PRN		QP Code	CM-156

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	**Day &Date**	Monday,24/06/2019
Course Code	CSL-301	**Time**	10 am To 1 pm
Course Title	Operating System-I	**Max.Marks**	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Write and explain operating system components and their functionalities.	8	2	1
	B	Explain five major groups of system calls categories.	7	2	1
2	A	Assume you have the following jobs to execute with one processor with the job arranging in the order Processes: P1 (Arrival time 0, Burst time 8); P2 (1, 4); P3 (2, 9); P4 (3, 5); P5 (4, 6) Use FCFS and Shortest-remaining-time-first scheduling and calculate the average waiting time for the processes	8	3	2
		Attempt any one of B & C			
	B	Explain the role of long term scheduler, medium term scheduler and short term scheduler in Operating System	7	2	2
	C	Explain the interprocess communication with two different communication models	7	2	2
3	A	What is a deadlock? Explain how resource allocation graph can be used to check for deadlock in a system	8	1	3
	B	Describe the Bounded - buffer problem and give a solution for the same using semaphores. Write the structure of producer and consumer processes.	7	2	3
4	A	Explain with the help of supporting diagram how TLB improves the performance of a demand paging system	8	2	4
		Attempt any one of B & C			
	B	Given 3 processes A,B and C, three resources x, y and z and following events, i) A requests x ii) A requests y iii) B requests y iv) B requests z v) C requests z vi) C requests x vii) C requests y Assume that requested resources should always be allocated to the request process if it is available. Draw the resource allocation graph for the sequences. And also mention whether it is a deadlock? If it is, how to recover the deadlock	7	4	4
	C	Describe the FIFO page replacement algorithm, assuming there are 3 frames and the page reference string is 7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1 Find the number of page faults	7	3	4

PRN		QP Code	CM-156

Que No		Question	Marks	BL	CO
5		**Attempt any one ofA&B**			
	A	Explain paging scheme of memory management. What hardware support is needed for its implementation?	8	2	5
	B	Explain the following i) file types ii) file operation iii) file attributes	8	2	5
		Attempt any twoof C, D & E			
	C	Explain Sequential and Direct file access methods	6	2	5
	D	Draw and explain two level Directory structure.	6	2	5
	E	What is Directory? Explain which different operations can be performed on Directory	6	2	5
6		**Attempt any one ofA&B**			
	A	Explain Direct Memory Access as I/O hardware.	8	2	5
	B	Draw and explain a typical bus structure in computer architectute.	8	2	5
		Attempt any twoof C, D & E			
	C	Draw and explain the interrupt driven I/O system in detail	6	2	5
	D	Write note on "Interrupt".	6	1	5
	E	Explain four different types of registers for I/O port.	6	2	5

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PRN		QP Code	CM-014

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Monday,17/06/2019
Course Code	CSL302	Time	10 am To 1 pm
Course Title	Database Engineering	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Write SQL queries to perform following tasks on given schema. Student(snum: integer, sname: string, major: string, level: string, age: integer) Class(cname: string, room: string, fid: integer) Enrolled(snum: integer, cname: string) Faculty(fid: integer, fname: string, deptid: integer) 1] Find the names of all Juniors (Level = JR) who are enrolled in a class taught by I. Teach. 2] Find the age of the oldest student who has History major 3] Find the age of the oldest student who is enrolled in a course taught by I. Teach. 4] Find the names of all classes that meet in room R128 5] Find the names of all classes that have five or more students enrolled. 6] Find the names of all students who are enrolled in two classes	8	6	4
	B	List and Explain different Data Manipulation Language (DML) Statements with their syntax	7	1	1
2	A	Draw E-R diagram for National Hockey League (NHL), with following assumptions. The NHL has many teams, each team has a name, a city, a coach, a captain, and a set of players, each player belongs to only one team, each player has a name, a position (such as left wing or goalie), a skill level, and a set of injury records, a team captain is also a player, a game is played between two teams (referred to as host_team and guest_team) and has a date and a score.	8	6	2
		Attempt any one of B & C			
	B	Explain – generalization, specialization and aggregation with example	7	2	1
	C	Explain strong entity set and weak entity set with example.	7	2	1
3	A	Explain B+ tree indexing with example.	8	2	5
	B	Compare Dense Indices with Sparse Indices	7	4	5

Que No		Question	Marks	BL	CO
4	A	Apply different applicable normal forms on the schema given in un-normalized form. video(title,director,serial) customer(name,addr,memberno) hire(memberno,serial,date)	8	3	3
		Attempt any one of B & C			
	B	What is functional dependency? Explain different types of functional dependency with example.	7	1	3
	C	Explain First Normal Form (1NF) and Second Normal Form (2NF) with example.	7	1	3
5		**Attempt any one of A & B**			
	A	Explain Lock-based protocols for concurrency control.	8	1	6
	B	Explain Timestamp-Based Protocols for concurrency control.	8	1	6
		Attempt any two of C, D & E			
	C	What is transaction? Give ACID properties of transaction.	6	1	6
	D	Describe the following terms i] Conflict Serializability ii] View Serializability	6	1	6
	E	What is granularity? What are the different types of granularity?	6	1	6
6		**Attempt any one of A & B**			
	A	Explain Log-based Recovery Mechanism.	8	2	1
	B	Explain use of Shadow Paging for Data Recovery. Give advantages and disadvantages of shadow paging.	8	2	1
		Attempt any two of C, D & E			
	C	Give different Deadlock Prevention Strategies.	6	2	1
	D	Explain different types of failure in DBMS.	6	2	1
	E	Explain the following terms i] Volatile Storage ii] Non-volatile Storage iii]Stable Storage	6	2	1

