



## MURANG'A UNIVERSITY COLLEGE

*(A Constituent College of Jomo Kenyatta University of Agriculture and Technology)*

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**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**LEVEL: DIPLOMA**

**CLASS: EEP/15DJ**

**UNIT CODE: SEE 1344**

**UNIT TITLE: COMPUTER NETWORKING**

**YEAR OF STUDY: 3**

**ACADEMIC YEAR: 2015/2016**

**SEMESTER: ONE**

**MAIN PAPER**

**DATE: 7<sup>TH</sup> DECEMBER 2015**

**TIME: 2HOUR**

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### **INSTRUCTIONS TO CANDIDATES**

- This paper contains **four** questions
- Question **one** is compulsory
- Attempt any **other two**
- No mobile phone!!!!!!!!!!!!

### QUESTION ONE

- a) Describe the concept of token passing in computer networking [4marks]
- b) Distinguish between physical topology and logical topology [4marks]
- c) Outline any **four** similarities between the **OSI MODEL** and the **TCP/IP MODEL** [marks]
- d) Explain **two** forms of unbounded transmission media [4marks]
- e) define the following terms
  - i. topology
  - ii. protocol
  - iii. standard
  - iv. bandwidth [8marks]
- f) Briefly explain the following multiple media access control methods
  - i. CSMA
  - ii. CSMA/CD
  - iii. CSMA/CA [6marks]

### QUESTION TWO

- a) Explain three classification of network [6marks]
- b) List seven layers of **OSI MODEL** and discuss the purpose of each layer [14 marks]

### QUESTION THREE

- a) What is computer network? [3marks]
- b) An organization wishing to implement a network has approached you to advise them on type of cable to use. As a network engineer outline any **four** strengths and any **four** weaknesses associated with fiber optic cable that they would like to use. [8 marks]
- c) Describe the following type of network
  - i. WAN
  - ii. MAN
  - iii. LAN [9marks]

#### QUESTION FOUR

- a) Briefly described the following WAN protocols [6marks]
- i. Circuit switch network
  - ii. **PSTN** (Public switched telephone network)
  - iii. **ISDN** (integrated service digital network)
- b) A company is planning to utilize computer networks to boost its competitive edge in dynamic Environment. They approach you to advice and design for them a computer network. They request you to advice on the following topologies **ring, bus and star**

#### **Required**

- i. Design with the diagram the said topologies
- ii. Describe the key factors that you would highlight as the strength and weakness

Of the said topologies

[14 marks]

