



SNS COLLEGE OF NURSING

SARAVANAPATTI (p.o), COIMBATORE-35



AFFILIATED TO THE TAMIL NADU DR .M.G.R. MEDICAL UNIVERSITY, CHENNAI

COURSE : I Year Bsc Nursing

Microbiology

UNIT I- Introduction

Topic : Introduction about Microbiology

INTRODUCTION

The term microbiology was introduced by a French chemist Louis Pasteur, who demonstrated that fermentation was caused by the growth of bacteria and yeast. He is known as father of microbiology . These microorganism cannot be seen by naked eyes, they are only seen under the microscope.



MICROBIOLOGY

Microbiology is the study of living organisms of microscopic size which includes:

BACTERIA

PROTOZOA

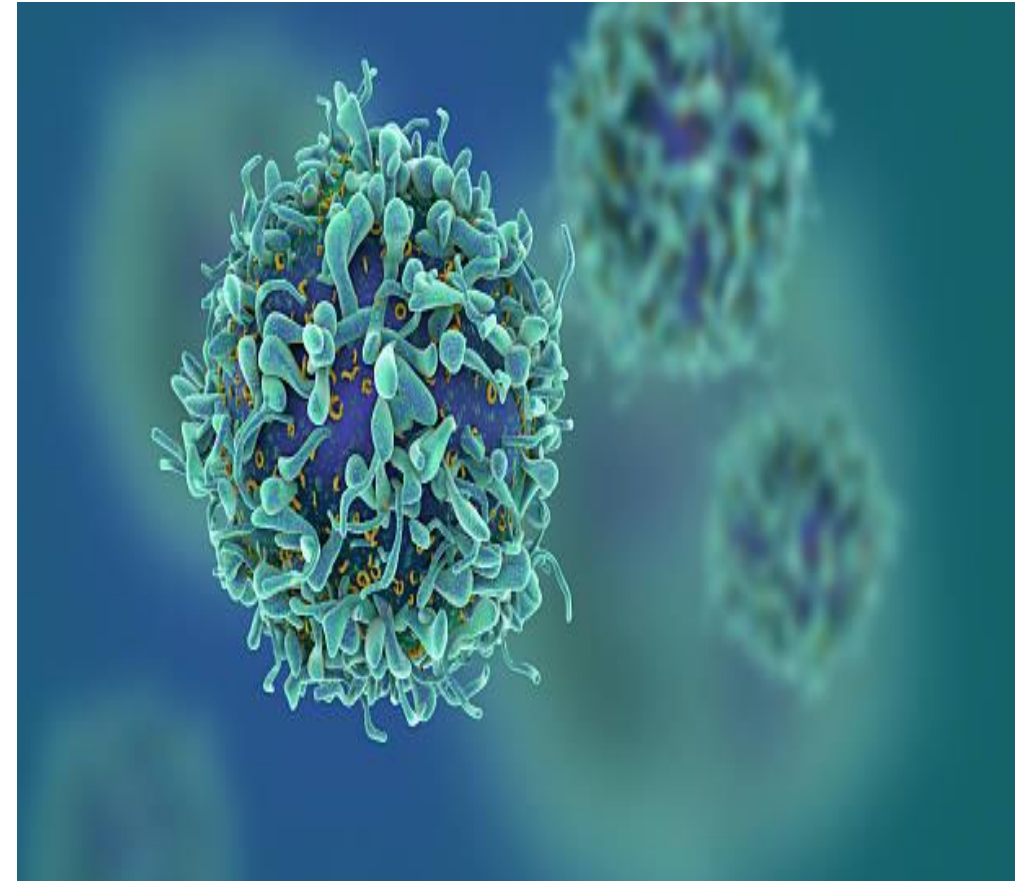
ALGAE

FUNGI

VIRUSES

DEFINITION

Microbiology is the study of microscopic organisms, which are defined as any living organism that is either a single cell (unicellular), a cell cluster , or has no cells at all (acellular)



BRANCHES OF MICROBIOLOGY

PURE SCIENCE

APPLIED SCIENCE

PURE SCIENCE

BACTERIOLOGY

PARASITOLOGY

MYCOLOGY

ALGOLOGY

GENETICS

PROTOZOOLOGY

IMMUNOLOGY

APPLIED SCIENCE

MEDICAL
MICROBIOLOGY

FOOD
MICROBIOLOGY

AQUATIC
MICROBIOLOGY

PHARMACEUTICAL
MICROBIOLOGY

SOIL
MICROBIOLOGY

AIR
MICROBIOLOGY

INDUSTRIAL
MICROBIOLOGY

AGRICULTURE
MICROBIOLOGY

EPIDEMIOLOGY

ASSESSMENT 1

1. Define microbiology ?

Ans.

