

**G 5057**

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2017**

**Eighth Semester**

Branch : Information Technology

IT 010 801—WIRELESS COMMUNICATION (IT)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all the questions,  
Each question carries 3 marks.*

1. Write short notes on Principles of CDMA.
2. Mention the significance of channel coding.
3. Give a description about Gateway mobile switching center.
4. Discuss about Media gateway.
5. Comment on the concept of DVB-H.

(5 × 3 = 15 marks)

**Part B**

*Answer all the questions.  
Each question carries 5 marks.*

6. Explain the various power control mechanism in CDMA.
7. Give an account on functionality of Media Access Control layer of CDMA.
8. Enumerate the concept of Multimedia Messaging services.
9. Discuss in detail about IMS services.
10. Illustrate the operation of LMDS in detail.

(5 × 5 = 25 marks)

**Turn over**

**Part C**

*Answer one full question from each module.*

*Each full question carries 12 marks.*

11. Discuss in detail about Forward error control and detection technique in CDMA.

*Or*

12. Comment on the following :

(i) Hand over mechanisms in CDMA.

(ii) Spreading and Scrambling codes.

(6 + 6 = 12 marks)

13. Describe PDC protocol and Data protocols of CDMA.

*Or*

14. Discuss the various channel coding techniques of CDMA in detail.

15. Devise UMTS network structure and its core network with suitable diagram.

*Or*

16. Elaborate GSM radio access networks and its interfaces in detail.

17. Explain the following IMS protocols : (i) SIP ; (ii) RTP/RTCP.

*Or*

18. Discuss about the various QoS classes and applications of 3G in detail.

19. Elaborate the architecture of Wireless Local Loop with suitable diagram.

*Or*

20. Write short notes on : (i) 4G networks ; (ii) WLL products.

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2017**

**Eighth Semester**

Branch : Information Technology

IT 010 802—CRYPTOGRAPHY AND NETWORK SECURITY (IT)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Define algebraic field and the axioms obeyed by a field.
2. The ciphertext CRWWZ was encrypted by an affine cipher mod 26. The plaintext starts 'ha'. Decrypt the message. Show the steps in decryption.
3. State the security requirements of hash functions.
4. Give the format of X.509 certificates.
5. Write a short note on trusted systems.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. State Chinese Remainder theorem and the assertions made find the integer that has a remainder of 3 when divided by 7 and 13, but divisible by 12.
7. Brief the decryption procedure using Hill cipher. Find the  $2 \times 2$  key matrix used in encrypting the plaintext 'dont'. The obtained ciphertext is 'ELNP'.
8. Explain the encryption steps using RSA algorithm and apply it to a system with message,  $M = 7$ , public key  $e = 13$  and  $n = 33$ ,
9. Express the need for authentication in network security.
10. Define Virus. Highlight the threats associated with a virus.

(5 × 5 = 25 marks)

Turn over

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. (a) State and prove Fermat's and Euler's theorem. (8 marks)  
(b) Find  $\phi(231)$  and the primitive roots of 9. (4 marks)

*Or*

12. (a) Show that for  $a = 1$  and  $a = (n - 1)$  Miller Rabin test will return 'inconclusive' if  $n$  is an odd composite integer. (6 marks)  
(b) Explain Pollard's  $p-1$  factorization algorithm with an example. (6 marks)

13. Elaborate Data Encryption standard with a neat diagram.

*Or*

14. With a neat diagram, discuss the substitution and permutation stages of AES encryption.  
15. Explain Elgamal public key cryptosystem. Determine 'm' if  $q = 17$  with a primitive root  $\alpha = 3$ . User B has 16 as its private key and 15 as its public key. User A sends the ciphertext (7, 6).

*Or*

16. Discuss the steps involved in generating a message digest using secure hash algorithm.  
17. Explain kerberos version 4 and its messages with necessary diagrams.

*Or*

18. With a neat sketch, explain authentication header in IP security.  
19. Explain distributed intrusion detections architecture with required diagrams.

