

BINDURA UNIVERSITY OF SCIENCE EDUCATION

DEPARTMENT OF BIOLOGICAL SCIENCES

HBScBZ/HBScBiotec

CELL AND MOLECULAR BIOLOGY (BZH104) (BTEC117)

EXAMINATION: (100 MARKS)

DURATION: 2 HOURS

AUG 2023

INSTRUCTIONS TO CANDIDATES

Answer FOUR questions. You MUST answer QUESTION 1 (Section A) and any THREE questions from section B. Each question carries 25 MARKS. Where a question contains sub-divisions, the mark value of each sub-division is given in brackets. Illustrate your answer where appropriate with large clearly labelled diagrams. You should not spend more than thirty minutes on each question.

SECTION A (COMPULSORY)

1. Figure 1 shows a picture of a light microscope.

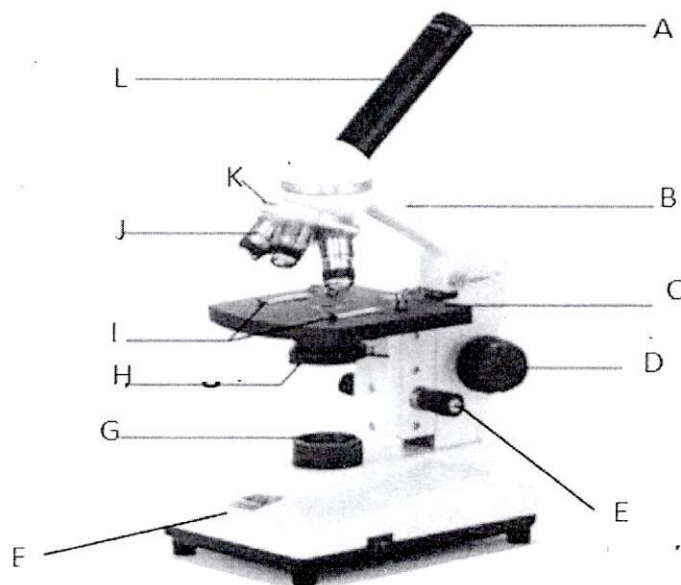


Figure 1. Light microscope.

- (a) Identify the parts labelled A-L. (12 marks)
(b) Describe the advantages and disadvantages of light microscopy. (13 marks)

SECTION B

2. Describe the structure and function of the fluid mosaic model.

3.(a) Describe the structural formation of a disaccharide.

(8 marks)

(b) Explain the significance of carbohydrates in the body.

(17 marks)

4. Write short notes on any **FIVE** of the following:

(a) Cytosol.

(5 marks)

(b) Okazaki fragments.

(5 marks)

(c) Physiological buffer.

(5 marks)

(d) Nucleotide.

(5 marks)

(e) tRNA.

(5 marks)

(f). Glycolipids

(5 marks)

5. Describe the process of gene expression in prokaryotes.

6. (a) Describe the events of prophase 1 of meiosis.

(12 marks)

(b) Discuss the significance of meiosis in living organisms.

(13 marks)

END OF EXAMINATION QUESTION PAPER