



SF-7783

B. E. IV (Sem. VIII) (IC) Examination
May / June – 2011
Instrumentation System & Interfacing

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य कभवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
B. E. 4 (Sem. 8) (IC)

Name of the Subject :
Instrumentation System & Interfacing

Subject Code No. : 7 7 8 3 Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

- (2) Answers to each section must be written in separate answer books.
(3) Figure to the right indicate maximum marks.
(4) Draw neat figure wherever required.

SECTION - I

- 1 (a) (i) Define the term current and charge with mathematical quations. 2
(ii) State True or False : 1
Unwanted capacitive pick up is increased as input impedance of instrument increases.
(iii) Explain RMS value 2
(iv) Explain Coaxial cable 2
(v) List out different types of switches. 1
(vi) Difference between closed Relay and reed Relay. 2
(b) Explain Input impedance and Output impedance. 8
- 2 (a) Explain electrically interference and its elimination technique. 8
(b) Explain different types of connectors and connection use in application. 8

OR

- (a) Discuss near field and far field external interference effect and explain electromagnetic interference. 8

- (b) Explain ground loop interference and its reduction techniques. 8
- 3 Explain following : (any two) : 16
- (i) Safety rules for electric shock
- (ii) Explain input guarding technique to reduce ground loop interference
- (iii) Explain Common-mode noise voltage.

SECTION - II

- 4 (a) Explain 20 mA current loop. 10
- Explain :
- (i) Aperture time
- (ii) Acquisition time
- (b) Define the following : 8
- (i) Settling time
- (ii) Transfer accuracy
- (iii) Throughput rate
- (iv) Crosstalk
- (v) Voltage range
- (vi) Handshaking
- (vii) Half duplex signal transmission
- (viii) Full duplex signal transmission
- (ix) Droop
- (x) Feed through.
- 5 (a) Discuss HART protocol. How does HART protocol communication differ from other conventional interfacing techniques ? 10
- (b) CAMAC interface. 6

OR

- (a) Discuss IEEE 488 bus standard with its characteristics. 10
- (b) Explain analog signal transmission. 6
- 6 Attempt any two : 16
- (a) Multiplexer
- (b) (i) Long distance transmission modem
- (ii) UART
- (c) Explain data line monitor in detail.