



MURANG'A UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY)

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT: ELECTRICAL AND ELECTRONIC

LEVEL: DIPLOM A

SEMESTER: 2

CLASS: MRUC/EEP/14DM

ACADEMIC YEAR: 2014/15

YEAR OF STUDY: 2

UNIT: ELECTRICAL INSTALLATION TECHNOLOGY 11

UNIT CODE: SEE1204

DATE: 17TH APRIL 2015

TIME: 2 HOURS

Instructions to candidates

- This paper contains FOUR(4) questions
- QUESTION ONE IS COMPASSORY
- Answer any OTHER TWO questions
- No mobile phone in examination room
- You should have the following for this examination;
 - Drawing instruments
 - Scientific calculator

QUESTION ONE

- a. Explain **three** factors considered when selecting electrical machines [6mrks]
- b. With aid of a diagram explain **construction and operation** of static starter fluorescent lamp [5mks]
- c. With aid of a diagram explain **operation** of trembler bell [5mrks]
- d. Highlight **two** advantages of using stranded cable [2mrks]
- e. Differentiate between structure cabling and traditional cabling [6mrks]

- f. With aid of a diagram show how lighting points looped together may be operated by two, two –way switches and intermediate switch. (6marks]

QUESTION TWO

- a) define stroboscopic effect , explaining its remedies (7marks)
- b) A factory space of 33m×13m is to be illuminated with an average illumination of 72 lm/m² by 200W lamps. The coefficient of utilization is 0.4 and depreciation factor is 1.4. Calculate the number of lamps required. The lumen output of a 200W lamp is 2,730 lm (6 marks)
- c) With aid of a typical line diagram, explain power transmission and distribution indicating voltage levels .(7marks)

QUESTION THREE

- (a) Explain the difference between testing and inspection. (2marks)
- (b) i) State the sequence of testing an installation upon completion (5marks)
ii) State any two IEE regulations for lighting circuits (4marks)
- (c) With aid of labeled circuit diagrams describe the polarity test of single switch with circuit dead after installation completion. (9marks)

QUESTION FOUR

- a) With the aid of a labeled diagram, explain the operation of non-maintained emergency lighting. [5 marks]
- b) With the aid of a diagram explain operation of D.O.L motor circuit. (10 marks)
- c) A household cooker is connected to a 230v supply and its load is 8.5kW. Determine the rating of the circuit. (5marks)