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Sample review questions. You should also review the logbook questions as preparation for the final exam. Remember you need to present the logbook on May 21, 2009 to take the final exam.

What of these five options best describe one or more differences between science and engineering?

A Calculus versus algebra
B Experiments versus theory
C Focus on understanding Nature versus focus on building a practical system
D Approximation versus precision
E General versus specific

Six steps of a supply chain are: 1) Raw materials processing 2) Components manufacturing 3) Product assembly 4) Transportation 5) Sales centers 6) End customer. In a supply chain for cell phones, what of the following engineering fields has the least to do with supply step #6?

A Civil Engineering
B Biomedical Engineering
C Mechanical Engineering
D Electrical Engineering
E Geological and Geophysical Engineering

How many guesses should I enter into column 3 of the spreadsheet if I would like to implement a quadric model (fourth order polynomial)

A 1
B 3
C 2
D 4
E 5

If I use only the highest order term of a polynomial, increasing the polynomial order will lower the minimized s parameter.

A True
B False

Look at equations (2)-(4) for the potentials V2-V4 in Circuit Analysis with LabVIEW III. The sub-Vi V_next can be used to calculate V2. Can we use it to calculate V4 and V6 as well?

A Yes

B No

A very common error when implementing a Case Structure is

A Undefined variable
B Missing assigned tunnel
C Missing semicolon at the end of the formula
D Content of the True and False windows are not the same
E Missing a string constant

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Project 3

Project	Description	Team	May 7 Assigned Improvements
A	Predict the max. temp. for the next day using previous days' temperatures, using polynomial and other models	6	Replace the Exponential Fit by another Fit available in LabVIEW Connect the right value for the For Loop N to generate the polynomial for The prediction
B	Predict the oil price for next week using previous weeks' prices, using polynomial and other models	10	Replace the Exponential Fit by another Fit available in LabVIEW Output coefficients into arrays and numeric indicators
C	Detect the frequency spectrum of a given signal using Fourier Transforms	4	Add sound for the signal
D	Say the decimal number for a four-digit binary number	5	Add an introductory audio playback to explain what is being done in this VI
E	Make a 8 keys piano	2	Front Panel; add two buttons, one that would sound all 8 keys from low to high; the other one in reverse order.
F	Solve the quadratic equation with distinction of cases for the discriminant	8	Add a plot to show the quadratic function once coefficients A,B,C are selected. This will allow the user to see what solutions to expect
G	A VI that can calculate the areas of 4 different geometrical shapes	3	Add an option to see the ratio Volume/Area for all shapes
H	A VI that produces interesting sounds from the combination of 2 or more sine waves with different frequencies	9	Use listbox with number options to enter combination of numeric values for frequencies
I	A VI that produces a chirp	7	Add spectrums for the signals using

	sound, that is a sound whose frequency is changing with time		FFT
J	Sound recorder and playback	1	Record and Play back in the same Run (without the need to click on the run button again).

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Project 3 -part I/ Teams	1	2	3	4	5	6	7	8	9	10
Project completed (35)	35	35	35	35	35	35	35	35	35	35
Design (FP&BD)(15)	12	14	15	14	15	15	12	15	14	12
Performance (Tasks specified)(25)	23	23	23	23	25	23	20	25	23	23
Presentation (15)	15	15	15	15	15	15	15	15	15	15
Webpage (10)										
Total part I (100)	85	87	88	87	90	88	82	90	87	85
Project 3 -part II/ Teams	1	2	3	4	5	6	7	8	9	10
Project completed (35)	35	35	35	35	35	35	35	35	35	35
Design (FP&BD) (15)	14	14	14	14	15	14	12	15	15	14
Performance (improvement req.) (25)	25	23	23	25	25	25	18	25	25	23
Presentation (15)	15	15	15	15	15	15	15	15	15	15
Webpage (10)										
Total part II(100)	89	87	87	89	90	89	80	90	90	87
Total Project 2 Pres. (200)	174	174	175	176	180	177	162	180	177	172

LOGBOOK: example of a logbook page

-Use a quadrille notebook; number all pages; date all entries
-Write your notes for all activities, thoughts, problems and solutions, and learning conclusions related to Engin 103. You should write down progress, outcomes, and conclusions on projects and teamwork; conclusions from class work (including LabVIEW) and homework.
-In addition you should answer in the logbook all questions listed in these notes in blue, as shown below:

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