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PRN		QP Code	CM-211

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Wednesday,26/06/2019
Course Code	CSL303	Time	10 am To 1 pm
Course Title	Machine Learning	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

<table>
<tr><th colspan="2">Que No</th><th>Question</th><th>Marks</th><th>BL</th><th>CO</th></tr>
<tr><td rowspan="4">1</td><td>A</td><td>Identify two clusters in following data using K-mean clustering technique
Data: 43,13, 17,37,9</td><td>5</td><td>3</td><td>3</td></tr>
<tr><td colspan="5">Attempt any one of B & C</td></tr>
<tr><td>B</td><td>Find the root node of the Decision Tree to classify fitness using following Data
<table>
<tr><th>Age</th><th>Eat fastfood</th><th>Do Exercise</th><th>Fitness</th></tr>
<tr><td>< 30</td><td>yes</td><td>No</td><td>Unfit</td></tr>
<tr><td>< 30</td><td>No</td><td>No</td><td>fit</td></tr>
<tr><td>< 30</td><td>No</td><td>Yes</td><td>fit</td></tr>
<tr><td>> 30</td><td>yes</td><td>No</td><td>Unfit</td></tr>
<tr><td>> 30</td><td>No</td><td>No</td><td>fit</td></tr>
<tr><td>> 30</td><td>No</td><td>Yes</td><td>fit</td></tr>
</table></td><td>10</td><td>3</td><td>3</td></tr>
<tr><td>C</td><td>Use data in Q.1 B to predict fitness of person having attributes as age > 30 , Eat fastfood = No , and Do exercise = yes using Bayesian Classifier.</td><td>10</td><td>3</td><td>3</td></tr>
<tr><td rowspan="5">2</td><td colspan="5">Attempt any three of A, B, C & D</td></tr>
<tr><td>A</td><td>Explain learning rate in regression.</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td>B</td><td>How centroid is calculated for multiple attribute data in clustering</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td>C</td><td>Write hypothesis function for logistic regression.</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td>D</td><td>What is gini index? How is it calculated.</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td rowspan="5">3</td><td colspan="5">Attempt any three of A, B, C & D</td></tr>
<tr><td>A</td><td>Explain collaborative filter based recommender system.</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td>B</td><td>How Similarity is measured in clustering Techniques?</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td>C</td><td>Explain the gradient decent learning algorithm for simple perceptron.</td><td>5</td><td>2</td><td>1</td></tr>
<tr><td>D</td><td>Explain merits and demerits of Decision Tree Classifier</td><td>5</td><td>2</td><td>2</td></tr>
<tr><td rowspan="2">4</td><td>A</td><td>i) Determine class of iris flower having following attributes using K-nn classifier with K =3
<table>
<tr><th>sepal length</th><th>sepal width</th><th>petal length</th><th>petal width</th></tr>
<tr><td>5</td><td>3.2</td><td>1.2</td><td>0.2</td></tr>
</table></td><td>15</td><td>3</td><td>3</td></tr>
</table>

Que No		Question	Marks	BL	CO

Training Dataset

sepal length	sepal width	petal length	petal width	class
5.1	3.5	1.4	0.2	Iris-setosa
4.9	3	1.4	0.2	Iris-setosa
4.7	3.2	1.3	0.2	Iris-setosa
7	3.2	4.7	1.4	Iris-versicolor
6.4	3.2	4.5	1.5	Iris-versicolor
6.9	3.1	4.9	1.5	Iris-versicolor

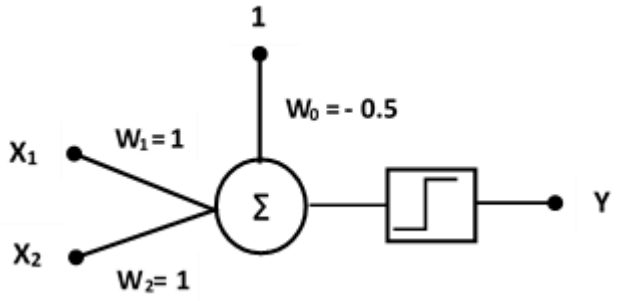
ii) Design an artificial neuron to recognize logical AND operation.