*Or*

20. Discuss the design and types of firewalls with necessary diagrams.

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2017**

**Eighth Semester**

Branch : Information Technology

IT 010 804 L01—SOFTWARE TESTING—(Elective III) [IT]

(New Scheme—2010 Admission onwards—Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. State the objectives of software testing.
2. List the stages quality planning in an organization includes.
3. Define beta testing.
4. What is test planning ?
5. List the objectives of acceptance test report.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Differentiate between verification and validation.
7. What is post-mortem review ? Why is it essential ?
8. Explain unit testing with an example.
9. How equivalence partitioning can be used for selection of test data ? Give example.
10. Explain product metrics with examples.

(5 × 5 = 25 marks)

**Turn over**

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. (a) What is a workbench ? Present a diagram of a tester's workbench and discuss the same. (7 marks)

(b) What is test planning ? Discuss. (5 marks)

*Or*

12. (a) List and explain the types of software risks. (6 marks)

(b) Is testing the software a risk reduction activity ? Discuss. (6 marks)

13. Explain with diagrammatic illustration VV model (verification and validation model) for testing.

*Or*

14. Explain with diagrammatic illustration the defect management process.

15. What is integration testing ? Explain the various approaches of integration testing with an example.

*Or*

16. (a) What is gamma testing ? List the advantages of gamma testing. (5 marks)

(b) Discuss the customer's responsibilities in acceptance testing. (7 marks)

17. What is a test case ? What are the attributes generally defined for each test case ? Discuss with an example.

*Or*

18. What are test scripts ? What information test scripts must contain ? What activities are involved in execution of test scripts ? Discuss.

19. Discuss the ways in which organizations measure the performance of a project in terms of efficiency and productivity measurements.

*Or*

20. (a) Explain requirement test matrix report with an example. (6 marks)

(b) What is benchmarking ? Explain competitive, functional and internal benchmarking. (6 marks)

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, MAY 2017**

**Eighth Semester**

Branch : Information Technology

IT 010 805 G04—ELECTRONIC BUSINESS AND SERVICES (Elective IV) [IT]

(New Scheme—2010 Admissions)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Define commerce in a business context.
2. What is a digital signature ?
3. List the main security requirements for electronic payment.
4. Define computational intelligence.
5. What is copyright ? Discuss.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Why electronic commerce requires careful planning and integration of a number of technology infrastructure components ? Discuss.
7. How symmetric key cryptography works? Give example.
8. Discuss the shifts that are occurring with regards to non-cash and online payments.
9. What are the ways credit card frauds are committed ? Discuss.
10. Define patent and explain what can be patented.

(5 × 5 = 25 marks)

**Turn over**

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Discuss the following with example:

- (a) Business-to-consumer (B2C) e-commerce. (4 marks)
- (b) Business-to-business (B2B) e-commerce. (4 marks)
- (c) Consumer-to-consumer (C2C) e-commerce. (4 marks)

*Or*

12. (a) What is electronic data interchange (EDI)? Explain the benefits of EDI, as well as barriers to its implementation. (6 marks)

(b) How EDI works? Discuss. (6 marks)

13. Explain with example and diagrammatic illustration the working of triple data encryption standard.

*Or*

14. Explain with example and diagrammatic illustration the working of Diffie-Hellman key agreement protocol.

15. What is a credit card? Explain with diagrammatic illustration the steps in processing a credit card transaction.

*Or*

16. (a) Discuss various online alternatives to credit card payments and identify under what circumstances they are best used. (6 marks)

(b) Discuss the pros and cons of mobile payment methods. (6 marks)

17. Discuss the traditional approaches for credit card fraud detection.

*Or*

18. Explain with an example how sequence alignment can be used in credit card fraud detection.

19. Discuss the major categories and trends of electronic commerce applications.

*Or*

20. List the intellectual property chain of activities and discuss the same.

[5 × 12 = 60 marks]