

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Winter Examination-2018

Subject Name: Principles of Microbiology

Subject Code: 5SC01PMB1

Branch: M.Sc. (Microbiology)

Semester: 1

Date: 26/11/2018

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed

SECTION-I

- Q.1 Attempt the following questions:** **7**
- a. What do you mean by pasteurization and sterilization?
 - b. Robert Koch first time demonstrated role of bacteria in causing diseases.(True/False)
 - c. Define pure culture.
 - d. Protozoa are not prokaryotic organisms. (True/False)
 - e. What are viroids?
 - f. Which protein is responsible for chromosome movement and cell shape in prokaryotes?
 - g. Which instrument is utilized for steam sterilization?
- Q.2 a** Describe spontaneous generation versus biogenesis in detail and also diagrammatically elaborate the devices used to disprove the theory of spontaneous generation. **7**
- b** Enlist major groups of chemical antimicrobial agents. Describe alcohols and halogens in detail. **7**
- OR
- a** Write a note on Germ theory of disease with Koch's postulates in detail.
- b** Explain 1.) Temperature and 2.) Osmotic pressure as physical agents of sterilization. **7**
- Q.3 a** Explain Haeckel's and Woese's three kingdom classification in detail. **7**
- b** Differentiate between organization of prokaryotic and eukaryotic cells. **7**
- OR
- a** Write general properties of viruses and structure of TMV with diagram. **7**
- b** What do you mean by binary fission? Diagrammatically explain cell cycle of *E. Coli*. **7**



SECTION-II

- Q.4 Attempt the following questions:** **7**
- a. What do you mean by Autotrophs and Heterotrophs?
 - b. Methanogens are strict anaerobes. (True/False)
 - c. Which type of photosynthesis is governed by Cynobacteria?
 - d. What are Psychrophiles?
 - e. Define ectosymbiont and endosymbiont,
 - f. If the one organism is benefited by nutrients or substances produced and provided by other organism growing nearby then which relationship is there between them?
 - g. What do you mean by bioleaching?
- Q.5 a** Describe significance, structure and chemical composition of gram positive and gram negative bacteria. **7**
- b** Explain morphological characteristics of Fungi and Algae. **7**
- OR
- a** Explain growth curve of bacteria in detail. **7**
- b** Write a note on special features of the thermophilic, methanogenic and halophilic archea. **7**
- Q.6** Write a note on: **14**
- a Biopesticides
 - b Microbial enzymes and fermented food
- OR
- a Describe mutualism and parasitism in detail. **7**
 - b Write a note on 1.) Aster yellow and 2.) Citrus stubborn **7**

