ribosomes	
	b) Animal cell	
	c) Actin and myosin	

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 Semester – II (Old CGPA)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 107	Saturday 09/11/2016	10.30 AM To 01.00 PM	Enzyme Technology	II	

- 1) All question of Section I are compulsory.
- 2) Answer any four questions from Section -II.
- 3) All question carry equal marks.4) Draw neat and labeled diagrams wherever necessary

	S	Section— I
A) R	ewrite the following sentences b	by selecting correct answers from given
al	lternative.	
1)	Some of are auto	ocatalytic molecule and considered as
	enzyme.	
	a) RNAs	b) DNAs
	c) Carbohydrates	
2)	· · · · · ·	t enzyme reaction rate gives
	shape.	
	a) Parabolic	b) hyperbolic
- \	c) bell	d) sigmoidal the first step of pyrimidine biosynthesis.
3)	enzyme catalyzes t	the first step of pyrimidine biosynthesis.
	a) Phosphorylase	b) Ribonucleased) Aspartate transcarbamoylase
4)	c) Carboxypeptidase	d) Aspartate transcarbamoylase
4)		bitors the Vmax of reaction
	a) Increasesc) becomes half of it	b) decreases
5 \	c) becomes half of it	d) remains constant
5)	may be exp	pressed as international unit per mg protein
	a) Specific activity	b) Enzyme activityd) Molar catalytic activity
\sim		
0)	when substrate itself blinds to a	allosteric site of enzyme and activates
	enzyme then it is known asa) Heterotropic positive	h) Homotronia nagitiya
	a) Heterorie positive	d) Hotmotronic angingering
7)		d) Hotmotropic engineering
1)	The improvement of attenation	in existing pathway is a task of
	a) immobilization	b) metabolic engineering
	c) protein engineering	d) enzyme engineering
	e) protein engineering	a) enzyme engmeeting
B) De	efine the following terms:	
,	Antibodies	
2)	Allosteric site	
3)	International unit	
4)	Uncompetitive	
5)		
6)	Transition state	
7)	Streospecificity	

Section-II

Q.2	Answer Any Four Write an essay on factors affecting catalytic efficiency of enzyme.	14
Q.3	Describe bisubstrate reactions with their types and kinetics.	14
Q.4	Illustrate the protein ligand interactions with quantitative measurement.	14
Q.5	What is immobilization? Give various methods and industrial application of it.	14
Q.6	 Answer any TWO of the following: a) Give an account of isozymes. b) Derive an euation of Michaelis -Menten for unisubstrate reaction of enzyme. c) Illustrate the structure and function relationship of lysozyme. 	14
Q.7	 Answer any TWO of the following: a) Write a note on glucose oxidase as biosensor. b) Explain the allosteric regulation of enzyme. c) Discuss the structure and function relationship of trypsin. 	14

Master of Science – I (Biotechnology) Examination: Oct/Nov 2016 Semester – II (Old CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 108	Tuesday 22/11/2016	10.30 AM To 01.00 PM	Molecular Cell Processing	III	

- 1) Section I is compulsory.
- 2) Answer any four questions from Section -II.
- 3) All question carry equal marks.4) Figures to right indicate full marks.

