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SEMESTER END THEORY EXAMINATION

B.Sc.(Hons) Agriculture

Semester	**:**	**V (New)**	**Term**	**:**	**I**	**Academic year**	**:**	**2021-22**
Course No.	**:**	**PATH –354**	**Title**	**:**		**Diseases of Field and Horticultural crops and their management- I**		
Credit	**:**	**3(2+1)**						
Day & Date	**:**	**13.11.2021**	**Time**	**:**	**2.00 h**	**Total Marks**	**:**	**80**

Note	**:**	1.	Solve **ANY EIGHT** questions from **SECTION"A".**
		2.	Solve **ANY TWELVE** questions from **SECTION"B"**
		3.	All questions are compulsory from **SECTION "C".**
		4.	Send the PDF file of answer sheet to the email id of respective course teacher.

MODEL ANSWERS

		SECTION 'A **(Write the answers in 4-5 sentences only. each question carries 4 marks)'**	
Q.1		**Describe the symptoms of following diseases.** **a) Blast of rice, b) Grain smut of sorghum**	4Marks
Ans:	**a)**	**Blast of rice**	2 Marks
		Short description of symptoms including following points of symptoms. • Leaf blast • Nodal blast • Glume blast • Neck rot	
	b)	**Grain smut of sorghum**	2 Marks
		Short description of symptoms including following points The diseases appear at the time of grain formation. Individual grains are replaced by smut sori.	
Q.2		**Describe etiology of *Fusarium udum*.**	4Marks
		***Fusarium udum*.**	
Ans:		Etiology: Answer should be including mycelium, different spores characters, mycelium, Spore fruits, Spores.	4Marks
Q.3		**Describe in short perpetuation of following diseases** **a) Coffee rust b) Anthracnose of greengram**	4 Marks
Ans:		Answer should be including following points	
Ans:	**a)**	**Coffee rust:** One lesion produces 1.5 lakh uredospores which spread by rain splash and wind. Many animals can also carry spores over long distances. Epidemics develop during the rainy season because of the necessity of water. The fungus survives the off season through uredial stage.	2 Marks
Ans:	**b)**	**Anthracnose of green gram:** The fungus is seed borne and cause primary infection. It also lives in infected plant tissues in soil. Rain splash also helps in dissemination.	2 Marks

Q.4		**Describe transmission of following diseases**	4 Marks
	a)	**Papaya ring spot**	2 Marks
Ans:		Answer should be including following points	
		Transmission: The virus is sap transmissible. Among insect vectors, and *Myzus persicae* are most efficient vectors, it is also transmitted by Aphis citricola, Aphis craccivora.Virus in a non persistant manner. TIP- 54-60^{O}C	
	b)	**Banana bunchy top**	2 Marks
Ans:		Transmission: The major vector is banana aphid, *Pentalonia nigronervosa*. Transmitted in persistant manner	
Q.5		**Give in brief management of following disease.**	4 Marks
	a)	**Yellow vein mosaic of okra**	2 Marks
Ans:		Answer should be include following points	
		Short description of management like cultural control, chemical control, resistant varieties and tolerant varieties etc	
	b)	**Black rot of cabbage**	2 Marks
Ans:		Short description of management like cultural control, hot water treatment , chemical control, etc	
Q.6		**Describe symptoms of following diseases**	4 Marks
Ans:	**a)**	**Phomopsis blight of brinjal**	**2 Marks**
		Short description of symptoms including following points of symptoms. • Damping off • Leaf spot • Fruit rot	
	b)	**Damping off of tomato**	**2 Marks**
		Short description of symptoms including following points of symptoms. • Pre emergence phase • Post emergence phase	
Q.7		**Write primary and secondary source of infection of following diseases a) Downy mildew of bajra, b) Leaf spot of blackgram**	**4 Marks**
Ans:	a)	**Downy mildew of bajra**	2 Marks
		Primary source of infection: Oospores, dormant mycelium. **Secondary source of infection:** Sporangia produced during rainy season.	
	b)	**Leaf spot of blackgram**	2 Marks
		Primary source of infection: Plant debris, seed. **Secondary source of infection: Air borne conidia.**	
Q.8		Describe symptoms of Rhizoctonia blight of soybean.	4 Marks
Ans:		Symptoms: short description of symptoms including following points of symptoms. Sunken lesions, web like mycelial growth on leaves, formation of sclerotia.	4 Marks
Q.9		**Describe the management of bacterial blight of Pomegranate**	4 marks
Ans:		Short description of management like cultural, chemical/antibiotics treatment, resistant varieties etc	4 Marks
Q.10		**Describe symptoms of bud rot of coconut and black shank of tobacco.**	4 Marks
		Bud rot of coconut	2 Marks
Ans:		Symptoms: short description of symptoms including following points of	

		symptoms. Pale leaf, leaf rot, rotting of basal tissue crown rot emitting foul smell, drooping.	
		Black shank of tobacco	2 Marks
Ans:		Symptoms: short description of symptoms including following points of symptoms. Yellowing of leaves ,sudden wilting blackening of roots, stem of such plants when split open show brown to black dried pith disc like plates characteristics of black shank.	