5 **Attempt any two of A, B & C**

A Calculate cost (MSE) of linear regression for following data when $W_0 = 1$, $W_1 = 4$ and $W_0 = -1$, $W_1 = 2$ Which parameter are more appropriate? Why? — 10 | 4 | 2

X	Y
5	21
10	38
15	62
20	83
25	101

B Analyze the following Artificial Neural with hardlimit Thresholding function and determine the logical operation it has implemented. — 10 | 4 | 2



C compare simple linear, multiple linear and polynomial regression. — 10 | 4 | 2

6 **Attempt any four of A, B, C, D & E**

A What is recommender system? Why is it needed? List applications of recommender system. — 5 | 2 | 1

B Explain performance parameters of classification techniques. — 5 | 2 | 1

C What the assumptions made for linear regression? — 5 | 2 | 1

D Explain Regularization in multiple linear regression. — 5 | 2 | 1

E Explain structure of a biological neuron. — 5 | 2 | 1

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PRN		QP Code	CM-100

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

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Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	**Day &Date**	Friday,21/06/2019
Course Code	CSL304	**Time**	10 am To 1 pm
Course Title	Information Security	**Max.Marks**	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Explain following substitution cipher techniques a. Caeser Cipher b. Playfair Cipher	8	2	1
	B	Explain X.500 security architecture	7	2	1
2	A	Discuss public key cryptosystems to achieve secrecy and authentication	8	2	2
		Attempt any one of B & C			
	B	Explain Key generation schedule of DES	7	2	2
	C	Explain Single round in DES encryption scheme	7	2	2
3	A	What are the four ways of public key distribution	8	1	2
	B	Define simple hash functions? List the basic uses of Hash functions.	7	1	2
4	A	Solve using RSA algorithm to perform encryption & decryption using RSA algorithm if p= 3, q = 11, e = 7, M = 5. Find C	8	3	3
		Attempt any one of B & C			
	B	List the details of message authentication dialog for Kerberos version 4	7	1	3
	C	What is direct digital signature and arbitrated digital signature?	7	1	3
5		**Attempt any one ofA&B**			
	A	Explain Pretty Good Privacy operation in detail	8	2	4
	B	Explain IPSec ESP format	8	2	4
		Attempt any twoof C, D & E			
	C	List the applications of IPSec Protocol	6	1	4
	D	What is S/MIME?	6	1	4
	E	What is enveloped data and signed data in S/MIME	6	1	4
6		**Attempt any one ofA&B**			
	A	Explain Secure Socket Layer (SSL) architecture with block diagram?	8	2	4
	B	Explain SSL alert protocol	8	2	4
		Attempt any twoof C, D & E			
	C	Explain are the Web security threats	6	2	4
	D	Explain SSL record header format	6	2	4
	E	Briefly explain Secure Electronics Transaction	6	2	4

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PRN		QP Code	CM-056

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Wednesday,19/06/2019
Course Code	CSL305	Time	10 am To 1 pm
Course Title	System Programming	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Discuss the Pass Structure of Assembler. How is the problem of forward reference resolved in single pass & two pass translation?	8	2	2
	B	List and explain Advanced Assembler Directives.	7	2	2
2	A	Illustrate the Front End of Toy Compiler with neat diagram.	8	2	1
		Attempt any one of B & C			
	B	Explain the fundamentals of language specification.	7	2	1
	C	Illustrate Language Processor Development Tools.	7	2	1
3	A	Enlist and explain various data structures used in Macro Preprocessor Design.	8	2	2
	B	Illustrate Macro definition & Macro Call with example.	7	2	2
4	A	Explain triple, quadruple & expression tree in Intermediate Code for expression.	8	2	3
		Attempt any one of B & C			
	B	Illustrate Code Optimization in detail.	7	2	3
	C	Explain Operand Descriptor & Register Descriptor with example.	7	2	3
5		**Attempt any one of A & B**			
	A	Illustrate with a neat diagram the structure of an Editor.	8	2	4
	B	Illustrate Enhancement of Program Performance.	8	2	4
		Attempt any two of C, D & E			
	C	Illustrate Program Testing & Debugging.	6	2	4
	D	How Command Dialogs are implemented?	6	2	4
	E	Explain structure of User Interface.	6	2	4
6		**Attempt any one of A & B**			
	A	What is Program Linking? Explain the use of ENTRY & EXTRN statements in relocation along with example.	8	2	3
	B	What steps are involved in execution of a program? Explain translated, linked & load time addresses with example.	8	2	3
		Attempt any two of C, D & E			
	C	Write a note on Object Module.	6	2	3
	D	Discuss about Self- Relocating programs.	6	2	3
	E	Explain Linking for overlays with example.	6	2	3

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PRN		QP Code	CM-034

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	Day &Date	Tuesday,18/06/2019
Course Code	CSL 311	Time	10 am To 1 pm
Course Title	Operating Systems-II	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Write an algorithm for block read ahead.	8	1	1
	B	State and explain UNIX i-nodes in detail.	7	2	2
2	A	How can you allocate a block for file system?	8	1	2
		Attempt any one of B & C			
	B	What is the need for buffer cache in UNIX? Explain buffer header in detail.	7	2	1
	C	What are various buffer retrieval scenarios in UNIX? Explain any one of them in detail.	7	2	1
3	A	Write an algorithm for changing the size of the region.	8	1	4
	B	How can you change a process from "kernel running" state to "asleep in memory" state?	7	1	4
4	A	Explain with proper diagram, layout of a system memory.	8	2	4
		Attempt any one of B & C			
	B	Elaborate UNIX pipes in detail.	7	2	3
	C	Describe various file system calls.	7	2	3
5		**Attempt any one ofA&B**			
	A	Write a short note on UNIX process scheduling.	8	2	5
	B	What are signals? Explain their role in UNIX.	8	2	5
		Attempt any twoof C, D & E			
	C	How can you terminate a process in UNIX?	6	1	5
	D	Write an algorithm for recognizing signals.	6	1	5
	E	Write an algorithm for clock.	6	1	5
6		**Attempt any one ofA&B**			
	A	List and explain various data structures for demand paging.	8	2	6
	B	Write a short note on swapping.	8	2	6
		Attempt any twoof C, D & E			
	C	What is swapper process? Write an algorithm for a swapper process.	6	2	6
	D	What do you mean by working set of a process?	6	2	6
	E	How block allocation in case of swap device is different from file system?	6	2	6

