[4859]-115

B.E. (Electronics)

ADVANCED MEASUREMENT SYSTEMS

(2008 Pattern) (Semester - I)

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

Instructions to the candidates:

    1) Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 from Section - I and Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 from Section - II.

    2) Figures to the right indicate full marks.

    3) Assume suitable data, if necessary.

    4) Both sections should be written separately.

SECTION - I

Q1) a) What are the signal integrity testing challenges and possible solutions?**[8]**

    b) Explain arbitrary waveform generator in detail.   **[8]**

<div align="center">OR</div>

Q2) a) State and explain electrical validation and debug with DPO.   **[8]**

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

Q3) a) Explain architecture, operation and use of logic analyzer.   **[8]**

    b) Explain hardware design and testing methods of spectrum analyzer. **[8]**

<div align="center">OR</div>

Q4) a) Explain architecture, operation and use of Network analyzer.   **[8]**

    b) Explain DSO trigger modes. What is the use & limitations different types of Analysis.   **[8]**

Q5) a) Explain embedded communication using Ethernet.   **[8]**

    b) What are the design issues and the role of electronic measurements for debugging in automotive electronics?   **[4]**

    c) What are the different interfacing techniques? Explain interfacing of graphic LCD (320×240) display.   **[6]**

<div align="center">OR</div>

Q6) Write short notes on the following : **[18]**
    a) GSM Modem.
    b) Embedded communication using RF Modules.
    c) Interfacing of touch screen.

SECTION - II

Q7) a) What are the barraters? Explain the operation of direct reading barraters bridges. **[8]**
    b) Explain in detail measurement of VSWR. **[8]**

OR

Q8) a) Explain transmission cavity & reactor wave meter. **[8]**
    b) What is attenuation? Explain measurement of free space attenuation. **[8]**

Q9) a) Explain VISA (GPIB, VXI, PXI) and SCPI coding. **[8]**
    b) Explain role of software & Hardware in virtual instrumentation. **[8]**

OR

Q10) a) Explain FDM and ASK Modulation techniques in virtual instrumentation. **[8]**
    b) Explain application of modulation techniques in Distortion Analyzer. **[8]**

Q11) a) Explain different modes of Universal counter. **[6]**
    b) Explain automation in digital instruments. **[6]**
    c) Explain DAC techniques in detail. **[6]**

OR

Q12) Write short note on any three : **[18]**
    a) Sample and hold.
    b) ADC techniques in digital instrumentation.
    c) V to F converter.
    d) Data Loggers.

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