

**PARUL UNIVERSITY**  
**COLLEGE OF AGRICULTURE**

**B.Sc. (Hons.) Agriculture, Winter 2016 - 17 Examination**

Semester: 1

Date: 21/12/2016

Subject Code: 20107101

Time: 2:00pm to 5:00pm

Subject Name: Plant Pathogens and Principles of Plant Pathology

Total Marks: 60

**Instructions**

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section – A, section – B on separate answer sheets.

**SECTION-A****Q.1 Fill in the blanks. (Each of 0.50 marks)****(10)**

1. 'Pathology' is a \_\_\_\_\_ word.
2. All plant viruses are made of \_\_\_\_\_ and \_\_\_\_\_.
3. A \_\_\_\_\_ microorganism lacks cell wall.
4. Technical name of Benlate is \_\_\_\_\_.
5. Father of Phytobacteriology \_\_\_\_\_.
6. The substance which inhibits the growth of other microorganism is known as \_\_\_\_\_.
7. The genus *Rhizobium* comes under phylum \_\_\_\_\_.
8. The author of book "Plant Bacteriology" is \_\_\_\_\_.
9. Fusion between two mycelia is called \_\_\_\_\_.
10. \_\_\_\_\_ is known as Great Grandfather of Plant Pathology
11. First plant parasitic nematode was reported by \_\_\_\_\_
12. Bordeaux mixture was discovered by \_\_\_\_\_
13. \_\_\_\_\_ gave the term 'Rhizosphere'
14. Estimating an object without being without being in physical contact with it is known as \_\_\_\_\_.
15. Destructive insect and pest act was passed in year \_\_\_\_\_.
16. Downy mildew of grapes was introduced in India from \_\_\_\_\_ country
17. Application of lime in soil reduces the \_\_\_\_\_ disease by increasing the pH of soil.
18. Mechanisms of biological control are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
19. Main components of Bordeaux mixture are \_\_\_\_\_ and \_\_\_\_\_.
20. Trade name of Chlorothalonil is \_\_\_\_\_.

**Q.2 Match group A with group B. (Each of 0.50 marks)****(05)**

- | A                         | B                                      |
|---------------------------|--|
| 1) Orobanchae             | a) 'mycetes'                           |
| 2) Class                  | b) Father of Plant Pathology           |
| 3) Surpal                 | c) Father of Indian plant Bacteriology |
| 4) Anton de Bary          | d) Wine industries affected            |
| 5) Metalyxyl              | e) Plant quarantine                    |
| 6) D W Dye                | f) <i>Trichoderma</i> spp.             |
| 7) M K Patel              | g) Complete root parasite              |
| 8) Downy mildew of grapes | h) Introduced 'Pathovar' system        |
| 9) Exclusion              | i) Ridomil                             |
| 10) <i>Pythium</i> spp.   | j) <i>Vriksha Ayurveda</i>             |

**Q.3 Define the following. (Any ten)****(05)**

1. Plant pathology
2. Virus
3. Mycology
4. Remote sensing
5. Isogamy
6. Pathogenesis
7. Oogonium
8. Disease incidence
9. Systemic fungicide
10. Horizontal resistance
11. Rouging
12. Plant quarantine

**Q.4 Answer the following. (Any ten)****(10)**

1. Give name of three reference books related to this course.
2. Enlist plant parasitic higher plants.
3. Draw figure of Dolipore septum.
4. Give purposes of modification of thallus in fungi.
5. Enlist phyla of kingdom fungi.
6. Enlist events/steps of pathogenesis.
7. Enlist general principles of plant disease management.
8. Example: Find out the quantity of fungicide required for spray from following data:  
Carbendazim 50 WP; recommended dose: 0.03%; water required: 10 litres.
9. Enlist different cultural tools used for plant disease management.
10. Enlist important biological control agents.
11. Enlist different physical methods for plant disease management.
12. Give name of three important bacterial phyla.

