Seat No. : _____

AG-133

April-2015

B.Sc., Sem.-VI

MI-311.1 : Microbiology

(Geomicrobiology)

Time : 3 Hours] **[Max. Marks : 70**

Instructions : (1) **All** questions carry equal marks.

(2) Mention answer number clearly in the margin.

1. Describe the following : (any **two**) **14**

   (1) Geomicrobiology as an applied science.

   (2) Microbial flora of earth.

   (3) Microbial flora of lithosphere.

   (4) Hydrosphere as microbial habitat.

2. Give details of the following : (any **two**) **14**

   (1) Non-molecular methods to study geomicrobially important microbes.

   (2) Single cell isotonic technique.

   (3) Activity of geomicrobially important groups of prokaryotes.

   (4) Microbes as catalysts of geochemical processes.

3. Explain the following : (any **two**) **14**

   (1) Bioleaching of copper ore.

   (2) Natural origin of metal sulphides.

   (3) Acid mine drainage.

   (4) Biobeneficiation.

4. Discuss the following : (any **two**) **14**

(1) Natural fossil fuels.

(2) Role of methanogenic bacteria.

(3) Role of microbes in peat formation.

(4) Microbial desulphurization of coal.

5. Answer in one or two sentences : **14**

(1) Define geomicrobiology.

(2) Name any two important prokaryotic microbes related to geomicrobiology.

(3) Name two organisms involved in coal formation.

(4) Mention the contribution of Winogradsky.

(5) Name any two techniques of bioleaching.

(6) What is microbial consortium ?

(7) Define : Biobeneficiation.

(8) Name two pyrite oxidizing bacteria.

(9) Enlist the molecular methods for geomicrobially important microbes.

(10) Define : Lithosphere.

(11) Enlist natural fossil fuel.

(12) What is the purpose of microcosm ?

(13) Define : Methanogenesis.

(14) Highlight the role of microbes in peat conversion.