

**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**

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

Pasteur came up with an experiment that proved that microbes are unable to generate spontaneously. He used 2 flasks, one with an open neck, the other with a swan-shaped neck to show that microbes were present in the air and bacteria forms when contact is made directly with the air, it doesn't simply appear. He came up with the germ theory - that germs are all around us in the air which leads to present understanding that diseases can be caught this way eg. influenza from someone sneezing.

Koch came up with Koch's postulates that show that a certain microorganism is responsible for causing an infectious disease. We still use them today - ① Pathogen must be proven present, ② isolate it and grow it as a pure culture, ③ introduce it to a new host that will develop the disease ④ Compare to original. Being able to do this and show what is responsible has helped lead to finding vaccinations for certain pathogens. Both Koch and Pasteur have contributed - through their work to our beliefs that hygiene and cleanliness are important eg. refrigeration so that bacteria can not grow and produce salmonella.