Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – 2nd Session- **Jan – June 2023** Month-**June**

Sem- IT 6th | Subject- Compiler Design | Code- C033612(033)

Time Allowed: 2 hrs | Max Marks: 40

Note: - All Questions are compulsory.

Q. N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	Section - I			
1.	Consider the following grammar: **S-> AA; A-> aA; A-> b** Parse the input string W=abab using Shift-Reduce parser stack Implementation.	[5]	Apply	CO2
2.	Describe the conditions of the operator precedence parser. Also, construct an operator precedence relation table for the following grammar **E-> E + T; T-> T * F; F-> (E) / id**	[5]	Apply	CO2
3.	Obtain **LR (0)** item sets and draw a parse table for the following grammar **S -> AaB; A->ab | a; B->b** also construct the **SLR(1)** Table.	[5]	Apply	CO2
4.	Given grammar **S-> AA; A-> aA | b** Construct set of Canonical LR (1) parsing tables.	[5]	Apply	CO2
	Section - II			
5.	Write **Semantic Action Rules** for the grammar: **E→E+T/T** **T→T*F/F** **F→id | (E)** And construct **Parse Tree**, and **an annotated parse** tree for the expression **5 * 6 + 7**. Show bottom-up evaluation also.	[6]	Apply	CO3
6.	If the SDD carried out the Input string **W=a a a a b c c** then the output is **Production** — **Semantic Rules** **S → a a W** — **{ print("1");}** **S → b** — **{ print("2");}** **W → S c** — **{ print("3");}**	[5]	Apply	CO3
7.	Write the Quadruple, Triple and Indirect Triple for the following statement: **X = -a * b + -a * b**	[5]	Apply	CO3
8.	Differentiate between Static, Stack, and Heap allocation.	[4]	Understand	CO4

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – II Session- Jan – June 2023 Month –May

Sem- B. Tech. 6th **Subject-** Management Information System **Code- C000646(033)**

Time Allowed: 2 hrs. Max Marks: 40

*Note: - **Attempt any 5 questions. All questions carry equal marks.***

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	Cos
1.	Explain about the concept of System with its types.	[8]	Understand	CO3
2.	Discuss about the concept of planning and computational support for planning.	[8]	Understand	CO3
3.	Define subsystem. Explain how to prevent system entropy and system stress.	[8]	Understand	CO3
4.	Discuss about the structure of Decision Support System.	[8]	Understand	CO4
5.	Explain Decision Support System with its characteristics and classification.	[8]	Understand	CO4
6.	Explain Knowledge Based Expert System in brief.	[8]	Understand	CO4

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – II Session- Jan-June-2022 Month –May

Sem- B. Tech. 6th **Subject-** Management Information System **Code- C000646(033)**

Time Allowed: 2 hrs. Max Marks: 40

*Note: - **Attempt any 5 questions. All questions carry equal marks.***

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	Cos
1.	Explain about the concept of System with its types.	[8]	Understand	CO3
2.	Discuss about the concept of planning and computational support for planning.	[8]	Understand	CO3
3.	Define subsystem. Explain how to prevent system entropy and system stress.	[8]	Understand	CO3
4.	Discuss about the structure of Decision Support System.	[8]	Understand	CO4
5.	Explain Decision Support System with its characteristics and classification.	[8]	Understand	CO4
6.	Explain Knowledge Based Expert System in brief.	[8]	Understand	CO4

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – II Session - Jan – June 2023 Month – April

Sem- 6th (B.Tech IT) **Subject-** Computer Graphics

Code- C033611(033)

Time Allowed: 2 hrs. Max Marks: 40

Note: ***-All questions are mandatory.***

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Clip the Line P1(40,15) – P2(75, 45) and P3(70,30) – P4(100, 10) with respect to the window A(50,10), B(80, 10), C(80,40) and D(50, 40) by using Cohen Sutherland Line Clipping Algorithm.	[8]	Apply	CO2
2.	Generate Bezier Curve to four control points P1 (60, 20), P2 (80, 100), P3 (150, 90) and P4 (180, 50).	[8]	Apply	CO3
3.	Elucidate Z-Buffer Algorithm.	[8]	Understand	CO3
4.	Elaborate the followings: 1. Scan Line Algorithm of Hidden Surface Removal 2. Basic Illumination Models	[8]	Understand	CO3
5.	Elucidate Sutherland Hodgeman Clipping Algorithm Using Example	[8]	Understand	CO2

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – II Session - Jan – June 2023 Month – April

Sem- 6th (B.Tech IT) **Subject-** Computer Graphics

Code- C033611(033)

