24/12/11 T.E. (COM) (Sem VI) OTR.

COMPUTER. GRAPHICS

Con. 7015–11. **(OLD COURSE)** **MP–6452**

(3 Hours) **[Total Marks : 100**

N. B. (1) Question No. 1 is compulsory.

(2) Attempt any four questions out of remaining six questions.

(3) Figures to the right indicate full marks.

Q.1.	(a)	Derive midpoint ellipse algorithm.	10
	(b)	Explain boundary fill and flood fill algorithm.	10
Q.2.	(a)	Show that the composition of two rotation is additive by concatenating the matrix representation for $\mathbf{R}(\theta_1)$ and $\mathbf{R}(\theta_2)$.	05
	(b)	Define the window, viewport and clipping with proper example.	05
	(c)	Derive DDA line drawing algorithm and write.	10
Q.3.	(a)	Compare Bezier curves and B-spline Curves.	10
	(b)	Explain 3-D transformations along with matrix representation.	10
Q.4.	(a)	Explain Sutherland Hodgeman polygon clipping algorithm.	10
	(b)	Differentiate between parallel and perspective projections.	10
Q.5.	(a)	Find the clipping coordinates to clip the line segment AB against the window using Liang Barsky line clipping algorithm. A(20,50), B(80,110).	10
	(b)	Explain Gouraud shading.	10
Q.6.	(a)	Explain Backface Detection method.	10
	(b)	Explain Window to View port coordinate transformation.	10
Q.7.		Write notes on any two.	20
		(i) Half-toning	
		(ii) Z-Buffer Method	
		(iii) Input and output devices.	

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DSP

Con.- 7008-11. **(OLD COURSE)** **MP-6448**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory.**
(2) Attempt any **four** questions from the remaining **six** questions.
(3) Assume **suitable** data if **required.**

Q.1 (a) Is a stable filter is always casual? Yes or no, justify? (5)

(b) $x_1(n)=\{1,2,3,4\}$ and $x_2(n)=\{5,6,7,8\}$. Find $X_1(k)$ and $X_2(k)$ of the above sequences by computing the DFT only once. (5)

(c) Find the number of real multiplications and real additions required to find DFT for 32-point signal. Compare them with the number of computations required if FFT algorithm is used. (5)

(d) Write the properties of the twiddle factor in FFT. (5)

Q.2 (a) Given X (k) = {2, -6j, 2-8j, 6j, 2,-6j, 2+8j, 6j}, find x (n) by using IFFT algorithm. Explain where overlap add and overlap save methods are used? (10)

(b) Perform circular convolution of following signals using DFT/IDFT technique (10)

$x_1(n)= \cos(2\pi n/N)$ $0 \le n \le N-1$

$x_2(n)= \sin(2\pi n/N)$ $0 \le n \le N-1$

Q.3 (a) Derive the DFT of the sample data sequence $x(n)=\{1,1,2,2,3,3\}$ and compute the corresponding amplitude and phase spectrum. (10)

(b) If $x(n)=\{1,2,3,4\}$ find DFT X(k). Using X(k) obtained above and not otherwise find the DFT of the following sequences: (10)

$x_1(n)= \{4,1,2,3\}$

$x_2(n)= \{2,3,4,1\}$

$x_3(n)=\{3,4,1,2\}$

$x_4(n)= \{4,6,4,6\}$

Q.4 (a) Design a digital Butterworth filter that satisfies the following constraint using bilinear transformation. Assume T=1 sec. (10)

$0.9 \le |H(e^{j\omega})| \le 1$ $0 \le \omega \le \pi/2$

$|H(e^{j\omega})| \le 0.2$ $3\pi/4 \le \omega \le \pi$

(b) Determine the convolution of the following sequence using DFT property: (10)

$x_1(n)= x_2(n)= \{1,1,1\}$

Q.5 (a) Design an FIR digital filter to approximate an ideal low filter with passband gain of unity, cut off frequency of 850 Hz and working at a sample frequency of f_s = 5000Hz. The length of the impulse response should be 5. Use a rectangular window. (10)

(b) Prove that FIR filter having odd length and positive symmetric have a linear phase. (10)

Q.6 (a) Derive the composite radix for 6=2.3 algorithm and draw the flow graph. (10)

(b) The transfer function of a discrete-time system has poles at z=0.5, z=0.1±j0.2 and zeros at z=-1 and z=1 (10)

(i) sketch the pole-zero diagram for the system

(ii) derive the system transfer function H(z), from the pole-zero diagram

(iii) develop the difference equation

(iv) find if the system is stable.

Q.7 (a) Draw single 2 radix butterfly for DIT-FFT and DIF-FFT. (5)

(b) Explain any four properties of the Z transform. (5)

(c) Write a note on the structure of IIR filter. (5)

(d) Write a note on Discrete Hilbert transform. (5)

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Web Technology.

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Con.- 7004-11. **(OLD COURSE)** **MP-6445**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory.**
(2) Solve any **four** questions from the remaining **six** questions.
(3) Assume **suitable** data wherever **required**.

Q.1. (a) Explain the CSS with examples. (5)
(b) Explain methods of HTTP protocol. (5)
(c) Write HTML program which includes Tables, Hyperlink, Character formatting, order and unordered list to display your Resume. (10)

Q.2. (a) Explain the five ASP objects in details. (10)
(b)Write HTML program to link images and multimedia documents (i.e. animations and sounds). (10)

Q.3. (a) Write HTML code to design a form with buttons red, green, blue and image. (10)
Write JavaScript code that will change the background color and background image of the page when user clicks on the particular button.
(b) Explain life cycle of Java Servlets. Differentiate between ASP and JSP. (10)

Q.4. (a) Write HTML code to accept input from the user for course registration. (10)
Input will include Name, Age and Email-id. Write code for validating input data.
(b) Explain frameset, frame, noframe, iframe tags, scrolling and frame border with example. (10)

Q.5. (a) What is cookies? How to create and retrieve cookies in ASP? (10)
(b) Explain E-commerce Types with e-shop and Online Payment. (10)

Q.6. (a) How is JSP request processed by a Web browser? Explain with diagram. (10)
(b) Write a program in ASP to display system date and time. (5)
(c) Explain Form tag with get and post method. (5)

Q.7. Write short notes on: (20)
(a) Java Servlets (b) ActiveX Objects
(c) Internet Banking (d) CGI and Perl

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109: 2nd Half-Exam.-11 mina (d).

Con. 7002-11. **(OLD COURSE)** **MP-6457**

(3 Hours) **[Total Marks : 100**

N. B. : (1) Question No. **1** is **compulsory**.
(2) Solve any **four** questions out of remaining **six** questions.

Q1a) What is an economic problem? (5)

Q1b)Is Management an art or science? (5)

Q1c) Explain appropriate technology (5)

Q1d) How is training beneficial to employees and employers? (5)

Q2a) What are the different forms of market? Explain oligopoly. (10)

Q2b) What are the functions of R.B.I.? (10)

Q3a) State different theories of motivation. Explain Maslow's theory of motivation. (10)

Q3b) Explain the process of Market Research with example. (10)

Q4a).Explain black money. What are the consequences of black money ? (10)

Q4b) How and when does devaluation help a country ? (10)

Q5a) Discuss merits and limitations of decentralisation. (10)

Q5b)Explain purchasing functions and policies (10)

Q6a)"Trade develops economy." Explain with reference to India. (10)

Q6b) Define money. How is the general level of prices influenced by changes in the quantity of money ? (10)

Q7a)What are the characteristics of effective delegation ? (10)

Q7b)Explain the nature of planning and discuss merits and demerits of planning. (10)

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