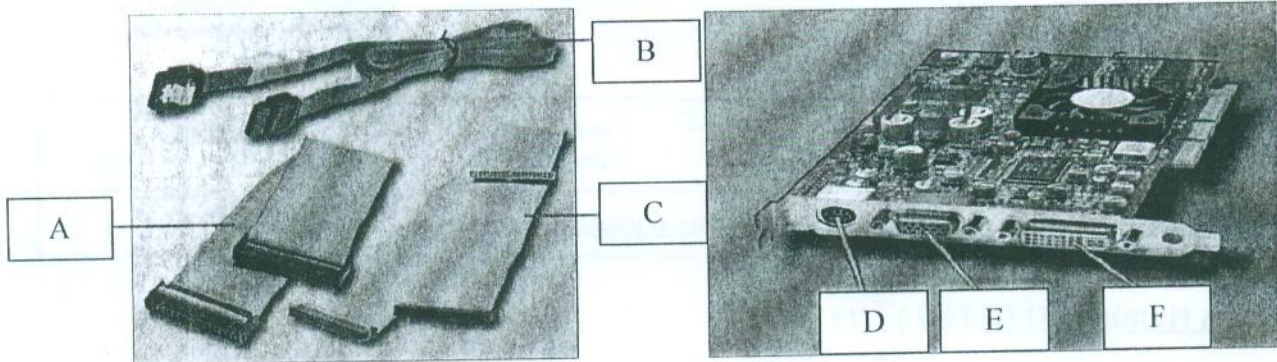3. State the name of each of the components shown in the following figures:

Problem Number (4) *(13 marks)*

What do you know about each of the following terms?

a. *Case form factor*
b. *Mother board*
c. *CPUs with PGA and ZIF*
d. Overclocking in CPUs

e. Three major types of the computer system cooling systems
f. *PCI, AGP, PCI-Express*
g. FireWire connection

Problem Number (5) *(8 marks)*

Complete each of the following statements

a. All computers need a power supply to convert ……… power from the wall socket into ………power.
b. Computer cases typically are made of ……... and ……… and are available in a variety of styles.
c. ……...memory modules contain RAM on only one side of the module. ……...memory modules contain RAM on both sides of the module.
d. The speed of a hard drive is measured in……...
e. Dot pitch is the ……...pixels on the screen. A lower dot pitch number produces a ……...image.
f. Brightness is the image's ……...

State whether each of the following statements is true or false and correct the false one.

a. *CRT* is commonly used in laptops and some projectors (…..)
b. Lower-resolution settings produce better image quality (…..)
c. DLP projectors use a spinning color wheel with a microprocessor-controlled array of mirrors called DMD (…..)
d. Pixels are the tiny dots that comprise a screen (…..)
e. Contrast is the ratio of light to dark (…..)
f. AC power is required for all the components inside the computer. (…..)

Best Wishes   Prof.Dr.Elsayed Sallam

Tanta University		Department: Computer and Control Engineering Total Marks: 80 Marks		Faculty Of Engineering

Course Title: Tests &Measurements Date: 26/1/2012 (First term)2011/2012	اختبارات وقياسات أ لائحة قديمة	Course Code: EPM3101 Allowed time: 3 hrs	Year: 3rd No. of Pages: 2

Answer ALL the following questions and assume any missing data

Problem Number (1) (HTML) *(14 marks)*

Answer the following Questions

1. Discus briefly the client/server Architecture
2. What is the World Wide Web?
3. What does the following abbreviations stands for
   - a. HTML
   - b. FTP
   - c. HTTP
   - d. DNS
   - e. ISP
4. Write a short note Domain names giving an illustrative example.

Problem Number (2) (HTML) *(10 marks)*

Write the HTML code which draws the following table

Brand	Price list	
HP	Laptop	510$
	Mouse	10$
DELL	Laptop	520$
	Mouse	7$

Problem Number (3) *(15 marks)*

Answer the following Questions

1. What is a Computer System?
2. What are two major CPU architectures related to instruction? And what is the latest processor technology that has caused CPU manufacturers t to incorporate more than one CPU core into a single chip?

Problem number (4)

(a) What is the difference between full-order state observer and reduced-order state observer? Derive an expression for the characteristic equation of the leunburger state observer.

(b) Given an open-loop control state-space model,

$$\dot{x} = \begin{bmatrix} 0 & 1 \\ 0 & -4 \end{bmatrix} x + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u$$

$$y = \begin{bmatrix} 1 & 0 \end{bmatrix} x$$

Design a full-order state-observer such that the closed-loop system poles have the values

$$s = -2, \quad s = -3$$

Problem number (5)

A regulator contains a plant that is described by

$$\dot{x} = \begin{bmatrix} 0 & 1 \\ 0 & -2 \end{bmatrix} x + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u$$

$$y = \begin{bmatrix} 1 & 0 \end{bmatrix} x$$

and has a performance index

$$J = \int_0^\infty \left[x^T \begin{bmatrix} 3 & 0 \\ 0 & 1 \end{bmatrix} x + u^2 \right] dt$$

Determine

   (i)   The Riccati matrix P
   (ii) The optimal state feedback matrix k_{opt}
   (iii) The closed-loop eigenvalues

GOOD LUCK

Dr. Ali Abu Tahoun

Tanta University	Department: Computer and Control Engineering Total Marks:　　Marks (لائحة 1997)	Faculty of Engineering

Course Title: (أسس التحكم الآلى)　　　　　　　　　　　　Year: 3rd
Date: January 22nd 2012 (First Term)　　　Allowed Time: 3 hrs　　No. of Pages: (2)

Remarks: (Answer the following questions)

Problem number (1)

(a) What is meant by gain margin and phase margin?

