

Hall Ticket No:

Question Paper Code: 14ENG103-M2

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

B.Tech III-I - MOOCS (2015-Batch) (R14) Supplementary End Semester Examinations - Jan 2019

SOFT SKILLS

(Common to ALL)

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

Q.1(A) Explain the process of Effective Communication 12M

OR

Q.1(B) Explain Active Listening and its importance. 12M

Q.2(A) Illustrate the barriers involved in working as a team 12M

OR

Q.2(B) Explain the skills a good leader should possess. 12M

Q.3(A) What are the different time management techniques? 12M

OR

Q.3(B) Explain the objectives and skills tested in a Group Discussion. 12M

Q.4(A) What are the different skills required in handling an interview? 12M

OR

Q.4(B) State the characteristics of Goal Setting in details. 12M

Q.5(A) Explain Dining Etiquette. 12M

OR

Q.5(B) Write a note on Email Etiquette. 12M

*** END***

Hall Ticket No:

Question Paper Code: 14EEE402-M1

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

B.Tech III –I - MOOCS (2015-Batch) (R14) Supplementary End Semester Examinations - Jan 2019

MODERN DIGITAL COMMUNICATION TECHNIQUES

(Common to ALL)

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

- Q.1
- i. Define modulation 1M
 - ii. What is Amplitude Shift keying? 1M
 - iii. Define Sampling Theorem. 1M
 - iv. List the different types of communication channels. 1M
 - v. MSK stands for _____ 1M
 - vi. AWGN stands for _____ 1M
 - vii. What is Minimum Distance Detection? 1M
 - viii. What is the importance of Chernoff Bound? 1M
 - ix. Draw the block diagram of Channel Models. 1M
 - x. What is Band Limited Channel? 1M
-
- Q.2(A) Discuss the types of Analog Modulation techniques in detail. 10M
- OR**
- Q.2(B) Explain in detail about Digital communication system with a neat block diagram. 10M
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- Q.3(A) Write note on Phase Shift Keying (PSK). 10M
- OR**
- Q.3(B) Explain in detail about QAM. 10M
-
- Q.4(A) Brief explain about Frequency Shift Keying (FSK) 10M
- OR**
- Q.4(B) Explain in detail about different types of modulation techniques. 10M
-
- Q.5(A) Explain about the optimum receivers in AWGN Channel. 10M
- OR**
- Q.5(B) Derive in detail about decision directed carrier phase recovery of modulated carrier 10M
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- Q.6(A) Explain in detail about Decision directed (Feedback) PLL for PAM (DFPLL). 10M
- OR**
- Q.6(B) Explain in detail about Early Late gate synchronizer. 10M

*** END ***

Hall Ticket No:

Question Paper Code: 14EEE401-M1

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

B.Tech III –I - MOOCS (2015-Batch) (R14) Supplementary End Semester Examinations - Jan 2019

CONTROL ENGINEERING

(Common to ALL)

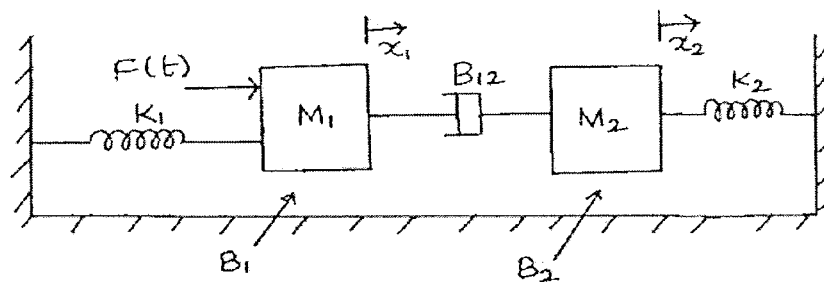
Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

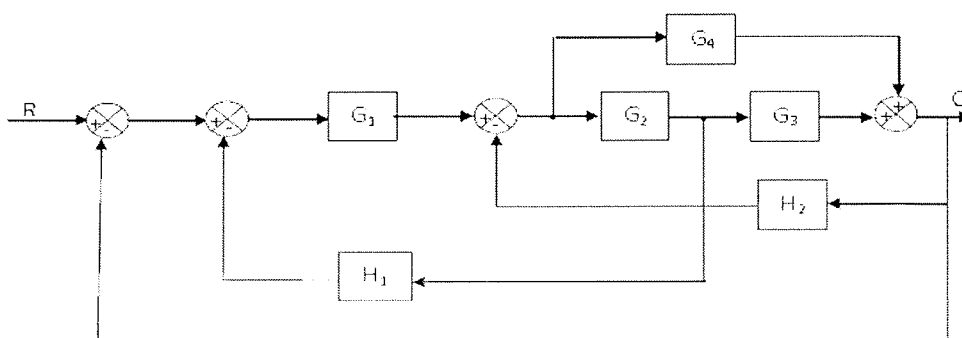
- Q.1
- | | | |
|--------|--|----|
| (i) | Write note on transfer function. | 1M |
| (ii) | Define Mason’s gain formula. | 1M |
| (iii) | What are the standard test signals? | 1M |
| (iv) | Write note on Peak time and Settling time. | 1M |
| (v) | Define Gain Margin. | 1M |
| (vi) | Write note on Frequency domain specification. | 1M |
| (vii) | Write note on breakaway point and breakin point. | 1M |
| (viii) | What are the effects of adding poles? | 1M |
| (xi) | Define state model. | 1M |
| (x) | Write note on state transition matrix. | 1M |

- Q.2(A) Write the differential equation governing the system for the given system and find 10M
a)Force-Voltage b)Force-Current Analogues.



