Code No: R05321001 **R05** **Set No. 2**

III B.Tech II Semester Examinations,December 2010
AUTOMATION OF INDUSTRIAL PROCESSORS
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) A discrete system is having the following transfer function,
T(Z) = $(Z^2 + 4Z + 3)/ (Z^3 + 3Z^2 + 2Z)$
Obtain the discrete state model and discuss about its controllability and observability
   (b) Give the structure of a self tuning regulator(STR) and explain how the controller parameters, are set [8+8]
2. What is artificial neural network (ANN)? Discuss its structure with neat diagram. [4+12]
3. Expalin any two types of feed forward controller (FFC) algorithms. [8+8]
4. (a) What is Dahlin's Algorithm? Explain Dahlin's Algorithm for a first order system without delay.
   (b) Give the design steps of discrete controller based on different algorithms. [10+6]
5. What is predictive control? Discuss with the help of block diagrams different types of popular predictive control systems used in industrial applications. [4+12]
6. (a) What are the different programming methods used for programming PLCS.
   (b) Develop a PLC program for operating Elavator using ladder diagram and explain the same, with the help of a flow chart. [4+12]
7. (a) Write a short notes on
      i. Artificial Intelligence based system.
      ii. Expert system controller.
   (b) Discuss the hierarchy of DCS. [10+6]
8. (a) Describe the principle of a 'Smart Transmitter' what and where does it transmit discus some aspects of its developments in recent years?
   (b) Draw a block diagram to show how sensors interact with the automated manufacturing process? Consider your own example. [8+8]

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Code No: R05321001 **R05** **Set No. 4**

III B.Tech II Semester Examinations,December 2010
AUTOMATION OF INDUSTRIAL PROCESSORS
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Describe the principle of a 'Smart Transmitter' what and where does it transmit discus some aspects of its developments in recent years?
   (b) Draw a block diagram to show how sensors interact with the automated manufacturing process? Consider your own example. [8+8]
2. (a) What are the different programming methods used for programming PLCS.
   (b) Develop a PLC program for operating Elavator using ladder diagram and explain the same, with the help of a flow chart. [4+12]
3. What is artificial neural network (ANN)? Discuss its structure with neat diagram. [4+12]
4. (a) A discrete system is having the following transfer function,
   T(Z) = $(Z^2 + 4Z + 3)/(Z^3 + 3Z^2 + 2Z)$
   Obtain the discrete state model and discuss about its controllability and observability
   (b) Give the structure of a self tuning regulator(STR) and explain how the controller parameters, are set [8+8]
5. (a) What is Dahlin's Algorithm? Explain Dahlin's Algorithm for a first order system without delay.
   (b) Give the design steps of discrete controller based on different algorithms. [10+6]
6. Expalin any two types of feed forward controller (FFC) algorithms. [8+8]
7. What is predictive control? Discuss with the help of block diagrams different types of popular predictive control systems used in industrial applications. [4+12]
8. (a) Write a short notes on
      i. Artificial Intelligence based system.
      ii. Expert system controller.
   (b) Discuss the hierarchy of DCS. [10+6]

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Code No: R05321001 **R05** **Set No. 1**

III B.Tech II Semester Examinations,December 2010
AUTOMATION OF INDUSTRIAL PROCESSORS
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What is predictive control? Discuss with the help of block diagrams different types of popular predictive control systems used in industrial applications. [4+12]

2. (a) What is Dahlin's Algorithm? Explain Dahlin's Algorithm for a first order system without delay.
   (b) Give the design steps of discrete controller based on different algorithms. [10+6]

3. (a) A discrete system is having the following transfer function,
   T(Z) = $(Z^2 + 4Z + 3)/ (Z^3 + 3Z^2 + 2Z)$
   Obtain the discrete state model and discuss about its controllability and observability
   (b) Give the structure of a self tuning regulator(STR) and explain how the controller parameters, are set [8+8]

4. Expalin any two types of feed forward controller (FFC) algorithms. [8+8]

5. What is artificial neural network (ANN)? Discuss its structure with neat diagram. [4+12]

6. (a) Write a short notes on
      i. Artificial Intelligence based system.
      ii. Expert system controller.
   (b) Discuss the hierarchy of DCS. [10+6]

7. (a) What are the different programming methods used for programming PLCS.
   (b) Develop a PLC program for operating Elavator using ladder diagram and explain the same, with the help of a flow chart. [4+12]

8. (a) Describe the principle of a 'Smart Transmitter' what and where does it transmit discus some aspects of its developments in recent years?
   (b) Draw a block diagram to show how sensors interact with the automated manufacturing process? Consider your own example. [8+8]

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Code No: R05321001 **R05** **Set No. 3**

III B.Tech II Semester Examinations,December 2010
AUTOMATION OF INDUSTRIAL PROCESSORS
Electronics And Instrumentation Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Describe the principle of a 'Smart Transmitter' what and where does it transmit discus some aspects of its developments in recent years?
   (b) Draw a block diagram to show how sensors interact with the automated manufacturing process? Consider your own example. [8+8]
2. (a) A discrete system is having the following transfer function,
   T(Z) = $(Z^2 + 4Z + 3)/ (Z^3 + 3Z^2 + 2Z)$
   Obtain the discrete state model and discuss about its controllability and observability
   (b) Give the structure of a self tuning regulator(STR) and explain how the controller parameters, are set [8+8]
3. Expalin any two types of feed forward controller (FFC) algorithms. [8+8]
4. What is predictive control? Discuss with the help of block diagrams different types of popular predictive control systems used in industrial applications. [4+12]
5. What is artificial neural network (ANN)? Discuss its structure with neat diagram. [4+12]
6. (a) What are the different programming methods used for programming PLCS.
   (b) Develop a PLC program for operating Elavator using ladder diagram and explain the same, with the help of a flow chart. [4+12]
7. (a) What is Dahlin's Algorithm? Explain Dahlin's Algorithm for a first order system without delay.
   (b) Give the design steps of discrete controller based on different algorithms. [10+6]
8. (a) Write a short notes on
      i. Artificial Intelligence based system.
      ii. Expert system controller.
   (b) Discuss the hierarchy of DCS. [10+6]

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