		5) Draw neat and labeled diagrams.			
				Total Marks: 70	
Q.1	A) Ro	Section— I ewrite the following sentences by selecting	cor	rect answers from given	07
		ternative.		S	
	1)	statement is true of D	NA	damage.	
		a) Most DNA damage is repaired	b)	All DNA damage result in	
		by the cell		diseases such as cancer	
		c) All DNA damage is caused by	d)	Most DNA damage is	
		physical agents		advantageous to the cell	
	2)	RNA primer necessary for DNA replication	·		
		a) The RNA prime is necessary	b)	The RNA primer creates the 5'	
		for the activity of DNA ligase.		and 3' ends of the strand	
		c) DNA polymerase can only add	d)	DNA polymerase can only add	
		nucleotides to RNA molecules		nucleotides to an existing	
				strand.	
	3)	The common demonization occurs during D	NA	damage	
		a) Thymine dimer		Adenine dimer	
		c) Guanine dimer	d)	None	
	4)	During the process of transcription,	(of the following is produced	
		a) H ₂ O		ATP	
		c) mRNA	d)	DNA	
	5)	DNA repair mechanism is absent in			
		a) Nuclear genome	b)	Mitochondrial genome	
		c) Chloroplast genome	d)	Both b & c	
	6)	The peptide chain grows on		site	
		a) A	b)	P	
		c) E	d)	Both a & b	
	7)	Transcription termination occurs by			
		a) Rho-dependent		Pho-independent	
		c) Sigma factor	d)	Both a & b	

	B) Define the following terms:	07
	1) Topoisomer	
	2) Activators	
	3) SOS repair	
	4) 50 S ribosome5) RNA Polymerase	
	6) Nitrosylation	
	7) Arthur Kornberg enzyme	
	7) Thende Rollioofg enzyme	
	Section – II	
	Answer Any Four	
0.2	Write a note on base excision and recombination repair with neat labeled diagram.	14
C		
Q.3	Write a note on different types of intron splicing and add a note on spliceosome.	14
Q.4	Describe the structure, assembly and function of each subunit of DNA pol III with	14
	neat labeled diagram.	
Q.5	What is oriC? Explain the eukaryotic DNA replication with neat labeled diagram.	14
Q.6	Answer any TWO of the following:	14
2.0	a) Write a note on different types RNA molecules	1
	b) Explain the recombination process	
	c) Write a note on post transcription modification of eukaryotic mRNA.	
Q.7	Write shorts notes on (Any Two):	14
	a) Prokaryotic gene structure	
	b) Eukaryotic ribosome subunits	
	c) Translation initiation factors	

Master of Science – I (Biotechnology) Examination: Oct / Nov 2016 Semester – II (Old CGPA)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK - 109	Thursday 24/11/2016	10.30 AM to 01.00 PM	Immunology & Immune Techniques	IV	

- 1) All question of Section-I are compulsory.
- 2) Answer any four questions from Section -II.
- 3) All question carry equal marks.
- 4) Draw neat and labeled diagrams wherever necessary

				Total Marks: 70	
Q.1	al	Section— I ewrite the following sentences by selectilternative.	Ü	S	07
	1)	Most abundant class of immunoglobulin	fou	nd in body is	
		a) IgM	b)	IgA	
		c) IgD		IgG	
	2)	The smallest unit antigenecity is			
		a) epitope	b)	adjuvant	
		c) hapten	d)	antibody	
	3)	Widal test is example of		_ type of reaction.	
		a) agglutination		precipitation	
		c) flocculation	d)	complement fixation	
	4)	BCG vaccine ist	/pe (of vaccine.	
		a) Live attenuated	b)	killed	
		c) toxoid	d)	toxin	
	5)	CD4 surface antigen is present in		cells.	
		a) T cytoxic	b)	T helper	
		c) Nature killer	d)	none of these	
	6)	The rejection of graft within 48 hours by	reci	pient body is called	
		a) acute	b)	hyperacute	
		c) chronic	d)	none of these	
	7)	is organs specific autoir			
		a) Myasthenia gravis		Systemic iupus erythromatus	
		c) Graves disease		None of these	

