KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Ag.2017 Admission
III Semester Final Examination-January-2019

Micr.2101 **Agricultural Microbiology (2+1)** **Marks: 50**
Time: 2 hours

I **Fill in the blanks:** **(10x1=10)**

1 During biological nitrogen fixation, atmospheric nitrogen (N_2) is converted into ----------
2 Proteinaceous infectious particle is called ----------
3 The odour of moist earth is the result of production of volatile substance called ---------- by *Actinomycetes.*
4 The genetic recombination process in bacteria where virus act as a vector for DNA transfer is known as ----------
5 The structure that connects two bacterial cell during conjugation is ----------
6 Polyisoprenoid branched chain lipids are present in the plasma membrane of ---------- bacteria.
7 *Nitrosomonas* uses--------- as electron source in nitrogen cycle.
8 ----------are small, circular, self-replicating extra chromosomal genetic elements in bacterial cell.
9 ----------is a red pigment in the active root nodule of legumes which provide "facilitated diffusion" of oxygen to the root nodule.
10 A nitrogen fixing *Actinomycete* associated withCasuarina'splant root is called ----------

II **Write Short notes on ANY FIVE of the following** **(5x2=10)**

1 Define antibiotics and explain the mode of action of penicillin.
2 Hfr Cells.
3 Various mechanisms involved inbiocontrol by *Trichoderma.*
4 Define microbial biofertilizers.Mention the nodulating bacteria associated with *Sesbaniarostrata.*
5 Phosphate solublizing microorganisms.
6 Differentiate between protoplast and spheroplast.
7 *Azospirillum.*

III **Answer ANY FIVE of the following** **(5x4=20)**

1 Archaeobacteria.
2 Rhizosphere effect.
3 Biological retting.
4 Presumptive test for detecting *coliforms.*
5 Differentiate between gram positive and gram negative bacteria.
6 Symbiotic *Cyanobacteria* inAzolla.
7 Anaerobic fermentation.

IV **Write an essay on ANY ONE of the following** **(1x10=10)**

1 Structure of abacterial cell.
2 Compare lytic and lysogenic life cycle of bacteriophage.

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