

國立彰化師範大學 97 學年度碩士班招生考試試題

系所： 數位學習研究所碩士班

科目： 計算機網路

☆☆請在答案紙上作答☆☆

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Show all your work and write your answers clearly in the following questions. You may write the answers in English or Chinese.

1. (10%) What is the main difference between TCP and UDP?
2. (10%) Use even-parity Hamming code to encode an 8-bit value: 10101111.
3. (10%) Why most data link protocols put the CRC (Cyclic Redundancy Check) checksum in a tail?
4. (15%) The wireless LANs that we studied used protocols such as MACA (Multiple Access with Collision Avoidance) instead of using CSMA/CD. Under what conditions, if any, would it be possible to use CSMA/CD instead?
5. (20%) You have learned a lot of techniques of computer networks. For business applications, a company may have separate computers to monitor production, keep track of inventories, and do the payroll. Each of these computers may have worked in isolation from the others, but at some points, management may have decided to connect them to be able to extract and correlate information about the entire company. Now, a school asks you to develop an E-learning environment. How to design it using techniques of computer networks? Elaborate your originality.
6. (15%) Please make explanation of “Direct link networks”; and “ZigBee”.
7. (20%) Please make the explanation of “network topology” and use the diagram for explaining the basic network topologies.