

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

**B.Sc. (Hons.) Agriculture Summer 2016 – 17, Examination**

Semester: 1

Date: 03/07/2017

Subject Code: 20107101

Time: 10:00am to 1:00pm

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. Bordeaux mixture was discovered by \_\_\_\_\_.
2. \_\_\_\_\_ is father of modern plant pathology and Indian mycology.
3. A disease usually occurs widely but periodically in a destructive form is referred as \_\_\_\_\_.
4. In most fungi, particularly in higher forms the cell wall is composed of \_\_\_\_\_.
5. \_\_\_\_\_ is a hard resting body of hyphae resistant to unfavourable conditions.
6. \_\_\_\_\_ are non-motile endogenous asexual spores.
7. \_\_\_\_\_ are formed usually at the tip or side of special hypha called conidiophores.
8. \_\_\_\_\_ was first to see bacteria under microscope.
9. \_\_\_\_\_ is a complete root phanerogamic plant parasite.
10. The text book 'Plant Pathology' is written by \_\_\_\_\_.
11. The set of varying symptoms characterizing a disease are collectively called a \_\_\_\_\_.
12. Trade name of mancozeb is \_\_\_\_\_.
13. The infective propagules of an organism coming in contact with the host are known as \_\_\_\_\_.
14. Term compound interest and simple interest diseases were given by \_\_\_\_\_.
15. Remote sensing technique for monitoring stem rust of wheat was first used by \_\_\_\_\_.
16. Removal of diseased plants or their affected organs from field to prevent the spread of plant pathogens is called \_\_\_\_\_.
17. The ability of the plant pathogen to cause disease is known as \_\_\_\_\_.
18. Full form of PGPR is \_\_\_\_\_.
19. The chemical which do not kill fungi but simply inhibit the fungus growth is called as \_\_\_\_\_.
20. When the defence mechanism is controlled by a single gene pair, it is called as \_\_\_\_\_.

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

- | <b>A</b>                    | <b>B</b>                                    |
|-----------------------------|---------------------------------------------|
| 1) Complete stem parasite   | a) Binary fission                           |
| 2) Asexual exogenous spores | b) Obligate parasite                        |
| 3) Haustoria                | c) Organ of attachment to the host          |
| 4) K C Mehta                | d) Barberry                                 |
| 5) Bordeaux mixture         | e) Plant quarantine                         |
| 6) Bacteria                 | f) Life cycle of cereal rust in India       |
| 7) Appresorium              | g) Dodder                                   |
| 8) Virus                    | h) Function of absorption of food from host |
| 9) Exclusion                | i) Conidia                                  |
| 10) Stem rust of wheat      | j) Downy mildew of grapevine                |

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

1. Plant disease
2. Obligate parasite
3. Symptom
4. Antisporulant
5. Isolation
6. Inoculation
7. Mycelium

8. Mycology
9. Plant disease epidemiology
10. Eradication
11. Soil inhabitants
12. Systemic fungicide

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

**(10)**

1. Name three reference books related to this course.
2. Enlist the main components of Integrated plant disease management (IPDM).
3. What are the advantages of IPDM?
4. Name the phanerogamic plant parasites.
5. Explain plant disease triangle with diagram.
6. What are the objectives of plant pathology?
7. Enlist important plant pathogens.
8. Name five copper fungicides.
9. Give the merits of remote sensing.
10. State the principles of plant disease management.
11. Draw the figure of aseptate and septate mycelium.
12. Enlist different cultural tools used for plant disease management.

