CT Inst. of Engg.

Roll No. [ ][ ][ ][ ][ ][ ][ ][ ]   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (ME) (Sem.–6)
Subject Code : PE-408
B.Tech. (IE) (Sem.–6)   (2008 and Onward Batch)
Subject Code : PE-408/IE-322

INDUSTRIAL AUTOMATION & ROBOTICS

Paper ID : [A0866]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. **Write briefly :**

   (a) Differentiate between fixed and programmable automation.

   (b) Draw standard symbols for

   (i) Unloading Valve

   (ii) 4/3 spring centered, lever operated DCV.

   (c) Differentiate between meter-in and meter-out hydraulic circuits.

   (d) Differentiate between pneumatics & Fluidics.

   (e) Differentiate between continuous and dis-continuous transfer devices on the basis of operation.

   (f) Draw line diagram of a Robot wrist and show the basic motions associated with it9+.

   (g) Explain a basic pneumatic circuit for direct co pneumatic cylinder.

   (h) Explain how vane pumps can be balanced.

   (i) Differentiate between active and passive orient

   (j) Draw figure of a Polar coordinate Robot & ex in it.

SECTION-B

2. Describe the working of a swash plate type axi sketch.

3. Explain the working of a sequence valve with t circuit.

4. Explain the functioning of a Time delay valve in a p

5. Explain the working of tactile array sensor used in

6. Explain the working of a Centrifugal Hopper feede

SECTION-C

7. (a) Explain the working of a pressure compensa with a sketch.

   (b) Explain the advantages and disadvantages of au

8. A Robot is to be used for spot welding of autom Select the robot to be used and explain the Geo type of drive etc. of the selected robot.

9. (a) Explain the working of a PLC with a block diag

   (b) Describe the difference between a pressure reli valve.

[N- 2-692   ]   [N- 2-692   ]