Total No. of Questions :12]

SEAT No. :

P3377

[Total No. of Pages :3

[4959]-115
B.E. (Electronics)
a: ADVANCED MEASUREMENT SYSTEMS
(2008 Course) (Semester - I) (Elective - I)

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

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10, Q11 or Q12.***
3) ***Use of electronic pocket calculator is allowed.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume suitable data if necessry.***

SECTION-I

Q1) a) What is signal integrity? How to ensure signal integrity in case of RF CMOS circuits? **[8]**

b) With the help of block schematic explain arbitrary waveform generator and give its typical application. **[8]**

OR

Q2) a) How DPO differs from DSO? Give typical application of DPO. **[8]**

b) What is need of MSO? List important specifications of MSO and give typical application of MSO. **[8]**

Q3) a) List and elaborate at least eight parameters to consider while selecting DSO. **[8]**

b) Give typical specifications of Logic Analyzer. Explain how it can be used in fault finding in microcontroller circuits. **[10]**

OR

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Q4) a) With respect to DSO explain the terms **[10]**

i) Math functions

ii) FFT

iii) Roll mode

iv) Zoom mode

v) Glitch mode

b) With the help of functional block diagram explain working of RF swept super heterodyne spectrum analyzer? **[8]**

Q5) a) What is role of Electronic measurements for Electronic Central Unit [ECU] in an Automotive system? **[8]**

b) Explain need and use of RF modules and Ethernet in Embedded systems? **[8]**

OR

Q6) a) Explain interfacing techniques for: **[8]**

i) 16X2 Graphic LCD

ii) Alphanumeric Touch Screen

b) Explain USB and CAN bus standards required in embedded systems? **[8]**

SECTION-II

Q7) a) Explain in detail the EMI/EMC test set up for conducted and radiated interference measurement? **[8]**

b) Draw a scheme for microwave power measurement using microwave power bridge circuit with barraters and explain the method? **[8]**

OR

Q8) a) Draw and elaborate the fundamental test setup for Advanced Radar System. **[8]**

b) What are different attenuation measurement techniques used in microwave network? Explain the schemes? **[8]**

Q9) a) Explain the concept of virtual instrumentation and its benefits in test and measurements? **[8]**

b) Explain the terms GPIB and SCPI of virtual instrumentation? **[8]**

OR

Q10)a) Elaborate in detail application of the virtual instrumentation for the distortion analyzer. **[8]**

b) Explain the desired features of software used for virtual instruments?**[8]**

Q11)a) Discuss the errors encountered in measurement of frequency/time period digitally? How to minimize these errors? **[10]**

b) Explain the data logger in detail with its typical application? **[8]**

OR

Q12)a) Explain the concept of ADC. List various types of ADCs with important specifications and explain any one in detail? **[10]**

b) Explain the different automations in digital equipments; namely auto polarity, auto ranging and auto zeroing? **[8]**

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