



UNIVERSITY OF NAIROBI

UNIVERSITY EXAMINATIONS 2019/2020

FIRST YEAR EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE
IN ASTROPHYSICS

SPA 101: INTRODUCTORY ASTRONOMY

DATE: DECEMBER 9, 2019

TIME: 2.00 P.M. – 5.00 P.M.

INSTRUCTIONS

- *Answer any THREE questions*

- Q1. (a) Discuss how principles of physics form an essential background for astronomy. (10 marks)
- (b) Explain what is meant by:
- (i) Band width (4 marks)
- (ii) Bolometrics (6 marks)
- Q2. (a) Describe the characteristics of a horizontal coordinate system as well as its limitations. (10 marks)
- (b) Discuss the usefulness of astronomy to human contexts. (10 marks)
- Q3. Establish fully the basis of the Parsec as an astronomy scale for distance. (20 marks)
- Q4. Beginning with apparent brightness of six different stars show what human eye perspective are logarithmic. (20 marks)
- Q5. (a) Formulate the relation between distance and stellar luminosity. (8 marks)

- (b) Determine the luminosity for a star that is at a distance of 10 Parsec from an observer. (4 marks)
- (c) Explain the distance modulus of stars. (8 marks)
