

**MPUC**

**University Examinations 2011**

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE  
OF BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY-  
BTECH.ICT 11 M2**

**EIT 4201: NETWORK DESIGN AND IMPLEMENTATION**

**August 2011**

**TIME: 2 HOURS**

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**INSTRUCTIONS**

This paper contains five questions

Answer **Question ONE** and any other **TWO** questions

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Paper 1

**QUESTION 1**

- (a) Outline THREE main methods of a bridge in computer networks  
3 Marks
- (b) State THREE main methods that are used to identify and analyze a customer's existing network environment.  
3 Marks
- (c) State any SIX structured design methodologies  
3 Marks
- (d) Outline any EIGHT Criteria for selecting LAN devices  
4 Marks
- (e) Name FOUR enterprise requirement that may affect the choice of the network design  
4 Marks
- (f) State FOUR types of information that need to be gathered about the existing network.  
4 Marks
- (g) Explain FOUR benefits of wireless network  
4 Marks
- (h) State any THREE security risks in wireless networks  
3 Marks
- (i) Describe Access Control List ACL  
2 Marks

## QUESTION 2

- (a)
- i. State TWO network design approaches
  - ii. Describe each of the design approaches in (a) (i) above
  - iii. Describe ONE advantages of each of the network design approaches in (a) (i)
  - iv. (iv) Describe ONE disadvantage of each of the network design approaches in (a) (i) 10 Marks
- (b) Outline any SIX specific steps involved in any network design project. 6 Marks
- (c) State any FOUR WAN technologies that are available for connecting enterprise resources 4 Marks

## QUESTION 3

- (a) Describe any FOUR common types of technical constraints that a network designer may encounter 8 Marks
- (b) Describe any SIX computer network planning steps 12 Marks

## QUESTION 4

- (a) Outline THREE major classes of IPv4 addresses 3 Marks
- (b) (i) Describe subnet masking  
(ii) Distinguish between sub-net and super-net masking  
(iii) Describe Variable Length Subnet Masking 5Marks
- (c) Explain any EIGHT network trouble shooting steps 4 Marks
- (d) Describe FOUR network troubleshooting tools 8 Marks

## QUESTION 5

- (a) Describe any FOUR data gathering process needs that are considered in any new planned services, applications, and features required for the new or upgraded network 8 Marks

(b) Outline any FOUR details that should be included in implementation plan documentation:  
4 Marks

(c) Explain any FOUR goals of network design 8 Marks