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

	ì	Schest	r - 1 (new	CDCS	1			
SLR No.	Day & Date	Time	Subjec	t Name	Paper No.	Seat No.		
SLR – SM 123	Wednesday 16/11/2016	10.30 AM to 01.00 PM	Fungi, Bact	Diversity of eria, Viruses ichens	HCT 1.1			
Instructions:1) Question no. 1 is compulsory.2) Attempt any two questions from question no.2 to 43) Attempt any two questions from question no.5 to 74) Attempt totally five questions.5) Figures to the right indicate full marks.6) Draw neat and labeled diagram wherever necessary.Total Marks: 70								
-	Q.1 Rewrite the following sentences by selecting correct answers from given 14 alternative.							
1)	had first ti	me discovere	d mycoplasma	as a disease inci	itant in anin	nals.		
/ _) Leeuwenhoe		v 1	Ainsworth				
) K. C. Mehta		,	Nocard & Rou	Х			
2)	MV is not affe	cted by						
а) UV-rays		b)	X-ray				
C) β-rays		d)	All of the abov	/e			
2) 7	ha Virugas pag	2000	analosa	l within protoin	aant			
	The Viruses pose) DNA	sess		RNA	coal.			
	DNA or RNA	4	/	DNA and RNA	1			
		1	u)		1			
	The third kingdo viologist.	m Protista wa	as proposed by	, he wa	is a Germar	1		
) E. Haeckel		b)	Leeuwenhoek				
C) Doi et al.		d)	Dickson				
· · · · ·	According to Be	•						
) Actinomycet			Basidiomycete				
C) Deuteromyce	etes	d)	Schizomycetes	5			
6)]	The disease wilt	of cotton is c	aused by					
) Alternaria di		b)	Fusarium oxys	pora			
C) Cladosporium	n spp.	d)	Cotton leaf spo	ot			
7) I	n photosyntheti	e hacteria	gre nrege	ent instead of ch	loronlast			
) chromosome			DNA	noropiasi.			
) chromatopho		,	ribosomes				
	· -		,					
	n 1676ł							
) A. Leeuwenł	noek	/	L. Pasteur				
C) E. Haeckel		d)	R. Hook				
9) I	Lichen thallus is	formed by th	e mutualism of	and a	lgae.			
) Fungi, bacter			Bacteriophage				
) Viruses		· · · · · · · · · · · · · · · · · · ·	Fungi				
			,					

	10) Myxomycophyta are		
	a) Golden-brown algae	b) Yellow-green algae	
	c) Slime molds	d) Diatoms	
	11) Protozoa, algae and fungi are included i	n the	
	a) Monera	b) Higher protista	
	c) Mycota	d) Animalia	
	12) Bacteria and blue-green algae are include	led in the	
	a) Protista	b) Mycota	
	c) Monera	d) None of the above	
	13) Cell wall in Eubacteria is		
	a) Thin, Flexible	b) Thin, Rigid	
	c) Thick, Rigid	d) Thin	
	14) When cells form cubical masses of coco	ti is type of bacteria.	
	a) Sarcina	b) Staphylococcus	
	c) Diplococcus	d) Vibrio	
Q.2	a) Discuss Mesosomes and Ribosomes in	Bacteria.	14
	b) Discuss in brief mycelium and spore pr	oducing body in Fungi.	
Q.3	a) Explain distribution and economic impo	ortance of Lichans	14
Q.3	b) Give an account of nitrogen fixing bact		14
	b) Give an account of multigen fixing back	-11a.	
Q.4	a) Size of bacteria with special reference t	••	14
	b) Importance of fungi in medicine and for	od.	
Q.5	A) Write short notes on:		10
	1) Pili and flagella in bacteria with its	- 1	
	2) Cylindrical symmetry (Helical) in v	ruruses with examples.	
	B) Write in short on T4 bacteriophage.		04
Q.6	A) Write short notes on:		10
	1) Myxomycota up to the order level.		
	2) Types of lichens based on morpholo	gical characters.	
	B) Write in short on polyhedral viruses with	n example.	04
Q.7	A) Write short notes on:		10
	1) Heteroecism or heterothallism		
	2) Asexual and sexual reproduction in	Fungi	
	B) Write in short on ultra structure of virus	es.	04

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

Semester – I (New CBCS)									
SLR No.	Day & Date	Time	Subje	ct Name	Paper No.	Seat No.			
SLR – SM – 124	Friday 18/11/2016	10.30 AM to 01.00 PM	Algae, Bry	d diversity of ophytes and ophytes	HCT 1.2				
Instructions:1) Attempt totally five questions2) Question no. 1 is compulsory3) Attempt any two questions from Q. No. 2 to Q. No. 44) Attempt any two questions from Q. No. 5 to Q. No. 75) Figures to the right indicate full marks.Total Marks: 70									
Q.1 A) C	hoose correct	alternatives	and rewrite th	e sentence		14			
1)	Fucus is a								
	a) fresh wat		b)						
	c) marine w	vater	d)	both a and c					
2)	In algae, one	type of	f sexual reproduc	tion is regarded as	s most evo	lved			
	a) isogamo	ous	b)	oogamous					
	c) anisogai			none of these					
3)	a) Oscillat		of prokaryotic a	-					
	c) Ulothrix			Chlamydomonas Spirogyra					
	c) clouin	L	u)	Sphogyra					
4)	Members of	blue green al	gae are involed i	n					
		on of mycorrh	nizae	b) disease deve	lopment				
	c) nitrogen	fixation		d) both a and b					
5)		re chaont in t	ha alaga Cyanani						
5)	a) Zoospor		he class Cyanopl	Flagellated motile	e cells				
	c) Gameter			All the above					
	,		,						
6)				class of algae					
	a) Cyanop			Chlorophyceae					
	c) Myxoph	iyceae	d)	all the above					
7)	C	lass of bryon	hvte is considere	d as most evolved	one				
• • •	a) Haepati		-	Anthocerotopsido					
	c) Bryopsi	-	· · · · · · · · · · · · · · · · · · ·	Both a and c					
		1	.1	r					
8)			the capsule of H						
	a) Calyptrac) Spores	ı		Columella None of these					
	c) spores		u)						
9)	The	are regarde	ed as the first vas	cular plants.					
	a) algae			pteridophytes					
	c) bryophy	vtes	d)	fungi					