**SECTION - B**

**Q.1 Multiple choice type questions. (Each of 0.50 mark)**

**(10)**

1. Loranthus is...
 

a) Complete root parasite	c) Partial root parasite
b) Partial stem parasite	d) Complete stem parasite
2. Discovered 'Mycoplasma'...
 

a) X. S. Prusiner	c) Doi and Ishii
b) Y. Mckinney	d) T. O. Diener
3. Developed solar heat treatment...
 

a) M K Patel	c) J C Luthra
b) R S Singh	d) B B Mundkar
4. Tridemorph...
 

a) Beam	c) Bavistin
b) Amistar	d) Calixin
5. Little leaf disease of brinjal is caused by...
 

a) Fungi	c) Bacteria
b) Phytoplasma	d) Nematode
6. Which one is a beneficial plant bacterium?
 

a) <i>Erwinia amylovora</i>	c) <i>Clostridium tetani</i>
b) <i>Rhizobium</i> spp.	d) <i>Xanthomonas campestris</i> pv. <i>Citri</i>
7. Dolipore septum is a typical characteristic of...
 

a) Ascomycetes	c) Oomycetes
b) Zygomycetes	d) Basidiomycetes
8. Asexual reproduction in fungi...
 

a) Meiosis	c) Plasmogamy
b) Fragmentation	d) Karyogamy
9. Father of Forest pathology...
 

a) Miles Joseph	c) E J Butler
b) E F Smith	d) Robert Hartig
10. Coffee rust disease was introduced in India from...
 

a) Sri Lanka	c) Java
b) Europe	d) Philippines
11. Contaf is the trade name of...
 

a) Propiconazole	c) Azoxystrobin
b) Hexaconazole	d) Tricyclazole
12. The author of book 'Fungi, Bacteria and Viruses' is...
 

a) Y L Nene	c) P A Micheli
b) H C Dube	d) E F Smith

13. 'Khaira' disease of rice is caused due to...
- |                    |                    |
|--------------------|--------------------|
| a) 'Mg' deficiency | c) Animate disease |
| b) 'Zn' deficiency | d) 'Fe' deficiency |
14. Irish famine...
- |                                   |                          |
|-----------------------------------|--------------------------|
| a) Bacterial leaf blight of paddy | c) Late blight of potato |
| b) Citrus canker                  | d) Cumin blight          |
15. Chemical which kills the fungus...
- |                |                      |
|----------------|----------------------|
| a) Nematicide  | c) Fungicide         |
| b) Bactericide | d) None of the above |
16. Main components of Bordeaux mixture are...
- |                                                 |                                                     |
|-------------------------------------------------|-----------------------------------------------------|
| a) $\text{CuSO}_4$ and $\text{Na}_2\text{CO}_3$ | c) $\text{CuSO}_4$ and Red lead                     |
| b) $\text{CuSO}_4$ and $\text{CaCO}_3$          | d) $\text{CuSO}_4$ and $(\text{NH}_4)_2\text{CO}_3$ |
17. Kittleson's killer fungicide...
- |                 |             |
|-----------------|-------------|
| a) Indofil M-45 | c) Kavach   |
| b) Captan       | d) Bavistin |
18. Important bacterial biocontrol agent...
- |                              |                                   |
|------------------------------|-----------------------------------|
| a) <i>Trichoderma viride</i> | c) <i>Pseudomonas fluorescens</i> |
| b) <i>T. harzianum</i>       | d) <i>Gliocladium virens</i>      |
19. Organ of locomotion in fungi...
- |               |             |
|---------------|-------------|
| a) Appresoria | c) Flagella |
| b) Haustoria  | d) Rhizoids |
20. Effective fungicide for the control of powdery mildew disease.
- |                     |           |
|---------------------|-----------|
| a) Wettable sulphur | c) Captan |
| b) Burgundy mixture | d) Thiram |

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

**(05)**

1. Fungi are prokaryotes.
2. Fungal cell wall is made up of peptidoglycan layer.
3. Viruses are made of nucleic acid and protein.
4. Striga is partial root parasite.
5. Louis Pasteur is father of modern bacteriology.
6. Group of closely packed hyphae is known as prosenchyma.
7. Late blight of potato introduced in India from Europe.
8. Epidemiology is useful in forecasting of a disease and also for the management of a disease.
9. Intercropping of sorghum in cotton reduces the root rot of cotton.
10. *Pseudomonas fluorescens* is bacterial biocontrol agent.

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

**(10)**

1. Disease pyramid
2. Remote sensing
3. Soil solarization
4. Plant quarantine
5. Bacteria
6. Avoidance

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

**(05)**

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