



SHRI SHANKARACHARYA TECHNICAL CAMPUS

(Approved by AICTE New Delhi and affiliated to CSVTU Bhilai)

(Managed by Shri Gangajali Education Society, Bhilai)

JUNWANI, BHILAI-490 020 (CHHATTISGARH), INDIA

*NIRF ranking 2020 (250-300) band



Class Test II	PROGRAM & BRANCH B.TECH. (Computer Science Engineering)	Semester VI (A, B, C, D, DS & IOTCS)
Max. Time 02 Hours	COURSE Compiler Design[CS102601]	Max. Marks 40

CO1 To understanding the fundamental principles in compiler design

CO2 To provide the skills needed for building compilers for various situations that one may encounter in a career in Computer Science.

CO3 After the course a student should have an understanding, based on knowledge of the underlying machine architecture, the limitations and efficiency of various design techniques of compilers implementation

INSTRUCTIONS: Attempt all the questions. Part (a) of each question is compulsory. Attempt any two parts from remaining parts (b), (c) and (d).

Q. No.	Questions	Marks	BL	CO	PO
1	a) What is a Synthesized attribute?	2	1	1, 2	1,2
	b) Translate the following statement: $A = - B * (C + D)$ to Three Address Statements, Quadruple, Direct and Indirect Triple Representation.	6	3	1, 3	1,2
	c) Explain the translation schema for the switch case statement. OR Construct an LALR(1) parsing table for the following given grammar : $S \rightarrow Ba/bBc/dc/bda$ $B \rightarrow d$	6	2	1, 3	1,2

CO: Course Outcome, PO: Program Outcome BTL: Bloom's Taxonomy Levels (L1 to L6)
(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analysis, L5 - Evaluating, L6 - Creating)

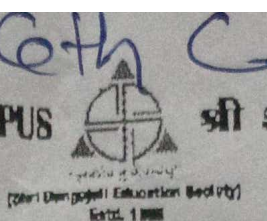
1	d)	Write the three address code for expression If $A < B$ and $C < D$ then $t = 1$ else $t = 0$.	6	2	1, 2	1, 2
	a)	Explain Basic block.	2	1	2	1
2	b)	Generate the code sequence for the given expression: $d = (a-b) + (a-c) + (a-c)$.	6	3	2	1, 2
	c)	What are the major issues in code generation?	6	3	2	1, 2
	d)	Define the term dead code elimination and copy propagation.	6	2	2	1, 2
3	a)	What is Activation Record & Tree?	2	2	1	1, 2
	b)	What are different storage allocation strategies Explain them.	5	3	1, 3	1, 2
		OR				
		Construct CLR Parsing table for the following grammar :- $S \rightarrow CC$ $C \rightarrow cC d$				
	c)	What are different parameter passing mechanism explain them.	5	2	1	1, 2
	d)	Explain the dynamic memory allocation.	5	1	2	1, 2

SHRI SHANKARACHARYA TECHNICAL CAMPUS

Bhilai (Chhattisgarh)

An Autonomous Institute

Approved by AJCTE, New Delhi
Affiliated to CSV Technical University, Bilaspur



श्री शंकराचार्य टेक्नीकल कैंपस

भिलाई (छत्तीसगढ़)

स्वशासी संस्थान

All B Tech Courses Accredited by MRA, New Delhi
Accredited by MAAC with "A" Grade

MIRF Ranking 2020 & 2021 (Rank 261-300)
Best NIT Unit (National Level)
An ISO 9001:2015 Certified Institution

Session: EVEN SEM (2022-23)

Class Test -II	Course Name: B Tech (CSE – A, B, C, D)	Semester: 6 th
Time: 2Hours	Subject Name: Software Engineering and Agile	Min Marks: 14
	Subject Code: CS102602	Max Marks: 40

Note: Attempt all questions. Parts (a) are compulsory & attempt any two parts from (b), (c) & (d).

