SH-I/MCB-102-C-2/(PR)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

MICROBIOLOGY

Course ID : 12222 **Course Code : SHMCB-102-C-2(PR)**

Course Title : Bacteriology

Time: 2 Hours **Full Marks: 15**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Carry out Gram's staining of the supplied specimen (A/B) and comment on the Gram nature of the bacterium with suitable diagram. 6

[Principle – 1, Workout – 2, Observation & result – 1, Drawing – 1, Comment – 1]

2. Give a demonstration on isolation of pure culture of bacteria by spread plate method. 4

[Principle – 1, Procedure – 2, Demonstration – 1]

3. Viva voce 3

4. Laboratory Notebook 2

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SH-I/MCB-102-C-2/(PRI)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

MICROBIOLOGY

Course ID : 12222 **Course Code : SHMCB-102-C-2(PRI)**

Course Title : Bacteriology

Instruction to the Examiners.

1. For Question No. 1, Examiners are requested to keep arrangement of one Gram positive and one Gram negative pure culture of bacteria, Gram's staining reagents and other necessary materials.
   [Principle – 1, Workout – 2, Observation & Result – 1, Drawing – 1, Comment – 1]

2. For Question No. 2, all the required materials for isolation of pure culture of bacteria has to be provided during demonstration.
   [Principle – 1, Procedure – 2, Demonstration – 1]

3. Key to the materials should be submitted along with the answer script.

4. Evaluated answer scripts should be sent to the Controller of Examination within 7 days after completion of exam.

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SH-I/MCB-101-C-1/(PR)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

MICROBIOLOGY

Course ID : 12221 **Course Code : SH/MCB/101/C-1(PR)**

Course Title : Introduction to Microbiology and Microbial Diversity

Time: 2 Hours **Full Marks: 15**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Make a suitable preparation of sample 'A' by simple staining process. Draw labelled sketches of organisms present on it. Give your comments. 1+2+2=5

2. Make a temporary preparation of material 'B'. Draw labelled sketches of vegetative and reproductive organs of it. Identify the genus giving reasons. 1+2+2=5

3. Laboratory Notebook. 2

4. Viva voce 3

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SH-I/MCB-101-C-1/(PRI)/19

B.Sc. 1st Semester (Honours) Practical Examination, 2019-20

MICROBIOLOGY

Course ID : 12221 **Course Code : SHMCB-101-C-1(PRI)**

Course Title : Introduction to Microbiology and Microbial Diversity

Instruction to the Examiners.

1. Specimen 'A' either from Algae (*Spirogyra* or *Chlamydomonas*) or from *Paramoecium* / *Plasmodium*.
2. Specimen 'B' from Fungi (*Rhizopus*, *Penicillium* or *Aspergillus*). Work out materials should be given in accordance with practical syllabus.
3. Key to the materials supplied should be submitted along with the examined answer script.
4. Viva voce should be taken at least by two examiners.
5. Numbers of Question number 3 and 4 should be mentioned in the main answer scripts and duly signed by the examiners.
6. Evaluated answer scripts should be sent to controller of examination within 7 days after completion of exam.

SH-I/MCB-102-C-2/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

MICROBIOLOGY

Course ID : 12212 **Course Code : SHMCB-102-C-2**

Course Title : Bacteriology

Time: 1 Hour 15 Minutes **Full Marks: 25**

The figures in the right hand side margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer *any five* of the following: 1×5=5

(a) What is L-form of bacteria?

(b) State the differences between eubacteria and archaebacteria.

(c) Distinguish fimbriae and pili.

(d) Mention the significance of calcium dipicolinate in endospore formation.

(e) What is cold sterilization?

(f) Why lysozyme is insensitive to archaeal cell wall.

(g) Mention the growth condition under which poly-β-hydroxyalkanoate (PHA) is synthesized by bacteria.

(h) What is differential medium? Cite example.

2. Answer *any two* questions from the following: 5×2=10

(a) What do you mean by pure culture? Write a brief note on cultivation of anaerobic bacteria. 2+3=5

(b) Briefly explain the salient features and economic importance of Archaebacteria. 3+2=5

(c) If in 8h, an exponentially growing culture increases from 5×10^6 cells/ml to 5×10^8 cells/ml, then calculate the number of generation (n), generation time (g) and growth rate. 2+2+1=5

(d) Write a short note on zeta-proteobacteria. What is non-proteobacteria? 3+2=5

3. Answer *any one* question from the following: 10×1=10

(a) Briefly describe the composition and structure of Gram-positive bacterial cell wall. State the functions of it. What component of Gram-negative bacterial cell has endotoxin property? 6+2+2=10

(b) Briefly describe the molecular basis of bacterial classification. What are the criteria used for bacterial species concept? 8+2=10

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