

TRƯỜNG ĐẠI HỌC CÔNG NGHIỆP

THÀNH PHỐ HỒ CHÍ MINH

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KHOA/VIỆN: CNTT

## ĐỀ kiểm tra TK1

**Môn:** Kiến trúc và tích hợp hệ thống

**Lớp/Lớp học phần:**

**Ngày kiểm tra:** 01/2024    **Đề 1**

Thời gian làm bài: ...90..... phút

ABC Company has the head office located in Ho Chi Minh City connected with 2 branches in Hanoi and Da Nang with a scale of 500 employees and 400 computers.

The resource distribution in the company is as follows:

### **Ho Chi Minh (headquarters): 400 employees**

- The head office has (HCM) 3 floors, in which the floors are arranged as follows:

+ 1<sup>st</sup> floor: Server room for the following applications: Web, Mail, VoIP, accounting, human resources

+ 2<sup>nd</sup> floor: 170 computers, including rooms: Accounting, Human Resources, IT, business

+ 3<sup>rd</sup> floor: 170 machines including departments: Purchasing, Marketing and Company leadership

+ Ground floor: 20 computers in reception, 40 laptops using Wi-Fi.

All floors have 1 server connected to the system.

### **Branches**

At Hanoi and Da Nang branches, there are 50 employees and 50 computers, of which 10 are of the receptionist and 40 are of the Sales department.

Branches connect to headquarters by internet lines, can access all company applications except accounting and human resource applications.

### **Applications:**

+ Company website which can be accessed by inside and outside the company writing by PHP and connecting on MySQL database. This web site managed by IT department. Marketing department is responsible for posting, updating and deleting

articles on this web site, each employee in this department and IT has an account on the website. In addition, when viewing, there is no need for an account.

+ Accounting program written on the WEB with ASP Dot Net and SQL Server, only for accounting staff. In addition, the program has a report section only for company leaders to see and must have an account to view.

+ The human resource management program is Window Form Application running on Oracle that only uses to human resources staff.

+ Mail system uses the company staff which access by inside and outside and managed by IT department.

+ VoIP phone system uses for the departments of the company and managed by IT department.

There are 2 web servers for using Company Web site and accounting program. These web servers run by Stand-by mode and located in DMZ

Similarly, there are 2 web servers for using human resource management program. These web servers run by Stand-by mode and located in LAN

There are 2 database servers installing SQL Server and the other 2 server installing Oracle database. All of them located in LAN and run by load balancing mode.

There are 2 servers, one for Mail and other one for VoIP.

All of the services run 24/24, 7 days a week and 365 days a year.

### **Requirements:**

**Câu 1:** (4đ). Thực hiện bảng phân tích yêu cầu:

- Functional (2đ)
- Non-Functional (2đ)

**Câu 2:** (4đ) Thực hiện mô hình User case?

**Câu 3:** (2đ) Vẽ toàn bộ sơ đồ kiến trúc mạng cho toàn bộ hệ thống trên?