	10) Steler evolution was first studied in _a) algae	b) fungi	
	c) bryophytes	d) pteridophytes	
	11) Homospores are formed in		
	a) Ophioglossum	b) Psilotum	
	c) Selaginella	d) both a and b	
	12) Isoetes belongs to the class		
	a) Psilopsida	b) Lycopsida	
	c) Sphenopsida	d) Pteropsida	
	13) is known a father of Indian		
	a) G M Smith	b) MOP Iyengar	
	c) Fritsch	d) all of these	
	14) Members of phaeophyceae are known	algae.	
	a) green	b) red	
	c) blue green	d) brown	
Q.2	A) Describe the fresh water forms of alg	zae.	07
-	B) Explain the diversity in pteridophyte		07
Q.3	A) Discuss the diversity in bryophytes v	vith respect to thallus structure.	07
	B) Explain the cultivation and preservat	ion of algae.	07
Q.4	A) Explain the modern trends of classifi	1 1 2	07
	B) Explain the telome concept with suit	able example.	07
Q.5	A) Give an account asexual reproduction	-	05
	B) Describe the interrelationship betwee		05
	C) Describe the methods of isolation of	algae.	04
Q.6	A) Describe the salient features of marc	hantiales.	05
	B) Describe the unicellular forms of alg	ae.	05
	C) Add note on ultra structure of algae of	cell.	04
Q.7	Write notes on any three:		14
	A) Give the salient features of Anthocer	rotales.	
	B) Explain the current trends of research		
	C) Describe the modern trends of classic	1 1 5	

- C) Describe the modern trends of classification in algae.D) Describe the salient features of chlorophyceae.

SLR No.	Day & Date	Time	<u> </u>	ct Name	Paper No.	Seat No.
SLR – SM – 125	Monday 21/11/2010	10:30 AM to 01:00 PM	Plant Ecolgoy		HCT 1.3	
Instruction	2) Q.1 3) Att 4) Att III	empt totally fiv is compulsory empt any two q empt any two q ures to the righ	(Section – I) uestions from uestions from	n question no	. 5 to 7 (Sect	
			SECTIO	N 1		
Q.1 A)		correct answer	from options			
	1) Green ho a) O_2	ouse effect is cau		$\overline{\text{CO}_2}$		
	c) CFC			N_2		
			,	2		
	2) The wate a) fresh	er found in wetlan	nds by	brackish		
	c) saltw		,	all of these		
	•) 501011					
	· · · · · · · · · · · · · · · · · · ·	s occur naturally	•		•	
	a) Asia c) Anta	rotion	/	Africa Australia		
	C) Ana	ictica	u)	Australia		
	4)			and coastal e		
		to reconcile the	e conservation	n of biodiversi	ty with its su	ustainable
	use. a) West	land	h)	Biosphere res	serves	
	/	ed grooves	· · · · · · · · · · · · · · · · · · ·	Tropical fore		
	• • • • •	-				
	$\begin{array}{c} \text{5) The India}\\ \text{a) 15} \end{array}$	an government h		1Biosph 16	ere Reserves	in India.
	c) 10		,	18		
	,		,			
		is a con			s in conjuncti	ion with
	a) succe	ving components		ecosystem		
	c) biosp		,	forest		
				.1 .	1 . 1 . 1 .	1 .1
	<i>in ecolog abiotic c</i>	gy, s omponents of an	ecosystem	the succession	i which driv	en by the
	a) Allog			Heterogenic		
	a) Allog	501110	0)	riciciogenie		

8) IUCN was established in _____.