Time Allowed: 2 hrs. Max Marks: 40

Note: ***-All questions are mandatory.***

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Clip the Line P1(40,15) – P2(75, 45) and P3(70,30) – P4(100, 10) with respect to the window A(50,10), B(80, 10), C(80,40) and D(50, 40) by using Cohen Sutherland Line Clipping Algorithm.	[8]	Apply	CO2
2.	Generate Bezier Curve to four control points P1 (60, 20), P2 (80, 100), P3 (150, 90) and P4 (180, 50).	[8]	Apply	CO3
3.	Elucidate Z-Buffer Algorithm.	[8]	Understand	CO3
4.	Elaborate the followings: 1. Scan Line Algorithm of Hidden Surface Removal 2. Basic Illumination Models	[8]	Understand	CO3
5.	Elucidate Sutherland Hodgeman Clipping Algorithm Using Example	[8]	Understand	CO2

Shri Shankaracharya Institute of Professional Management & Technology

Department of Information Technology

Class Test – II Session- Jan.– June 2023 Month- June

Sem- IT 6th Subject- Information Theory and Coding C033613(033)

Time Allowed: 2 hrs Max Marks: 40

Note: - ***Attempt any 5 question. All questions carry equal marks.***

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	The Parity Check matrix of (7,4) linear code is as follows: $H=\begin{bmatrix}1&1&1&0&1&0&0\\1&1&0&1&0&1&1\\1&0&1&1&0&0&1\end{bmatrix}$ Calculate the syndrome vector for single bit errors.	[8]	Understand	CO3
2.	State and Prove Shannon Hartley theorem. Also show the channel capacity of an ideal AWGN channel with infinite bandwidth is given by $C_\infty = 1.44\frac{P}{N0}$ Where P is the average signal power and N0/2 is the power spectral density of white Gaussian noise	[8]	Apply	CO3
3.	For a (6,3) linear block code the coefficient matrix [p] is as follows: $P=\begin{bmatrix}0&1&1\\1&0&1\\1&1&0\end{bmatrix}$ The received code words at the receiver are i) 0001110 ii) 111011 Check whether they are correct or contain errors.	[8]	Understand	CO3
4.	For a systematic linear block code, the three parity check digits , C_4, C_5 , C_6 are given by $C_4 = d_1 + d_2 + d_3$ $C_5 = d_1 + d_2$ $C_6 = d_1 + d_3$ i) Construct generator matrix ii) Construct code generated by this matrix iii) Determine error correcting capability iv) Prepare suitable decoding table	[8]	Apply	CO3
5.	For a (7,4) cyclic code , find out the generator matrix if G(D)= 1+D+D3	[8]	Apply	CO4
6.	Explain Viteri decoding algorithm with Trellis diagram along with an example.	[8]	Apply	CO4

Shri Shankaracharya Institute of Professional Management & Technology

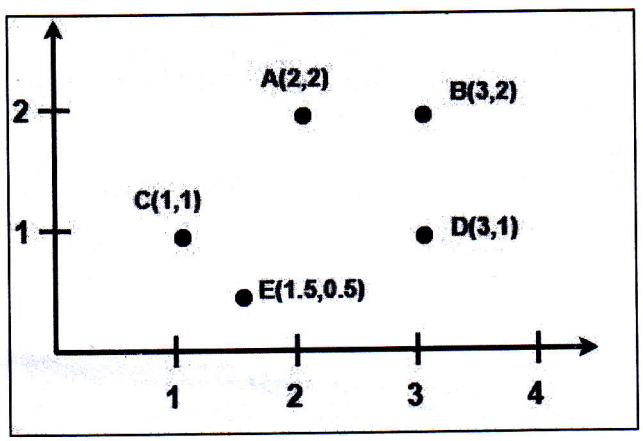
Department of Information Technology

Class Test – II Session- Jan-june, 2023 Month- june

Sem- IT 6th Subject- Data Mining

Time Allowed: 2 hrs Max Marks: 40

Note: - solve any five questions

Q. N.	Questions	Marks	Levels of Bloom's taxonomy	COs
A.	Explain following terminology in Decision Tree. 1. Gini Index 2. Information gain 3. Entropy	[8]	Understand	CO3
B.	Explain Logistic Regression with example.	[8]	Understand	CO3
C.	Explain Discriminant Analysis with example	[8]	Understand	CO3
D.	Use K-Means Algorithm to create two clusters-  Assume A(2, 2) and C(1, 1) are centers of the two clusters.	[8]	apply	CO4
E.	Describe Outlier Detection with proper example	[8]	Understand	CO4
F	Explain Density-based Methods in cluster analysis	[8]	Understand	CO4