2. Enumerate the branches of microbiology?

Ans.



TYPES OF MICROBES

VIRUSES

PRIONS

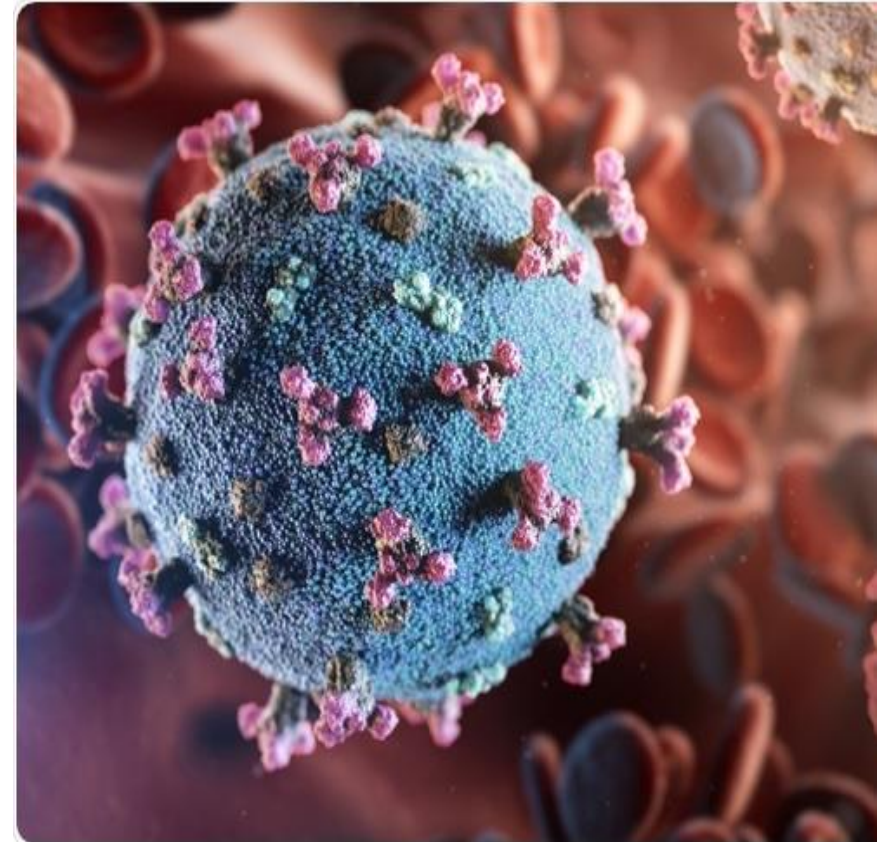
PROTOZOANS

BACTERIA

HELMINTHS

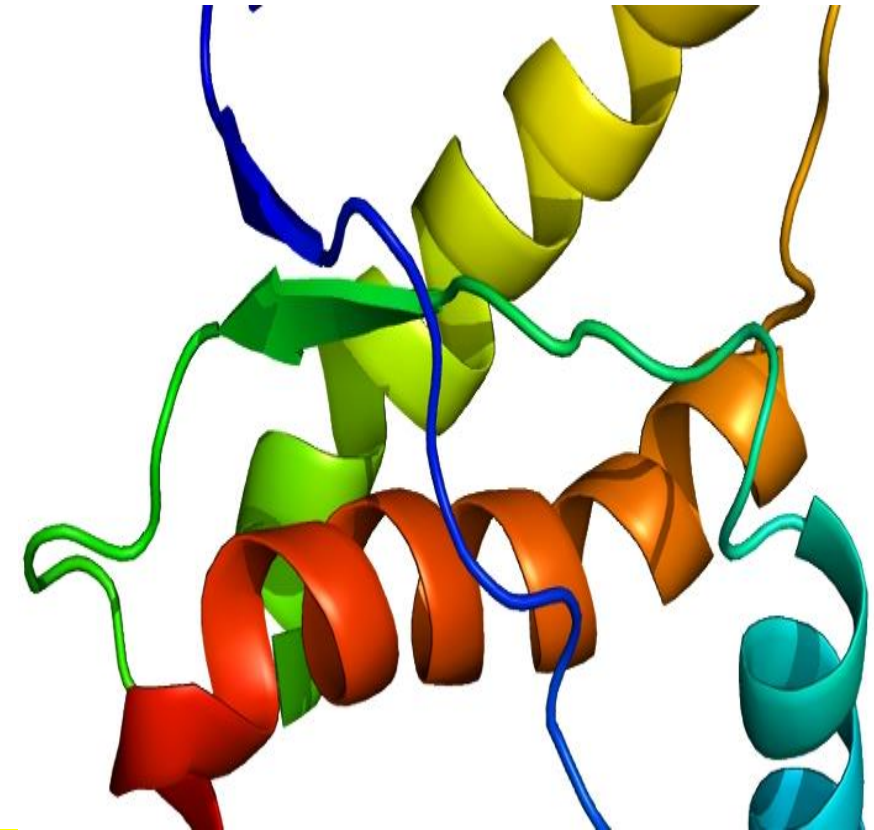
FUNGI

- ✓ They are very small acellular infectious particles made up of nucleic acid (either DNA or RNA) and a protein coat.
- ✓ As they lack the cell organelles, they cannot multiply without the help of a host cell.