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PRN		QP Code	CM-075

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third YearB.Tech. (CS)	**Day &Date**	Thursday,20/06/2019
Course Code	CSL312	**Time**	10 am To 1 pm
Course Title	Compiler Construction	**Max.Marks**	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	With neat diagram explain phases of compiler?	8	2	1
	B	Construct minimum state DFA for the regular expression (a|b)*a (a|b)	7	3	1
2	A	Construct NFA for the regular expression (0 | 1)* 00) |0)	8	3	1
		Attempt any one of B & C			
	B	Explain compiler construction tools with example?	7	2	1
	C	What is the role of lexical analysis? Explain input buffering with example ?	7	2	1
3	A	Construct LALR parsing table for following grammar: S -> AA A -> aA | b	8	3	2
	B	Construct predictive parsing table for the grammar: E -> E + T | T T -> T * F | F F -> (E) | id Generate the string id + id * id	7	3	2
4	A	What is three address code? Translate the expression (a+b)/(c+d)*(a+b/c)-d into quadruples, triples and indirect triples.	8	3	3
		Attempt any one of B & C			
	B	Generate three address code for following Boolean expression (a < b) or (c < d) and (e < f) using the translation scheme of Boolean.	7	3	3
	C	Write SDD for following assignment statement x: = a + b * c + d. construct annotated parse tree.	7	3	3
5		**Attempt any one ofA&B**			
	A	Explain activation tree and control stack with example?	8	2	3
	B	Explain stack allocation with example?	8	2	4
		Attempt any twoof C, D & E			
	C	What is activation record? Explain the contents of activation record?	6	2	3
	D	Explain dynamic storage allocation strategies?	6	2	4
	E	Explain following parameter passing methods : 1) Call by value 2) Call by value result	6	2	4
6		**Attempt any one ofA&B**			
	A	Explain following machine independent transformation techniques: 1) common sub expression and dead code elimination. 2) copy propagation and constant folding,	8	2	4

PRN		QP Code	CM-075

Que No		Question	Marks	BL	CO
	B	Explain how code motion and frequency reduction used for loop optimizations?	8	1	4
		Attempt any twoof C, D & E			
	C	Explain global data flow analysis using data flow equations?	6	2	4
	D	Explain different code generation issues with example?	6	2	4
	E	Explain labeling algorithm with example?	6	1	4

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PRN		QP Code	CM-129

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

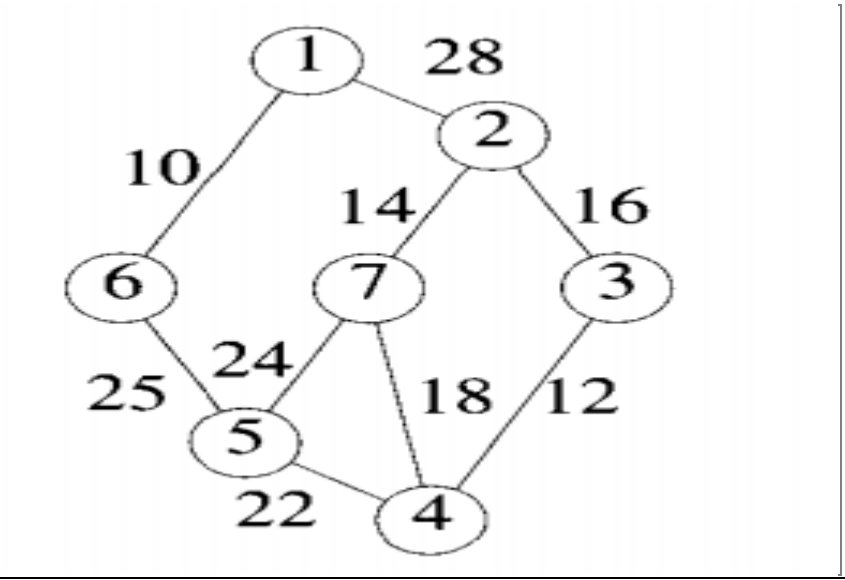
(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Saturday,22/06/2019
Course Code	CSL313	Time	10 am To 1 pm
Course Title	Computer Algorithm	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Give algorithm to sort numbers using Merge Sort. Compute its Complexity.	8	5	2
	B	What is algorithm? What are different characteristics of algorithm?	7	1	1
2	A	Find Minimum Cost Spanning Tree (MST) using Prim's and Kruskal's algorithm in following graph 	8	3	2
		Attempt any one of B & C			
	B	Solve the following instance of Knapsack Problem. n=4 m=25 (p1, p2, p3, p4) = (2, 5, 8, 1) (w1, w2, w3, w4) = (10, 15, 6, 9)	7	3	2
	C	Find an optimal merge pattern for ten files whose lengths are 28, 32, 12, 5, 84, 53, 91, 35, 3 and 11	7	3	2
3	A	Explain absolute approximation with examples.	8	4	4
	B	Explain polynomial time approximation scheme with example.	7	4	4
4	A	What is Resource Allocation Problem? Apply mechanism used to solve multistage graph problem to solve Resource Allocation Problem.	8	3	3
		Attempt any one of B & C			
	B	Solve the instance of 0/1 knapsack problem using dynamic programming where n=3. (w1, w2, w3)=(2, 3, 4) and (p1, p2, p3)=(1, 2, 5) and m=6	7	3	3
	C	Give solution to all pairs shortest path problem using dynamic programming.	7	3	3

