

T.E.(INSTRUMENTATION)(SEM VI) (CBSGS) / DEC-2019 /03 .12 .2019

(3 Hours)



[Total Marks: 80]

- N.B:
- (1) Question No.1 is **compulsory**.
 - (2) Answer any **three** questions from Question Nos. 2 to 6.
 - (3) Assume suitable data if necessary.
- 1 Answer any FIVE of the following questions:-
 - (a) Draw and explain the block diagram of process control. 4
 - (b) Explain Dead Time. Why dead time systems are difficult to control? 4
 - (c) Discuss types of variables associated with process control. 4
 - (d) State significance of continuous control actions. 4
 - (e) Justify the need of Adaptive control? 4
 - (f) Explain in brief relative gain analysis (RGA). 4
 - 2
 - (a) Compare pneumatic and electronic PID controller. 10
 - (b) What is inverse response behavior? Explain how to compensate inverse response behavior of a chemical processes. 10
 - 3
 - (a) Discuss various controller modes and explain working of ON/OFF controller. 10
 - (b) Explain block diagram analysis for MIMO system. 10
 - 4
 - (a) Explain advantages and disadvantages of feedback/feed forward control strategy. 10
 - (b) Explain dynamic behavior of Second order systems with suitable sketches. 10
 - 5
 - (a) Why tuning of controller is required? Explain process reaction curve method for tuning. 10
 - (b) Explain with a neat sketch cascade control scheme for CSTR. 10
 - 6 Write Short Notes on :
 - (a) PLC. 05
 - (b) Proportional Band and Offset. 05
 - (c) Ratio control scheme. 05
 - (d) Interacting System & Non Interacting system. 05