Course Outcome:

CO1		Developing some basic level of software architecture/design				
CO2		Extracting and analysing software requirements specifications for different projects				
CO3		Select and implement different software development process models				
CO4		Defining the concepts of software quality and reliability on the basis of International quality standards				
CO5		Analysing software risks and risk management strategies				
Q. No.		Questions	Marks	CO	BL	PI
1	a	What is Feasibility Study?	2	CO1	L2	1.3.1
1	b	What is DFD? Develop a DFD for creating software for ATM machine	6	CO2	L2	1.3.1
1	c	Explain the concept of top down and bottom up design in software engineering.	6	CO3	L2	1.3.1
1	d	What are coding standards and coding guidelines recommended by many software development organizations? Explain.	6	CO3	L1	2.1.2
2	a	What is Debugging?	2	CO2	L3	2.1.3
2	b	Explain the levels of testing.	6	CO4	L2	1.3.1
2	c	Distinguish between verification and validation.	6	CO5	L2	1.3.1
2	d	What is SRS? Explain characteristics & needs of SRS.	6	CO2	L3	2.1.3
3	a	When to use agile model.	2	CO3	L2	1.3.1
3	b	Explain Scrum.	5	CO1	L3	1.3.1
3	c	Explain the phases of extreme Programming.	5	CO5	L1	2.1.2
3	d	Write short notes on i)KANBAN ii)Crystal	5	CO6	L2	1.3.1



Class Test-II

Session: EVEN SEM (2022-23)

Subject Code	CS109603
Subject Name	Artificial Intelligence and Machine Learning

Course & Sem: B. Tech. 6th Sem
Sec(C,D)

Branch: CSE

Max Marks: 40

Min Marks: 14

Time: 2Hours

Note: Attempt all questions. Parts (a) are compulsory & attempt any two parts from (b), (c) & (d).

Q. No.	Questions					M	CO	BL	PI	
1	a	Define Spectral Clustering?					2	CO1	L2	1.3.1
1	b	Difference between Markov Model and Hidden Markov Model?					6	CO1	L2	1.3.1
1	c	Explain different type of Distribution?					6	CO1	L2	1.3.1
1	d	Sl no	AGE	COMPETIT ION	TYPE	PROFIT	6	CO1	L1	2.1.2
		1	OLD	YES	S/W	DOWN				
		2	OLD	NO	S/W	DOWN				
		3	OLD	NO	H/W	DOWN				
		4	MID	YES	S/W	DOWN				
		5	MID	YES	H/W	DOWN				
		6	MID	NO	H/W	UP				
		7	MID	NO	S/W	UP				
		8	NEW	YES	S/W	UP				
		9	NEW	NO	H/W	UP				
10	NEW	NO	S/W	UP						
Solve using Id3 algorithm										
2	a	Write 4 application of clustering?					2	CO2	L3	2.1.3
2	b	Explain various clustering methods?					6	CO2	L2	1.3.1
2	c	Difference between Agglomerative clustering and Divisive Clustering?					6	CO2	L2	1.3.1

You are given 15 points in the Cartesian coordinate system as follows.

Point	coordinate
A1	(2,10)
A2	(2,6)
A3	(11,11)
A4	(6,9)
A5	(6,4)
A6	(1,2)
A7	(5,10)
A8	(4,9)
A9	(10,2)
A10	(7,5)
A11	(9,11)
A12	(4,6)
A13	(3,10)
A14	(3,8)
A15	(6,11)

Input Dataset

We are also given the information that we need to make 3 clusters. It means we are given $K=3$. solve this numerical on k-means clustering

6 CO2 L3 2.1.3

3	a	Difference between Bagging and Boosting?	2	CO1, 2	L2	1.3.1
3	b	Explain the simple Ensembling Technique?	5	CO1, 2	L3	1.3.1
3	c	Explain the different boosting algorithm?	5	CO1, 2	L1	2.1.2
3	d	Short notes 1) Out of Bag Evaluation 2) Random Patches and Random Subspaces	5	CO1, 2	L2	1.3.1

Class Test-II
Session: EVEN SEM (2022-23)

Subject Code	CS102644
Subject Name	Cloud Computing

Course : B. Tech.
Sem : 6th (A, B, C, D)
Max Marks: 40

Branch: CSE

Min Marks: 14

Time: 2Hours

Note: Attempt all questions. Parts (a) are compulsory & attempt any two parts from (b), (c) & (d).