PRN		QP Code	CM-129

Que No		Question	Marks	BL	CO
5		**Attempt any one of A & B**			
	A	Give solution to n-queens problem using Backtracking method.	8	2	3
	B	Explain the following terms with suitable example i] Live node ii] E-node iii] Static Trees iv] Dynamic Trees	8	2	3
		Attempt any two of C, D & E			
	C	Draw and explain state space tree for sum of subset problem	6	2	3
	D	Give backtracking solution to Hamiltonian Cycle.	6	2	3
	E	Give backtracking solution to Graph coloring problem.	6	2	3
6		**Attempt any one of A & B**			
	A	Explain NP-Hard Scheduling Problems.	8	2	5
	B	Assume that Node cover decision problem is NP-hard; Prove that Clique decision problem is also NP-Hard.	8	2	5
		Attempt any two of C, D & E			
	C	Explain the following terms i] Deterministic and non-deterministic algorithms ii] Decision and Optimization problems	6	1	5
	D	Define P and NP. Draw and Explain commonly believed relationship between P and NP.	6	1	5
	E	Explain AND/OR Graph Decision problem with example.	6	1	5

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PRN		QP Code	CM-185

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Monday,25/06/2019
Course Code	CS314	Time	10 am To 1 pm
Course Title	Data Science	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Explain Statistical Data Modeling techniques.	8	2	1
	B	Explain Bonferroni's Principle with suitable example.	7	2	1
2	A	What are four ways to handle missing data in dataset? Of the four methods for handling missing data, which method is preferred?	8	2	2
		Attempt any one of B & C			
	B	For the stock price data given below, find the decimal scaling stock price for all the stock prices. 10, 7, 20, 12, 75, 15, 9, 18, 4, 12, 8, 14	7	3	2
	C	For the stock price data given below, identify all possible stock prices that would be outliers using Interquartile Range (IQR) method. 12, 9, 22, 14, 77, 17, 11, 20, 6, 14, 10, 17	7	3	2
3	A	What is Exploratory Data Analysis (EDA)? What are objectives of EDA?	8	1	2
	B	Explain method of binning based on predictive value.	7	2	2
4	A	What is Feature Selection? Explain methods of Feature Selection used in text categorization.	8	2	3
		Attempt any one of B & C			
	B	Explain Text Categorization (TC) using Example-Based Classifiers and Support Vector Machines.	7	2	3
	C	Explain document clustering algorithms.	7	2	3
5		**Attempt any one of A & B**			
	A	What is Betweenness? How Betweenness can be used to find Communities in Social Network Graph?	8	2	4
	B	How to discover Communities in Social-Network Graph directly?	8	2	4
		Attempt any two of C, D & E			
	C	How Social-Network Graph can be partitioned to identify Communities?	6	2	4
	D	How to find overlapping communities in Social Network Graph?	6	2	4
	E	Why triangles in Social-Network Graph are counted? Explain algorithm for finding triangles in Social Network Graph.	6	2	4
6		**Attempt any one of A & B**			
	A	Explain classification evaluation measures accuracy, overall error rate, sensitivity and specificity.	8	2	5
	B	Why do we not use the average deviation as a model evaluation measure? How is the square root of the MSE interpreted?	8	2	5

Que No		Question	Marks	BL	CO
		Attempt any two of C, D & E			
	C	What is the minimum descriptive length principle, and how does it represent the principle of Occam's razor?	6	2	5
	D	What might be a drawback of evaluation measures based on squared error? How might we avoid this?	6	2	5
	E	With suitable example explain decision cost/benefit analysis.	6	2	5

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PRN		QP Code	CM-241

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (EL/ET)	Day &Date	Thursday,27/06/2019
Course Code	CSLOE2	Time	10 am To 1 pm
Course Title	Introduction to Java Programming	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Explain following features of java. a. Object oriented b. Platform independent c. Portable d. High Performance	8	2	2
	B	What is identifiers, variables and data-types in java?	7	1	1
2	A	Briefly explain static modifier and final modifier in java with example	8	2	2
		Attempt any one of B & C			
	B	What are the different logical operator available in java explain with example	7	1	1
	C	What are the different assignment operator available in java explain with example	7	1	1
3	A	Construct a program to read 5 elements from user into array and display on console?	8	3	2
	B	Explain use this keyword in java with example?	7	2	3
4	A	Explain the following terms with respect to exception handling. i) try ii) catch	8	2	4
		Attempt any one of B & C			
	B	What are the built in exceptions available in java?	7	1	4
	C	What is scope of inner class and its members? Explain with example	7	1	3
5		**Attempt any one ofA&B**			
	A	What are the different uses of super keyword in java? Explain with example	8	1	3
	B	Briefly define what is an abstraction in java and how to achieve abstraction in java with example	8	2	3
		Attempt any twoof C, D & E			
	C	Briefly explain polymorphism and its types with example	6	2	3
	D	How to call abstract methods from abstract class explain with example	6	2	3
	E	What are the rules for method overriding using super keyword?	6	1	3
6		**Attempt any one ofA&B**			
	A	Compare between Interfaces and abstract Classes	8	4	4
	B	Describe the levels of access protection available for packages	8	2	4
		Attempt any twoof C, D & E			
	C	How to implement and interface? Explain with example?	6	2	4
	D	How to achieve multiple inheritance using interface? Explain with example?	6	2	4
	E	How to create a package? Explain with example	6	2	4

