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MBF-003-1011016

Seat No. _____

First Year B. Sc. (CBCS) (Sem. I) Examination

November / December – 2016

Microbiology : Paper - MB-101

(Basic Aspects of Microbiology)

(New Course)

Faculty Code : 003

Subject Code : 1011016

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory.

(2) Figures on right indicate marks.

1 (a) Answer the following : (One mark each) **4**

(1) Define : Protoplasm.

(2) Define : Classification.

(3) Chloroplast is _____ in bacteria. (Present / Absent)

(4) _____ proposed five kingdom concept of classification system.

(b) Answer in brief : (Any one out of two) **2**

(1) Define : Vaccine. Who discovered first vaccine ?

(2) Who proposed third kingdom protista ? And it includes which biological life forms ?

(c) Answer in detail : (Any one out of two) **3**

(1) Contribution of Robert Koch.

(2) Explain classification of bacteria according to Bergey's manual of systematic bacteriology.

(d) Write a note on (Any one out of two) **5**

(1) Enlist the features distinguishing Prokaryotic cell from Eukaryotic cell.

(2) Spontaneous generation versus Biogenesis.

2 (a) Answer the following : (One mark each) **4**

(1) Define : Resolution.

(2) Define : Autoradiography.

(3) Antigen Antibody reactions can be studied by _____ Microscopy.

(4) _____ enhances staining capacity in staining methodology.

(b) Answer in brief : (Any one out of two) **2**

(1) Define : Numerical Aperture.

(2) Define : Leuco Compound.

(c) Answer in detail : (Any one out of two) **3**

(1) Phase contrast Microscopy.

(2) Ultra thin sectioning for electron microscopy.

(d) Write a note on (Any one out of two) **5**

(1) Bright field Microscopy.

(2) Compare and contrast Scanning electron microscopy and transmission electron microscopy.

3 (a) Answer the following : (One mark each) **4**

(1) Define : Sphaeroplast.

(2) Define : Cyst.

(3) _____ is ribbon like, nonliving structure of the cell, present external to the cell wall.

(4) _____ granule is source of poly phosphate.

(b) Answer in brief : (Any one out of two) **2**

(1) What is Prosthaecae ?

(2) What is Mesosome ?

(c) Answer in detail : (Any one out of two) **3**

(1) Structure of Outer Membrane.

(2) Sporulation.

(d) Write a note on : (Any one out of two) **5**

(1) Bacterial Flagella.

(2) Structures present internal to the cell wall in Bacteria.

4 (a) Answer the following : (One mark each) **4**

(1) Define : Mixotroph.

(2) Define : Halophile.

(3) _____ organisms can grow in presence and absence of oxygen.

(4) _____ acts as coenzyme, present in nutritional requirement of bacteria.

(b) Answer in brief : (Any one out of two) **2**

(1) What are Psychrophile ?

(2) Define Pure culture.

(c) Answer in detail : (Any one out of two) **3**

(1) Selective biological method to obtain pure culture.

(2) Explain differential media with example.

(d) Write a note on : (Any one out of two) **5**

(1) Oxygen Toxicity.

(2) Nutritional types of bacteria.

5 (a) Answer the following : (One mark each) **4**

(1) Define : Chemostat.

(2) Define : Growth.

(3) _____ is an example of budding bacterial.

(4) Generation time of E.coil is _____.

(b) Answer in brief : (Any one out of two) **2**

(1) Derive the equation that is used to calculate the number of generations.

(2) Define : Synchroneous Growth. What types of graph is obtained in synchroneous culture ?

(c) Answer in detail : (Any one out of two) **3**

(1) Septum formation in gram negative bacteria.

(2) Explain modes of cell division in bacteria.

(d) Write a note on (Any one out of two) **5**

(1) Bacterial growth curve.

(2) Continuous culture of bacteria.