The figures in the right hand side margin indicate marks.

Answers <u>all</u> questions :

1. Carry out Gram's / Endospore staining of the supplied sample (A/B) and comment on the nature with suitable diagram   5

    [Principle - 1; Work out - 1; Observation and Comment - 2; drawing - 1]

2. Perform pure culture technique for isolation of bacteria by streaking or streak plate method.   5

    [Principle - 1; Work out - 2; Observation and Comment - 2]

3. Laboratory note book.   2

2. Viva - Voce.   3

BANKURA UNIVERSITY
B. Sc. Semester I (Hons) Examination 2017
MICROBIOLOGY

Subject Code : 12211   Course Code : SHMCB/101/C-1 (P1)

Course Title : Introduction to Microbiology and

Microbial diversity   **Time : 1 hr. 30 min. (1ˢᵗ day)**

Full Marks : 15   **30 min. (2ⁿᵈ day)**

The figures in the right hand side margin indicate marks.

Answers all questions :

1. Prepare an appropriate culture medium and isolate bacteria present in air of mentioned place [a. corridore b. toilet c. library d. class room e. open air sample].   6

    [principle- 1; Work out - 2; Observation and result - 2; Conclusion -1]

2. With suitable reason identify the supplied specimen 'x' and 'y'.

    [Reason - 1½; Identification ½]   2 x 2 = 4

3. Laboratory note book.   2

2. Viva - Voce.   3

Full Marks : 25   Time : 1 hr. 15 min.

The figures in the right hand side margin indicate marks.

1. **Answer <u>any five</u> questions out of following :**   1 x 5 = 5

    a)   What are carboxysomes?

    b)   Write the scientific name of one Gram - ve., pathogenic bacterium.

    c)   Define plasmid.

    d)   What is phenol co-efficient?

    e)   What is a differential medium?

    f)   What is cold sterilization?

    g)   Name one culture collection centers in India.

    h)   Define generation time

2. **Answer <u>any two</u> from the following :**   5 x 2 = 10

    a)   Schematically describe the nutritional pattern of chemolithoautotrophs with suitable examples.   5

    b)   Describe with suitable diagram the basic structure of peptidoglycan from a typical bacterial cell wall.   4+1=5

    c)   What is pure culture? What are the methods by which you can culture anaerobic bacteria in laboratory? Write the name of one obligate anaerobic bacterium.   1+3+1=5

    d)   What are archaebacteria? Write their general characteristics. Name at least two archaebacteria.   1+3+1=5

3. **Answer <u>any one</u> from the following :**   10 x 1 = 10

    a)   With suitable labelled diagram discuss the ultra structure of flagellum from a typical Gram negative bacterium.   3+7=10

    b)   Draw and describe different phases of bacterial growth curve. What is a batch culture ?   2+6+2=10

Subject Code : 12201   Course Code : SHMCB/101/C-1 (T1)
Course Title : Introduction to Microbiology and
Microbial diversity

Full Marks : 25   **Time : 1 hr. 15 min.**

The figures in the right hand side margin indicate marks.

1. **Answer <u>any five</u> from the following :** $1 \times 5 = 5$

    a) What are the major pigments of Xanthophyceae?

    b) What is diplanetism?

    c) Mention one contribution each of Robert Koch and Sergei Winogradsky.

    d) Name an alga used as human food.

    e) Name a fungus used in cheese industry.

    f) What are dimorphic fungi?

    g) What is diatomaceous earth?

    h) State the difference between SEM and TEM.

2. **Answer <u>any two</u> from the following :** $5 \times 2 = 10$

    a) State the characteristic features of Prion. Mention two diseases caused by them.   5

    b) Write briefly about the characteristic features of Cyanophyta.   5

    c) Describe the principle with ray diagram of a Dark field Microscope and mention its applications.   4+1=5

    d) Discuss the classification system of proposed by Carl Woese. Mention its merit over Whettaker's system.   4+1=5

3. **Answer <u>any one</u> from the following :** $10 \times 1 = 10$

    a) What is parasexual cycle? Briefly discuss different modes of sexual reproduction occur in fungi.   2+8=10

    b) Who disproved spontaneous generation and how? Describe the general characters of Paramecium. Discuss the application of algae in agriculture and industry.   1+2+3+4=10