Subject Code: H4002/R13

M. Tech –II Semester Regular Examinations, September, 2014

INFORMATION SECURITY

(Common to IT, CS, CS&T and CS&E)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions

All questions carry EQUAL marks

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1. a) Explain various security attacks and Security Mechanisms in detail
   b) Explain ARP attacks and SQL injection in detail

2. Briefly explain different conventional algorithms

3. a) Explain ECC algorithms
   b) What is digital signature? Explain how the public key algorithms' used for obtaining digital signature

4. a) Explain ESP in detail
   b) Explain SMTP in detail

5. a) Explain web security requirements?
   b) Explain SSL header
   c) Explain differences between SSL and TSL

6. a) Describe SNMP
   b) What is a virus? Explain different viruses

7. Explain the following
   a) Cipher modes of operations
   b) Intrusion detection approaches

8. Explain the following
   a) Route table modification
   b) Firewalls
   c) Reference monitor

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Subject Code: H6803/R13

M. Tech –II Semester Regular Examinations, September, 2014

EMBEDDED REAL TIME OPERATING SYSTEMS

(Common to VLSI&ES, ES&VLSI, VLSID&ES, ES&VLSID, DECS, E&CE and DECE)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions

All questions carry EQUAL marks

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1. a) Show the use of semaphores and timer functions for synchronizing the tasks as round robin time-sliced scheduled tasks in a preemptive RTOS?
   b) Give examples of IO subsystems. Explain the use of asynchronous IOs?

2. How do you create, remove, open, close, read, write and IO control a device using RTOS functions? Take an example of a pipe delivering an IO stream from a network device?

3. a) Describe windows CE serial communication functions?
   b) Write the codes for sending and receiving bytes between two Windows CE threads using message queues?

4. a) Explain how the task for reading ports synchronizes with the port device drivers?
   b) Draw the state diagram of ACVM functions?

5. a) With the help of diagrams explain ACC hardware and software architectures?
   b) List the classes for host of smart card used in the Bank ATM?

6. a) Explain the pros and cons of leaving the debugging software in the final embedded system's firmware?
   b) What are the function calls for semaphore management in Linux?

7. a) Write a shell script to find single letter, two letter and three letter words in a text file?
   b) List the function calls used for shared memory and message queues?

8. a) What is an RTLinux module? What is the function calls provided for timer management in RTLinux?
   b) Write a program to display a message periodically in RT Linux?

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Subject Code: H0403/R13

M. Tech –II Semester Regular Examinations, September, 2014

QUALITY ENGINEEING IN MANUFACATURING

(Common to CAD/CAM and AMS)

Time: 3 Hours **Max Marks: 60**

Answer any FIVE questions

All questions carry EQUAL marks

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1. (a) Derive the quadratic loss functions and explain its characteristics.
   (b) How the production design can be considered to improve the quality in production Processes.

2. (a) How the variation in tolerances affect the economics of manufacturing.
   (b) What is need for tolerance design in manufacturing and explain about the larger the better characteristics.

3. (a) Differentiate between Two -way ANOVA and Three- way ANOVA.
   (b) Consider a power supplier circuit used in stereo system for which target voltage is 110V with output voltage falls outside 110±20v then the stereo fails half of the situations and must be repaired. Suppose its cost is Rs. 100 to repair then calculate the average quality loss.

4. Suppose the National Transportation Safety Board (NTSB) wants to examine the safety of compact cars, midsize cars, and full-size cars. It collects a sample of three for each of the treatments (cars types). Using the hypothetical data provided below, test whether the mean pressure applied to the driver's head during a crash test is equal for each types of car. Use α = 5%. ANOVA Table. Find out (i) Total sum of squares (ii) Treatment Sum of Squares (iii) Error Sum of Squares (iv) Total Mean Squares (v) Mean Square Treatment (vi) Mean Square Error (vii) F Value.

	Compact cars	Mid size cars	Full size cars
	643	469	484
	655	427	456
	702	525	402
$\bar{x}$	666.67	473.67	447.33
s	31.18	49.17	41.68

Table

5. Explain the methodology of six sigma concept.

6. (a) Discuss in brief, the choice of factors and their levels in designing an experiment.
   (b). Explain with suitable example, the additive relationship of tolerances.

7. (a). Explain the concept of Taguchi's quality loss function in detail. Give an example.
   (b). Explain the procedure for analyzing an experiment.

8. Write short notes on following:
   (a) Importance of signal to noise ratio
   (b) Percent contributor.
   (c) Tools required for process improvement in six sigma

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