9/12/14 BE sem VII (R) COMP M.C.

QP Code :15490

(3 Hours) **[Total Marks : 100**

N.B. (1) Question No. **1** is **compulsory**. Solve any **four** questions from remaining **six** questions.
(2) Assume suitable **data** wherever **necessary**.
(3) **Figures** to the **right** indicate **full** marks.

1. (a) Consider a mobile user who is migrating from a place to another place provide him a seamless service by satellite system, also sketch the architecture. **10**
   (b) A certain city has an area of 1300 square miles and is covered by a cellular system using a seven cell reuse pattern" Each cell has a radius of 4 miles and the city has 40 MHz spectrum with a full duplex channel bandwidth of 60KHz. Find : **10**
   (i) The number of cells in the service area.
   (ii) The number of channels per cell.
   (iii) Total number of subscribers that can be served.

2. (a) Write about types of antennas and their radiation pattern ? **10**
   (b) Describe how data encryption is done in GSM system, with diagram explaining the role of SIM, A3, A5 and A8 algorithm. **10**

3. (a) What are various types of satellites are used ? Describes there functionality and also explain the concept of localization, routing and handover in them. **10**
   (b) The channel access control sublayer of HIPERLAN offers a connectionless data transfer service to the higher MAC layer. Justify the above statement with related references. **10**

4. (a) What is the fundamental difference of WML compared to HTML ? Why is this difference important with respect to handheld devices ? What is specified in addition to save bandwidth ? **10**
   (b) What are the general problems of mobile IP regarding security and support of quality of service ? **10**

5. (a) Explain the transaction classes provided by Wireless Transaction Protocol (WTP) ? Also explain Services provided by Wireless Session Protocol (WSP) ? **10**
   (b) What are the modifications require to an existing GSM network to be upgraded to GPRS ? Explain with the help of diagram. **10**

6. (a) Discuss the PHY frame format of an IEEE 802-11 using the spread spectrum technique which separates by code. **10**
   (b) Discuss IMT 2000 system. **10**

7. (a) Explain in short Wireless Security Threats. **5**
   (b) What do you mean by WiMAX ? In what way it is similar to DSL ? **5**
   (c) Discuss about Link Management in Wireless A TM. **5**
   (d) What is handoff ? What is roaming ? How do you perform handoff during roaming ? **5**

BE VII (Comp (R) VII (R) DSIP

27 Nov. 2014

QP Code :15363

(3 Hours) **[Total Marks : 100**

N. B. : (1) Question No. **1** is **compulsory**.
(2) Attemp any **four** questions out of remaining **six** questions.
(3) **All** questions carry **equal** marks.
(4) Assume suitable data wherever necessary and state them clearly.

1. (a) Explain classification of Discrete time systems. 5
(b) Prove that DFT is orthogonal transform. 5
(c) Explain image fidelity criteria. 5
(d) Unit step signal is a power signal. Justify. 5

2. (a) Check whether the following systems are linar/nonlinar and Time variant/Time invariant. 10
(i) $y(n) = e^{x(n)}$
(ii) $y(n) = n\, x(n)$

(b) Find the Z transform of following signals and sketch ROC. 10
(i) $x(n)=\left(\frac{1}{4}\right)^n u(n)$
(ii) $x(n)=\left(\frac{1}{2}\right)^n u(-n-1)$

3. (a) Explain Decimation is time FFT algorithm with signal flow graph. 10
(b) Determine circular convolution of two sequences 10
$x_1(n) = \{1, 2, 3, 1\}$
$x_2(n) = \{4, 3, 2, 2\}$

4. (a) Explain region based image segmentation techniques. 10
(b) Explain image enhancement techniques in spatial domain. 10

5. (a) Explain various types of redundancies in an image. Specify techniques to remove redundancies. 10
(b) Construct improved gray scale quatization code for given data 10
{100, 110, 124, 124, 130, 200, 210}

6. (a) Explain trimmed average filtering and median filtering with example. 10

(b) Compute DFT of the given image 10

0	1	2	1
1	2	3	2
2	3	4	3
1	2	3	2

7. Write short notes on (any **four**) :– 20
   (a) Hough transform
   (b) Histogram Equalization
   (c) Wiener filter
   (d) Noise models
   (e) Walsh Hadamard Transform.

15/12/2014 EXTRA

BE(Comp)(R) VII S.S.

QP Code :15608

(3 Hours) **[Total Marks : 100]**

N.B. : (1) Question 1 is compulsory.
(2) Attempt any four out of remaining six questions.
(3) Assumptions made should be clearly stated.
(4) Assume suitable data whenever required but justify the same.

