Total No. of Questions : 12]

SEAT No. :

P1975

[Total No. of Pages : 4

[5254]-84

B.E. (Electronics) (Semester -I)

ADVANCED MEASUREMENT SYSTEMS (Elective -I)

(2008 Pattern)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer-books.***
2) ***Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, from Section-I and Q7 or Q8 or Q9 or Q10, Q11 or Q12 from Section-II.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) State and explain Electrical Validation and debug with MSO series Oscilloscopes. **[8]**

b) Explain in detail signal integrity design issues. **[8]**

OR

Q2) a) Explain Arbitrary Waveform generator and its typical applications. **[8]**

b) Explain testing challenges and solutions for signal integrity issues. **[8]**

Q3) a) Describe working of Logic Analyzer with basic block diagram. **[8]**

b) What is meant by spectrum analysis? List types of spectrum analyzer. What are the applications of spectrum analyzer? What are its limitations? **[8]**

OR

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Q4) a) Draw and explain block diagram of network analyzer and state its applications. **[8]**

b) Explain with necessary diagram different DSO trigger methods. **[8]**

Q5) a) Explain the interfacing techniques for touch screen and thermal printer. **[8]**

b) Write a short note on: (any two) **[10]**

i) USB standard

ii) I2C standard

iii) PCI Express

OR

Q6) Write short notes on **[18]**

i) Role of CAN bus in embedded system

ii) GSM modem and AT command

iii) Role of RF modules in embedded system.

SECTION - II

Q7) a) What are microwave enclosures and electromagnetics compatibility? Explain EMI and EMC measurements. **[8]**

b) Write short notes on **[8]**

i) Operation of barraters

ii) Transmission cavity wave meter

OR

Q8) a) Explain different attenuation measurement techniques in microwave network. **[8]**

b) Explain single line cavity coupling system for wavelength measurement. **[8]**

Q9) a) Discuss in details of Virtual instruments and its components. **[8]**

b) Explain Lab view based data acquisition system design. **[8]**

OR

Q10)a) List and explain the features of LABVIEW. **[8]**

b) Explain modulation techniques FDM and ASK with their application in instrumentation. **[8]**

Q11)a) Explain the concept of ADC. List various types and explain any two types of ADC in detail. **[10]**

b) Explain the following terms: **[8]**

i) Measurement errors in counter

ii) Data logger

OR

Q12) Write short note on any three. **[18]**

a) Automation in digital instruments

b) V to F converter

c) Sample and hold

d) Analog Multiplexer