RAMAIAH UNIVERSITY OF APPLIED SCIENCES

Faculty of Engineering & Technology			
Ramaiah University of Applied Sciences			
Department	Computer Science and Engineering	**Programme**	B. Tech.
Semester	5th		
Course Code	CSC303A	**Course Title**	Computer Networks
Course Leader	Dr. Rinki Sharma, Ms. Suvidha K S, Mr. Nithin Rao R		

Assignment - 1					
Register No.		Name of Student			
Sections		**Marking Scheme**	**Max Marks**	**First Examiner Marks**	**Second Examiner Marks**
Q.1	1.1	Disadvantages of the protocol	02		
	1.2	Modifications to overcome the disadvantages	03		
		Max Marks	**05**		
Q.2	2.1	Program to compute checksum at the transmitter	10		
	2.2	Program to check for error free data transmission at the receiver	10		
		Max Marks	**20**		
		Total Assignment Marks	**25**		

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Course Marks Tabulation				
Component- 1(B) Assignment	**First Examiner**	**Remarks**	**Second Examiner**	**Remarks**
Q 1				
Q 2				
Marks (Max 25)				

Signature of First Examiner

Signature of Second Examiner

Please note:

1. Documental evidence for all the components/parts of the assessment such as the reports, photographs, laboratory exam / tool tests are required to be attached to the assignment report in a proper order.
2. The First Examiner is required to mark the comments in RED ink and the Second Examiner's comments should be in GREEN ink.
3. If the variation between the marks awarded by the first examiner and the second examiner lies within +/- 3 marks, then the marks allotted by the first examiner is considered to be final. If the variation is more than +/- 3 marks then both the examiners should resolve the issue in consultation with the Chairman BoE.

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Assignment

Instructions to students:

1. The assignment consists of **3** questions.
2. Maximum marks is **25.**
3. The assignment has to be neatly word processed as per the prescribed format.
4. The maximum number of pages should be restricted to **9**.
5. The printed assignment must be submitted to the course leader.
6. **Submission Date: December 5th 2020**
7. **Submission after the due date is not permitted.**
8. **IMPORTANT**: It is essential that all the sources used in preparation of the assignment must be suitably referenced in the text.
9. Marks will be awarded only to the sections and subsections clearly indicated as per the problem statement/exercise/question

Preamble

This course is intended to provide a thorough knowledge of the concepts of computer networks to students. It introduces the layered software hierarchy and the protocols that are applied at each layer. This course also touches on certain application areas of computer networks such as Local Area Networks and Mobile Ad-hoc Networks.

Question 1 **(5 Marks)**

Consider a simple application-level protocol built on top of UDP that allows a client to retrieve a file from a remote server residing at a well-known address. The client first sends a request with a file name, and the server responds with a sequence of data packets containing different parts of the requested file. To ensure reliability and sequenced delivery, client and server use a stop-and-wait protocol.

1.1 Discuss the disadvantages of this protocol in terms of performance and reliability.

1.2 Suggest approaches to modify this protocol so that it is not susceptible to the disadvantages you have identified above.

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Question 2 **(20 Marks)**

Consider 32 bit long data. Write a program to compute the Checksum at the transmitter. Verify the computed Checksum at the receiver for error free data transmission. The program should be generic.

Your report should include:

2.1 Program to compute checksum at the transmitter.

2.2 Program to check for error free data transmission at the receiver.