



**JAS-1603220001010500** Seat No. \_\_\_\_\_

**B. Sc. (Bioinformatics) (Sem. I) (CBCS) Examination**

**December - 2019**

**BI - 105 : Basics in Microbiology**

*(New Course)*

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory.  
(2) The right side figure indicates total marks of the question.

- 1 The following questions from Unit - 1 : **14**
- (A) Attempt the following objective Questions : **4**
- (1) Phycology is the study of \_\_\_\_\_
- (2) \_\_\_\_\_ is father of microbiology
- (3) Which vitamin is produced by E.coli in gut?
- (4) Give the name of phage which infects E.coli.
- (B) Attempt any **one** out of two from the following : **2**
- (1) Peptidoglycan - an important compound of bacterial cell wall
- (2) Wall of archebacteria
- (C) Attempt any **one** out of two from the following : **3**
- (1) Bacterial conjugation
- (2) Cell wall of Gram Positive Bacteria
- (D) Attempt any **one** out of two from the following : **5**
- (1) Asexual and sexual life cycle of Chlamydomonas
- (2) Asexual and sexual life cycle of Penicillium

- 2** The following questions from Unit-2
- (A) Attempt the following objective Questions : **4**
- (1) Organism A has 65 percent G+C and organism B has 35 percent G+C. So both these organism are related to each other or unrelated
  - (2) In general, light microscopes can magnify an object up to approximately how many times?
  - (3) The protein coat of virus enclosing nucleic acid is called \_\_\_\_\_
  - (4) Light microscopy is also known as \_\_\_\_\_ microscopy
- (B) Attempt any **one** out of two from the following : **2**
- (1) Resolution
  - (2) Phase contrast microscopy
- (C) Attempt any **one** out of two from the following : **3**
- (1) Sexual cycle of *Saccharomyces cerevisiae*
  - (2) Numerical taxonomy
- (D) Attempt any **one** out of two from the following : **5**
- (1) Lytic and lysogenic life cycle of Bacteriophage
  - (2) Major characteristics of microorganism used in taxonomy
- 3** The following questions from Unit-3
- (A) Attempt the following objective Questions : **4**
- (1) Blood agar medium is type of enrichment media (True or False)
  - (2) When food materials are preserved at a temperature just above freezing temperature, the process is called \_\_\_\_\_
  - (3) Glassware are sterilized by \_\_\_\_\_
  - (4) A culture that contains only one type of microorganism is called \_\_\_\_\_ culture

- (B) Attempt any **one** out of two from the following : **2**
- (1) Pasteurization
  - (2) Nutrient agar and broth
- (C) Attempt any **one** out of two from the following : **3**
- (1) Explain any 3 Chemical agents for sterilization
  - (2) Preservation of microbial culture
- (D) Attempt any **one** out of two from the following : **5**
- (1) Explain different methods for propagation of microorganisms
  - (2) Define growth. Explain different phases of bacterial growth curve.
- 4 The following questions from Unit-4
- (A) Attempt the following objective Questions : **4**
- (1) Hepatitis is Bacterial disease (True or False)
  - (2) Bacterial resistance to antibiotics is transmitted by \_\_\_\_\_
  - (3) \_\_\_\_\_ is a causative agent of leprosy.
  - (4) Endotoxin produced by gram negative bacteria is present in outer membrane of \_\_\_\_\_
- (B) Attempt any **one** out of two from the following : **2**
- (1) What is multiple drug resistance?
  - (2) Human MRP protein
- (C) Attempt any **one** out of two from the following : **3**
- (1) Inhibition of DNA/RNA synthesis by antibiotics
  - (2) Damage to cell membrane by antibiotics

- (D) Attempt any **one** out of two from the following : **5**
- (1) Explain symptoms, causative agent, diagnosis and prevention of microbial disease Polio
  - (2) Microbes used in various industrial applications
- 5** The following questions from Unit-5
- (A) Attempt the following objective Questions : **4**
- (1) Salting, as a preservative plasmolyzes bacteria and fungi. (True or False)
  - (2) The production of substances in industrial microbiology occurs in the sequence: inoculation, \_\_\_\_\_, downstream processing, removal of waste
  - (3) Secondary metabolites are by-products of metabolism that are not important to microbe function (True or False)
  - (4) Which virus is used as Biopesticides?
- (B) Attempt any **one** out of two from the following : **2**
- (1) Pasteurization of milk (LTH and HTST)
  - (2) Advantage and disadvantages of Biofertilizers
- (C) Attempt any **one** out of two from the following : **3**
- (1) Symbiotic nitrogen fixer – Rhizobium
  - (2) Explain in situ and ex situ bioremediation
- (D) Attempt any **one** out of two from the following : **5**
- (1) Explain fermentation process of ethanol
  - (2) Explain fermentation process of vitamin