

PARUL UNIVERSITY
COLLEGE OF AGRICULTURE

B.Sc.(Hons.)Agriculture Winter 2019 -20 Examination

Semester: 2

Date: 12/12/2019

Subject Code: 20110152

Time: 2.00 pm to 4.30 pm

Subject Name: Agricultural Microbiology

Total Marks: 50

Instructions

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Do as Directed.**A. Fill in the blanks. (Each of 0.5 marks)****(05)**

1. Azolla an aquatic fern is regarded as “_____”
2. Azolla has been extensively used both as biofertilizer and _____ for rice cultivation.
3. Azolla fixes _____ kg N/ha in rice crop.
4. Root nodules of rhizobium found in _____ crop.
5. Bio-NPK Liquid consortia is recommended for _____ crop.
6. Potash culture is recommended for _____ crop.
7. *Beauveria bassiana* is one type of _____.
8. Silage is called _____ of fodder.
9. All plants and animals having _____ type of cell .
10. Azotobacter is recommended for _____ crop.

B. Multiple choice type questions. (Each of 0.5 mark)**(10)**

1. In silage making to decrease its acidic quality (pH) to _____, which stops the growth of harmful germs.

a) 8.0-9.0	c) 3.0-4.0
b) 2.0-4.0	d) 1.0-6.5
2. Identify biological nematicide

a) Acetobacter	c) <i>Paecilomyces lilacinus</i>
b) Salmonella typhi.	d) None of above
3. Identify biological insecticide

a) <i>Beauveria bassiana</i>	c) <i>Trichoderma viride</i>
b) Pseudomonas	d) None of above
4. In silage making which ingredient is make the microbial process faster

a) Microbial inoculants	c) Rhizobium
b) Water	d) Jaggery
5. Aerobic process means...

a) Absence of CO_2	c) Absent of Oxygen
b) Present of Oxygen	d) None of above
6. Anarobic process means...

a) Absence of Air	c) Absence of Carbon dioxide
b) Present of Air	d) Absence of Oxygen
7. Bacteria having _____ cell structure.

a) Eukaryotic	c) Multi cellular
b) Prokaryotic	d) None of above
8. System improves soil fertility

a) Cereal+Cereal	c) Cereal+Horticulture crops
b) Millets+Fodder	d) Cereal+Pulses
9. Equipment used for transfer of one bacterial colony to another media

a) Hand glove	c) Wire-loop
b) Spreader	d) Hot-Air-Oven
10. Equipment use for maintain aseptic temperature for proper growth of microorganism.

a) Autoclave	c) Incubator
b) Laminar air Flow	d) Water bath
11. Azolla doubles its biomass in _____ days.

a) 7-9	c) 10-12
b) 3-5	d) 13-15

12. Azolla is used in _____ crop.
- a) Wheat
b) Pearl millet
c) Rice
d) Sorghum
13. Nutrient agar contains _____.
- a) Beef extract
b) Agar
c) Peptone
d) All of the above
14. Bio-fertilizers can replace _____ % chemical fertilizer.
- a) 25-30
b) 35-40
c) 10-15
d) 40-45
15. Filtration is _____ method of sterilization.
- a) Physical
b) Chemical
c) a & b Both
d) None
16. Hot air ovens are used as _____ heat sterilization.
- a) Dry
b) Moist
c) a & b both
d) None
17. In autoclave require _____ °C temperature for 20 minutes.
- a) 121
b) 131
c) 141
d) 151
18. The principle of moist sterilization is to produce steam which raises the _____ in the inner chamber.
- a) Temperature
b) Pressure
c) a & b both
d) None
19. Azospirillum is used in _____ crop.
- a) Wheat
b) Green gram
c) Sorghum
d) a & c both
20. Azolla can supplement about _____ % of nitrogen requirement by the rice crop.
- a) 30
b) 20
c) 70
d) 50

Q.2 Do as Directed.

A. Define the following. (Any five)

(05)

1. Microbiology
2. Rhizobium
3. Bio-Pesticide
4. Bio-Fertilizers
5. Silage
6. Sterilization
7. Bio-waste degradation

B. Answer the following. (Any Five)

(05)

1. Give the name of bio-fungicide.
2. What do you mean by Biological control?
3. Fungi grows on which specific media?
4. Bacteria grow on which specific media?
5. Standard temperature and pressure for autoclave.
6. Function of cytoplasm.
7. Function of Ribosome.

Q.3 Write short notes. (Any five)

(10)

1. Importance of microbiology in agriculture.
2. Mass multiplication of azolla.
3. Bio-Pesticide.
4. Advantages of silage making.
5. Draw labelled diagram of Eukaryotic cell and write function of it.
6. Difference between Prokaryotes vs Eukaryotes

Q.4 Attempt any Three/Long Questions/Example

(15)

1. Draw labelled diagram of Prokaryotic cell and write function of it.
2. Give steps of Gram's staining procedure.
3. Characteristics of azolla.
4. Bio-Fertilizers