

Marks

Question 27 (8 marks)

Evaluate the contributions made by both Louis Pasteur and Robert Koch to our present understanding of the causes and possible prevention of infectious diseases. 8

Pasteur proved that the theory of spontaneous generation was not true. Pasteur performed an experiment with 2 flasks, one open to the air, the other with an S-shaped bend in it. The flask open to the air directly, the broth inside spoiled. The S-shaped one the broth did not spoil, showing pathogens in the air cause things to spoil. This led to sanitation in medical operations. He also did an experiment on sheep immunising some and then injecting the whole herd with a lethal dose; those who had been immunised survived. This showed the value of immunisation against infectious diseases.

Robert Koch created postulates for identifying the organism causing an infectious disease.

1. All ^{infected} organisms must have the same ^{organism present in them.} symptoms.
2. Pure culture taken from infected organism and isolated (of the suspected organism/cause).
3. Pure culture injected into non-infected species.
4. ^{Suspect} Organism re-cultured from newly infected organism.
5. New culture compared to the original.
If not the cause then process started again with the isolation of a new suspect organism.