	B) Define the following terms:	07
	1) ELISA	
	2) Antigen	
	3) Autoimmunity	
	4) Antibody	
	5) Innate immunity (a) Youngraft	
	6) Xenograft7) Transplantation	
	7) Transplantation	
	Section-II	
	Answer Any Four	
Q.2	Write an account on types of Vaccines.	14
Q.3	Write an account Mechanism of T cell mediated immunity.	14
Q.4	Give structural, morphological, cultural, life cycle and pathogenecity characters of influenza virus	14
	of influenza virus	
Q.5	Explain mechanism of classical complement pathway	14
Q.6	Answer any TWO of the following:	14
	a) Write a note on MHC Class II molecule	
	b) Write a note on mechanism of Grave's disease	
	c) Write note on Radioimmunoassay	
Q.7	Answer any TWO of the following:	14
	a) Write short not on types of antigen	
	b) Write short note on Primary and secondary immune response	
	c) Write brief note account on mechanism of allograft rejection	

Master of Science – II (Biotechnology) Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 114	Wednesday 16/11/2016	2:30 P.M to 5.00 P.M	Advanced Analytical Techniques	IX	

- Section-I are compulsory.
 Answer any four questions from Section –II

				Total Maiks. 70	
		Section- I			
Q.1	A) Re	ewrite the sentence using correct alterna	ative	given below.	07
	1)	In circular dichorism, the differential ab	sorpt	tion of light	
		is analyzed.			
		a) polarized	,	reflected	
		c) inhibited		deviated	
	2)	Radioactive decay is measured in a		·	
		a) Scintillation counter	b)	AAS	
		c) UV Spectrometer	d)	Autoradiography	
	3)	The first working microscope was desig	ned l	oy	
		a) Robert Hook	b)	Kepler	
		c) Leeuwenhoek	d)	Watson	
	4)	In Western Blotting technique		is transferred to the	
		membrane.			
		a) DNA	b)	RNA	
		c) Protein	d)	None	
	5)	Paper chromatography is a type of		chromatography.	
		a) Planar	b)	column	
		c) TLC	d)	All of the above	
	6)	The working rang of a pH meter is in be	etwe	en	
		a) 8-14	b)	0-14	
		c) 0-7	d)	1-7	
	7)	The nuclear fraction is sedimented at		rpm.	
		a) 10,000	b)	1000	
		c) 8000	d)	12,000	
	B) De	fine the following terms:			07
	1)	Refractive index			
	2)	Sedimentation coefficient			
	,	Partition coefficient			
	/	Isoelectric focusing			
		рН			
	6)	Radioactivity			
	7)	Spectroscopy			

Section-II

Q.2	Explain the different types of Electron microscopy with suitable diagrams.	14
Q.3	What are Radio tracer techniques? Give its advantages and restrictions.	14
Q.4	Give the principle, instrumentation, working and applications of Atomic Absorption Spectroscopy.	14
Q.5	 Answer Any two of the following: a) Explain the technique of Pulse Field Gel Electrophoresis b) Write a note on HPLC. c) Differentiate between Turbidimetry and Nephelometry. 	14
Q.6	 Write shorts note onany TWO of the following: a) Biosensors b) Support material used in the technique of Electrophoresis c) Ultracentrifuges 	14

Master of Science – II (Biotechnology) Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 115	R-SK- Friday to		Genetic Engineering	X	

- 1) Section-I is compulsory.
- 2) From Section II attempt any four.

		 3) All questions carry equal mar 4) Figures to right indicate full r 5) Draw neat and labeled diagra 	nark	s.
		3) Diaw iicat anu iabeitu uiagi a	.1115.	Total Marks: 70
		Section-I		
Q.1		Iultiple Choice questions:		
	1)	CaMV is an a) DNA containing Virus c) RNA containing Virus		Animal Virus Bacteriophage
	2)	The first human protein produced througa) Insulin	_	combinant DNA technology is Erythropoitin
		c) Interferon		Somatostatin
	3)	Bt cotton is not: a) A GM plant c) A bacterial gene expressing system		Insect resistant Resistant to all pesticides
	4)	A 'clone' obtained by a sexual reproducta) Group of genetically similar organismsc) Assembly of genes and protein	b	is an) Population None
	5)	The trigger for activation of toxin of <i>Ba</i> a) Acidic pH of stomach c) Alkaline pH of gut 	b)	thuringiensis is , High temperature None of the above
	6)	A Plant called <i>Rauwolfia serpentina</i> is a save this plant, which technique is highla) DNA finger printing c) Genetic engineering	ly use b)	the threat of extinction. To eful? Hybridoma technology In vitro culture
	7)	Endonucleases, a group of enzymes clea a) Externally c) Both a and b	b)	NA Internally Neither a nor b

