



SOUTH EASTERN KENYA UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

**SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE IN BIOCHEMISTRY AND MOLECULAR BIOLOGY**

BCH 302: BIOCHEMICAL TECHNIQUES AND INSTRUMENTATION II

DATE: 13TH APRIL, 2017

TIME: 8.00-10.00 A.M

INSTRUCTIONS TO CANDIDATES

- (a) Answer ALL the Questions in Section A**
(b) Answer ANY TWO Questions in Section B
(c) Illustrate your answers with well labeled diagrams where appropriate
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SECTION A (30 marks)

1. List any **five** applications of spectrofluorimetric in enzyme assays. **(5 marks)**
2. Briefly explain any **four** disadvantages of size exclusion chromatography. **(4 marks)**
3. Briefly explain **five** technical challenges associated with culturing of DU145 cell lines. **(5 marks)**
4. Explain any **two** major types of centrifuges. **(6 marks)**
5. a) Explain sub-cellular fractionation. **(1 mark)**
b) Briefly explain the **two** major steps involved in sub-cellular fractionation. **(4 marks)**
6. List any **five** components of cell culture media and their functions. **(5 marks)**

SECTION B (40 marks)

7. Discuss the various applications of cell culture systems. **(20 marks)**
8. a) Briefly describe the principle of gas chromatography. **(5 marks)**
b) Discuss any **five** industrial applications of gas chromatography. **(15 marks)**
9. Describe the various enzyme purification techniques. **(20 marks)**
10. a) Explain the basic principles of centrifugation. **(10 marks)**
b) Describe the various components of High Performance Liquid Chromatography. **(10 marks)**