



FIJI NATIONAL UNIVERSITY
College of Engineering, Science & Technology

SCHOOL OF ELECTRICAL & ELECTRONIC ENGINEERING

CERTIFICATE IV IN BIOMEDICAL TECHNOLOGY

EEE426 – COMPUTER AND DATA COMMUNICATION

FINAL EXAMINATION – TRIMESTER 3 - 2015.

TIME: TBA

Date: TBA

DURATION: 3 HOURS

INSTRUCTIONS TO STUDENTS:

1. You are allowed 10 minutes **EXTRA** as reading time during which you are **NOT** to write.
 2. Begin each answer on a fresh page and use both sides of the sheet.
 3. Write your candidate number at the top of each attached sheet.
 4. Insert all written foolscap, graph paper, drawing paper, etc. in their correct sequence and secure well.
 5. For all sheets of paper on which rough/draft work has been done, cross it through and attach to your answer scripts.
 6. Show all workings where necessary
 7. Diagrams and graphs can be drawn in pencil.
 8. Non- programmable calculators are allowed.
 9. **ATTEMPT ALL QUESTIONS**
 10. **Check your work before you leave the room!!**
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Section A: (20 marks)

Number Systems

Question 1

- a) Convert decimal to binary; (4 marks)
 - (i) 23
 - (ii) 4
- b) Convert binary to decimal; (4 marks)
 - (i) 1001
 - (ii) 0011
- c) Convert hexadecimal to decimal; (4 marks)
 - (i) ABC
 - (ii) 4F

Question 2

- a) Convert decimal to hexadecimal; (4 marks)
 - (i) 1234
 - (ii) 75
- b) Convert hexadecimal to binary; (4 marks)
 - (i) 10AF
 - (ii) FF4

Section B (20 marks)

Computer Interface & Mediums

Question 1

- a) What is a peripheral (2 marks)
- b) What is one disadvantage of a peripheral (1 marks)
- c) Name 3 characteristics of a peripheral (3 marks)

Question 2

- a) What is an interface (2 mark)

- b) Name 3 functions of an interface (3 marks)
- c) Name the 3 types of interface cards (3 marks)
- d) Name one difference between a serial and parallel connector (1 mark)

Question 3

- e) What is a computer Bus (1 mark)
- f) Name 2 types of Buses (2 marks)
- g) Name 2 types of Expansion Buses (2 marks)

Section C (20 marks)

Asynchronous & Synchronous Transmission

Question 1

- a) What is Data Transmission (1 mark)
- b) What is a communication channel and give three examples (3 marks)
- c) Name the 3 main types of transmission circuits (3 marks)

Question 2

- a) What is Asynchronous transmission in telecommunication (1 marks)
- b) Name the 3 types of networks that uses the asynchronous communication mode (3 marks)
- c) What is a PDH network (2 marks)
- d) Give 2 advantages of a SDH network (2 marks)

Question 3

- a) What is TDM (Time Division Multiplexing) (1 mark)
- b) What is FDM (Frequency Division Multiplexing) (1 mark)
- c) What are the 3 basic modulation techniques (3 mark)

SECTION D (20 marks)

OSI Layer and Communication Devices

Question 1

- a) Name all the layers of the OSI model in sequence order (4 marks)
- b) Name 3 benefits of the OSI model (3 marks)
- c) Name any 3 layers and their respective functions (3 marks)

Question 2

- a) What is a hub and name its disadvantage (3 mark)
- b) What is a gateway (2 mark)
- c) What is a router and what is its function (3 marks)
- d) What is a bridge (2 marks)

SECTION E (20 marks)

Computer Network and Communication Devices

Question 1

- a) Name 3 digital networks in which computers operate (3 marks)
- b) What is PRI and describe its channel composition (3 marks)
- c) What is BRI and describe its channel composition (3 marks)
- d) What does ADSL stand for (1 mark)

Question 2

- a) What is a WAP and its function (3 marks)
- b) What is the function of a firewall (2 marks)
- c) Name one application of a Wi-Fi (2 marks)
- d) What is Bluetooth and its function (3 marks)

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