a)	1945	b)	1951
c)	1948	d)	1940

	9) Biosphere reserves are areas comprising ecosystems	5.
	a) Terrestrial b) Marine	
	c) Coastal d) All of these	
	10) MAB aims to establish a scientific basis for the improven relationships between	
	a) People and their b) Wetlands and their environment	nents
	environments c) Ecosystem and their d) Forest and their environmer environments	nts
	 11) The emission of ODS account for roughly, depletion of ozone layer in stratosphere. a) 80% b) 90% c) 95% d) 72 % 	of total
	12) are expelled from high temperature combustion, and a produced during thunderstorms by electric discharge.	re also
	 a) Sulfur oxide (SO_x) b) Nitrogen oxide (I c) Volatile organic compounds (VOC) d) Carbon monoxid 	NO _x) e (CO)
	13) is the increase of Earth's average surface temperature effect greenhouse gases.	due to
	a) Global Warmingb) Thunder stormsc) Global coolingd) Global freezing	
	 14) is a form of phytoremediation that involves filtering vertices through a mass of roots to remove toxic substances or excess nutries a) Phytoextraction b) Rhizofiltration c) Phytostabilization d) Phytovolatization 	
	SECTION II	
A) B)	What are the wetlands? Explain characteristic features of wetlands. Explain in detail marine water ecosystem.	07 07
A) B)	Explain consequences of climate change studied by you. Comment up on green house effect.	07 07
A) B)	What is water pollution? Comment up its effect on biodiversity. Write an essay on 'environmental toxicology' studied by you.	07 07
	SECTION III	
A) D)	What are the structural components of ecosystem?	05
B) C)	Environmental awareness programmes. Bioaccumulation of pollutants.	05 04
A)	Biosphere reserves.	05
B) C)	Phytostabilization. Explain in brief Bioremediation.	05 04
പ	Write notes on any three. Ramasar conservation.	14
a) b)	Autogenic succession.	
c)	EIA	
d)	Global warming.	Page 2 of 2

Q.2

Q.3

Q.4

Q.5

Q.6

Q.7

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

			Semester	<u>– I (Nev</u>	W CBCS)			
SLR N	0.	Day & Date	Time	Sut	ject Name	Paper No.	Seat No.	
SLR – SM 126	M –	Wednesday 23/11/2016	10:30 AM to 01:00 P.M		nd Techniques 1 Botany	SCT 1.1		
Instructions: 1) Attempt totally five questions. 2) Question no. 1 is compulsory (section -1) 3) Attempt any two questions from question no. 2 to 4 (section II) 4) Attempt any two questions from question no. 5 to 7 (section III) 5) Figures to the right indicate full marks.								
				SECTIO	N 1			
Q.1		write the follo Presentation c	0	•	osing correct alte	rnative.	14	
		a) Line diagrc) Pie diagra		/	Bar diagram All of these			
2) The lens that is within the eyepiece of the light microscope is called						called		
		a) Scanningc) Low power	er		High power Ocular			
	3)	1	amp is used a	s a source	of visible radiation	n.		
		a) Hydrogenc) Tungsten			Nerst glower Deuterium			
	4)	To measure th	e absorption	of a compo	ound in UV region	l.		
		a) Glassc) Plastic		/	Quartz All of these			
	5)	11			in biology is calle			
		a) Statics in 1c) Biostatisti		/	Statistics in vivo Biological statist			
	6)	a) Fischer Francis Ga	s regarded as a	b)	iostatics. Karl person Francis Bacon			
	7)	is		-	son when his	-	given	
		a) Correlatioc) Regression	-	,	Association prob Qualitative probl			
	8)	presence of au	axochrome is	called	ds higher waveler	-	the	
		a) Bathochroc) Hyperchro			Hypsochromic sl Hypochromic sh			

	9) In gel filtration chromatography th	ne pa	rticles are separated based on	·
	a) Affinityc) Molecular size	b)	Ion	
	c) Molecular size	d)	Gel size	
	10) In herbarium technique the specim	nen p	preparation involves	_steps.
	a) Strappingc) Special handling	b)	Sewing	
	c) Special handling	d)	All of these	
	11) Handling of incoming specimens i	in he	rbarium maintenance involve	S
			Heating	
	a) Fumigationc) Poisoning	d)	All of these	
	12) factors affecting elec	tropl	noretic mobility	
	a) The sample	b)	Electric field	
	a) The samplec) The buffer	d)	All of these	
	12)		1:	
	$13)_{a}$ is used to measure th	e rac	110activity. LIV spectrophotometer	
	a) SEMc) Scintillation counters	d)	NMR	
	14) Photograph which is taken form m			_
	a) Macrographc) Micrograph	b) d)	Monograph Pictograph	
	c) Micrograph	u)	riciograph	
	SE	CTI	ON II	
A) B)	What is chromatography? Describe th Discuss the principle and application			07 07
A) B)	Write the principle and applications of Explain how permanent slides are pre-			07 07
A)	Write the principles and applications of	of Co	olorimetry.	07
B)	Explain principles and applications of		5	07
	SECT	ΓΙΟΙ	N III	
A)	Herbarium preparation technique.			05
B)	Applications of gas chromatography.			05
C)	Write a note on cytophotometry.			04
A)	Types of presentation of biological da	ata.		05
B)	Analysis of variance.			05
C)	Stains used in cytological techniques.			04
Wri	te a notes on any three:			14
	A) Application of atomic absorption.			
	B) Important herbaria in India.			
	C) Theory of probability.			
	D) Half life of radioisotopes.			