**SECTION-B****Q.1 Multiple choice type questions. (Each of 0.50 mark)****(10)**

1. The book 'Plant Disease' is written by...
  - a) R S Singh
  - b) G N Agrios
  - c) H C Dube
  - d) None of the above
2. Bacteria possess' ribosome size...
  - a) 80 S
  - b) 70 S
  - c) 60 S
  - d) 23 S
3. Cell wall is made of peptidoglycan in...
  - a) Fungi
  - b) Bacteria
  - c) Viroid
  - d) Virus
4. Little leaf of brinjal disease is caused by...
  - a) Fungi
  - b) Bacteria
  - c) Phytoplasma
  - d) Viroid
5. Which one is complete stem parasite?
  - a) Dodder
  - b) Orobanchae
  - c) Striga
  - d) Loranthus
6. The book entitled 'Plant Bacteriology' is written by...
  - a) M K Patel
  - b) H C Dube
  - c) K K Mondal
  - d) G N Agrios
7. *Azospirillum* comes under which phylum...
  - a) Proteobacteria
  - b) Firmicutes
  - c) Actinobacteria
  - d) None of the above
8. Dolipore septum is a typical characteristics of ...
  - a) Ascomycetes
  - b) Zygomycetes
  - c) Oomycetes
  - d) Basidiomycetes
9. Which one is method of asexual reproduction in fungi...
  - a) Meiosis
  - b) Karyogamy
  - c) Fragmentation
  - d) Plasmogamy
10. Spermatization type sexual reproduction is observed in...
  - a) *Neurospora*
  - b) *Puccinia*
  - c) Both A and B
  - d) None of above
11. Sub-class always ends with...
  - a) *mycota*
  - b) *mycetes*
  - c) *ales*
  - d) *mycetidae*
12. Current classification of fungi is given by...
  - a) Saccardo
  - b) Kirk
  - c) Ainsworth
  - d) Alexopolus
13. Father of Forest Pathology...
  - a) Miles Joseph
  - b) E J Butler
  - c) E F Smith
  - d) Robert Hartig
14. \_\_\_\_\_ developed solar heat treatment for wheat smut.
  - a) PMA Millardet
  - b) Kittleson
  - c) Jensen
  - d) J C Luthra
15. \_\_\_\_\_ formulated Indian stem rust rules.
  - a) M K Patel
  - b) K C Mehta
  - c) Nagarjan
  - d) R S Singh

16. Conditions required for occurrence of a disease.
- |                                 |                      |
|---------------------------------|----------------------|
| a) Favorable climatic condition | c) Virulent pathogen |
| b) Susceptible host             | d) All of the above  |
17. \_\_\_\_\_ disease was introduced in India from Philippines.
- |                             |                         |
|-----------------------------|-------------------------|
| a) Late blight of potato    | c) Rice blast           |
| b) Bacterial blight of rice | d) Bunchy top of banana |
18. Soil solarization was discovered by\_\_\_\_\_
- |          |                 |
|----------|-----------------|
| a) Egley | c) Luthra       |
| b) Katan | d) Both A and B |
19. Which one is ambimobile fungicide?
- |                 |                      |
|-----------------|----------------------|
| a) Azoxystrobin | c) Fosetyl- Al       |
| b) Tricyclazole | d) None of the above |
20. Highly effective fungicide against blast disease of rice.
- |                 |                  |
|-----------------|------------------|
| a) Azoxystrobin | c) Fosetyl- Al   |
| b) Tricyclazole | d) Propiconazole |

**Q.2 Give the sentence true or false. (Each of 0.50 mark)**

**(05)**

1. Fungi are prokaryotes.
2. Nematodes are eukaryotes.
3. Cell divides by fission in eukaryotes.
4. Mollicutes have no cell wall.
5. Dodder is complete root parasite.
6. Louis Pasteur is father of modern bacteriology.
7. Plant quarantine comes under 'Avoidance'.
8. 'Tilt' is trade name of propiconazole.
9. Crop rotation is a type of 'Eradication' in plant disease management.
10. Late blight of potato disease was introduced in India from Sri Lanka.

**Q.3 Write short notes. (Any five)**

**(10)**

1. Enlist different types of modifications of thallus and explain any one of them.
2. Enlist different types of sexual reproduction in fungi and explain gametangial contact.
3. Explain: Soil solarization.
4. Give short note: Mechanisms of biological control.
5. Give types of resistance and explain any two of them.
6. Give integrated plant disease management strategies of rice.

**Q.4 Differentiate the following. (Any five)**

**(05)**

1. Eukaryotes vs Prokaryotes
2. Asexual reproduction vs Sexual reproduction
3. Compound interest disease vs Simple interest disease
4. Chemical control of plant disease vs Non-chemical control of plant disease
5. Biological control vs Chemical control
6. Systemic fungicides vs Non-systemic fungicides
7. Vertical resistance vs Horizontal resistance