

SIR ARTHUR LEWIS COMMUNITY COLLEGE
DIVISION OF TECHNICAL EDUCATION AND MANAGEMENT STUDIES

EXAMINATION SESSION	End of Semester Examination
TUTORS	Ms. Annie Auguste
PROGRAMME TITLE	Computer Maintenance Technician
PROGRAMME CODE	314
COURSE TITLE	Data Communications
COURSE CODE	DAT 321
CLASS(ES)	2 CMT
DATE	9 th May 2001
TIME	9:00 a.m.
DURATION	2 ½ hours
ROOM	CMT-W1
INVIGILATOR	Ms. Annie Auguste/Mr. Arthur Plummer



INSTRUCTIONS:

- There are **TEN (10) questions** on this examination paper.
- Answer **ALL** questions.
- Place your name on all sheets of paper submitted to the invigilator.
- This is a closed book examination. Calculators are permitted.
- The maximum number of marks is indicated at the end of each question.
- Use this as a rough guide to determine the depth to which each question will need to be answered.
- You have **two and a half (2 ½) hours** to complete this examination.

1. (a) Sketch the waveforms of the asynchronous characters specified

Number of data bits	Parity	Character value
6	Even	26
7	Odd	7F

(10)

2. Draw and label the UART Transmitter Block Diagram

(14)

3. A full duplex asynchronous serial link is established between a notebook computer and an Apple (Barrel) Mac desktop computer. The notebook computer sends a message in standard ASCII at 9600 baud with even parity and the maximum number of stop bits. Calculate the minimum time it takes to send: -

Pieces of nine, is it exam time?

(10)

4. (a) Differentiate between a DTE and DCE, give an example of each.

(4)

- (b) In terminal handling there are two ways of linking the terminal to the controller. With the aid of diagram, explain **one** option.

(5)

- (c) The RS232 Standard specifies the particular voltage levels, plug sockets and also the signals and “pins” which are to be used for controlling the flow of data. Indicate the use of the following pins: -

Pin 7, Pin 2, Pin 3, Pin 4 and Pin 5.

(5)

- (d) What is the purpose of a NAK

(1)

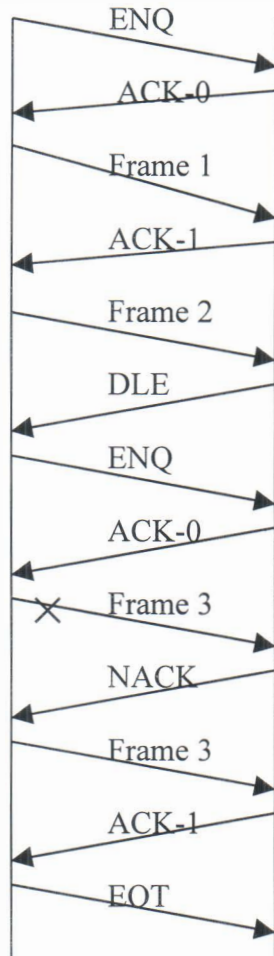
5. Briefly describe **two** of the following: -

- (a) Telnet
- (b) SMTP
- (c) FTP
- (d) ISDN
- (e) POP-3

(4)

6. (a) By means of a labeled diagram, show the structure of an HDLC Information Frame (5)

(b) The diagram below shows a half duplex idle RQ data exchange such as that used by the BSC data link layer. Explain the sequence of events, making clear the significance of the symbol above each arrow. (15)



7. (a) Briefly explain how data is transmitted using Time Division Multiplexing (5)

(b) Give one disadvantage of using Frequency division Multiplexing, also indicate a method of data transmission where it is used (3)

8. List four (4) purposes of an FEP (4)

9. (a) Explain how CRC is used for error Detection (5)
- (b) Give one limitation of CRC (1)
10. (a) The responsibility of the network layer includes Routing, congestion control and Internetworking. What information is required to carry out these task? (2)
- (b) Briefly describe how Datagram Routing works, your answer should include at least **one** implications (3)
- (c) Differentiate between Random Walk and Hot Potato Routing (4)