(b) Consider the system that has the open-loop transfer function,

$$G(s)H(s) = \frac{K(s+2)}{s(s+1)}$$

(i) Sketch the root-locus.

(ii) Determine the value of K such that the complex conjugate closed loop poles have a damping ratio of 0.7.

Problem number (2)

(a) What is the meaning of gain-crossover frequency and phase-crossover frequency? Discuss the relationship between systems types and the corresponding bode diagrams.

(b) For the system that has the open-loop transfer function

$$G(s)H(s) = \frac{K}{s(\frac{s}{20}+1)(\frac{s}{10}+1)(1+s)}$$

Using bode diagram method

(i) Find the value of K for critically stable system.

(ii) Find the value of K for gain margin of 60 dB, find the corresponding phase margin.

Problem number (3)

(a) Explain the main methods that are available for tuning PID controllers.

(b) For the following block diagram, design a PD controller such that the closed loop system has an undamped natural frequency of 10 rad/s and a damping ratio of 0.5.
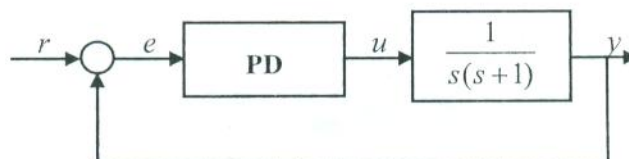
TANTA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF POWER AND ELECTRICAL MACHINES
EXAMINATION (*third* YEAR)

COURSE TITLE: Electrical Communication	COURSE CODE: EEC 2206

DATE: 8/1/2012	TERM: FIRST	TOTAL ASSESSMENT MARKS:50	TIME ALLOWED: 3 HOURS

Answer the following questions

PROBLEM # ONE (12 marks)

For the periodic signal shown below
 a. Draw its amplitude spectrum.
 b. Determine the DC contained in this signal.
 c. Can you extract a sinusoidal wave of $20/T_O$ from this signal? Why?
 d. Is it energy or power signal?

PROBLEM # TWO (18 marks)

 I. State whether the following statements are true or false, comment on your Answers
   a. The Energy for nonperiodic signals is infinite.
   b. Baseband signal generated by information source is suitable for transmission over free space.
   c. Envelope detector is used in AM detection.
   d. Single sideband (SSB) is used for bandwidth conservation.
   e. AM is less susceptible for noise than FM signal.
 II. Find Fourier transform for the following signals
   a. rect(t/10) u(2-t)   b. 3sgn (t-t_0)   c. 10 sinc (10t)

PROBLEM # THREE (20 marks)

 I. Compare amplitude modulation different modulation techniques from the following point of view:
   a. Time domain equation.   b. Frequency domain spectrum.
   c. Bandwidth.   d. Power.

 II. For AM system if Ac = 50 and K_a= 0.0138 and m(t)= 20 Cos (2πx500t):
   a) Write down the AM equation.
   b) Calculate the total transmitted power.
   c) Calculate Efficiency and comment on your answer.
   d) Sketch signal spectrum.
   e) What happen if the frequency of m(t) changed to 1500 Hz?

Good Luck,

Dr. Salwa Serag Eldin

تعلم فليس المرء يولد عالما وليس اخو علم كمن هو جاهل

TABLE IV

Values of $t_{\alpha,\nu}$ [1]

ν	$\alpha = .10$	$\alpha = .05$	$\alpha = .025$	$\alpha = .01$	$\alpha = .005$	ν
1	3.078	6.314	12.706	31.821	63.657	1
2	1.886	2.920	4.303	6.965	9.925	2
3	1.638	2.353	3.182	4.541	5.841	3
4	1.533	2.132	2.776	3.747	4.604	4
5	1.476	2.015	2.571	3.365	4.032	5
6	1.440	1.943	2.447	3.143	3.707	6
7	1.415	1.895	2.365	2.998	3.499	7
8	1.397	1.860	2.306	2.896	3.355	8
9	1.383	1.833	2.262	2.821	3.250	9
10	1.372	1.812	2.228	2.764	3.169	10
11	1.363	1.796	2.201	2.718	3.106	11
12	1.356	1.782	2.179	2.681	3.055	12
13	1.350	1.771	2.160	2.650	3.012	13
14	1.345	1.761	2.145	2.624	2.977	14
15	1.341	1.753	2.131	2.602	2.947	15
16	1.337	1.746	2.120	2.583	2.921	16
17	1.333	1.740	2.110	2.567	2.898	17
18	1.330	1.734	2.101	2.552	2.878	18
19	1.328	1.729	2.093	2.539	2.861	19
20	1.325	1.725	2.086	2.528	2.845	20
21	1.323	1.721	2.080	2.518	2.831	21
22	1.321	1.717	2.074	2.508	2.819	22
23	1.319	1.714	2.009	2.500	2.807	23
24	1.318	1.711	2.064	2.492	2.797	24
25	1.316	1.708	2.060	2.485	2.787	25
26	1.315	1.706	2.056	2.479	2.779	26
27	1.314	1.703	2.052	2.473	2.771	27
28	1.313	1.701	2.048	2.467	2.763	28
29	1.311	1.699	2.045	2.462	2.756	29
inf.	1.282	1.645	1.960	2.326	2.576	inf.