B) Define the following terms:

- 1) YAC and BAC
- 2) Endonucleases
- 3) Primers
- 4) cDNA
- 5) Marker genes
- 6) Bio-spharming
- 7) Plasmid

Section-II

Attempt any four

Q.2 Long answer type

Add a brief note on DNA sequencing by Maxam and Gilbert method

Q.3 Long answer type

With suitable example and application explain vector mediated gene transfer

Q.4 Long answer type

Add a brief note on expression system yeast and bacteria with suitable example?

Q.5 Long answer type any Two:

- a) Explain in detail the construction of Genomic library
- b) Add a note on DNA fingerprinting
- c) Explain in detail DNA Amplification by PCR

Q.6 Write shorts note on any TWO of the following:

- a) Genetically engineered animals
- b) Assembly of genes
- c) Cosmid Vector

Master of Science – II (Biotechnology) Examination: Oct/Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK– 116	Monday 21/11/2016	02:30 P.M to 05:00 P.M	Research Methodology and IPR	XI	

Instructions:

c) Social value

- 1) Section -I, Question 1 is compulsory.
- 2) From Section II attempt any four
- 3) Figures to right indicate full marks
- 4) Answers to the Section-I and Section-II are to be written in same answer Booklet only.

Total Marks: 70 Section-I A) Rewrite the following sentences by selecting correct answers from given 07 Q.1 alternative. 1) The data of research is _____ b) Quantitative only a) Qualitative only d) None of these c) Both a & b 2) Action research is a type of _____ b) Quantity research a) Applied research c) Survey research d) Population research 3) Hypothesis relates _____ a) Constant to variables b) Constant to constant c) Variables to constant d) Variables to variables 4) Statistics in used by researchers to a) Analyze the empirical data collected in a study b) Operationally define their variables c) Make their finding sound better d) Ensure the study comes out the way it was intended 5) Preliminary data collection is a part of the b) Exploratory research a) Descriptive research d) Explanatory research c) Applied research of the following is not a type of copyright work. 6) a) Literary works b) Furniture c) Sculpture d) Musical works 7) Intellectual property Right (IPR) protect the use of information and ideas that are of a) Ethical value b) Moral value

d) Commercial value

	 Pure research ANOVA Hypothesis Trade secrets Sampling Correlation Coefficient IMRAD 	
	Section-II	
	Attempt any four What is research? Explain in detail steps in research.	14
3	What is sampling theory? Explain in detail the steps in sampling.	14
	Give the different guidelines for writing introduction and materials & methods for preparation of manuscript.	14
i	 Answer any Two from the following: a) Write a note on patent b) Write a note on data collection methods c) Write a not Preparation of poster for conference 	14
1	Write shorts note onany TWO of the following:a) Review of Literatureb) Primary and secondary datac) Technology transfer.	14
1	b) Primary and secondary data	

B) Define the following terms:

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Examination: Oct / Nov 2016 Semester – III (New CBCS)

SI	R No.	Day &	Time	Subject Name	Paper No.	Seat No.
SLR	– SK – 117	Date Wednesday 23/11/2016	02:30 P.M To 05:00 P.M	Advanced Pharmaceuticals	XII	Seat 110.

