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**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2019/2020**

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN MEDICAL MICROBIOLOGY**

**MMB 2102: CELL BIOLOGY**

**DATE: APRIL, 2020 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE: 30 MARKS**

a. Describe the contributions of the following scientist:-

 i. Emsf Ruska. (1 mark)

 ii. Rudolf Virchow. (2 mark)

 iii. Anton Van ????????. (2 marks)

b. Outline five differences between prokaryotic and Eukaryotic cell. (5 marks)

c. Briefly describe the process of binary fission in bacteria. (5 marks)

d. Explain the cell and organismal theories. (5 marks)

e. Outline the procedure for gram staining technique. (5 marks)

f. Write short notes on:- bacterial cell wall. (5 marks)

**QUESTION TWO: 20 MARKS**

Discuss the bacterial growth curve.

**QUESTION THREE: 20 MARKS**

Discuss cellular motility.

**QUESTION FOUR: 20 MARKS**

Discuss mitosis.