Total No. of Questions : 12]

SEAT No. :

P3691

[Total No. of Pages :3

[4759] - 113
B.E. (Electronics)
ADVANCED MEASUREMENT SYSTEMS
(2008 Course) (Semester -I) (Elective -I) (404204)

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 right indicate full marks.***
3) ***Assume suitable data if necessary.***

SECTION - I

Q1) a) Explain in detail signal integrity design issues. **[8]**

b) Draw and explain arbitrary waveform generator. **[8]**

OR

Q2) a) State and explain Electrical Validation and Debug with MSO Series Oscilloscopes. **[8]**

b) What are the Signal Integrity Testing Challenges and possible solutions? **[8]**

Q3) a) Draw the architecture and explain in detail logic analyzer. State applications. **[8]**

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

OR

Q4) a) Explain hardware design and testing methods of Network analyzer. **[8]**

b) Explain DSO trigger modes with examples. State applications of DSO. **[8]**

P.T.O.

Q5) a) Explain embedded communication using CAN. **[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 display. **[6]**

OR

Q6) a) Explain serial bus decode test instruments for USB and PCI Express. **[8]**

b) Write short note on any two. **[10]**

i) GSM Modem for AT commands

ii) RF Modules

iii) Interfacing of thermal printer.

SECTION - II

Q7) a) Explain measurement of microwave power bridge circuit using thermistors and barraters. **[8]**

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

OR

Q8) a) Draw and explain the fundamental set up for advanced radar system. **[8]**

b) What are microwave enclosures and electromagnetic compatibility? Explain EMI and EMC measurements. **[8]**

Q9) a) What is virtual instrumentation? Explain test system development using virtual instrumentation? **[8]**

b) Explain the application of TDM and PSK in instrumentation. **[8]**

OR

Q10) a) Explain hardware and software role in virtual instrumentation. **[8]**

b) Explain Lab View based Data acquisition system design. **[8]**

Q11) a) Explain application of counter for frequency and capacitance meter. **[6]**

b) What are the types of ADC and DAC? Enlist the specifications of ADC and DAC. **[6]**

c) Explain data loggers in detail. **[6]**

OR

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

a) Automation in digital instruments

b) Analog mixers

c) V to F converter

d) Universal Counter.

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