## B.Sc. (HONS.) IN CSE FOURTH YEAR, EIGHTH SEMESTER EXAMINATION, 2021

### NETWORK AND INFORMATION SECURITY

*[According to the New Syllabus]*

Subject Code : 540219

Examination Code : 5617

Time—3 hours

Full marks—80

*[N.B. The figures in the right margin indicate full marks. Answer any **four** questions.]*

Marks

1. (a) Define cryptography. Write down the importance of cryptography. 3
   (b) Differentiate between conventional encryption and public key encryption. 4
   (c) List and briefly define the categories of security mechanism. 6
   (d) Explain various types of cryptanalysis attack with necessary diagram. 7

2. (a) What is remote access and explain various types of technologies used for secure remote access. 5
   (b) Draw and explain network security model. 5
   (c) What is firewall? Mention some merits and demerits of using firewall. 5
   (d) Define PGP. Write down the application of network security. 5

3. (a) Describe the detailed structure of AES encryption and decryption. 8
   (b) Briefly explain the general approaches to attack a conventional encryption scheme. 8
   (c) What requirements must a public key cryptosystem fulfill to be a secure algorithm? 4

4. (a) What is PKI? Is it possible to operate encryption technique without PKI? 5
   (b) Write down DSA Algorithm. 5
   (c) State and explain middle-man-attack. 5
   (d) Explain the IPSec architecture. 5

5. (a) Perform encryption and decryption using RSA algorithm for the following values : 8
      $p = 7$, $q = 11$, $M = 5$ and $e = 13$.
   (b) Differentiate between AES and DES.
   (c) Briefly explain Diffie—Hellman key exchange. 4
   (d) What do you mean by SET? Mention its features. 5

6. Write short notes (any **four**) : 3
   (a) Digital Immune System 5×4=20
   (b) E-mail Security
   (c) P-Box and S-Box
   (d) Feistel Cipher
   (e) Firewall
   (f) RSA Algorithm.

## B.Sc. (HONS.) IN CSE FOURTH YEAR EIGHTH SEMESTER EXAMINATION, 2021

### INFORMATION SYSTEM MANAGEMENT

*[According to the New Syllabus]*

Subject Code : CSE-540221

Examination Code : 5617

Time—3 hours

Full marks—80

*[N.B. The figures in the right margin indicate full marks. Answer any **four** questions.]*

| | | | Marks |
|---|---|---|---|
| 1. | (a) | What is Management Information System (MIS)? Why do you need to study MIS? | 2+4=6 |
| | (b) | Write the characteristics of Management Information System. | 4 |
| | (c) | Briefly explain the components of Information System. | 5 |
| | (d) | Write down the differences between MIS and DSS. | 5 |
| 2. | (a) | Define data, information and knowledge. | 3 |
| | (b) | Distinguish between E-business and E-commerce. | 4 |
| | (c) | Describe the various layers of the TCP/IP Model. | 6 |
| | (d) | What is network topology? Explain Ring and Mesh network topology. | 1+3+3=7 |
| 3. | (a) | What is cloud computing? Write down the characteristics of cloud computing. | 5 |
| | (b) | What is meant by enterprise collaboration system? What are the major goals of an ECS? | 5 |
| | (c) | Describe the various functional business systems. | 5 |
| | (d) | Describe the various tools of security management of information system. | 5 |
| 4. | (a) | What is IS planning? Why IS planning paradox is so important? | 2+4=6 |
| | (b) | Discuss on differences among strategic, tactical and operational planning. | 7 |
| | (c) | Describe different types of planning techniques. | 7 |
| 5. | (a) | What is success factor? Describe the planning technique for critical success factor. | 2+4=6 |
| | (b) | Describe value chain analysis technique. | |
| | (c) | Describe attributes of distributed system. | 4 |
| | (d) | What are the types of distributed system? | 5 |
| 6. | (a) | Describe four levels of IT infrastructure. | 5 |
| | (b) | Describe on content management system. | 5 |
| | (c) | How information security is ensured in IS? | 5 |
| | (d) | Write short notes on : | 4 |
| | | (i) Structured development and | |
| | | (ii) Computer-aided software engineering. | 6 |

# B. Sc (HONS.) IN CSE FOURTH YEAR EIGHTH SEMESTER EXAMINATION, 2021

## SYSTEM ANALYSIS AND DESIGN

*[ According to the New Syllabus ]*

**Subject Code : 540243**

**Examination Code : 5617**

Time—3 hours

Full marks—80

[N.B. The figures in the right margin indicate full marks. Answer any four questions.]

Marks

1. (a) Define system. Describe the elements of system. 6

   (b) Describe the different stages of system development life cycle (SDLC) briefly. 6

   (c) What do you mean by system analysis? What are the skills needed to be a system analyst? 5

   (d) "An information system is an open system." Discuss briefly. 3

2. (a) Describe four traditional techniques for collecting information during analysis. Which one is better and why? 5

   (b) What do you mean by CASE? Describe the CASE tools and examples. 5

   (c) What do you mean by prototyping? What are the basic benefits of prototyping? 5

   (d) Discuss the concepts of MIS and DSS. How they are related? 5

3. (a) Discuss the key strategies for eliciting information about the user requirements. 6

   (b) Describe three commonly used methods for performing economic cost-benefit analysis. 6

   (c) What is information system analysis and design? 4

   (d) Differentiate between management information system and decision support system. 4

*[Please turn over*

4. (a) What is project management? What are the characteristics that define a project?    5

(b) What is Data Flow Diagram (DFD)? What are the basic rules relevant to constructing a DFD.    6

(c) What is feasibility study? State the steps of feasibility analysis with an example.    6

(d) Write down the objectives of database.    3

5. (a) Describe decision table and decision tree with examples.    5

(b) What is data dictionary? What points should be considered in constructing a data dictionary?    5

(c) What is HIPO? Write down the differences between HIPO and IPO.    4

(d) Define the following :    6

     (i) User Interface Design,

     (ii) Quality Assurance,

     (iii) Coupling,

     (iv) Cohesion.

6. (a) What is cost benefit analysis? Explain with example.    5

(b) What is testing? What are the types of system testing?    5

(c) What is implementation? Differentiate between implementation and conversion.    5

(d) What is documentation? Describe different types of documentation.    5