

**INDUSTRIAL AUTOMATION
3K4-IEA-17**

Time : 3 hrs.

M.M : 100

Note :—

1. Part 'A' may be attempted in first 6 pages of Answer Sheet.
भाग 'क' के सभी उत्तर, उत्तर-पुस्तिका के प्रथम छः पृष्ठों में ही करने हैं।
2. Part 'B' in rest of the Sheets of Answer Sheet.
भाग 'ख' के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।
3. Answers may be given in English or Hindi.
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

PART - 'A'**1. Attempt any ten questions :****(10x2=20)**

- (a) Draw the block diagram of Electric Drive.
- (b) Define CNC.
- (c) What is RS 232 standard?
- (d) What is slip sensor?
- (e) What is vision system?
- (f) Define FMS.
- (g) What is ladder logic?
- (h) Define part programming.
- (i) What is electric braking?
- (j) What is Pick& place robot?
- (k) What is stepper motor?
- (l) Why layout is required?
- (m) What is the basic principle of D.C. Motor?
- (n) What is the concept of smart sensors?

2. Attempt any five Questions :**(5x4=20)**

- (a) Write down the advantages of CAD system?
- (b) How do you select drive for the cement Industry?
- (c) Explain the components of FMS and its layout?
- (d) Explain in brief robot part programming methods?
- (e) Explain in detail about characteristics of 3-phase induction motor?
- (f) How sensors and vision system works in the robots?

- (g) State the effect of starting on power supply, load and motor itself.
- (h) Explain in detail about classification of robots.

PART- B

Attempt any three Questions :

(3x20=60)

- 3. (a) Is Robotics an automotion? What are the components of FMS and its layout?
(b) Give brief idea of the following about CAD interfacing, synchronous, RS485 and line driver.
- 4. (a) Explain the block diagram of overall PLC system.
(b) Compare PLC and PC.
- 5. (a) Discuss various methods of starting electrical motors?
(b) Describe the regenerative braking of 3-phase induction motor.
- 6. (a) Explain the one application of electric drives in
 - (i) Paper Mill
 - (ii) Petro-chemical Industry.