



**Shri Shankaracharya Institute of Professional Management & Technology**

Department of Information Technology

Class Test - II Session- Jan - June, 2022 Month-June

Sem- IT 6<sup>th</sup> | Subject- Compiler Design | Code- CO33612(033)

Time Allowed: 2 hrs | Max Marks: 40

Note: - All Questions are compulsory.

Q. N.	Questions	Marks	Levels of Bloom's taxonomy	COs
<b>Section - I</b>				
1.	Find <b>FIRST</b> and <b>FOLLOW</b> functions for the following grammar by Removing Left Recursion if exists. $E \rightarrow E+T / T; T \rightarrow T * E / F; F \rightarrow (E) / \text{id}$	[5]	Apply	CO2
2.	Construct <b>LL (1)</b> Parser Table for the following grammar $S \rightarrow \text{ICSI}   \text{ICSES}   a; C \rightarrow b$ Is grammar LL (1)? Obtain LR (0) item sets and draw a parse table for the following grammar $S \rightarrow SS   a   \epsilon$ also indicate the conflict (if any) in SLR(1) Table.	[5]	Apply	CO2
3.	Obtain LR (0) item sets and draw a parse table for the following grammar $S \rightarrow SS   a   \epsilon$ also indicate the conflict (if any) in SLR(1) Table.	[5]	Apply	CO2
4.	Given grammar $A \rightarrow CC; C \rightarrow aC   b$ Construct set of Canonical LR (1) parsing table.	[5]	Apply	CO2
<b>Section - II</b>				
5.	write SSD for the grammar: $E \rightarrow E+T/T$ $T \rightarrow T*E/F$ $F \rightarrow \text{id}   (E)$ And construct annotated parse tree for the expression $(4+7+1)*2$ . Show bottom-up evaluation also. If the SDD carried out the input string $W = x x x x y z z$ then the output is	[6]	Apply	CO3
6.	Production $S \rightarrow x x W$ $S \rightarrow y$ $W \rightarrow S z$ Semantic Rules { print("1");} { print("2");} { print("3");}	[5]	Apply	CO3
7.	Generate 3AC for the following segment of code: while (A<C and B>0) do if A=1 then C=C+1 else while A<=0 do A=A+3	[5]	Apply	CO3
8.	Differentiate between Static, Stack, and Heap allocation.	[4]	Remember	CO4



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# Shri Shankaracharya Institute of Professional Management & Technology

## Department of Information Technology

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

Semester- IT 6th Subject- : Data mining Code-: C033635(033)



Time Allowed: 2 hrs Max Marks: 40

Note: -Answer any 5 questions.

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
1.	Explain Naive Bayes Classification method with example.	[8]	Understand	CO3
2.	Explain Logistic Regression with example.	[8]	Understand	CO3
3.	What is Classification and Prediction? Compare both the methods.	[8]	Understand	CO3
4.	Explain Cluster analysis in detail.	[8]	Understand	CO4
5.	Differentiate supervised, Unsupervised and Reinforcement learning methods.	[8]	Understand	CO4





**Shri Shankaracharya Institute of Professional Management & Technology**

**Department of Information Technology**

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

**Sem- IT 6<sup>th</sup>, Subject- Computer Graphics and Data Visualization, Code- C033611(033)**

Time Allowed: 2 hrs Max Marks: 40

*Note: - Solve any five questions. All question carries equal marks.*

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Enlighten different projection techniques.	[8]	Understanding	CO1
2.	a. What is control graph and convex hull? b. Alaborate 3D transformtion.	[4] [4]	Understanding	CO2, CO3
3.	Elaborate Cohen Sutherland line clipping.	[8]	Applying	CO2
4.	Draw a Bezier curve of order 3, with 4 control points A (1,1), B (2,3), C (4,3) & D (6,4).	[8]	Applying	CO3
5.	A triangle defines by vertices A (0,0), B (1,1), C (5,2). Perform the rotate 45° about the point (-1, -1) and find the final position.	[8]	Applying	CO2
6.	Deliberate following visible suface detection methods: a. Depth-buffer method b. Back-face detection	[4] [4]	Understanding	CO3