PRN		QP Code	CM-241

Que No	Question	Marks	BL	CO

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PRN		QP Code	CM-266

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (TC/TT/MMTT/TPE)	Day & Date	Friday,28/06/2019
Course Code	ELLOE1	Time	2:30 pm To 5:30 pm
Course Title	PLC & SCADA	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1		**Attempt any five of A, B, C, D, E & F**			
	A	Explain any one type of Photoelectric Sensor	4	2	1
	B	Write operating principal of Inductive Proximity Sensor	4	2	1
	C	Write note on Relay	4	2	1
	D	Explain Absolute Encoder in Detail	4	2	1
	E	Explain any one non-Contact type Sensors	4	2	1
	F	Write note on Flow Measurement	4	2	1
2	A	What are different types of PLC's?	4	2	2
		Attempt any one of B & C			
	B	Write Ladder Logic Program for following Logic gates with truth tables 1) OR 2) AND 3) NOT 4) NOR 5) NAND 6) XOR	12	3	2
	C	Explain Advantages and Disadvantages of Programmable logic controller	12	2	2
3	A	Explain with example Latching of Output	4	2	3
		Attempt any one of B & C			
	B	Explain in Detail Different types of timers used in PLC	12	2	3
	C	With the help of connection Diagram draw and explain Ladder program to turn OFF 3 Motor sequentially with delay of 5 seconds	12	3	3
4		**Attempt any two of A, B & C**			
	A	State advantages disadvantages of Convectional ,PLC based control system	8	2	2
	B	Explain Always on Always OFF and Oscillator Circuit	8	3	2
	C	Write features of Ladder Diagram and their advantages.	8	2	2
5		**Attempt any two of A, B & C**			
	A	Write & Explain Ladder program to generate Pulse on output with on Time 10 second Off time 5 Sec	8	6	3
	B	Develop Ladder Program to control Batch Process.	8	6	3
	C	Explain Failsafe Design in PLC	8	2	3
6		**Attempt any two of A, B & C**			
	A	What is SCADA? Explain SCADA systems	8	2	4
	B	Explain functions of SCADA system in details	8	2	4
	C	Explain benefits and Application of SCADA systems	8	2	4

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PRN		QP Code	CM-240

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination –Makeup 2018-19

Class - Program	Third Year B.Tech. (CS/IT)	Day &Date	Thursday,27/06/2019
Course Code	ETL0E1	Time	10 am To 1 pm
Course Title	Fundamentals of Embedded Systems	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1		**Attempt any fiveofA, B, C, D, E & F**			
	A	i) Which microcontroller is present in Arduino UNO board? ii) What is the difference between setup() and loop() function in sketch of Arduino IDE?	4	2	3
	B	Explain the syntax and use of following library functions of Arduino i) digitalWrite ii) pinMode	4	2	3
	C	Answer following questions i) How many digital pins are there on the Arduino UNO board? ii) How many analog pins are used in Arduino Mega board? iii) What the pre built circuit boards that fit on top of Arduino called as? iv) What is the program written with the IDE for Arduino called as?	4	2	3
	D	Answer the following i) What does IDE stand for? ii) Which Arduino board allows sewn into clothing? iii) What does p refer to in ATmega328p iv) Which is the default boot loader of the Arduino Uno	4	2	3
	E	Enlist four Arduino boards' names. State features and microcontroller used in the board for any two of them	4	2	3
	F	What are the advantages of Arduino?	4	2	3
2		**Attempt any twoofA, B & C**			
	A	i) Draw and explain block diagram of mode 2 of timer 0 in 8051. ii) Explain TMOD SFR in detail.	8	3	2
	B	i) Write interrupts available in 8051 with their vector address. ii) Explain IE and IP registers in detail. Explain how 8051 services simultaneous and pending interrupts?	8	3	2
	C	What is serial communication? How is this achieved with 8051 using RS232 standards? For the 8051, if the crystal frequency is 11.0592 MHz, what will be the baud rate with TH1 = -3 and TH1 = -12, for SMOD = 0 and SMOD = 1;	8	3	2
3		**Attempt any twoofA, B & C**			
	A	i) Write an embedded C program to generate square wave of 1KHz on pin P1.0 of 8051 using timer 0. Assume crystal frequency of 12MHz. ii) Write an 8051 C program to toggle only pin P1.5 continuously every 250ms. Use Timer 0, mode 2 (8-bit auto-reload) to create the delay	8	4	2
	B	Write embedded C program to continuously transmit "DKTE Ichalkaranji" with baud rate of 4800 bps to terminal connected to serial port of 8051. Crystal frequency is 11.0592 MHz	8	4	2

