

Seat No. : _____

MQ-124

March-2019

B.Sc., Sem.-VI

SE-311 : Microbiology (Geomicrobiology)

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) Figure on right indicate marks.
(3) Answer **all** question in series.

1. (A) Describe Geomicrobiology as a branch of Microbiology. 14

OR

- (1) Give details of Hydrosphere as microbial habitat. 7
(2) Give details of microflora and its distribution in mineral soil. 7

(B) Answer the following in short : (Any **four**) 4

- (1) What is Geomicrobiology ?
(2) Name any two scientists having important contribution in Geomicrobiology.
(3) What is Magma ?
(4) What is Subduction ?
(5) Name three successive concentric regions of earth.
(6) What is Lithosphere ?

2. (A) Describe molecular methods used in Geo-microbiology. 14

OR

- (1) Explain the role of microbes as catalysts of geochemical process. 7
(2) Give details of non- molecular methods used in the study of Geo-
microbiology. 7

(B) Answer the following in short : (any **four**) 4

- (1) What is microcosm ?
(2) Name the enzyme used to fractionate DNA molecules.
(3) What is Consortium ?
(4) What is phylogenomics ?
(5) Give full name of PCR technique.
(6) Give examples of photoheterotrophs.

3. (A) Describe in details Bioleaching. 14

OR

(1) Explain biooxidation of metal sulphides. 7

(2) Explain Acid mine drainage. 7

(B) Answer in short the following : (any **three**) 3

(1) What is methanogenesis ?

(2) What is biobeneficiation ?

(3) Enlist two methods of bioleaching.

(4) Give two examples of microbes involved in biooxidation of metal sulphides.

(5) Name two organisms involved in formation of acid mine drainage.

4. (A) Explain in details Geo-microbiology of methane. 14

OR

(1) Give details of Natural fossil fuels. 7

(2) Explain the role of microbes in desulfurization of coal. 7

(B) Answer the following in short : (any **three**) 3

(1) What is peat ?

(2) Enlist two natural fossil fuels.

(3) Name two microbes involved in peat formation.

(4) Enlist different types of coal.

(5) Name the organism associated with desulfurization of coal.