Q. No.	Questions	M	CO	BL	PI
1	a Define virtualization. Why is virtualization important in cloud computing?	2	CO1	L2	1.3.1
1	b Discuss and Explain Map Reduce model.	6	CO1	L2	1.3.1
1	c What do you mean by Virtualization Hypervisor Management Software?	6	CO1	L2	1.3.1
1	d Write Short notes on (any 2) : a) VSAN b) VLAN c) Storage Virtualization	6	CO1	L1	2.1.2
2	a What do you mean by cloud ecosystem?	2	CO2	L3	2.1.3
2	b Explain Security Reference Architecture of cloud with neat diagram.	6	CO2	L2	1.3.1
2	c Explain the following terms (any 2): a) Cloud Analytics b) Testing Under Control c) Cloud BPM	6	CO2	L2	1.3.1
2	d Write short notes on : a) Security Challenges of cloud OR b) Virtualization Security Management	6	CO2	L3	2.1.3
3	a Define Inter cloud.	2	CO1, 2	L2	1.3.1
3	b Discuss the architecture of cloud federation stack.	5	CO1, 2	L3	1.3.1
3	c What do you mean by Third party cloud services? Give suitable examples.	5	CO1, 2	L1	2.1.2
3	d Write short notes on (any 2): a) Hadoop b) Aneka c) Google app engine	5	CO1, 2	L2	1.3.1



Session: EVEN SEM (2022-23)

Class Test - 2	Course Name: B Tech (CSE – B + C)	Sem: 6 th
Time: 2 Hours	Subject Name: Data analytics using R Programming	Min Marks: 14
	Subject Code: CS102626	Max Marks: 40

Note: Attempt all questions. Parts (a) are compulsory & attempt any two parts (b), (c) and (d)

Course Outcome:

CO1		Learn Fundamentals of R.				
CO2		Covers how to use different functions in R, how to read data into R, accessing R packages.				
CO3		Writing R functions, debugging, and organizing data using R functions.				
CO4		Cover the Basics of statistical data analysis with examples.				
CO5		The whole syllabus will give an idea to collect, compile and visualize data using statistical functions.				
Q. No.		Questions	Marks	CO	B L	PI
1	a	Explain cbind() and rbind() with example.	4	CO1	L2	1.3.1
1	b	Explain melting and casting in detail with example.	8	CO2	L2	1.3.1
1	c	Explain various R-String Manipulating Text Data as mentioned below: 1. substr(), 2. strsplit() 3. paste() 4. grep() 5. toupper() 6. tolower()	8	CO3	L2	1.3.1
1	d	Create a 5X4 matrix and perform the following operations on them: 1. Check if the element exist in matrix or not. 2. Arrange the matrix row wise and access the element at [, 3]. 3. Update the matrix by adding 1 row and 1 column. 4. Convert the given matrix to dataframe.	8	CO3	L1	2.1.2
2	a	Write a brief note on factors.	4	CO2	L3	2.1.3

2	b	Write about apply, lapply, sapply with suitable examples	8	CO4	L2	1.3.1																								
2	c	<p>Create a data frame with the following structure.</p> <table><tr><th>EMPID</th><th>EMPNAME</th><th>SALARY</th><th>START DATE</th></tr><tr><td>1</td><td>Satish</td><td>50000</td><td>01-11-2013</td></tr><tr><td>2</td><td>Rani</td><td>75000</td><td>05-06-2011</td></tr><tr><td>3</td><td>Praveen</td><td>130000</td><td>09-03-2010</td></tr><tr><td>4</td><td>Pallavi</td><td>90000</td><td>27-04-2004</td></tr><tr><td>5</td><td>Ramesh</td><td>80000</td><td>29-05-2000</td></tr></table> <p>Write programs for the following:</p> <p>a. Extract two column names using column name.</p> <p>b. Extract the first two rows and then all columns.</p> <p>c. Extract 3rd and 5th row with 2nd and 4th column.</p>	EMPID	EMPNAME	SALARY	START DATE	1	Satish	50000	01-11-2013	2	Rani	75000	05-06-2011	3	Praveen	130000	09-03-2010	4	Pallavi	90000	27-04-2004	5	Ramesh	80000	29-05-2000	8	CO5	L2	1.3.1
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2	d	<p>The students taught by 3 different methods gave the following performance(marks):</p> <p>A 19,9,12,16,7,14,11</p> <p>B 8,13,3,17,15</p> <p>C 14,11,10,9,15,16</p> <p>Calculate the analysis of variance.</p>	8	CO2	L3	2.1.3																								