

V.P & R.P.T.P. SCIENCE, V.V.NAGAR

Internal Exam

B.Sc. (VthSEM.) INSTRUMENTATION (Voc.)

DATE: 03/10/2018

SUB: US05CINV03

TIME:10:00 am to 12:00 pm

MARKS-50

- Q-1 Choose correct answer** [08]
- Which type of the following is not a type of timing relay?
(A) Latching Relay (C) OFF- delay Relay
(B) ON delay Relay (D) Period ON-OFF
 - Contactors and Control relay are _____ devices provides control signals and the electrical isolation between the commanded electrical circuits?
(A) Control (C) Amplifiers
(B) Switching (D) none of the above
 - The disadvantage of Stepper motor is _____.
(A) Precise Monitoring (C) Precise Positioning
(B) Control at High Speed (D) None of above
 - Servo Motor is control element which should have linear _____.
(A) Speed (C) Speed control
(B) Torque (D) Speed torque Characteristics
 - Servo Mechanisms are generally used to control _____ from its source of control.
(A) Proximity (C) opposite
(B) feedback (D) remotely
 - The minimum controllable flow is that value of flow which tends to
(A) slight opening of valve (C) loose control valve
(B) completely closed valve (D) none of the above
 - Three pipeline connections provide installation of
(A) single port valve (C) three way valve
(B) balanced port valve (D) balanced port valve
 - Electromechanical Actuators are consists of
(A) electric motors (C) both A & B
(B) Mechanical Gear trains (D) None of above
- Q-2 Short answer type question. (any Five)** [10]
- State necessary features of Contactors.
 - State and draw relay logic with computer and NEMA standard.
 - What is working principle of Solenoid? List different solenoid types.
 - State advantages and disadvantages of Stepper motor.
 - Explain in brief velocity servo loop.
 - Explain SYNCHRO torque transmitter in brief.
 - Give the classification of Control Valves.
 - What is factor Cv? Show it relation between flow rate, pressure drop and specific gravity of fluid.
- Q.3** With the help of necessary diagram explain the working magnetic motor starter. [08]
- OR**
- Q.3** Write note on Electromagnetic relay. [08]
- Q.4** Explain the operation of basic servo system [08]
- OR**
- Q.4** Explain theory of operation of Synchros with necessary diagrams. [08]
- Q.5** Explain different types of characteristics of controlvalves. [08]
- OR**
- Q.5(a)** Write note on variable Reluctance Stepper motor. [04]
- Q.5(b)** Explain torque – angle and torque- speed characteristic of Stepper motor. [04]
- Q.6** Explain Rotary valve Actuators with its different type in details. [08]
- OR**
- Q.6** Write note on Diaphragm control valve with respective diagram. [08]