OR

- Q.2(B) Convert given block diagram in to signal flow graph and find overall transfer function 10M
using Masons gain formula.



Q.3(A) Derive the expression for 2nd order under damped system with unit step as input. 10M

OR

Q.3(B) What is steady state error? Derive the expression for Static and generalized error coefficients. 10M

Q.4(A) For the given open loop system draw Bode plot and find Gain Margin and Phase Margin. 10M

$$G(s) = \frac{75(1 + 0.2s)}{s(s^2 + 16s + 100)}$$

OR

Q.4(B) Plot polar graph for the given system. 10M

$$G(s)H(s) = \frac{500}{s(s+6)(s+9)}$$

Q.5(A) For Routh array for the given characteristics equation and also comments on the roots. 10M
 $s^6 + 2s^5 + 8s^4 + 12s^3 + 20s^2 + 16s + 16 = 0$

OR

Q.5(B) Sketch root locus for different values of for the given system. 10M

$$G(s) = \frac{K}{s(s+2)(s+4)}$$

Q.6(A) Obtain the time response of the system given below $\dot{X} = AX$ where $A = \begin{bmatrix} 0 & 1 \\ -2 & 0 \end{bmatrix}$; 10M

given

$$X(0) = \begin{bmatrix} 1 & 1 \end{bmatrix}^T \text{ and } Y = \begin{bmatrix} 1 & -1 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$$

OR

Q.6(B) Determine transfer matrix for the system for the given system below 10M

$$\begin{bmatrix} \dot{x}_1 \\ \dot{x}_2 \end{bmatrix} = \begin{bmatrix} 0 & 3 \\ -2 & -5 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix} u(t) \text{ and } y = \begin{bmatrix} 2 & 1 \\ 1 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$$

*** END***

Hall Ticket No:

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Question Paper Code: 14MAT401-M1

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

B.Tech III –I - MOOCS (2015-Batch) (R14) Supplementary End Semester Examinations - Jan 2019

NUMERICAL ANALYSIS

(Common to ALL)

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.
All parts of Q.no 1 are compulsory. In Q.no 2 to 6 answer either A or B only

- Q.1
- i. Form the difference table for the following table 1M
- | | | | | | |
|------------|----|-------|---|-------|---|
| x | -2 | -1 | 0 | 1 | 2 |
| $y = f(x)$ | 2 | -0.25 | 0 | -0.25 | 2 |
- ii. Write the Newton's Backward difference formula 1M
- iii. Illustrate Euler's method $y(0.1)$ for $y' = -y$ with condition $y(0) = 1$ and $h = 0.05$ 1M
- iv. Define modified Euler formula. 1M
- v. Define Simpson's 1/3 rule. 1M
- vi. Illustrate the formula for method of false position 1M
- vii. Find the eigen values of the matrix $A = \begin{bmatrix} 4 & 0 \\ 0 & 2 \end{bmatrix}$ 1M
- viii. Define a diagonal matrix 1M
- ix. Define wave equation. 1M
- x. When the general second order linear partial differential equation is said to be parabolic 1M

- Q.2(A) Obtain $f(3)$ from the following data using Divided difference formula 10M

x	1.0	2.7	3.2	4.8	5.6
$f(x)$	14.2	17.8	22	38.3	51.7

OR

- Q.2(B) Consider the following data 10M

x	0	1	2	3	4	5	6
$f(x)$	6.9897	7.4036	7.7815	8.1291	8.4510	8.7506	9.0309

Find the first and second order derivatives at $x = 1$ and $x = 6$

- Q.3(A) Use the data in the table to find the integral between $x = 1.0$ and $x = 1.8$ using the trapezoidal rule with (a) $h = 0.1$ (b) $h = 0.2$ (c) $h = 0.4$ 10M

x	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
$f(x)$	1.543	1.669	1.811	1.971	2.151	2.352	2.577	2.828	3.107

OR

- Q.3(B) Evaluate $\int_{0.2}^{2.6} e^{-x} dx$ by four term Gaussian formula 10M

Q.4(A) Determine y at $x = 0.6$ for $\frac{dy}{dx} = \frac{1}{x+y}$, $y(0) = 2$ using fourth order Runge-Kutta method with $h = 0.2$. 10M

OR

Q.4(B) Solve $y' = \sin x + y$, $y(0) = 2$ by the modified Euler method to get $y(0.1)$ and $y(0.2)$ 10M

Q.5(A) Find an approximate root of the equation $x^3 - 3x - 5 = 0$ by false position method that lies between 2 and 3. 10M

OR

Q.5(B) Find a root of $f(x) = 3x + \sin x - e^x$ by Newton's method 10M

Q.6(A) Solve the system of simultaneous algebraic linear equations $6x_1 - 2x_2 + x_3 = 11$; $x_1 + 2x_2 - 5x_3 = -1$; $-2x_1 + 7x_2 + 2x_3 = 5$ by Gauss-Seidel method 10M

OR

Q.6(B) Find the largest eigen value and eigenvector of the matrix $A = \begin{bmatrix} 3 & -1 & 0 \\ -2 & 4 & -3 \\ 0 & -1 & 1 \end{bmatrix}$ by the power method. 10M

*** END***