- ✓ They infect a host cell and with the help of the host cell's protein machinery they multiply and produce their progeny
- ✓ The viruses are seen through electron microscope.



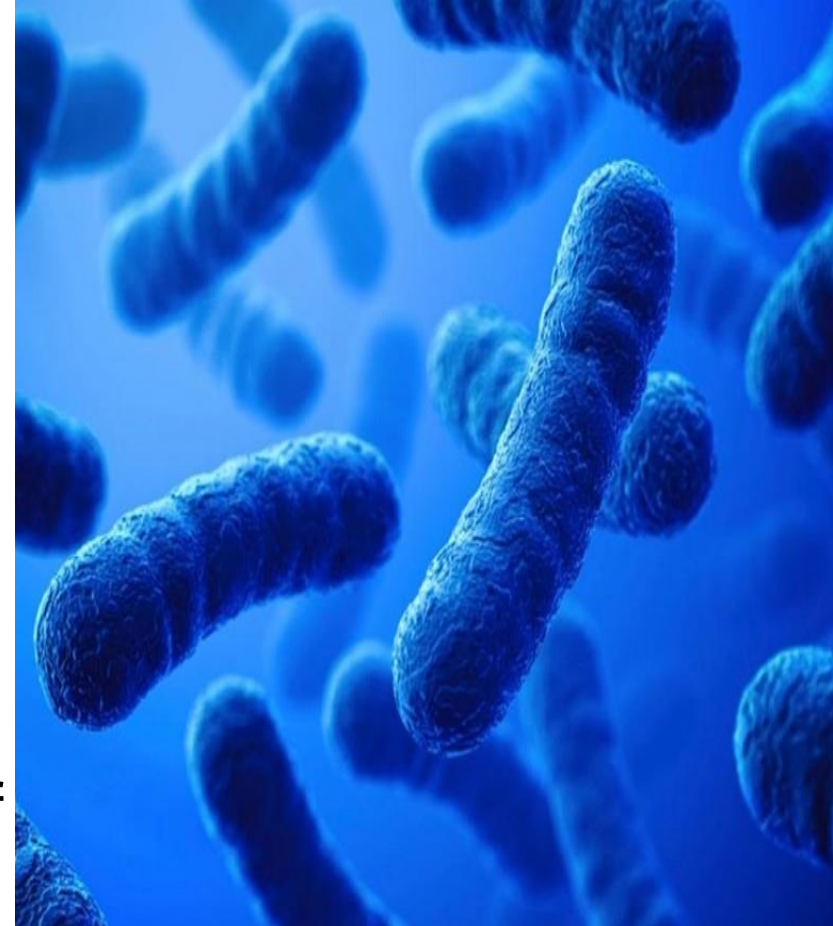
PRIONS

- ✓ They are small infectious protein particles.
- ✓ They are seen on the surface of the nerve cells of the central nervous system in those people who are affected with spongiform encephalopathies.
- ✓ They are much smaller than viruses and cannot be seen even through the electron microscope .



