

2016

BOTANY

( Major )

Paper : 5.2

( Plant Pathology and Lichen )

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Answer the following questions : 1×7=7

(a) Name the scientist who invented late blight disease of potato, a fungal disease.

(b) Tobacco mosaic disease was caused not by a microorganism, but by a 'contagious living fluid' or 'contagium vivum fluidum' i.e., called a virus. Who concluded this after repeated experiments?

(c) What is the pathogen responsible for the leaf spot disease of cabbage?

- (d) A pathogenic fungus produces five different types of spores to complete its life cycle. What is the disease caused by this fungus?
- (e) What is the name of causal organism of grey blight disease of tea?
- (f) *Albugo candida* is responsible for causing 'white rust' or 'blister blight' of members of Brassicaceae. What is the synonym of this species?
- (g) Write the name of one fruticose lichen which is also yielding usnic acid.

2. Answer briefly the following questions :  $2 \times 4 = 8$

- (a) One fungus was responsible for Irish famine. What was the name of the fungus? What was the name of the disease? What was the name of the crop which was ruined by the infection of the fungus? In which year this famine in Ireland took place?
- (b) What is meant by obligate parasite? Name one fungus which is the causal organism of one very important crop. The fungus is also heteroecious in habit which is a salient feature of the fungus.



(c) Define epidemiology of plant disease very briefly.

(d) One scientist gave the concept of determination of pathogen from a previously unknown disease. What is the name of this concept or postulation? Who was that scientist credited for such a postulation or concept?

3. Write brief notes on/Answer any *three* of the following : 5×3=15

(a) Draw a disease triangle narrating the components of its different arms. "All the components are responsible for disease development." Justify the statement.

(b) Define the following :

(i) Pathogen

(ii) Pathogenesis

(iii) Disease syndrome

(iv) Necrotrophe

(v) Facultative parasite

(c) Host-parasite interaction

(d) Pre-existing chemical defense mechanism of plants

4. Write notes on the following : 5×2=10

(a) Tobacco mosaic disease

(b) A brief note on economic importance of lichen

5. Write a note on the transmission viral diseases of plants. 10

6. "Plant disease management is an important aspect of plant pathology." In this context write a historical background of the discovery and utilization of Bordeaux mixture. What is the name of the disease in which for the first time the Bordeaux mixture was found to be fruitful? State the role of different chemical applications for the control of plant diseases. 10

Or

Write an account on the different forms of lichens stating their process of reproduction. 10

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