PRN		QP Code	CM-240

Que No		Question	Marks	BL	CO
	C	i) Write embedded C program to send out value 22H serially one bit at a time via P1.2. The LSB should go out first. ii) How the code segment is accessed in embedded c programming?	8	4	2
4		**Attempt any twoofA, B & C**			
	A	Interface ADC 0809 to 8051. Write a program to convert analog input to digital which is applied to Port1.	8	6	2
	B	Draw interfacing diagram of 16x2 LCD with8051 ports. Write a program to display the message Kolhapur	8	6	2
	C	Interface LM35 sensor and LCD to 8051. Write algorithm/ flowchart/program to display the temperature on LCD	8	6	2
5		**Attempt any twoofA, B & C**			
	A	i) Draw and explain functional pin out of 8051. ii) Explain function of ALE, PSEN, RST and XTALI-XTAL2 pins in 8051.	8	2	1
	B	i) Explain how stack is implemented in 8051. ii) What is difference between microprocessor and microcontroller?	8	2	1
	C	Draw and explain architecture of 8051	8	2	1
6		**Attempt any twoofA, B & C**			
	A	Draw interfacing diagram of dc motor with Arduino Uno board. Write a program to operate the motor	8	6	4
	B	Draw Arduino based detailed interfacing diagram of LM35 temperature sensor. Write in detail program to display the temperature on LCD	8	6	4
	C	Draw interfacing diagram of 16x2 LCD with Arduino Uno board. Write a program to display the message "DKTE TEI Ichalkaranji"	8	6	4

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PRN		QP Code	CM-264

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

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Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (TT/TP/TC/TF)	**Day & Date**	Friday,28/06/2019
Course Code	ITLOE1	**Time**	2.30 pm To 5.30 pm
Course Title	Enterprise Resource Planning and E-Commerce	**Max.Marks**	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	List and explain various core processes in a manufacturing company.	8	2	1
	B	Describe the Key issues for the success of ERP implementation.	7	1	1
2	A	Illustrate the ERP approach for building the business model.	8	2	1
		Attempt any one of B & C			
	B	Write a note on- ' Customization in ERP implementation'	7	1	1
	C	Write a note on- ' Supply chain management '	7	1	1
3	A	What is SAP R/3? Explain the SAP R/3 Applications.	8	2	2
	B	Explain the treasury management module in SAP R/3.	7	2	2
4	A	Describe major business to business (B2B) business models.	8	1	3
		Attempt any one of B & C			
	B	Explain the E-tailer business model in E-commerce.	7	2	3
	C	Describe the content provider model in B2C business models.	7	2	3
5		**Attempt any one of A & B**			
	A	Describe various Internet marketing technologies used in E-commerce.	8	1	4
	B	Define economic viability. Describe Strategic and financial analysis for viability of online firms.	8	1	4
		Attempt any two of C, D & E			
	C	Describe the online recruitment industry trends.	6	1	4
	D	Describe the use of web transaction logs for marketing.	6	1	4
	E	State the benefits of online auctions.	6	1	4
6		**Attempt any one of A & B**			
	A	Illustrate the types and examples of auctions.	8	2	4
	B	Illustrate the types of E-commerce portals with examples.	8	2	4
		Attempt any two of C, D & E			
	C	Explain the types of social networks and online communities	6	2	4
	D	Explain the online Banking and Brokerage financial services	6	2	4
	E	Explain Marketing automation and CRM systems.	6	2	4

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PRN		QP Code	CM-242

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (ET/EL)	**Day &Date**	Thursday,27/06/2019
Course Code	MELOE1	**Time**	10 am To 1 pm
Course Title	Fundamentals of Mechatronics	**Max.Marks**	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1	A	Define and explain the concept of mechatronics. Enlist advantages and limitations of the same.	8	2	1
	B	Enlist various applications of mechatronics systems. Explain any one in detail with neat sketch.	7	2	1
2	A	Suggest suitable sensors for following quantities, also state principle of the sensor suggested. a. Level b. Velocity	8	4	1
		Attempt any one of B & C			
	B	Explain performance terminology of sensors.	7	2	1
	C	Explain LVDT in detail with neat sketch and applications.	7	2	1
3	A	Enlist various types of ADC. Explain any one in detail with neat sketch.	8	2	1
	B	Explain various signal conditioning processes used in mechatronics systems.	7	2	1
4	A	Classify pumps. Explain any one pump with neat sketch, advantages and limitations.	8	2	1
		Attempt any one of B & C			
	B	Draw ISO symbols of following: Pneumatic Compressor Pressure reducing valve Double acting cylinder Filter FRL unit Hydraulic motor 4/3 tandem centre DC valve with port names	7	1	1
	C	Explain Meter-in circuit in detail with neat sketch, working and application.	7	2	1
5		**Attempt any one ofA&B**			
	A	Define PLC. Explain block diagram and components of PLC with neat sketch.	8	2	1
	B	Explain the concept of Physical Vs Programmed components in PLC.	8	2	1
		Attempt any twoof C, D & E			
	C	Explain Always ON and Always OFF contacts in PLC programming.	6	2	1
	D	Explain w.r.t. PLC: Latching circuit b. Disagreement circuit	6	2	1
	E	Explain the concept of RS-232 Serial Interface in PLC.	6	2	1