Instructions:

- 1) Section I is compulsory.
- 2) From Section II attempt any four

Total Marks: 70 Section-I **Q.1** A) Rewrite the following sentences by selecting correct answers from given 07 alternative. 1) Two solution are said to be isotonic if they exert same b) Surface tension a) Viscosity c) Osmotic Pressure d) None of the above 2) Buffer index can be defined as the ratio of the increment of strong base/ acid to the a) Change in pH b) Change in Viscosity c) Change in osmotic pressure d) None of the above 3) Toxicity is measured on the basic of _____ properties b) Pharmaceutical a) Pharmacological c) Rheological d) Colligative 4) Dissolution is effected by a) Surface area b) Viscosity d) All of the above c) Temperature 5) Electro dialysis is a method for the purpose of a) Purification b) Identification c) Preparation d) Stabilization 6) The temperature at which the solubility of the surfactant is equal to CMC is a) Boiling point b) Melting point c) Kraft point d) None of the above 7) Finely divide powder have _____ wettability b) Good a) Average d) Moderate c) Poor

	B) Define the following terms:	07
	1) Sedimentation	
	2) USP	
	3) Carriers	
	4) Co-solvent	
	5) Surfactant	
	6) Antibacterial activity	
	7) Emulsion	
	Section-II	
Q.2	Explain in details about hydrotrophy in pharmaceuticals	14
Q.3	Describe the methods of polymerization and its characterization	14
Q.4	Discuss about the stability studies of the drug	14
Q.5	Answer any Two from the following: a) Characterization of granules and compacts b) Factors affecting dissolution rate c) Solid dispersion 	14
Q.6	Write shorts note onany TWO of the following: a) Biodegradable polymer b) Cyclodextrin c) Kinetics of the drug 	12

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Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SK – 118	Wednesday 23/11/2016	02:30 P.M To 05:00 P.M	Computational Structure Biology & Drug Designing	XII	

Instructions:

1) Section – I, Question 1 is compulsory.

2) From Section- II attempt any four 3) Figures to the right indicate full marks. 4) Answer to the Part-I & Part-II are to be written in same answer booklet only. **Total Marks: 70** Section-I Q.1 A) Rewrite the following sentences by selecting correct answers from given 07 alternative. 1) The computational methodology that tries to find the best matching between two molecules, a receptor and ligand is called a) Molecular matching b) Molecular docking c) Molecular affinity d) Molecular fitting 2) Proteomics is the study of a) Set of proteins b) Set of proteins in a specific region of the cell c) Entire set of expressed proteins in a cell d) None of the above 3) A compound that has desirable properties to become a drug like is called a) Lead b) Fit drug d) Both a & b c) Non lead of the following is one of the rules in Lipinski's rule 4) of five a) A molecular weight equal to 500 b) No more than five hydrogen bond acceptor group c) No more than ten hydrogen bond donor group d) A calculated logP value is less than +5 is visualization tool which tool does not recognize 5) PDB format. a) Cn3D b) RasMol c) RasTop d) PyMol 6) Neural network based secondary structure method is b) GOR a) PSIPRED c) PHD d) Both a&b

	7)		ted almo	ost entirely based on manual	
		examination of protein structures.			
		a) SCOP	,	CATH	
		c) PDB	d)	Both CATH and SCOP	
	B) De	efine the following terms:			07
	1)	Drug efficacy			
	2)	3D PSSSM			
	,	CYP450			
	,	PSI-PRED			
	,	Motiff			
	6)				
	7)	CRD			
		Sect	ion–II		
Q.2	What	ver any four of the following: is interactome? Explain the in detail Prance.	Protein-P	Protein interaction and its	14
Q.3	Expla	ain the molecular modeling steps and a	dd a not	e on model validation.	14
Q.4		nin the 3D structure prediction and expod in details.	lain fold	I recognition and threading	14
Q.5	a b	wer any Two from the following: a) Write a note on Quantitative Structure b) Explain in detail PDBeNMR, PDBe c) Write a note on mutation in drug tar	echem, F	•	14
Q.6	a b	e shorts note onany TWO of the follows: Protein-DNA interaction prediction of ChemBank Yeast three hybrid system			14