

S-266(D to F)

B. Sc. (Sixth Semester) EXAMINATION, 2019

COMPUTER SCIENCE

(Elective Paper)

Time : Two Hours]

[Maximum Marks : 70

S-266(D)

(Information Security)

[SOS/C.S./E-002(A)]

Note : (i) Attempt any *five* questions from Section A and any *three* questions from Section B.

(ii) Answer each question of Section A within 50 words.

(iii) Limit your answers within the given answer book. Additional answer book (B-Answer book) should not be provided or used.

Section—A

Note : Attempt any *five* questions. Each question carries 5 marks.

1. Explain the importance of information and discuss the challenges to information security.

(A-40) P. T. O.

2. What is cryptography ? Explain the development trend in this science.
3. What is Digital Signature ? Explain the applications of Digital Signature.
4. What is Symmetric Cipher ? State the main drawback with Symmetric ciphers.
5. What is intrusion ? Explain the scope of IDS for defending intrusion.
6. Explain the potential vulnerabilities in the enterprise networks.
7. Explain the Diffie-Hellman key exchange algorithms and its applications.

Section—B

Note : Attempt any *three* questions. Each question carries 15 marks.

1. Explain the CIA pyramid of information security with suitable examples.
2. What is Firewall ? Discuss the types of filtering processes in firewall. <https://www.hnbguonline.com>
3. Explain the taxonomy of the modern methods of encryption.
4. Discuss the properties and design of cryptographic hash functions and message authentication codes.
5. Discuss the various insider and outsider threats to the information security.
6. Write short notes on the following topics :
 - (a) Malware
 - (b) Penetration testing
 - (c) Role of CERT India

(A-40)

S-266(E)

(Database Applications)

[SOS/C.S./E-002(B)]

- Note :** (i) Attempt any *five* questions from Section A and any *three* questions from Section B.
- (ii) Answer each question of Section A within 50 words.
- (iii) Limit your answers within the given answer book. Additional answer book (B-Answer book) should not be provided or used.

Section—A

Note : Attempt any *five* questions. Each question carries 5 marks.

1. Discuss user interface and tools.
2. What do you mean by system and user privileges ?
3. Explain exception handling in detail.
4. Explain limitation of SQL authorizations.
5. Explain web servers in detail.
6. What is data redundancy ? What are the problems associated with it ?
7. What are views ? How are they useful ?

Section—B

Note : Attempt any *three* questions. Each question carries 15 marks.

1. Explain SQL triggers and types of trigger with an example.

2. Explain server side scripting and its languages in detail.
3. (a) Explain HTML and its tags.
(b) Explain selection operation of relation algebra with an example.
4. Explain encryption and decryption. Define any *one* encryption technique in brief.
5. (a) Explain DBMS and its applications.
(b) Explain Relational model and Network model.
6. Write short notes on the following :
(a) Digital signature
(b) Projection
(c) Static and dynamic web pages

S-266(F)

(Computer Networks)

[SOS/C.S./E-002(C)]

Note : (i) Attempt any *five* questions from Section A and any *three* questions from Section B.

- (ii) Answer each question of Section A within 50 words.
- (iii) Limit your answers within the given answer book. Additional answer book (B-Answer book) should not be provided or used.

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Section A

Note : Attempt any five questions. Each question carries 5 marks

1. What are the advantages and drawbacks of LAN ?
2. What are the specifications of Narrow band ISDN ?
3. Differentiate between Guided and Unguided transmission medias.
4. What are the different services provided by transport layer ?
5. What is the significance of TCP protocol ?
6. What is the difference between Broadcasting and Multicasting ?
7. Explain the differences between 10 base 2 and 10 base 5 Ethernet.

Section—B

Note : Attempt any three questions. Each question carries 15 marks.

1. Explain the following terms with respect to a network : Attenuation, Distortion, Noise, Throughput, Propagation speed and time, Wavelength, Shannon Capacity.
2. How does congestion control in datagram subnets take place ? Also, explain with neat sketch circuit switching techniques in detail.
3. What is the significance of Error Control Mechanism ? Explain how it is achieved by CRC.
4. Explain the OSI model and explain the functionality of each layer.

(A-40)

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5. How a connection is established in a Transport Protocol ? Explain three protocol scenarios for establishing a connection.
6. Write short notes on any two of the following :
 - (i) Broadband ISDN
 - (ii) WDM vs. TDM
 - (iii) Static and Dynamic Routing
 - (iv) Repeaters

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(A-40)