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JAS-003-001111 Seat No. _____

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

December - 2019

Microbiology : MB - 101

(Fundamentals of Microbiology)

Faculty Code : 003

Subject Code : 001111

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

Instructions : (1) All questions are compulsory.
(2) The paper is divided in two sections.
(3) There is no separate OMR sheet provided for Section I.
(4) Figures to right indicate marks.

SECTION - I

1 Answer the following MCQ : **20**

(1) Who did an experiment for Spontaneous Generation with Jars of covered / uncovered meat?

(2) Write any two Koch's postulates.

(3) Eukaryotic lower plants are devoid of chlorophyll known as _____

(4) Which phylum of bacteria consists of most Gram Positive bacteria?

(5) The ability of microscope to distinguish two adjacent points as distinct and separate is known as _____

(A) Magnification (B) Resolving power

(C) Refraction (D) None of the above

(6) Write the resolution of electron microscope.

(7) Which of the important parts of phase contrast microscope?

(8) Give the example of fluorescence dye.

(9) Write the total magnification of oil immersion lens.

(10) Write two examples of acidic dye.

(11) Which of the following stain is pH indicator?

(A) Crystal Violet (B) Bromo thymol blue

(C) Saffranine (D) All of the above

(12) Give the example of natural stain that is obtained from insects.

(13) What is the difference between sterilization and disinfection?

(14) Which of the following is not an ideal characteristic of disinfectant?

(A) Solubility in water

(B) Stability for long period of time

(C) Stored at low temperature

(D) Nonstaining

(15) Give examples of ionizing radiation.

(16) Write two examples of cell wall synthesis inhibiting antibiotics.

(17) Which of the following organisms shows palisade arrangement?

(A) *Beggiatoa*

(B) *Corynebacterium diphtheria*

(C) *Saprospira*

(D) *Bacillus subtilis*

(18) Define Protoplast.

(19) One or more flagella at one end in bacterial cell is known as _____.

(20) Nonliving external structure of cell is Pilli. True/ False.

SECTION - II

2 (A) Answer specifically : (Any **Three**) **3×2=6**

(1) Define : TDT Thermal Death Time.

(2) Give two examples of antibiotics that inhibit DNA synthesis

(3) Write the function of pili.

(4) What is chromophore? Give examples of basic chromophores.

(5) Which factors affect the resolution of a microscope?

(6) Why Louis Pasteur is considered as the father of Microbiology?

(B) Answer Specifically : (Any **Three**) **3×3=9**

(1) Discuss the mode of action of UV light.

(2) Discuss in brief about phenol and phenolic compounds as disinfectants.

(3) Describe in brief dark field microscopy.

(4) Write a note on capsule in bacteria.

(5) Write a note on accentuators and mordants.

(6) Discuss the differences between prokaryotic and eukaryotic cell.

(C) Write short notes : (Any **Two**) **2×5=10**

(1) Discuss in detail various fields of microbiology.

(2) Describe working principle of fluorescence microscopy.

(3) Write in brief about Acid fast stain..

(4) Discuss in detail use of antibiotic affecting cell wall synthesis.

(5) Describe in detail cell wall of gram positive bacteria.

3 (A) Answer specifically : (Any **Three**) **3×2=6**

(1) Define : Bacteriostasis.

(2) Write in brief about antibiotics damaging cell membrane.

(3) Discuss various shapes and arrangements found in prokaryotes.

(4) Write a note on oil immersion lens.

(5) What are higher and lower protists?

(6) Write in brief about azine stains.

(B) Answer Specifically : (Any **Three**) **3×3=9**

(1) Discuss any two applied areas of microbiology.

(2) Explain sheaths and prosthecae in bacteria

(3) What is autoradiography?

(4) Write a note on granules found in bacterial cells.

(5) Discuss various methods of moist heat sterilization.

(6) Write in brief about heavy metals as agents of disinfectants.

(C) Write short notes : (Any **Two**) **2×5=10**

(1) Discuss the germ theory of disease..

(2) Write a note on transmission electron microscopy.

(3) Discuss in detail classification of biological stains.

(4) Write an essay on antibiotics inhibiting protein and nucleic acid synthesis.

(5) Enlist various structures found external to cell wall and discuss capsule in detail.