Q.2

Q.3

Q.4

Q.5

Q.6

Q.7

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

			Semester –					
SLI	R No.	Day & Date	Time	Sub	oject Name	Paper No.	Seat No.	
	– SM- 37	Saturday 19/11/2016	10:30 A.M to 01:00 P.M		xonomy of giosperms	VI		
Instructions:1)Question no. 1 is compulsory. (Section I)2)Attempt any two questions from question no.2 to 4 (Section II)3)Attempt any two questions from question no.5 to 7								
		· -	n 111) ot totally five q s to the right ii	-	marks.			
						otal Marks	: 70	
			SE	CTION I				
Q.1	Rewrit alterna		g sentences by	selecting c	orrect answers fro	om given	14	
	1) Spo	ot out the staten	nent which is fa	lse for Zing	giberaceae			
		Usually the roo		d fleshy				
		The venation is	1					
	· · · · · ·			-	y of water (Hydroj	phily)		
	d)	The bracts are	spirally arrange	ed.				
) Tax	conomia aroun	of one rouls wit	hin the grat	am is tarmad as			
		Division	of any rank wit	-	tem is termed as			
	/	Taxon			Family Genus			
	a)	its of angiosper Simple or Com	pound	b)	Dry of Fleshy	-		
	c)	Dehiscent or In	ndehiscent	d)	All of these			
	/	bellum' petal is	s present in the		0.1:1			
		Moraceae		/	Orchidaceae			
	C)	Onagraceae		d)	Poaceae			
	/	ra of Marathwa			<u> </u>			
		Wadood Khan V. N. Naik			S. Punekar			
	6)	V. IN. INAIK		u)	S. R. Yadav			
	6) $\frac{1}{\text{plan}}$		f germination i	s supposed	to be primitive in	flowering		
	1	Hypogeal		b)	Epigeal			
		Perigeal			Syngeal			
	7) Wh	en pollination i	s carried out by	wind it is	called as			
	· ·	Anemophily			Entomophily			
		Cantharophily			Ornithophily			
		ngroves are gro	owing in	,	1 0			
		Riverine			Grassland			
		Estuarine			Decidious			
				,				

	() Din au hatal I halan as to family			
	9) <i>Piper betel</i> L. belongs to family	b)	Piperaceae	
	a) Urticaceaec) Febaceae		Myrtaceae	
	10) Name of the family has the suffix			
	a) –oideae	b)	-aceae	
	c) –eae	d)	-inae	
	11) The largest family in India is		_	
	a) Leguminosae		Poaceae	
	c) Orchidaceae	d)	Urticaceae	
	12) The alternative name of family Cr			
	a) Brassicaceae	/	Poaceae	
	c) Moraceae	d)	Fabaceae	
	13) An isotype is any duplicate of the			
	a) Lectotype	b)	Holotype	
	c) Neotype	d)	Paratype	
	14) If the specific epithet repeats exac	tly the gene	eric name then it is	
	a) Tautonym	b)	Synonym	
	c) Homonym		Superfluous	
	,	,		
	SE	CTION II		
Q.2	Explain:	1		07
	a) General evolutionary trends in 'Ha			07
	b) Biodiversity conservation strategie	es		07
Q.3	Discuss:			
	a) Various nomenclatural types			07
	b) Principle of priority			07
Q.4	Discuss:			
	a) General evolutionary trends in and	droecium		07
	b) Typological species concept			07
	SEC	CTION III		
Q.5	a) Rejection of names			05
	b) Aims of taxonomy			05
	c) Chemotaxonomy			04
Q.6	a) Morphological characters of Mag	noliaceae		05
	b) Reproductive characters of Casuri			05
	c) Systematic position of Araceae			04
Q. 7	Write notes on any three:			14
ν •′	a) Orchid flower			14
	b) Alpha taxonomy			
	c) Binomial nomenclature			
	d) Floristic work in Maharashtra			

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

Semester – III (Old CGPA)						
SLR No.	Day & Date	Time	Su	bject Name	Paper No.	Seat No.
SLR – SM- 142	Monday 21/11/2016	02:30 P.M to 05:00 P.M	Me	ances in Plant tabolism and lochemistry	XI	
Instruction	s: 1) Ouest	ion no. 1 is co	mpulsor	V.		
	· · · · · · · · · · · · · · · · · · ·			rom question no.2	to 4	
	,			rom question no.5	to 7	
	· · · · · · · · · · · · · · · · · · ·	pt totally five	-			
		es to the right Marks: 70	l mulcate	iun marks.		
Q.1 Rewr			y selectin	g correct answers	from given	14
	natives.	_	-	-	C	
1)		ey enzyme in j				
· · · · · · · · · · · · · · · · · · ·	glycolate oxid RUBP carbox			RUBP oxygenase catalase		
C)	KUDF Caluax	ylase	u)	Catalase		
2) St	arch deposition	in bundle she	ath cells i	s seen in		
,	Sunflower			Aloe		
c)	Wheat		d)	Maize		
3)	is a comm	on sulphur co	ntaining r	beptide in plants.		
· · · · ·	methionine	on surprior co		glutathione		
,	cystein			allicin		
		• •				
4) $(-1)^{-1}$	organic succinate	acid acts as an		ant. malate		
/	glutamate			ascorbate		
-)	8					
	alvin cycle was			·		
· · · · · · · · · · · · · · · · · · ·	Chlorella pyre			14CO2		
c)	autoradiograp	ny	a)	all of these		
6) St		scite are impo of the soil.	ortant soil	phosphates which c	occur under	
,	saline			acidic		
c)	alkaline		d)	neutral		
	hlorophyll struc iytol tail.	ture shows for	ur pyrrole	rings attached to	and a	
-	Mg		b)	Ca		
· · · · · · · · · · · · · · · · · · ·	Mn		d)			
8) C	ystolith is an ag	prepation of c	alcium	crystals	1	
	carbonate	51 Countrie of Co		oxalate		
/	sulphate			phosphate		

