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(CBCS)

(5th Semester)

BOTANY

FIFTH PAPER

(Fungi, Plant Pathology and Biostatistics)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(*Marks* : 10)

Tick (✓) the correct answer in the brackets provided : 1×10=10

1. A thick strand or root-like aggregation of somatic hyphae is called

(a) sclerotium ( )

(b) rhizomorph ( )

(c) prosenchyma ( )

(d) plectenchyma ( )

2. Which of the following are acellular slime moulds?

(a) Basidiomycetes ( )

(b) Oomycetes ( )

(c) Ascomycetes ( )

(d) Myxomycetes ( )

3. Aflatoxin—the most potent carcinogenic was isolated from

(a) *Rhizopus stolonifer* ( )

(b) *Aspergillus flavus* ( )

(c) *Alternaria solani* ( )

(d) *Penicillium notatum* ( )

4. Fungi which can live only on living tissues are known as

(a) obligate saprophytes ( )

(b) facultative saprophytes ( )

(c) obligate parasites ( )

(d) facultative parasites ( )

5. Father of Indian Plant Pathology is

(a) E. J. Butler ( )

(b) A. P. Roy ( )

(c) M. S. Swaminathan ( )

(d) B. D. Singh ( )

6. Which organism is used as biocontrol agent of several plant pathogens?

(a) Virus ( )

(b) Bacteriophage ( )

(c) Trichoderma ( )

(d) Mycoparasite ( )

7. Which one is the control measure recommended for loose smut of wheat?

(a) Rogueing ( )

(b) Seed selection ( )

(c) Chlorose treatment ( )

(d) Sett inspection ( )

8. The sexual spores of powdery mildew of crucifers are

(a) basidiospores ( )

(b) ascospores ( )

(c) zoospores ( )

(d) arthrospores ( )

9. If standard deviation and mean of a data are 6·5 and 12·5 respectively, the coefficient of variation will be

(a) 30% ( ) *(b)* 40% ( )

(c) 62% ( ) *(d)* 52% ( )

10. Chi-square is zero when

(a) expected frequency is lesser than the observed frequency ( )

(b) expected frequency is equal to the observed frequency ( )

(c) expected frequency is double that of the observed frequency ( )

(d) expected frequency is greater than the observed frequency ( )

(SECTION : B—SHORT ANSWERS)

(*Marks* : 15)

Write short notes on the following : 3×5=15

UNIT—I

1. Asexual spores of fungi

OR

2. Comparison of mycelium of zygomycetes and basidiomycetes

UNIT—II

3. Evolutionary trends in fungi

OR

4. Blakeslee's experiment on heterothallism

UNIT—III

5. Scope of plant pathology

OR

6. Phytoalexins

UNIT—IV

7. Control measures of wheat rust

OR

8. Disease cycle of early blight of potato

UNIT—V

9. Arithmetic mean

OR

10. Correlation

(SECTION : C—DESCRIPTIVE)

(*Marks* : 50)

Answer the following : 10×5=50

UNIT—I

1. Write an account on the main characteristics of fungi. 10

OR

2. Write short notes on the following : 5+5=10

(a) Eumycota

(b) Active liberation of fungal spores

UNIT—II

3. Describe the various modes of nutrition in fungi. 10

OR

4. Briefly describe the following : 5+5=10

(a) Negative role of fungi

(b) Para-sexuality in fungi

UNIT—III

5. Discuss the dissemination of plant pathogens by various agencies with suitable examples. 10

OR

6. Write short notes on the following : 5+5=10

(a) Entry of plant pathogens through artificial openings

(b) History of plant pathology

UNIT—IV

7. Write an account on the symptoms, disease cycle and control measures of red rot of sugarcane. 10

OR

8. Discuss in brief the symptoms and control measures of the following : 5+5=10

(a) Citrus canker

(b) Downy mildew of crucifers

UNIT—V

9. In order to find the effect of nitrogen on the yield of oranges in two plots of 10 trees each. Orange trees in Plot 1 were treated with nitrogen whereas Plot 2 were untreated. The yield in the number of oranges for each tree was noted :

Tree No.	1	2	3	4	5
Plot 1 with N	110	100	110	90	95
Plot 2 without N	70	80	75	70	95

Tree No.	6	7	8	9	10
Plot 1 with N	110	115	100	105	105
Plot 2 without N	85	80	80	90	95

Find whether there is any significant effect of nitrogen on the number of oranges produced or not. ($t_{0\ 05,18}$ 2 10) 10

OR

10. Write short notes on the following : 5+5=10

(a) Standard error

(b) Median

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