BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VI ELECTRICAL : WINTER- 2022
SUBJECT : MODERN CONTROL SYSTEMS

Day : Monday | Time : 10:00 AM-01:00 PM

Date : 28-11-2022 | **W-13328-2022** | Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use suitable data **WHEREVER** necessary.
4) Use **non-programmable** calculator.

Q.1 Explain state variable representation using Physical Variables. **[10]**

OR

Q.1 Explain state variable representation using Phase Variables. **[10]**

Q.2 Explain Laplace Transform Method of determination of State Transition Matrix. **[10]**

OR

Q.2 Explain Caley Hamilton Theorem Method of State Transition Matrix. **[10]**

Q.3 Explain with figure in detail different types of Non-Linearities in control system. **[10]**

OR

Q.3 Describe peculiar behavior of non-linear system response. **[10]**

Q.4 Explain with block diagram elements of discrete Data System. State the merits of discrete system. **[10]**

OR

Q.4 Explain the following **[10]**

a) Sampling **b)** Selection of Sampling Period

Q.5 Explain Bilinear transformation. Describe stability in Z-plane. **[10]**

OR

Q.5 Explain Jury's test. Describe Routh's criteria. **[10]**

Q.6 Write short notes on following:

a) Artificial Neural Network (ANN) **[05]**

b) Algorithm and Learning Architecture for ANN **[05]**

OR

Q.6 Write applications of following:

a) Adaptive Control System **[05]**

b) Robust control System **[05]**

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