6E6066

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B. Tech. VI Sem. (Main & Back) Exam., April/May-2016
Electronic Inst. & Control Engineer
6EI6.1A Control System Components

Time: 3 Hours **Maximum Marks: 80**

Min. Passing Marks (Main & Back): 26

Instructions to Candidates:-

*Attempt any **five questions,** selecting **one question** from **each unit.** All Questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.*

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination.

1. NIL 2. NIL

UNIT-I

Q.1 (a) Explain the specifications of pressure switch with applications. [8]

(b) Explain the working of hermetically sealed relay with suitable diagram. [8]

 OR

Q.1 (a) Explain the specifications of flow switch with applications. [8]

(b) Explain the working of electromechanical relay with their merits & demerits. [8]

UNIT-II

Q.2 (a) Explain the following with applications:- [8]

(i) Direction controlled valves

(ii) Time delay valves

(b) Explain the working of filter regulator lubricator with suitable diagram. [8]

OR

Q.2 (a) Explain the following with applications:- [8]

(i) Double rod cylinder

(ii) Rotary cylinder

(b) Explain the working of sequencing pneumatic circuits with merits & demerits. [8]

UNIT-III

Q.3 (a) Explain the DC motor control using pulse width modulation with neat sketch and characteristics. [8]

(b) Discus about the shunt wound compound DC motor. Explain its characteristics, merits & demerits also. [8]

OR

Q.3 (a) Explain the DC motor control using analog drive with applications, merits & demerits. [8]

(b) Explain and draw the torque – speed characteristics of DC motor. Discuss the Brushless DC motors also. [8]

UNIT-IV

Q.4 (a) Explain the working and applications of universal motors. Discuss its merits and demerits also. [8]

(b) Explain the block diagram of the vector control of AC induction motors. Discuss its characteristics, merits and demerits also. [8]

OR

Q.4 Explain the following with suitable diagrams:-

(a) Variable speed control of AC motors [8]

(b) Variable frequency drives. [8]

UNIT-V

Q.5 Write short notes on the following:-

(a) Variable reluctance stepper motors [8]

(b) Ladder diagram programming of PLC. [8]

OR

Q.5 (a) Explain the working and applications of programmable logic controllers and networks. [8]

(b) Explain the techniques of improving torque at higher stepping rates of stepper motor. [8]
