

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fourth Semester B.Tech Degree (S,FE) Examination August 2021 (2015 Scheme)

**Course Code: MR202****Course Name: SENSORS AND ACTUATORS**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions. Each question carries 5 marks*

- 1 Defend the uses of filters in hydraulic system. (5)
- 2 Evaluate the stages of air treatment in pneumatic system. (5)
- 3 Draw the graphical representation of
a) 4/2 -poppet valve b) Pilot operated valve (5)
- 4 criticize the working of an impact cylinder with neat figure. (5)
- 5 Examine the working of fail up actuators. (5)
- 6 Explain proportional pneumatic control. (5)
- 7 Demonstrate the working of Stepping motor in NC system. (5)
- 8 Illustrate tachogenerators with sketch. (5)

PART B*Answer any three questions. Each question carries 10 marks*

- 9 Employ the working of a piston pump with stationary cam. Draw a neat sketch. (10)
- 10 Conclude the working of deliquescent driers with neat sketch. (10)
- 11 Determine the working of pilot operated 3/2 valve with neat figure. (10)
- 12 Distinguish Spool valves with neat figure. (10)
- 13 Differentiate the different type of seals used in hydraulic system. (10)

PART C*Answer any two questions. Each question carries 15 marks*

- 14 a) Employ volume booster with neat figure. (8)
b) Explain force balance principle. (7)
- 15 Evaluate the working of a I-P Converter with neat figure. (15)
- 16 Distinguish between encoders and resolvers with essential diagrams. (15)
- 17 a) Judge backpressure sensor and express its features. (8)
b) Elucidate cone jet proximity sensor. (7)