TABLE III

Standard Normal Distribution

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990

Also, for $z = 4.0$, 5.0, and 6.0, the probabilities are 0.49997, 0.4999997, and 0.499999999.

Tanta University | Physics & Engineering Mathematics Department
Total Marks: 85 Marks | Faculty of Engineering

Course Title: Engineering Mathematics (4)   Year: Third year Computer and Control Engineering.
Date:18 /1/ 2012   Allowed time: 3 hrs   No. of Pages: 1 for problems and 1 for tables.

Remarks: (Answer the following questions. Assume any missing data…)

Problem number (1)   (22 Marks)

(a) A certain item is manufactured by three factories, A, B, and C. it is known that A turns out twice as many items as B, and that B and C turn out the same number of items (during a specific production period). It is known that 8% of the items produced by A and B are defective, while 4% of those manufactured by C are defective. One item is chosen at random
(i) What is the probability that the chosen item is non-defective?
(ii) If the chosen item was non-defective, what is the probability that it comes from factory B or C?

(b) Three cards are drawn without replacement from a deck of 52 playing cards, what is the probability that they are all aces?

(c) The mean and variance of binomial distribution are 4 and 3 respectively, find $p(x \geq 1)$.

Problem number (2)   (20 Marks)

(a) A random variable X has a pdf $f(x) = 3x^2$, $0 \leq x \leq 1$, find 'a' and 'b' such that
(i) $p(X \leq a) = p(X > a)$ (ii) $p(X > b) = 0.05$

(b) if X is a random variable its density function is given by
$f(x) = k\,x(1-x)$ for $0 < x < 1$ and $f(x) = 0$ otherwise . Find
(i) the value of k   (ii) the cumulative distribution function   (iii) p (x <0.2)

(c) Find the probability that 3 of 10 persons will recover from a tropical disease, given that the probability is 0.8 that any one of them will recover from disease.

Problem number (3)   (23 Marks)

(a) Derive formulas for the main and variance of the Poisson distribution.

(b) A random sample of size 81 is taken from an infinite population with mean 128 and a standard deviation of 6.3. with what probability can we assert that the sample mean will fall between 126.6 and 129.4.

(c) The following table contains the results of seven students in two tests of mathematics and electronics. Is there a correlation between these two tests? Comment on your results.

Student	1	2	3	4	5	6	7
Math.	Pass	Very weak	Pass	excellent	Good	weak	Very good
Electronics	weak	Pass	good	Very good	good	Very weak	excellent

Problem number (4)   (20 Marks)

(a) A machine is producing metal pieces that are cylindrical in shape, a sample of pieces is taken and the diameters are 1.01, 0.97, 1.03, 1.04, 0.98, 1.03 centimetres. Find a 99% confidence interval for the mean diameter of pieces from this machine.

(b) Find n which is necessary to obtain a 96% confidence interval for the mean value of length L = 0.4 when the population has a normal distribution with $\sigma^2 = 1$.

(c) If a sample of 100 tires of a certain kind has a mean life of 24800 km and a standard deviation of 2000 km. Can the manufacturer claim that the true mean life of such tires is less than 25000 km, assuming a 0.01 level of significance?

P.T.O. For Tables   **Good luck** Dr. Manal Mohamed Hekal

اجب عن الاسئله الاتيه : (40 درجة)

السؤال الأول:-

1- ما هي العوامل (العناصر) الرئيسية التي تؤثر على نفقة الإنتاج وتكلفة الاستثمار؟ وما هي نقطة التعادل بالنسبة للمشروع الصناعي وأهمية تحديدها؟.

2- تكلم بالتفصيل عن عناصر التصنيع.

3- ما هو تعريفك للصناعات التحويلية , وما هي أهم المؤشرات التي تستخدم للتفرقة بين الصناعات الصغيرة وبين غيرها من الأحجام الصناعية الاخرى.

4- اشرح ما يلى :-

- النشاط الحرج .
- المسار الحرج .

5- ما هي مراحل دورة حياة المشروع؟ وما هى النقاط الرئيسية لمشروع ناجح؟

6- ما هى أسس اختيار موقع المشروع النهائى.

مع أطيب التمنيات بالنجاح

ا.د/عبد الفتاح مصطفى خورشد