



COLLEGE OF ENGINEERING, SCIENCE AND TECHNOLOGY
SCHOOL OF ELECTRICAL AND ELECTRONICS ENGINEERING
BACHELOR OF ENGINEERING PROGRAMME
YEAR 3 EEB764 INTRODUCTION TO COMPUTER NETWORKING

FINAL EXAMINATION SEMESTER 2, 2018

DATE/TIME/ROOM – Refer to Timetable

INSTRUCTIONS TO CANDIDATES

1. You are allowed 10 minutes extra reading time during which you are NOT allowed to write.
2. Begin each answer on a fresh new page and use both sides of the sheets.
3. Write your candidate number on the top of each attached sheet.
4. For all sheets of paper in which rough work has to be done, cross it through and you must attach to your answer script.
5. The paper is divided into two sections i.e. Section A & B.
6. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
7. Good handwriting and way of representation of answers has weight with respect to marks.
8. **Draw diagrams if any with pencil only and label it and show all working where necessary.**
9. Always check your work before you leave the exam room.
10. **The paper is of 100 marks.**

Section A: Multiple Choice (Each carry 1 marks; Total 10 x 1 = 10 marks)

1. 100BaseTX uses two pairs of
 - a) twisted pairs
 - b) fiber optic
 - c) coaxial cable
 - d) None of above

2. Network layer at source is responsible for creating a packet from data coming from another
 - a) Data
 - b) Link
 - c) IP
 - d) Protocol ✓

3. Segmentation and reassembly is responsibility of
 - a) 7th Layer
 - b) 6th Layer
 - c) 5th Layer
 - d) 4th layer

4. In SONET, STS-1 level of electrical signaling has the data rate of
 - a) 51.84 Mbps
 - b) 155.52 Mbps
 - c) 466.56 Mbps
 - d) none of the mentioned

5. To achieve reliable transport in TCP, _____ is used to check the safe and sound arrival of data.
 - a) Packet
 - b) Buffer
 - c) Segment
 - d) Acknowledgment

6. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001. What is the sequence number of the segment if all data is sent in only one segment.
 - a) 10000
 - b) 10001
 - c) 12001
 - d) 11001 ✓

7. Radio channels are attractive medium because
 - a) Can penetrate walls
 - b) Connectivity can be given to mobile user
 - c) Can carry signals for long distance
 - d) All of the mentioned

8. Which one of the following is the multiple access protocol for channel access control?
 - a) CSMA/CD
 - b) CSMA/CA

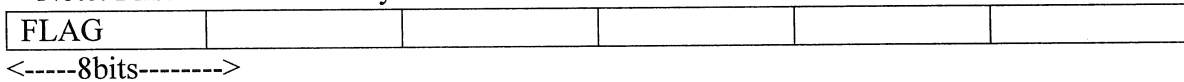
- c) Both CSMA/CD & CSMA/CA
 - d) None of the mentioned
9. FDMA, TDMA, and CDMA are
- a) automatic repeat protocol
 - b) channelization protocols
 - c) bit oriented protocol
 - d) None
10. How many modes Current technology supports for propagating light along optical channels
- a) one mode
 - b) two modes
 - c) three modes
 - d) five modes

Section B; Each Question carry 10 marks (Answer all questions)

1. With respect to switching answer below: [10 marks]
- a) What are the two different kinds of packet switching techniques?
 - b) Mention the advantages of packet switching.
 - c) Differentiate between packet and circuit switching.
2. With respect to telephony systems answer below questions: [10 marks]
- a) What is PBX? Explain trunk line & local loop.
 - b) Name the signaling protocol used for voice traffic.
 - c) Draw a basic PSTN network, showing local loop & trunk lines.
3. A protocol is a set of rules that govern data communication. A protocol defines what is communicated how it is communicated, and when it is communicated. Answer below questions. [10 marks]
- a) Name three major functions of protocol. Explain one of them.
 - b) Derive that T-1 links have bandwidth of 1.544 Mbps.
 - c) What do you mean by CSU/DSU unit? Name three kinds of alarms related to CSU/DSU.
4. a) Explain modem technologies and their standards. [10 marks]
- b) What do you mean by xDSL modem?
5. With respect to X.25 standard answer below questions. [10 marks]
- a) What do you mean by X.25 standard?
 - b) Draw a diagram showing X.25 protocol related to OSI model.

c) Below is the X.25 header. Mention its fields and the number of bits it contains.

Note: First one is done for you.



6. In regards to digital communication answer below: [10 marks]

- a) What are the two basic modes of communication?
- b) What are the three different communication channel types?
- c) Draw generic diagram of communication system showing parts of transmitter and receiver.

7. TCP helps in congestion control, with respect to same answer below questions: [10 marks]

- a) What do you mean by congestion? Why congestion arises in the network?
- b) In which two categories congestion control can be divided?
- c) Name four prevention and removal congestion control strategies.

8. With respect to Digital modulation answer below questions: [10 marks]

- a) Define channel capacity & the data rate.
- b) Explain Amplitude Shift Keying (ASK) with the help of a diagram.
- c) We have an available bandwidth of 100 kHz which spans from 200 to 300 kHz. What are the carrier frequency and the bit rate if we modulated our data by using ASK with $d = 1$?
What should be the carrier frequency and the bit rate if we modulated our data by using FSK with $d = 1$?

9. a) Draw a LAN consisting of 4 computers, 3 routers and 3 switches. Label the diagram.
- b) What are the different kinds of interfaces present in routers? How you connect two Routers?
- c) How you test the connectivity between the end devices? [10 marks]

-----The End-----