FIJI NATIONAL UNIVERSITY

COLLEGE OF ENGINEERING, SCIENCE AND TECHNOLOGY
SCHOOL OF ELECTRICAL AND ELECTRONICS ENGINEERING

BACHELOR OF ENGINEERING PROGRAMME, YEAR 3 (BENG 3)
(TELECOMMUNICATION & NETWORKING)

EEE745 INTRODUCTION TO COMPUTER NETWORKING

FINAL EXAMINATION (SEMESTER 2, 2015)

DATE/TIME/ROOM – Refer to Timetable

INSTRUCTIONS TO CANDIDATES

1. You are allowed 10 minutes extra time during which you are not to write.
2. Begin each answer on a fresh new page and use both sides of the sheets.
3. Write your identification number on the top of each attached sheet.
4. For all sheets of paper in which rough work has been done, cross it through and you must attach to your answer script.
5. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
6. The paper contains three sections, Sec- A; Sec- B & Sec- C
7. **ATTEMPT ALL QUESTIONS IN SEC-A AND SEC- B AND ANY 4 IN SEC-C.**
8. Always check your work before you leave the exam room.
9. Total time duration is 3 hours 10 minutes.

SECTION A: - MULTIPLE CHOICE (1 x 20 = 20 MARKS)

1. What does flow control determine?
   a. When a device can transmit
   b. Whether a device is connection oriented or connectionless
   c. Both a and b
   d. Neither a nor b
2. Converting data into signals by transforming and encoding the information to produce electromagnetic signals is the functionality of a _____.
   a. source
   b. transmitter
   c. receiver
   d. destination
3. Which of the following is also called forward error correction?
   a. Simplex
   b. Retransmission
   c. Detection-error coding
   d. Error-correction coding
4. For a CSMA/CD network, twice the propagation time between the two most distant stations is called _____.
   a. slot time
   b. transfer time
   c. round trip delay time
   d. both a and c
5. Telnet, FTP, SMTP, DNS, HTTP are examples of protocols that are used in _____.
   a. application layer of OSI reference model
   b. presentation layer of OSI reference model
   c. session layer of OSI reference model
   d. data link layer of OSI reference model
6. _____is a technique which transforms an analogue telephone circuit into a digital signal, and involves three Consecutive processes; sampling, quantization and encoding.
   a. Frequency Modulation (FM)
   b. Pulse Code Modulation (PCM)
   c. Amplitude Modulation (AM)
   d. Phase Modulation (PM)
7. _____ is the standard defined by the American National Standard Authority, ANSI T1 for synchronous Operation used in North America.
   a. DXC
   b. STM-1
   c. ADM
   d. SONET
8. What must a sender do before a receiver's sliding windows buffer can expand?
   a. Send an acknowledgment
   b. Receive an acknowledgment
   c. Either a or b
   d. Neither a nor b
9. Packet-switched networks can also be divided into _____subcategories: virtual-circuit networks and datagram Networks.
   a. five
   b. three
   c. Two
   d. Four

10. Which of the following are Transport layer protocols?
    a. ATM
    b. CISC
    c. TCP & UDP
    d. HTTP & FTP
11. What layer establishes, maintains, & terminates communications between applications located on different Devices?
    a. Session
    b. Data Link
    c. Application
    d. Network
12. What addressing information is shipped with every network interface card?
    a. The internet protocol (IP) address.
    b. The physical (MAC) address.
    c. The address resolution protocol.
    d. None of the above
13. In an 802.3 frame, what is the purpose of the preamble?
    a. It provides the cyclic redundancy check
    b. It alerts and synchronizes the destination network interface card
    c. It indicates the length of the data field
    d. None of the above
14. The X.25 standard specifies the
    a. Technique for start – stop data
    b. DTE/DCE interface
    c. Data bit rate
    d. None of the above
15. Which of the following performs modulation and de-modulation
    a. Modem
    b. Fiber Optics
    c. Coaxial cable
    d. Satellite
16. TCP delivers _____ out-of-order segments to the process.
    a. all
    b. no
    c. some
    d. none of the above
17. Which of the following does UDP guarantee?
    a. flow control
    b. connection-oriented delivery
    c. either a or b
    d. none of the above
18. A port address in UDP is _____bits long.
    a. 8
    b. 16
    c. 32
    d. none of the above
19. The _____ cellular phone system will provide universal personal communication.
    a. second generation
    b. third generation
    c. first generation
    d. none of the above

20. The original IEEE 802.11, uses _____.
    a. FHSS
    b. OFDM
    c. DSSS
    d. either a or c

SECTION B:

SHORT ANSWER QUESTIONS each carry 4 marks (10 x 4 = 40 MARKS)

1. What are circuit switching properties?
2. What do you mean by CSMA/CD & CSMA/CA?
3. Explain the term PSTN.
4. What do you understand by ARP? At which layer it works?
5. What do you mean by broadcast & unicast domains?
6. What is the difference between Hashing and Encryption? What protocols are used to provide to provide Encryption?
7. What do you mean by congestion control in data networks?
8. Explain coaxial cable, twisted pair cable & fiber optic cable with its example of usage.
9. What is data encapsulation?
10. What is the function of the OSI Session Layer?

SECTION C

Attempt any four each carry 10 marks (10 x 4= 40 marks)

1. What do you mean by OSI model? Explain its various layers
2. Explain the following terms
   (a) TCP three-way handshake
   (b) Domain Name System
   (c) DTE & DCE
   (d) X.25
   (e) SONET

3. Define TCP header frame with the help of diagram, showing all relevant fields.
4. Distinguish between the
   (a) GSM and CDMA
   (b) Circuit and Packet switching
   (c) TCP and UDP
   (d) Wi-Max and LTE
5. What do you understand by URL? Explain all the four things which it provides.
6. Write short notes on following:
   a) ISDN
   b) DSL
   c) Ethernet 802.3
   d) Virtual Circuit
7. Design the LAN network in detail showing all the required components and explaining its function.

[THE END]

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FNU/E-5

EQP RECEIPT CHECKLIST FORM

Particulars		Details/Comments (To be filled by Unit Lecturer)	Tick if present on EQP (To be filled by exams staff)
Cover Page			
Fiji National University with Logo		✓	
College		✓	
School		✓	
Program		✓	
Unit Code		✓	
Unit Name		✓	
Examination Period		✓	
Duration of Examination		✓	
Instructions		✓	
Total Number of Pages		✓	
Other Pages			
Footer	Page Number	✓	
	Unit Code	✓	
	Examination Period	✓	
Last Page		✓	
The End		✓	
Overall		✓	
Proper Print		✓	
Examination Requirements (FNU/E-1)		N/A	
Moderator's Report (FNU/E-3)		✓	
ERRS (Class List)		✓	
Unit Coordinator/Principal Lecturer's Name		✓	

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