BACTERIA

- ✓ They are typical prokaryotic single – celled organisms.
- ✓ They reproduce by asexual reproduction called binary fission.
- ✓ They do not possess a distinct nucleus.
- ✓ They have a rigid cell wall made up of peptidoglycan.
- ✓ Some bacteria are motile due to the presence of flagella.



FUNGI

- ✓ They are eukaryotic multicellular organisms .
- ✓ They lack chlorophyll and do not belong to the plant kingdom.
- ✓ Their cell contains a rigid cell wall made up of chitin.
- ✓ There are more than 50,000 fungi in the world and most of them are saprophytic .
- ✓ Only around 300 fungi are known human pathogens.



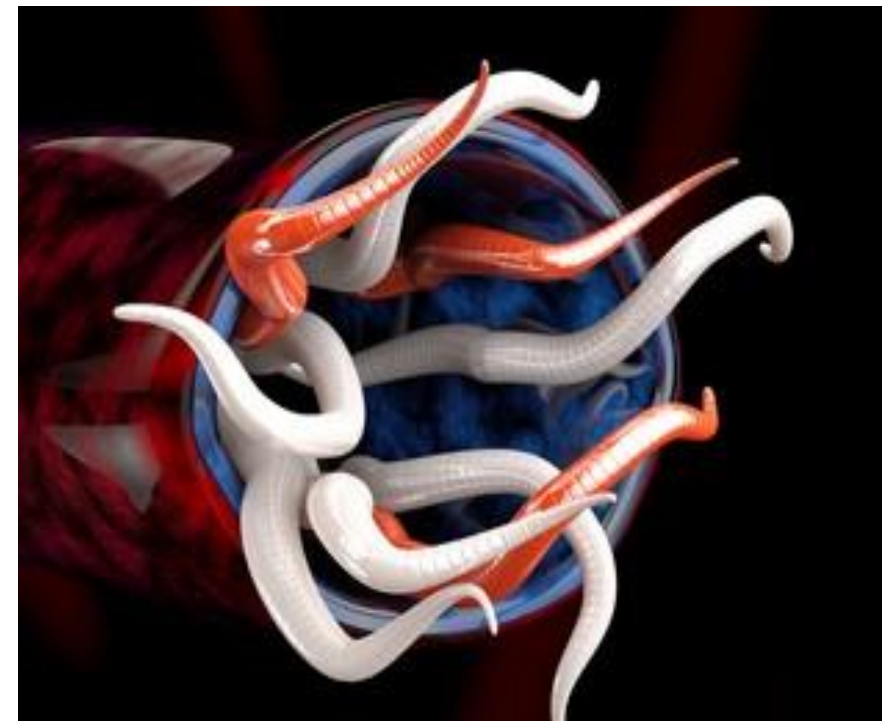
PROTOZOANS

- ✓ They are single – celled eukaryotic microbes belonging to the animal kingdom.
- ✓ Some protozoans cause deadly human diseases like malaria.
- ✓ They have a distinct nucleus and may be motile .
- ✓ They possess motile organs like flagella , cilia or pseudopodia.



HELMINTHS

- ✓ They are multicellular eukaryotes belonging to the animal kingdom.
- ✓ the adult forms are macroscopic .
- ✓ However, most of their infectious stages like larva or eggs are microscopic .
- ✓ There are two main groups of helminths.
- ✓ They are platyhelminths and nemathelminths.
- ✓ They are highly organized structure and some are even sexually differentiated.



ASSESSMENT 2

1. Enlist types of microbes ?

Ans.

2. Define virus ?

Ans.



References

1. L Kannan ,'Essentials of Microbiology for Nurses ', Elsevier Science company limited, New Delhi , First Edition,2020.
2. R Ananthanarayan ,'Textbook of Microbiology ',EMMESS Medical Publishers,Bangalore,First edition,2015.
3. Dr. C P Baveja ,' Textbook of Microbiology for Nursing 'APC publications,Indore,Sixth edition,2014.

THANK YOU