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**TECHNICAL UNIVERSITY OF KENYA**

**FACULTY OF APPLIED SCIENCES AND TECHNOLOGY**

**SCHOOL OF COMPUTING & INFORMATION TECHNOLOGY**

**END OF SEMESTER EXAMINATION SERIES**

**FIRST SEMESTER EXAMINATIONS 2017/2018**

**SECOND YEAR EXAMINATIONS FOR THE DEGREE OF**

**BACHELOR OF TECHNOLOGY IN COMPUTER NETWORK TECHNOLOGY**

**ECCI 2201 : COMPUTER NETWORKS 2**

TIME: 2 Hours

**Instructions to candidates:**

This paper consists of FIVE Questions.

Answer Question ONE [30 Marks] and any other TWO Questions [20 Marks Each].

Write your college number on the answer sheet.

This paper consists of 3 printed pages

**Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**

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**QUESTION ONE [30MARKS] COMPULSORY**

1. i) Explain briefly why the data link layer in IEEE project 802.Why is divided into sub layers? [3MARKS]

ii) Describe the various factors that determine the choice of topology [2MARKS]

1. i). Name the five basic network technologies and state the advantages of a multipoint over a point-to point connection [4MARKS]
2. Discuss various characteristics that distinguish optical fiber from twisted pair or coaxial cable [4MARKS]
3. Compare the data transmission rates for traditional Ethernet, Fast Ethernet, and Gigabit Ethernet [3MARKS]
4. i) In B-ISDN, what is the difference between a distributive services and interactive services [2MARKS]

ii) Briefly, explain the function of ISND physical layer [3MARKS]

1. i) Explain why Frame Relay offer a better solution for connecting LAN than in T-1 lines defined on X.25 protocol [2MARKS]

ii) Distinguish the resilient features of Frame Relay over X.25 [2MARKS]

1. i) Explain how virtual path identifier and virtual circuit identifier operates [2MARKS]

(ii). Why did the ATM forum define the cell network? Enlist its advantages over the other kind of network. [3MARKS]

**QUESTION TWO [20 MARKS]**

1. Describe different kinds of Fast Ethernet implementation [8MARKS]
2. i)Distinguish between a peer to peer relationship and primary –secondary relationship hence give the disadvantages for each of topology [8MARKS]

ii). How does bounded media differ from unbounded media? Discuss [4MARKS]

**QUESTION THREE [20MARKS]**

1. To sense whether a given channel of communication is busy, idle or in active, MAC layer devise various mechanism that are in involved to avoid packet collusion and delay. Explain how CSMA/CD as one of technique get involved and how is part of the 802 project use? [8MARKS]
2. X.25 traditionally played major role in early days for the case of packet switching. How are its layers different from the ones defined on OSI? Explain [8MARKS]
3. Describe the advantages of FDDI over a basic Token ring [4MARKS]

**QUESTION FOUR [20MARKS]**

1. Discuss briefly the evolution of ISDN [5MARKS]
2. Contrast the three categories of services provided by ISDN [6MARKS]
3. Congestion in a Frame Relay network is problem that must be avoided because it decreases the throughput and increase the delay. Illustrate three method devised in handling congestion control [6MARKS]
4. Explain any three attributes related to Traffic control in Frame Relay [3MARKS]

**QUESTION FIVE [20MARKS]**

1. ATM forum has defined various classes of services. Explain? [5MARKS]
2. Explain how user and network attributes are being defined by Quality of service in ATM

[8MARKS]

1. To have high switching network, what are the necessary requirement need to deploy a wireless LAN system [7MARKS]