Subject Code: H0401/R13

M. Tech –II Semester Regular/ Supply Examinations, October, 2015

SIMULATION MODELING OF MANUFACTURING SYSTEMS

(Common to CAD/CAM, AMS and AM&MSD)

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

Answer any FIVE questions

All questions carry EQUAL marks

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1. (a) Define model. Classify and explain them.
   (b) Explain point estimation and interval estimation.

2. (a) State and explain the various techniques for increasing the model credibility.
   (b) Obtain statistical procedures for developing credible model.

3. (a) Explain the inverse transform method to generate random variates from a given distribution.
   (b) Derive a formula by which to generate Weibull distributed random variates with mean μ and shape factor α.

4. (a) Explain the different techniques of simulation output analysis.
   (b) With illustrative example describe the output analysis for steady state simulations.

5. Explain about a M/MI1 queues with infinite and finite capacities.

6. (a) Describe about types l & 2 errors.
   (b) Explain the following terms:
      (i) Verification
      (ii) Validation

7. (a) Compare simulation packages with programming languages.
   (b) What is output analysis? State its purpose.

8. Write short notes on following:
   a) New boy paper problem
   b) Welch algorithm
   c) Strong law of large numbers

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Subject Code: H3801/R13

M. Tech –II Semester Regular/ Supply Examinations, October, 2015

CODING THEORY AND APPLICATIONS

(Common to DECS, E&CE, DECE and CS)

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

Answer any FIVE questions

All questions carry EQUAL marks

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1. a) What are different types of errors and explain the control strategies.
   b) State and prove the theorems related to minimum distance of linear block codes.

2. a) Explain encoding and decoding circuits of a systemic (n,k) codes.
   b) Form a parity check matrix for (15,11) hamming code and design a decoder for this.

3. a) List out and prove any five theorems related to cyclic codes..
   b design an encoder and decoder for the (7,4) cyclic code generated by $1+X+X^3$

4. a) Explain the operation of any two error trapping decoder circuit.
   b) Consider (4,3,2) convolutional code. Find the generator sequences of the code. Find the generator matrix G. Find the code word v corresponding to the information sequence u=(110, 011, 110).

5. a) Explain about viterbis decoding algorithm.
   b) Explain the application of sequential decoding of convolutional codes.

6. a) Explain about (2,1,3) Convolutional Encoder
   b) Consider (2,1,2) code with $G(D)=[1+D^2, 1+D+D^2]$. Find the GCD of the of its generator polynomial.

7. a) Determine the generator polynomial for all the primitive BCH codes of length 7.
   b) Explain the syndrome computation circuit for the double error correcting (15,7) BCH Code.

8. Write short notes on the following
   a) Bounds on Burst Error Control
   b) Encoder of the Burst Error control Code
   c) Interleaved Cyclic

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Subject Code: H4001/R13

M. Tech –II Semester Regular/ Supply Examinations, October, 2015

ADVANCED UNIX PROGRAMMING

(Common to IT, 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 about OSI model.
   b) Differentiate between TCP and UDP.

2. Write a TCP client server program for echo message.

3. Explain about the following systems calls with syntax's
   a) connect b) fork c) socket d) accept

4. a) What are the uses of getsockopt and setsockopt system calls? Discuss.
   b) Discuss about IPV6 socket option.

5. a) What is flow control? Explain about the lack of flow control in UDP.
   b) Write shot notes on lost datagram.

6. a) Explain the uname and gethost by name functions
   b) What is byte ordering and manipulation functions? Discuss.

7. write a client server program for echo message using FIFO's

8. Explain about the following terms
   a) Message Queues
   b) RPC
   c) DNS

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Subject Code: H4301/R13

M. Tech –II Semester Regular/ Supply Examinations, October, 2015

SWITCHED MODE POWER CONVERSION

(Common to PE, P&ID, PE&ED, PE&D, EM&D and PE&PS)

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

Answer any FIVE questions

All questions carry EQUAL marks

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1. a). Briefly explain the operating modes of Buck converter and deduce expression for boundary value of inductance to decide operating modes?
   b). When the MOSFETsused in Boost converter are non-ideal components, what are their affects in the converter operation?

2. a) Draw the schematic diagram of full wave zero current switching buck converter and explain its operation?
   b) A parallel resonant dc-dc converter has the following parameters
   $V_s = 100\,V,\ L_r = 8\,\mu H,\ C_r = 0.32\,\mu F,\ R_L = 10\,\Omega,\ f_s = 120\,kHz$
   Determine the output voltage of the converter. Assume the output filter components L_0 and C_0 produce the ripple free output current and voltage.

3. Explain the operation of quasi resonant ZVS Boost converter and deduce the expression for dc gain?

4. Evaluate
   (i) Operating mode (CCM or DCM)
   (ii) Operating duty ratio and
   (iii) The primary current wave shape and its peak value of the following 10 W Flyback converter shown in Fig. 1

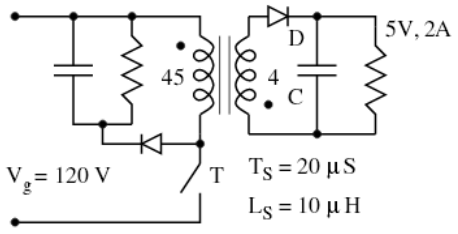

Fig. 1 Flyback converter

5. a) What are the closed loop control requirements in switch mode converter explain in brief?
   b) What are the design considerations of the transformer in the switch mode converter?

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6. Obtain the steady state solution of the non-ideal boost converter by using its average model?

7. Obtain the gain and phase plot of the non-ideal boost converter from its transfer function?

8. Explain in brief a) push-pull converter operation b) choice of the switching frequency of isolated switch mode converters

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