

National University, Gazipur

B.Sc. (Hons) in CSE 4th Year 8th Semester Examination-2021

Course Code: 540220

Course Title: Network and Information Security Lab

Full Marks: 40

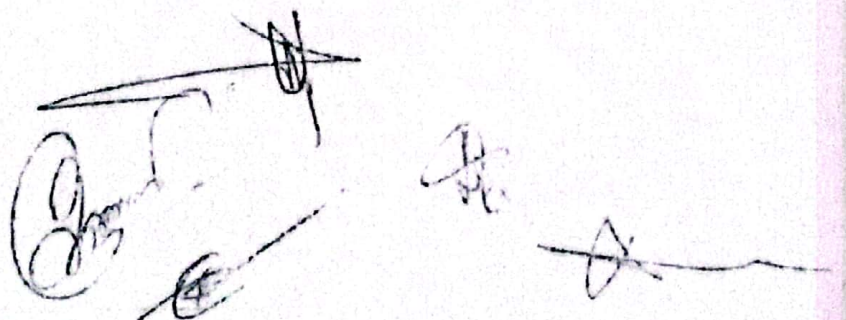
Time: 3.00-Hours

*[Solve any two (02) problems from the following lists]
[Questions will be given in random orders]*

1. Design and configure a **RIP** (Routing Information Protocol) server by using a **RIPv1** or **RIPv2** dynamic routing protocol also connect four LANs.
2. Design and configure a network with four LAN connected through WAN **PPP** (Point-to-Point Protocol) connection by using two Cisco Routers.
3. Design and configure E-mail Protocol **SMTP** (Simple Mail Transfer Protocol) and **POP** (Post Office Protocol) using Cisco Routers.
4. Implement the Cryptography system **Plaintext** (CSE) to convert **Ciphertext** (AQC) and vice versa.
5. Analysis the features of firewall in providing network security and to set **Firewall Security** in a windows.
6. Analysis the different wireless network components and features of any one of the **Mobile Security** Apps.
7. Analysis the security vulnerabilities of **E-Mail** Applications
8. Analysis the Security Vulnerabilities of **E-Commerce** services
9. Implement the **DES** (Data Encryption Standard) Symmetric-Key Block Cipher algorithm for Network Information Security.
10. Implement the **RSA** (Rivest-Shamir-Adleman) Asymmetric-Key Block Cipher algorithm for Network Information Security.
11. Implement the **DSA** (Digital Signature Algorithm) for Information Security.
12. Implement the **SSL** (Secure Sockets Layer) in the OSI Application Layer.
13. Implement the **VPN** (Virtual Private Network) Encrypted network using Cisco.

Marks Distribution (For Each Question)

- | | |
|-------------------|------|
| 1. Configuration | : 05 |
| 2. Implementation | : 10 |
| 3. Viva-Voce | : 05 |
| <hr/> | |
| Total Marks | : 20 |



National University

B.Sc. (Hons.) in CSE, 4th Year, 8th Semester Examination-2021

CSE-540244[System Analysis and Design Lab]

Time: 03 Hours

Full Marks: 40

Answer any one of the following questions:

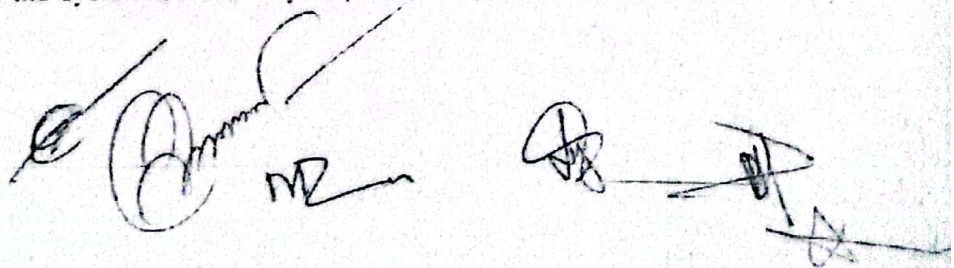
[N.B. Apply the steps of System Development Life Cycle (SDLC) like Planning & Analysis (Ex: information gathering, feasibility study, cost-benefit analysis), Design (Ex: ER-diagram, DFD, Use Case Diagram, Form Design etc.), Implementation (Coding, Debugging & Testing)].

1. **Online Reservation and Booking System:** In this system, the administrator offer various reservation systems such as resorts vehicles, conference hall etc. Administrator makes an implementation on Check in/ Check out facility, record the customer details, customer manages the booking easily, adapt the pricing, make sure about online payment, customization of reservation.

2. **Class Attendance Management System:** In this system, the colleges or institutes affiliated with National University want to develop a system that can keep track the daily attendance records of all the students in a particular class, where a respective teacher can log into the system and take attendance of the students using the system. The system also labels the specific teacher's number of courses, class time, number of students, course name and department name. The system shows the overall scenario of the semester's class attendance.

3. **Online Business Management System:** In this system, the administrator provides user interface, offer catalog on Home appliances, Office Equipment, men/women clothing, electronic gadgets etc. with product details, price and appropriate photograph. User can easily access the categories and choose the specific items, can easily order the items. There must be online payment option and product exchange option in due times.

4. **Hospital Management System:** In these system patient requests for appointment for doctors. The details of the existing patients' history are retrieved by the system. New patients can update their details in the system before they request for appointment with the help of

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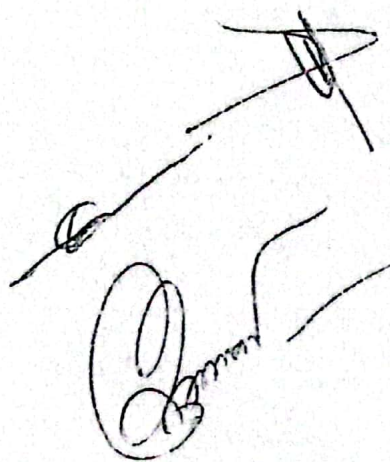
assistant. The assistant confirms the appointment based on the availability of free slots for the respective doctors and the patient is informed. Assistant can cancel the appointment at any time.

5. Employee Management System: In this system, the administrator provides user interface. the employee will first sign-up the system and will create the initial personal profile. This system will allow to create payroll heads, specify company's payroll formula and to organize the payroll heads into multiple payroll structures. The software should be flexible enough to configure payroll in different payroll structures for different groups of employees in the company. Employees' clock in/clock out times are used to make calculations in payroll such as lateness, overtime, work duration and so on. Integration with time attendance devices will enable payroll software to automate payroll processing with reference to attendance data.

Marks Distribution:

(i) Analysis and Design	:10
(ii) Implementation	:15
(iii) Viva	:10
(iv) Result	:05
Total	:40

MZ

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