B.E Comp VII (Rev) System Security

Con. 3121–11. **(REVISED COURSE)** **RK–3360**

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

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) Make **suitable assumption** wherever **necessary** and clearly **justify** them.

1. a) What are the different types of threats? 05

b) What is the difference between symmetric and asymmetric key cryptography? 05

c) Give the differences between stream and block cipher. 05

d) Explain diffusion and confusion. 05

2. a) Explain the information security goals. 10

b) Explain A5/1 stream cipher. 10

3. a) Explain control of access to general objects in operating system. 10

b) What are the properties of cryptographic hash function? Explain the birthday problem. 10

4. a) Explain the Diffie – Hellman key exchange algorithm. 10

b) Write a detailed note on Biometric techniques. 10

5. a) What is the use of Tiger Hash? Explain it in detail. 10

b) What is a firewall ? Explain different types of firewalls. 10

6. a) Explain the different software flaws with examples. 10

b) What is Spoofing? Explain ARP spoofing. 10

7. Write short notes on the following:– 20
a) Session Hijacking
b) SYN Flood
c) CAPTCHA
d) Covert Channel .

B.E. Comp VII (Rev)
Mobile Computing

Con. 3987-11. (REVISED COURSE) **RK-3369**

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

N. B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.
(3) Make **suitable** assumptions wherever **necessary** and clearly **justify** them.

1. (a) What are the main problems of signal propagation ? Why do radio waves not always follow a straight line ? **5**
   (b) How much of the original GSM network does GPRS need ? Which elements of the network performs the data transfer ? **5**
   (c) Compare IEEE 802·11 and Hiper LAN2. **5**
   (d) What are the primary goals of WAP forum efforts and how they effected in initial WAP protocol architecture ? **5**

2. (a) Explain the following with respect to Mobile IP : **14**
      (i) IP packet delivery
      (ii) Agent discovery
      (iii) Registration
      (iv) Tunneling and encapsulation.
   (b) List and explain the applications of ad-hoc networks. **6**

3. (a) Compare and contrast I-TCP, Snooping TCP, and Mobile TCP. **10**
   (b) Explain reactive routing protocols in an ad-hoc network with examples. **10**

4. (a) Draw and explain the UMTS core network together with a 3G RNS and 2G BSS. **10**
   (b) Sketch and explain the functional architecture of a GSM system. **10**

5. (a) Describe the Bluetooth protocol stack with neat diagram. **10**
   (b) How does IEEE 802·11 solve hidden terminal problem ? Explain with necessary diagrams. **10**

6. (a) What are the functions of authentication and encryption in GSM ? How is the system security maintained ? **10**
   (b) What is the use of spread spectrum ? Sketch the block diagram of the transmitter and receiver of DSSS. Explain what each block does and what the signal looks like (in time and/or frequency domains) at each location in the block diagram with an example. **10**

7. Write notes on any **three** of the following :– **20**
   (a) Threats and Security issues in Mobile Computing
   (b) Mobile Operating Systems
   (c) Wireless Broadband (WiMax)
   (d) Wireless Sensor Networks (WSNs).

30|5|11

BE (Comp) VII (Rev)
Robotic & AI

Con. 3361-11. (REVISED COURSE) RK-3357

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.

Q.1 a) Give the classification of robot. [5]

b) What are PEAS descriptors? Give PEAS descriptor for part-picking robot [5]

c) What is uncertainty? What are the reasons of uncertainty? [5]

d) Compare different uninformed search strategies [5]

Q.2 a) What is state space representation? Give state space representation for Four queens problem and water jug puzzle? [10]

b) Write a note on Four axis SCARA robot [10]

Q.3 a) Explain various methods of knowledge representation with example [10]

b)What are the attributes of a sensor? Explain different types of sensors. [10]

Q.4 a) Explain different Matrix path planning methods [10]

b) What is reactive paradigm? List the characteristics of reactive robotic system [10]

Q.5 a) Give and explain IDA* algorithm . [10]

b) What is resolution by refutation? Explain with example. [10]

Q.6 a) Explain in detail the Knowledge based agents [10]

b) Define partial order planner? Explain STRIPS representation of planning problem. [10]

Q.7 Write short note on any two of following ; [20]

a) Agent Environments b) Belief Network

c) PROLOG d) Crypt Arithmetic

BE (Comp) VII (REV)
Digital Signal & Image Processing

Con. 3269–11. (REVISED COURSE) RK–3372

(3 Hours) [Total Marks : 100

Note: 1. Question one is compulsory.
2. Attempt any 4 questions from remaining six questions.
3. Assume suitable data wherever necessary and state it.

Q1. (a) Find the inverse Z- transform of $X(z) = \frac{z^3 - 4z^2 + 5z}{(z-3)(z-1)(z-2)}$

(i) ROC = $|z| > 3$

(ii) ROC = $|z| < 1$

(iii) ROC = $2 < |z| < 3$ 10

(b) Explain the concept of Homomorphic Filter. 10

Q2. (a) Write a note on DCT and its application in Image Compression 10

(b) Name and explain any four zero memory operations 10

Q3. (a) Check whether the following systems are linear or non-linear

(i) $y(n) = n\,x(n)$

(ii) $y(n) = e^{x(n)}$

(iii) $y(n) = x^2(n)$ 10

(b) Illustrate Arithmetic Coding and Decoding 10

Q4. (a) Give masks of 3X3 size for the following and explain its usefulness in image processing

(i) Sobel operator

(ii) Prewitt operator 10

(b) Compute the convolution of $y(n) = x(n) * h(n)$

where $x(n) = \{1, 1, 0, 1, 1\}$ and $h(n) = \{1, -2, -3, 4\}$ 10

↑ ↑

Q5. (a) Can Graph theoretic techniques be used in Image Segmentation ? If so, how? 10

(b) State and prove periodicity and symmetry property of DFT 10

Q6. (a) With a neat block diagram explain the working of a lossy predictive coding 10

(b) Explain the following methods for zooming

(i) Linear Interpolation

(ii) Replication 10

Q7. (a) Write a note on Wavelet transform. 10

(b) Write a note on Image Restoration and its applications. 10

13/6/2011

B.E Comp VII (Rev)
Elective I - E- Commerce.

Con.3865-11. **(REVISED COURSE)** **RK-3363**

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

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from Q. **2** to **7**.

1. (a) Explain how e-commerce in different than E-business. 5
   (b) List out the flaws in internet payment methods. 5
   (c) What is an impact of e-business on the traditional business ? 5
   (d) List the different types of Web-Based Auctions. 5

2. (a) Explain the following with respect to e-business :— 10
      (i) Levels of e-business strategies
      (ii) Consequences of e-business.
   (b) Discuss the architecture of WAP model. 10

3. (a) Explain the important factors to be consider in server side programming. 10
   (b) Highlight the importance of Database connectivity and session tracking techniques in e-commerce. 10

4. (a) Explain the need of SET protocol in e-commerce with its features. 10
   (b) You are launching a new product on web using e-commerce site. Explain the strategies for Sales and Promotion. 10

5. (a) Discuss the success factors to be consider for implementation of e-business strategies. 10
   (b) Compare the different e-business models. 10

6. (a) Explain the complete cycle for online credit card transaction. 10
   (b) Discuss the requirement of e-business along with its challenges. 10

7. Write short notes on (any **two**) :— 20
   (a) WS-Security
   (b) EAI and Web Services
   (c) Enterprise Application Integration
   (d) Web Portals.