	9) linkage groups play impo	ortant role in energy transfer reactions	5.		
	a) phosphodiester				
	c) glycosidic	d) peptide			
	10) Glycolysis is regulated by				
	a) Hexokinase	b) Phosphofructokinase			
	c) Pyruvic kinase	d) All of these			
	11) Phenylalanine is synthesized throug				
	a) Shikimic acid	b) Malonic acid			
	c) mevalonic acid	d) Pentose phosphate			
	12)is not the first stable pr				
	a) PGA	b) Malate			
	c) Aspartate	d) Glucose			
	13) Activation of sulphate is brought about by				
	a) Cystein	b) ATP			
	c) Glutathione	d) APS			
	14) occur as glycosides, are	e soluble in water and mostly coloure	d.		
	a) Flavonoids	b) Alkaloids			
	c) Lignin	d) Tannins			
Q.2	Describe critically:				
	a) Factors controlling P uptake in plan	nts	07		
	b) Regulation of glycolysis and TCA	cycle in plants	07		
Q.3	Give an outline and significance of:				
	a) Calvin Cycle		07		
	b) Photorespiration		07		
Q.4	Explain the biosynthesis of:		07		
	a) Secondary metabolite – any one		07		
	b) Methionine and cysteine		07		
Q.5	Compare between:				
	a) C3 and C4 pathway		05		
	b) Light and dark respiration		05		
	c) Cyclic and non-cyclic electron tran	ister	04		
Q.6	Write short notes on any three:		14		
	a) Carotenoids				
	b) Classification of C4 plants				
	c) Organic acids in plants				
	d) Starch and cellulose				

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

		N	semester ·	<u>– III (New</u>	CBCS)		
SLR	No.	Day & Date	Time	Subject	Name	Paper No.	Seat No.
	R - SM- 144Wednesday 16/11/20162:30 P.M to 		• •••	IX			
Instru	ctions:	 Attemp Attemp Attemp Figures 	ot any two qu to the right	mpulsory. testions from (testions from (indicate full r eled diagram v	question no.5 narks.	, 6 to 7.	: 70
		e the following	sentences b	y selecting con	rect answers	from given	14
	alterna						
	1) _		dosperm is re	estricted largely		nocots.	
) Cellular		,	Helobial		
	c) Polyembryon	пу	d)	None		
,	2) S	tub pollination	has proved e				
	a	a) Pollination b) Fertilization					
	c) Incompatibil	ity	d)	None		
,	3) F	usion of the eg	g nucleus wit	h sperm nucleu	is is called		
) Syncarpous	<u> </u>		Synonyms		
) Syngamy		,	Progamy		
		ollen tube entry	v into the ovu	,	0 1	lled	
	_			1 \	N		
) Chalazogam	У	· · · · · · · · · · · · · · · · · · ·	Mesogamy		
) Porogamy		d)	Hologamy		
		The pollen intine			5 11 1		
) Sporopolleni	n	,	Pecto-cellul	OSIC	
) Pectin		,	Legnin		
(6) H	lighly reduced	exine is adapt			rests.	
	a) humid tropic	al		dry deciduo	us	
	c) hot thorny		d)	dry tropical		
,	7) A	ge of tree could	d be cause fo	r			
) polyembryor		b)	apomixes		
	c) apospory	-	d)	diplospory		
:	8) T	ransfer of polle	en grains from	n male parent to	o stigma by ba	ts is called	
	- 2) anemophily		b)	entomophily	7	
	a C				cheiropterop		
			ana muagant i	,	1 1	hiiiy	
	9)			n Chenopodiac			
) Amphilotrop	ous	· · · · · · · · · · · · · · · · · · ·	Circinotropo		
	c	/ I	0 11	· · · · · · · · · · · · · · · · · · ·	Campylotro	pous	
	10) _		tollowing inc	luces polyembi			
	a	/		· · · · · · · · · · · · · · · · · · ·	Kinetin		
	c) Gibberellins		d)	None		

	11)is main difference between the mature embryo of Dicots and					
	Monocots.					
	a) Number of embryo	b) Number of cotyledons				
	c) Nature of radicle	d) Nature of plumule				
		male and female sex organs in bisexual				
	flower itself proves a barrier to self	-				
	a) Dichogamy	b) Herkogamy				
	c) Heterostyly	d) All				
	13) Ca++ ions are a naturally occurring interaction.	chemotropic agent in the				
		b) Snorm and nucleur				
	a) Pollen-pistil	b) Sperm-egg nucleus				
	c) Sperm-secondary nucleus	d) None				
	14) In type of apomicts diploi division.	id embryo sac produced through mitotic				
	a) apospory	b) dislospory				
	c) both	d) none				
0.1		11 11 24 24 11 12	07			
Q.2	a) Give an account of structure of exine		07			
	b) Explain structure and function of amo	beboid tapetum with suitable diagram.	07			
0.2	a) Europein abnormal male comptendinte	and its factures	07			
Q.3	a) Explain abnormal male gametophyte					
	b) Discuss ultra structure of female gam	etophyte with suitable diagram.	07			
Q.4	a) Explain scope of palynology.		07			
×	b) Explain barrier to fertilization with su	uitable example	07			
	b) Explain barrier to returization with st	mable example.	07			
Q.5	a) 1) Explain genetic basis of self incomp	patibility.	10			
L	2) Discuss biological significance of ir	-				
	2) Discuss biological significance of in	icompationity.				
	b) Discuss role of palynology in Taxonor	ny of Angiosperms.	04			
Q.6	A) 1) Explain pollen pistil interaction with	th suitable diagram.	10			
	2) What is dislospory? Discuss its cau	ses and significance.				
			0.4			
	B) Discuss forage behavior of Bee.		04			
Q. 7	A) 1) What is polyembryony? Discuss its	s practical significance.	10			
-	2) Give an account of allergic propert	ı c				
	2, Give an account of anorgic propert.	tes of policii.				
	B) Discuss methods to overcome incomp	atibility.	04			