**Shri Shankaracharya Institute of Professional Management & Technology**

**Department of Information Technology**

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

**Sem- IT 6<sup>th</sup>, Subject- Computer Graphics and Data Visualization, Code- C033611(033)**

Time Allowed: 2 hrs Max Marks: 40

*Note: - Solve any five questions. All question carries equal marks.*

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Enlighten different projection techniques.	[8]	Understanding	CO1
2.	c. What is control graph and convex hull? d. Alaborate 3D transformtion.	[4] [4]	Understanding	CO2, CO3
3.	Elaborate Cohen Sutherland line clipping.	[8]	Applying	CO2
4.	Draw a Bezier curve of order 3, with 4 control points A (1,1), B (2,3), C (4,3) & D (6,4).	[8]	Applying	CO3
5.	A triangle defines by vertices A (0,0), B (1,1), C (5,2). Perform the rotate 45° about the point (-1, -1) and find the final position.	[8]	Applying	CO2
6.	Deliberate following visible suface detection methods: c. Depth-buffer method d. Back-face detection	[4] [4]	Understanding	CO3



**Shri Shankaracharya Institute of Professional Management & Technology**



**Department of Information Technology**

Class Test –II Session- Jan-June, 2022 Month- JUNE

**Sem- IT 6<sup>th</sup> Subject- Management Information System Code- C000648(033)**

Time Allowed: 2 hrs Max Marks: 40

*Note: Question 1 to 5 is compulsory, Carry 2 marks each.*

*Attempt any 5 from question 6 to 11. All carry 6 marks.*

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
<b>Unit I</b>				
1	What are the general models of systems?	[2]	Understanding	CO1
2.	What are the basic system concepts applied to MIS?	[2]	Understanding	CO2
3.	Define System concept.	[2]	Understanding	CO1
4.	Why AI systems are needed in MIS?	[2]	Understanding	CO3
5.	Write the Applications of Expert systems.	[2]	Applying	CO2
6.	What are the DSS objectives? Draw and explain a DSS model.	[6]	Understanding	CO4
7.	What is the need of DSS in MIS?	[6]	Applying	CO1
8.	Write Strategic planning for information resources.	[6]	Understanding	CO3
9.	Write human resource information system with suitable example.	[6]	Understanding	CO1
10	What is the model for mastering information system?	[6]	Applying	CO1
11	What is the need of knowledge based expert system in MIS?	[6]	Understanding	CO1



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

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	<p>The Parity Check matrix of (7,4) linear code is as follows:</p> $H = \begin{pmatrix} 1 & 1 & 1 & 0 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 & 0 & 1 & 1 \\ 1 & 0 & 1 & 1 & 0 & 0 & 1 \end{pmatrix}$ <p>Calculate the syndrome vector for single bit errors.</p>	[8]	Understand	CO3
	<p>The generator matrix for (6,3) block codes is given below. Find all code vectors of this code.</p> $G = \begin{pmatrix} 1 & 0 & 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 & 1 & 0 \end{pmatrix}$	[8]	Apply	CO3
3.	<p>For a (6,3) linear block code the coefficient matrix [p] is as follows:</p> $P = \begin{pmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 1 & 0 \end{pmatrix}$ <p>The received code words at the receiver are                      i) 0001110 ii) 111011                      Check whether they are correct or contain errors.</p>	[8]	Understand	CO3
4.	<p>For a systematic linear block code, the three parity check digits, <math>C_4, C_5, C_6</math> are given by  <math>C_4 = d_1 + d_2 + d_3</math>  <math>C_5 = d_1 + d_2</math>  <math>C_6 = d_1 + d_3</math></p> <p>i) Construct generator matrix                      ii) Construct code generated by this matrix                      iii) Determine error correcting capability                      iv) Prepare suitable decoding table</p>	[8]	Apply	CO3
5.	<p>For a (7,4) cyclic code, find out the generator matrix if <math>G(D) = 1 + D + D^3</math></p>	[8]	Apply	CO4
6.	<p>Construct a systematic (7,4) cyclic code using generator polynomial <math>G(D) = x^3 + x^2 + 1</math> for the message                      i) 1010 ii) 1000</p>	[8]	Apply	CO4