



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF
SCIENCE (OCCUPATIONAL HEALTH AND SAFETY)

PEO 802:PHYSIOLOGY OF WORK AND ERGONOMICS

DATE: Monday, 15th May 2017

TIME: 2.00p.m-5.00p.m

INSTRUCTIONS

- Answer Question One and any other THREE questions
1. a. Outline six consequences that would result from ignoring ergonomic concerns at work place. (10marks)
- b. Explain briefly the characteristics of Work Analyses (10marks)
- c. Explain briefly the major aims of ergonomics in workplace (10marks)
- d. Make a brief explanation of the risk factors to consider for muscular work at workplace. (10marks)
- e. A meat packer at an abattoir unloads 250 boxes from a conveyor point A to point B, a distance of 2 meters, making an angle of 60° with horizontal. Each box has a mass of 16kg. Assuming there is no friction and he does this work in 8 hours,

Calculate

- i. Vertical distance each box is carried (3marks)
- ii. The force (3marks)
- iii. Work done (2 marks)
- iv. Power required to unload the boxes (2marks)

(Assume that the acceleration required to overcome the box's inertia is 9.8 m.s^{-2})

2. Discuss the Basic set of anthropometric variables and their importance in a workplace. (30marks)
3. (a) Why has Postures at workplace interested researchers and practitioners (10marks)

(b) Explain the factors that affect the working postures in the workplace and how you can record and measure working Postures. (20marks)
4. Mental fatigue is a consequence of performing tasks with a high level of difficulty that involve predominantly information processing and/or are of protracted duration. Differentiate among several negative consequences of mental strain and explain some of the practices in workplaces that can be used to prevent it. (30marks)
5. You are head of safety committee at your work place. You are preparing to explain to the CEO how lighting at workplace is a major ergonomic hazard. Make an elaborated explanation on this concept and how light can be measured, the eyes respond to light and how a work place can be designed to reduce the ergonomic risks that accompany poor lighting. (30marks)
6. Sleep deprivation presents a particular problem for workers who cannot take sufficient sleep periods because of work schedules. Discuss the main conditions of irregular working hours that contribute to sleep deprivation and explain the expected effects of sleep deprivation among workers. (30marks)