Master of Science – II (Botany) Examination: Oct / Nov 2016 Semester – III (CGPA)

SLR		Day & Date	Time	Subie	ct Name	Paper	C 4 N -
1				Subje		No.	Seat No.
Insti	45	1- Friday 18/11/2016	02:30 P.M to 05:00 P.M	Breeding	etic, Plant and Genetic neering	X	
	ructi	ons: 1) Oues	tion no. 1 is co	ompulsory.			
		-) 2			question no.2 to	o 4	
					question no.5 to		
		4) Draw	neat and lab	eled diagram	whenever necess	sary.	
		5) Figur	es to the righ	t indicate full			
						otal Marl	
Q.1		write the followi	ng sentences l	by selecting co	orrect answers fi	rom given	14
		ernative.	1 12 0 1				
	1)	A 'fiber folded n					
		a) Taylor (1959			Freese (1958)		
	•	c) DuPraw (196	/		Steffensen (1961	/	
	2)	In viruses the siz	e of genetic m			genes.	
		a) 1000		/	250		
	•	c) 2000		,	5000		
	3)		osomes are dif	fused through	out the nucleus d	uring	
		interphase.		1 \			
		a) prokaryotes			dekaryotes		
		c) eukaryotes			protists		
	4)	Rec A- type prot		reciprocal exc	changes of DNA s	strands bet	ween
		two DNA double	e helices.	1 \			
		a) discourage		· · · · · · · · · · · · · · · · · · ·	promote		
	-	c) disintegrate		,	denature		.1
	5)	The distance bet				nosome is	the
		average number ofbetween them.					
		a) linkages			crossovers		
	\cap	c) non-crossove		,	interference		
	6)	The crossing over			rossing over in a	neighborir	ıg
		region; the pheno	omenon is call	ed as	<u> </u>		
		a) interference			mapping		
	7)	c) non-crossove			single crossover		1
	7)	The plants regen					
			uantitative trai		ion is known as		
		a) artificial	1		secondary		
	0)	c) gametoclona		/	somaclonal		
	8)	In the process of	protoplast iso	lation the cell	wall is removed t	by using	
		enzyme.		1 \	11 1		
		a) macerase			cellulase		
	()	c) carinase	1 . 1		peptidase	. 1	•
	9)	The hybrids in w			one parent and c	ytoplasm l	rom
		both the parents	are called		1 • 1		
		a) plastidc) true breeds			cybrids		
		a) terra la ma a da		(h	symbrids		

	10) is an intangible property.	
	a) Real estate b) Bank balance	
	c) Trade union d) Trade secrete	
	11) The patents are merely to enable patentee to enjoy a monopoly for	
	the importation of patented article.	
	a) granted b) not granted	
	c) secured d) encouraged	
	12) Aright granted by a government to an inventor to exclude others from manufacturing, using or selling the invention during the specified	
	period.	
	a) Trade secrete b) Copyright	
	c) Patent d) Trade mark	
	13) is widely used programme for database similarity searching.	
	a) FASTA b) NCBI	
	c) Pro Table d) RUSA	
	14) compare a query protein or nucleotide sequence to existing	
	database of known sequences.	
	a) Gene TAC b) BLAST	
	c) SWISSPROT d) EMBL	
Q.2	Write in short about:	14
Q.2	a) Organization of prokaryotic genome	14
	b) Chromosome mapping	
Q.3	Describe:	14
	a) Production and use of somaclonal variations	
	b) Concept of intellectual property rights	
~ .		
Q.4	Explain:	14
	a) Genome differences in eukaryotes and organelles	
	b) The procedure for protoplast isolation	
0.5	() Write short notes one	10
Q.5	A) Write short notes on:a) Introns and exons	10
	b) Linkage groups	
	B) Write in short on Hybridoma technology	04
	b) which in short on Hyperdonia technology	01
Q.6	A) Write short notes on:	10
-	a) Somatic hybridization	
	b) Nucleotide databases	
	B) Write in short on enzymes involved in recombination.	04
o -		
Q.7	A) Write short notes on:	10
	a) Molecular markers	
	b) BLAST	
	D) Write in chart on second one	• •
	B) Write in short on yeast genome.	04

