



SF-7761

B. E. - IV (Electrical) (Sem. - VIII) Examination
May/June - 2011
Industrial Instrumentation
(Elective - I)

Time : 3 Hours]

[Total Marks : 100

Instruction :

(1)

नीचे दृष्टाविक निशानीयाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. - 4 (ELECTRICAL) (SEM. - 8)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="INDUSTRIAL INSTRUMENTATION"/>	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="7"/> <input type="text" value="6"/> <input type="text" value="1"/>	<input type="text"/>
Section No. (1, 2,.....): <input type="text" value="Nil"/>	<input type="text"/>
	Student's Signature

- 1 (a) Answer the following questions :
- (i) What is Plank's Law ? Give formula for Radiation. 2
 - (ii) Which materials are Used for thermocouple ? 2
 - (iii) Range of optical Pyrometer is _____ . 1
 - (iv) State the principle of pressure measuring device. 2
 - (v) Load cell used for _____ . 1
 - (vi) What is Seeback effect ? 2
- (b) Explain Pulsed Thermocouple Technique. 5
- (c) Discuss Cantilever type load cells. 5
- 2 (a) Explain pH measurement. 8
- (b) Un chopped (D.C) broadband radiation thermometer. 8
- OR
- 2 (a) Explain working of electronic weighing system with diagram. 8
- (b) Write brief note on vibration measurement. 8

- 3** Attempt any **two** : **14**
- (i) Eddy current transducer for thickness measurement.
 - (ii) Electrical Actuator.
 - (iii) Explain in brief different conductivity cells used in gas analyser.
 - (iv) Write short note on 'Pressductor'.
- 4** (a) Answer the following questions :
- (i) Draw PLC ladder diagram for NAND operation of two inputs. **1**
 - (ii) Explain process scanning in PLCs. **2**
 - (iii) List types of memory. Which is required for PLC ? **2**
 - (iv) Explain interlocking logic used in PLC ladder diagram. **2**
 - (v) What is 'program scan' in PLC ? **1**
 - (vi) The word SPDT stands for _____ . **1**
 - (vii) Most of CPU's of PLCs work on _____ volt DC. **1**
- (b) Explain registers in PLCs. **10**
- 5** (a) Explain the forward and reverse operation of motor. Draw PLC ladder diagram also. **7**
- (b) Output module of PLCs. **7**
- OR**
- 5** (a) Draw PLC ladder diagram for a motor with a START (NO) and STOP push buttons (NC) with overload relay which operates in case of high temperature and stops motor. To glow red light for overload and green light for 'RUN' condition. **7**
- (b) Explain drawbacks/challenges against PLC systems. **7**
- 6** Attempt any **two** : **16**
- (i) Explain functional levels of plant automation.
 - (ii) Explain with the help of waveform and examples the function of on Delay timer and OFF delay timer in ladder diagram.
 - (iii) PLC architecture.