1 (a) What is Multilateral Security? 5
(b) Compare Stream and Block encryption algorithms. 5
(c) Distinuish between attack, vulnerability and access control. 5
(d) What is Buffer overflow and incomplete mediation in Software Security? 5

2 The following questions are based on scenario in which encrypted data are passed between Alice and Bob using RSA algorithm. Alice's public key is { 17, 23} and Bob's public key is { 5, 23} Assume that no one knows the private keys but the original owners. 20
(a) Encrypt the message M=7 using Bob's public key.
(b) What should Alice have to do to decrypt the message from Q-2 a?
(c) What would Bob have to do to decrypt the message from Q-2 a?
(d) What is Alice's private key?
(e) What is Bob's private key?

3. (a) Explain how threat precursors are used for Reconnaissance of network. 10
(b) Upon reception of a digital certificate, how one can decide whether to trust that or not. 10

4. (a) Explain Physiological and Behavioral biometric techniques with example. 10
(b) Write short note on Access control List (ACL) and Capabilities. 10

5. (a) What is a firewall? Expalin different types of firewall. 10
(b) Explain various types of port scan. 10

6. (a) What is spoofing? Explain ARP spoofing. 5
(b) What is SQL Injection? Give Example. 5
(c) Compare packet sniffing and packet spoofing. Expalin the session hijacking attack. 10

7. Write short note on (Any **Two**) 20
(a) Compare AES and DES
(b) Explain different Security Mechanisms.
(c) Various ways for Memory and Address Protection

21/11/2014 BE comp Sem VII Elective I - E commerce

Extra.

QP Code : 15291

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. 1 is **compulsory**.
(2) Solve any **four** Questions from remaining **six** questions.

1. (a) Write a note on Rich Internet Application and Web 2.0 **10**
   (b) Explain working of SET in detail. Also explain the advantages of dual signature in SET? **10**

2 (a) What are the key technologies for B2B E-commerce? Explain architectural models of B2B E-commerce **5** **5**
   (b) What do you understand by reverse auction? **5**
   (c) Differentiate between Web Service and Web Site. **5**
   (d) Differentiate between E-commerce and E-business

3. (a) What do you mean by session management? Explain various ways of session management. **10**
   (b) Explain the role and support of E-commerce in the following applications: **10**
   (i) Real estate business (ii) Insurance Sector

4. (a) What is Web Mashup Architecture? **5**
   (b) Explain working of RSS? **5**
   (c) What types of electronic payment systems are required in E-Commerce? Why are there different types of payment systems? Explain the necessary characteristics of each type of payment system and give an example ,each of where it is used **10**

5. (a) Explain revenue models for web portals and virtual communities? **10**
   (b) Explain SOA, How SOA used in E-business, explain it with an example. **10**

6. (a) Describe the strategy used by designers of web sites for getting a page added in search engines, and getting it ranked high for target keywords **5**
   (b) Write note on hadoop? **5**
   (c) Explain in brief the different types of E-commerce from the perspective of the buyer and seller relationship by giving suitable example for each **10**

7 Write short note on :– **20**
   (1) Cloud computing
   (2) Working of Search Engine

LM-Con.:6959-14.

BE/ Comp/ REV) RAI 3/12/2014

Comp VII

QP Code **15421**

(3 Hours) **[Total Marks : 100**

N.B.: (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) Assume **suitable** data wherever **necessary**.

1. (a) Explain Heuristic function with example. **5**
   (b) Explain Robot workspace. **5**
   (c) Describe unsupervised learning with suitable example. **5**
   (d) List and define kinetic parameters. **5**

2. (a) Describe the following sensors – **10**
      (i) Sonar
      (ii) Infrared
   (b) Explain A* algorithm with example. **10**

3. (a) Obtain Inverse kinematic solution for 4-axis SCARA robot. **10**
   (b) Compare different uniformed search strategies. **10**

4. (a) Describe Hill climbing algorithm. What are it's limitations. **10**
   (b) Explain various methods of knowledge representation with example. **10**

5. (a) Define partial order planner. Explain STRIPS representation of planning problem. **10**
   (b) Give steps in designing the reactive behavioral system. **10**

6. (a) What are PEAS descriptors ? Give PEAS discriptors for **10**
      (i) Part-picking Robot
      (ii) WUMPUS world.
   (b) Explain supervised, unsupervised and reinforcement learning with example. **10**

7. Write short note on following (any **four**) :– **20**
   (a) PROLOG
   (b) Belief network
   (c) Forward and inverse kinematics
   (d) Crypt Arithmatic
   (e) GPS
   (f) Uniform and Inform search.