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

			Semester –	III (N	New CGPA)		
SLR N	No.	Day & Date	Time		Subject Name	Paper No.	Seat No.
SLR – SM- 146		Monday 21/11/2016	02:30 P.M to 05:00 P.M	N	lvances in Plant Ietabolism and Biochemistry	XI	
Instruc	tions:	2) Attem 3) Attem 4) Figure	pt any two ques s to the right in	stions f stions f ndicate	rom question no.2, rom question no.5,	6 to 7	ndra. 70
Q.1 F	Powrit	te the followin	a sentences hy	selectin	g correct answers f		<u>14 14 14 14 14 14 14 14 14 14 14 14 14 1</u>
	lterna		g sentences by s	scicciii	ig correct answers i	i om given	14
			hesize in	is tı	ansferred to peroxys	omes.	
	a)	Mitochondria			Cytoplasm		
	/	Chloroplast			Nucleus		
2	the	ien oxygen is ro following Reducing NAI		-	otosynthesis, it is by Spliting of water m	1	of
		Chemiosmosis			Electron transfer sy		ГТ
	0)	Chemioshiosh	,	u)	Liection transfer sy		
3) The	e end product o	f metabo	lism is	glutathione.		
		Phosphorous			Sulfate		
	c)	Flavonoids		d)	Starch		
4) In 1	plant cell in	ATP syntha	se com	plex are located.		
		Thylakoid me	<u>mbrane</u>	be com	Innner mitochondri	al membran	e
		Both a and b			Plasma membrane		-
5		action contro in	ab at a grat and T				
3) Real	action centre in	photosystem I i	lS			
		P ₇₀₀			D ₆₈₀		
	0)	P ₆₇₀		u)	P ₆₀₀		
6				synthes	is in plant plastids.		
		UTP – glucose			ATP – glucose		
	c)	ADP – glucos	e	d)	UDP – glucose		
7) Fir	st stage in the a	ssimilation of C	O_2 into	biomolecules is the		
	·	Carbon regula			Carbon fixation rea		
			sis reaction		Carbon metabolism		
0		maga ia armtha	ind in the				
0		crose is synthes Ribosome		<u> </u>	Endoplasmic reticu	lum	
		Mitochondria			Cytosol	IuIII	
	-))	J		
9	·	-			6 Phosphate into		-
		Glucose 6 pho	-		Fructose 1, 6 bisph		
	c)	Fructose 2, 6 b	oisphosphate	d)	Fructose 1 phospha	te	

	10) Generation of proton gradients occurs in membranes during	
	a) Photosynthesis b) Resperation	
	c) Both a and b d) Cytosol	
	11) Shikimic acid is act as precursor of	
	a) Flavonoids b) Alkaloids	
	c) Terpenes d) Tannins	
	12) The enzyme that catalyzes incorporation of CO ₂ into an organic form is	
	a) Oxygenase b) Dehydrogenase	
	c) Transferase d) Ligase	
	13)is an example of Hill reagent.	
	a) 1, 4 dichlorophenol indophenol b) 2, 6 dicholorophenol	
	c) 1, 6 dichlochlrophenolindol d) 2, 6 dichlorophenol indophenols	
	14) Reduction of oxygen which forms water occurs during	
	a) Photosynthesis b) Respiration	
	c) Photorespiration d) neither photosynthesis not respiration	
Q.2	a) Give an account of electron transport chain in mitochondria and its role in ATP synthesis.	07
	b) Explain in detail the light harvesting complexes of photosystem II with schematic presentation.	07
Q.3	a) Explain TCA cycle with help schematic diagram and work out its energetic for a molecule of glucose.	07
	b) Describe overview of the reactions of the Calvin cycle.	07
Q.4	a) Define the following terms:	07
Т. Ч	1) Photosynthesis	07
	2) Respiration	
	3) Photosystem I	
	4) Metabolism	
	5) Oxidative phosphosrylation	
	6) Hill reaction7) Gluconeogenesis	
	b) Explain the mechanism of biosynthesis of sulphar containing methionine amino	07
c –	acid with schematic presentation.	
Q.5	A) 1) Secondary metabolites	10
	2) Mechanism of CAM B) Write on Chucollyria cycle	04
	B) Write on Glycolysis cycle.	04
Q.6	A) 1) What is the metabolic pathway of oxalic acid? Discuss its mechanism.	10
	2) How does starch synthesize and degrades in a chloroplast of plants?	
	B) What are the factors controlling phosphorous uptake?	04
Q.7	A) 1) Schematic presentation of C3 cycle	10
	2) Schematic presentation Photosystem II	
	B) Describe energy transduction in photosynthesis.	04

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

Semester – III (New CGPA)							
SLR No.		Day & Date	Time	S	ubject Name	Paper No.	Seat No.
SLR – SM 148	[–	Wednesday 23/11/2016	02.30 PM to 05.00 PM	, i	siology of Plant Growth and Development	XII	
Instructions:1) Answer any five questions.2) Q.1 is compulsory.3) Attempt any two from Q.2, 3 & 44) Attempt any two from Q.5, 6 & 75) Figures to the right indicate full marks							
						Total Ma	arks: /U
1)	Jası a)	the correct alternonate is synth Linolenic acid Aspartic acid		b)	alternatives Palmtic acid Ascorbic acid		14
	a)	A acts as an Gibberellins Kinetin	trai	b)	hibitor. Auxin H+		
	a)	escence of enti Sequential Monocarpic	re plant after	b)	reproductive cycle i Overall Deciduous	is called	
	/	Banana	n-climacteric	b)	Lemon		
5)	Ara a)	Apple didopsis thalian Physiologist Molecular biol		,	Mango h tool by plant b) Geneticists d) Cytologists		
	inte a)	independent sig rmediate. Calmodulin Cyclic AMP	gnal transduct	b)	way involves Cyclic GMP Protein kinase	as sign	naling
	a)	ymines contain Polyvalent cati Zwitter ions		b)	cids and are Polyvalent anions Both a & c		
	a)	situ conservatio Tolerance to do Freeze toleranc	esiccation	b)	s not problematic de Long life span All of these	ue to	
,	a)	nversation of Pr Red Infra red	to Pfr occurs	s in prese	ence ofl b) Far red d) All of these	light.	

