



FIJI NATIONAL UNIVERSITY

COLLEGE OF ENGINEERING, SCIENCE AND TECHNOLOGY
SCHOOL OF ELECTRICAL AND ELECTRONICS ENGINEERING
BACHELOR OF ENGINEERING PROGRAMME, YEAR 2 (BENG)
EEE 745 INTRODUCTION TO COMPUTER NETWORKING

FINAL EXAMINATION (SEMESTER 2, 2016)

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. The paper contains three sections, **Sec A, Sec B & Sec C (Attempt any 5 questions)**.
5. For all sheets of paper in which rough work has to be done, cross it through and you must attach to your answer script.
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 Questions (Each carry 1 mark)

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

2. Parameter that is normally achieved through a trailer added to end of frame is
 - a) Access Control
 - b) Flow Control
 - c) Error Control
 - d) Physical addressing.

3. FDMA, TDMA, and CDMA are
 - a) Automatic repeat protocol
 - b) Channelization protocols
 - c) Bit oriented protocol
 - d) None

4. How many modes Current technology supports for propagating light along optical channels
 - a) one mode
 - b) two modes
 - c) three modes
 - d) five modes

5. The functionalities of presentation layer includes
 - a) Data compression
 - b) Data encryption
 - c) Data description
 - d) All of the mentioned

6. User datagram protocol is called connectionless because
 - a) all UDP packets are treated independently by transport layer
 - b) it sends data as a stream of related packets
 - c) both (a) and (b)
 - d) none of the mentioned

7. If there are N routers from source to destination, total end to end delay in sending packet P(L->number of bits in the packet R-> transmission rate)

- a) N
 - b) $(N*L)/R$
 - c) $(2N*L)/R$
 - d) L/R
8. Resources are allocated on demand in
- a) packet switching
 - b) circuit switching
 - c) line switching
 - d) frequency switching
9. Header of a frame generally contains
- a) synchronization bytes
 - b) addresses
 - c) frame identifier
 - d) all of the mentioned
10. Terms that control flow and errors in full duplex switched Ethernet is called
- a) LLC Sub layer
 - b) MAC Sub layer
 - c) LLC Control Layer
 - d) MAC Control Layer
11. 100BaseTX uses two pairs of
- a) twisted pairs
 - b) fiber optic
 - c) coaxial cable
 - d) None of above
12. Elapsed time between an inquiry and a response is called.
- a) Transit Time
 - b) Delay Time
 - c) Processing Time
 - d) Response time
13. Nodes are another name of
- a) Devices
 - b) Links
 - c) Codes
 - d) Modes

14. Transmission data rate is decided by
- a) network layer
 - b) physical layer
 - c) data link layer
 - d) transport layer
15. Which one of the following is a data link protocol?
- a) Ethernet
 - b) point to point protocol
 - c) HDLC
 - d) all of the mentioned

Section B: Short Answer Questions (Each carry 5 marks)

1. Explain the below protocols:
 - a) Domain Name Service (DNS)
 - b) Address Resolution Protocol (ARP)
2. With respect to PSTN, answer below
 - a) Name the signaling protocol used for voice traffic.
 - b) Draw a basic PSTN network, showing local loop & trunk lines.
3. Distinguish between the
 - a) TCP and UDP
 - b) Circuit Switching and Packet Switching
4. With respect to Packet switching answer below:
 - a) Datagram approach
 - b) Virtual circuit approach
5. What do you mean by RS- 232 interface? Write the difference between RS-449 & Rs-442 interface.
6. Explain TCP three way handshaking
7. What do you mean by ISDN?

Section C: Attempt any 5 questions (Each carry 10 marks)

1. Explain OSI 7 layer model including its functions.
2. Write short notes on the Following:
 - a) Ethernet
 - b) PDH
 - c) LTE
3. Define TCP header segment with the help of diagram, showing all relevant fields.
4. With respect to WAN concepts answer below:
 - a) What are T-1 and E-1 links?
 - b) Draw the chart showing different T-1 links with respect to Digital service level, Number of voice channels & Transmission rate.
5. a) What do you mean by SONET and SDH?
c) Draw the SONET BLSR Topology
6. In regards to digital communication answer below:
 - 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. With respect to TCP protocol answer below:
 - a) Name all the six kinds of TCP flags which maintain the connection state.
 - b) Explain Fast retransmission and fast recovery with the help of diagram.
8. With respect to Browser architecture answer below:
 - a) Draw the diagram of the browser architecture.
 - b) Explain the three components of the browser

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