SECTION 'B' **Write the answers in one sentence only. (Each question carries 2 marks)**		
Q.11		**Do as directed. 12X2=24 Marks**
	a.	Write the causal agent of *Phytophthora* blight of Colocasia.
	Ans	***Phytophthora colocasiae***
	b.	State the insect transmission vector of Soybean mosaic.
	Ans	**Aphid**
	c.	State the vegetative spores produced by pigeon pea wilt causing pathogen.
	Ans	**Chlamydospore**
	d.	Causes of khaira disease of rice.
	Ans	**Zinc**
	e.	State sexual spore produced by pathogen seedling blight of castor.
	Ans	**Oospore**
	f.	Secondary spread of ergot of bajra is through---------.(Fill in the blank)
	Ans	**Insect and air**
	g.	State the causal agent of oily spot of pomegranate.
	Ans	***Xanthomonas axonopodis pv.punicae***
	h.	Nylon netting of tomato nursery is practiced for the management ---------- disease. (Fill in the blank)
	Ans	**Leaf curl**
	i.	State the vector of bud necrosis groundnut virus.
	Ans	**Thrips**
	j.	Grain smut of sorghum is also known as?
	Ans	**Covered smut/Kernel/Short smut**
	k.	Give the full form of RTSV and RTBV.
	Ans	**Rice tungro spherical virus and rice tungro bacillus virus.**
	l.	Suicidal germination take place in_____. (Fill in the blank)
	Ans	**Striga**
	m.	What is the shape of conidia of rice blast pathogen?
	Ans	**Pyriform**
	n.	Write the perfect stage of sigatoka of banana.
	Ans	***Mycospharella musicola***

SECTION 'C'		
Choose the correct answer. Each question carry one mark		**24x1=24 Marks**
Q.12	**1 .**The fungi included in order pernosporales cause the disease known as	
	b)	**Downy mildew**
	2. White rust of crucifers is ---------- type of parasite.	
	c)	**Obligate parasite**
	3. Kresek phase observed in ----------disease.	
	b)	**Bacterial blight of rice**
	4. Coconut cadang cadang diseases is caused by	
	b)	**Viroid**
	5.Which of the following is fungal biocontrol agent	
	c)	***Trichoderma***
	6. **The causal organism of bunchy top of banana is transmitted by vector**	
	a)	*Pentalonia nigronervosa*
	7. **In 1943 Bengal had faced a serious famine which cause a great loss in rice yield was caused by----------.**	
	a)	*Helminthosporium oryzae*
	8. **The pathogen responsible for charcoal rot of soybean**	
	c)	*Macrophomina phaseolina*
	9.Leaf curl of tomato is a geminivirus whose nucleic acid is made up of	
	b)	**DNA**
	10. **Local and systemic both infections are found in**	
	c)	White rust of mustard
	11. **The pathogen of downy mildew of bajra is-------.**	
	c)	*Sclerospora graminicola*
	12. **The optimum temperature for the attack of foot rot of papaya is----**	
	d)	**27-36^{0}C**
	13.**For the effective control of wilt, pigeonpea should be intercropped with**	
	c)	**Sorghum**
	14. **Disease which interferes with the conduction of water in plants**	
	a)	**Wilts**
	15.Phloem cells of which infected virus plant produce fluorescence	
	a)	**Banana bunchy top virus**
	16. **The sexual spore produced by downy mildew fungus is**	
	a)	**Oospore**
	17. **The rice tungro virus contains**	
	d)	Both a& b
	18***Exobasidium vexans*** **which causes**.	
	a)	Blister blight of tea
	19. **Tobacco mosaic was first reported by**	
	c)	**Adolf Mayer**
	20. **Heterocious means**	
	b)	Required two different host species to complete life cycle
	21. **Papaya ring spot virus belongs to**	
	c)	Potyvirus
	22. Yellow vein mosaic of okra is transmitted by ----------insect vector.	
	a)	**Whitefly**

	23. **The pathogen of Anthracnose of bean is----------.**	
	a)	*Colletotrichum lindemuthianum*
	24.Tea rust is caused by	
	d)	**Algae**