10) D	1 1 4		:- 1:4-1	11 - f f
10) During seed	development	phosphorus	is deposited	in the form of
10)20008	a	priorprior	is aspesses	

a) Sugar phosphates

- b) Phospholipidsd) Lecithin
- c) Phytin d)
- 11) _____ controls spouting of potato tubers which increases the food value and quality of tubers.
 - a) CCC b) Maleic hydrazide
 - c) Salicylic acid d) TIBA

12) Recalcitrant seeds are known as ______ seeds

- a) Desiccation sensitive b) Desiccation tolerant
- c) Freeze sensitive d) Freeze tolerant
- 13) Aqueous solution of ethephon is often sprayed on plants in field conditions to exert hormonal effects of

a)	ABA	b)	Ethylene
c)	Brassisin	d)	TRIA

14)_____, a natural plant growth regulator, is a component of epicuticular wax.

- a) Triacontanolb) Paclobutrazolc) Ethephond) Brassinosteroids
- Q.2 Describe the second messengers and their role in signal transduction in plants with 14 suitable examples.
- Q.3 Define growth retardants. Give an account of growth retardants and their role in rops.14

Q.4 Define senescence. Explain the mechanism of leaf and petal senescence. 14

Q.5 Write in brief about

- A) Physiology of seed germination07B) Physiology of seed development07Q.6A) Describe the structure and function of phytochrome.07B) Explain about "Drosophila of plant Biology".07Q.7Write short notes on any three14
 - A) Salicylic and jasmonic acid
 - B) Brassinosteroids
 - C) PCD
 - D) Biochemical changes during fruit ripening

Master of Science – II (Botany) Examination: November 2016 Semester – IV (New CGPA)

Semester – IV (New CGPA)							
SLR No.	Day & Date	Time		Subject Name	Paper No.	Seat No.	
SLR – SM 151	Saturday • 19/11/2016	02.30 PM to 05.00 PM		it Tissue Culture & House Technology & Hydroponics	XIV		
Instructions:1) Question no. 1 is compulsory.2) Attempt any two questions from question no.2 to 43) Attempt any two questions from question no.5 to 74) Attempt totally five questions.5) Figures to the right indicate full marks.6) Draw neat and labeled diagram wherever necessary.Total Marks: 70							
	Q.1 Rewrite the following sentences by selecting correct answers from given 14 alternative.						
	he embryo rescu						
) treatment of e		aliminat	ion of diseases			
				d condition and formation	on of new		
) prevention of) for breaking o		ancy of y	young embryo			
2) It	n tissue culture t	he needle and	forceps a	are sterilizes through			
· · · · · ·	Water bath at		-	dry air oven	<u> </u>		
	autoclave			sprit lamp			
3) T	he best method	to obtain virus	free pla	nt through tissue culture	is		
· · · · ·) Embryo rescu		-	Protoplast culture			
) Meristem cult			anther culture			
4)	is best fr	equently used	to induce	e somaclonal variation.			
a							
c) NAA		d)	PEG			
5)	is an init	ial for cybrid	productio	on.			
a) emasculation			fertilization			
с) pollination		d)	protoplast isolation and	d fusion		
0	smotic pressure		n mixture		ain proper		
) sucrose		/	Nacl			
С) Mannitol		d)	Phosphate buffer			
	/hat is agar?		_ .				
	A nutrient			Vitamins			
с	c) Broth d) A solidifying agent						
8) C 0	-	ts are photo sy	nthetical	lly more efficient becaus	se the high	%	
) N2		/	O2			
с) CO2		d)	CO			

	9) Application of embryo culture is	
	a) Clonal propagation b) 1	Production of alkaloids
	c) Overcoming hybridization d)	Haploid production
	10) Which one of the following cytokinin?a) Indole-3-acetic acidb)	Thidiazuron
	c) Dicamba d) 1	Brassinosteroid
	11) The relative humidity in greenhouse for p	
	, , , , , , , , , , , , , , , , , , , ,	50-60 60-80
	12) is siliceous mineral of volca for green house.	nic origin used as soil less culture
	, , , , , , , , , , , , , , , , , , , ,	Perlite
	c) Peat d) d	Glass wool
	13) Callus culture formation is promoted bya) Excess of NAA	Absonoos of solts
	c) Darkness and sub culturing d)	Proper light and sub culturing
	14) The technique of protoplast fusion was give	ven hv
	a) Steward b)	Visit and Haberlandt
	c) Carison et al d)	Barski et al
Q.2	a) Describe the design of commercial plant t	issue culture laboratory. 07
	b) Describe operation and management in tis	ssue culture laboratory. 07
Q.3	a) What is synthetic seed? Describe in detail	s synthetic seed production. 07
	b) Describe application of synthetic seed.	07
Q.4	a) What are the basic principles of in-vitro c	ulture? 07
	b) Write critically on factor influencing mor	phogenesis. 07
Q.5	Answer in brief:	
	a) Write note on Anther cultureb) Bioreactors	05 05
	c) Types of green houses	04
Q.6	Write brief notes on:	
-	a) Fertigationin Greenhouse	05
	b) Cell suspension culturec) Types of hydroponics	05 04
07		ving. 14
Q.7	Write short notes on any three of the followa) Embryo culture	ving: 14
	b) Application of Hydroponicsc) Embruo rescuing	
	c) Embryo rescuingd) Pest and disease control in greenhouse	