PRN		QP Code	CM-242

Que No		Question	Marks	BL	CO
6		**Attempt any one ofA&B**			
	A	In a PLC based automatic ball sorting system, there are three types of balls viz. metal, plastic and glass, are to be sorted. If metallic ball is sensed, actuator A1 will be actuated and will retract touching the limit switch LS1. If plastic ball is sensed, actuator A2 will be actuated and will retract touching the limit switch LS2. If the ball is of glass, no actuators would be actuated and RED light will glow. Devise a ladder program with input-output listing.	8	5	4
	B	Explain the types of timers used in PLC programming with examples.	8	2	1
		Attempt any twoof C, D & E			
	C	Explain PLC system fault finding in detail.	6	2	1
	D	Explain up counter with suitable example.	6	2	3
	E	Explain various terms and symbols related to basic PLC ladder program.	6	2	3

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PRN		QP Code	CM-248

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third Year B.Tech. (IT and CSE)	Day & Date	Thursday,27/06/2019
Course Code	TFLOE1	Time	10 am To 1 pm
Course Title	MERCHANDISING	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1		**Attempt any five of A, B, C, D, E & F**			
	A	Define and explain all the parameters with one example i) Merchandising ii) Merchandiser iii) Merchandise iv) Marketing	4	1	2
	B	Justify the statement- Visual merchandising increases sales of retail.	4	5	2
	C	Explain the role of buying house.	4	2	3
	D	Explain the role of IE, PPC , HR and quality department	4	2	1
	E	List what all can be marketed?	4	1	2
	F	Explain the key concepts of marketing.	4	2	2
2	A	Explain the steps involved in marketing process?	4	2	2
		Attempt any one of B & C			
	B	Illustrate and explain different types of organizational structure. Analyze and explain which type of structure is suitable for small, Medium and large size IT companies.	12	3	1
	C	Explain pre and post shipment documents used for export.	12	2	4
3	A	Divide Boston matrix in four parts and explain how Boston matrix can be used to eliminate the non-performing product.	4	4	2
		Attempt any one of B & C			
	B	Analyze the case and give appropriate solution- An organization is facing a problem of higher lead time and management decided to reduce lead time. After analysis organization found 80% time was getting consumed by pre-production activities. To reduce this time what steps management should take, so that they can reduce lead time significantly.	12	4	2
	C	Analyze the case and give appropriate solution with your marketing knowledge -One of the businessman is planning to open a retail store but he is confused whether he should take franchise for branded retail chain where profit margin is less is or he should take non branded retail where profit margin is high. The decision is stuck as volume plays very important role. How this problem can be solved?	12	4	2
4		**Attempt any two of A, B & C**			
	A	Define sourcing and explain different types of sourcing	8	1	3
	B	Explain different types of samples of product development.	8	2	3
	C	Explain the roles and responsibilities of merchandiser.	8	2	2

PRN		QP Code	CM-248

Que No		Question	Marks	BL	CO
5		**Attempt any two of A, B & C**			
	A	Explain different Inco-terms used in export	8	2	4
	B	Define SEO. Explain with suitable example. How SEO helps in promotion of any product	8	1	4
	C	Define BOM. How merchandiser takes help of BOM in costing.	8	1	2
6		**Attempt any two of A, B & C**			
	A	Explain TIMWOOD wastages and how JIT Technique helps to reduce TIMWOOD wastages	8	2	3
	B	Define Teck-pack. Explain the content of Teck pack	8	1	1
	C	State the different types of merchandiser and explain 6 R for merchandiser?	8	1	2

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PRN		QP Code	CM-250

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third YearB.Tech. (EL/ET)	**Day &Date**	Thursday,27/06/2019
Course Code	TMLOE1	**Time**	10 am To 1 pm
Course Title	TECHNICAL TEXTILE	**Max.Marks**	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1		**Attempt any fiveofA, B, C, D, E & F**			
	A	Differentiate 'Traditional textile & Technical textile	4	1	1
	B	Define - Yarn count. Calculate Denier and Tex from 80's Ne.	4	2	4
	C	What is MIS? State its functions and advantages	4	3	2
	D	Explain the properties & applications of Natural and Synthetic fibres	4	4	3
	E	Define Nonwoven. State its classification and advantages.	4	6	3
	F	Describe different types of yarns	4	2	4
2	A	What are the high Visibility technical fabrics?	4	2	4
		Attempt any one of B & C			
	B	Define wave length of UVA, UVB & UVC. How to minimize the negative effects of UV rays by using technical textiles. Explain in detail.	12	4	4
	C	What are the protective measures to minimize electromagnetic radiations? How to make shielding fabrics?	12	4	4
3	A	What are the anti static fabrics? Describe the classification of protective clothing.	4	1	4
		Attempt any one of B & C			
	B	Compile the technical details of Flame retardant (FR) fibres and fabrics. Discuss the testing of FR fabrics?	12	4	4
	C	Write short note on "Bullet proof jackets". Explain it with principle, kinetic energy dissipation, fibres and fabrics for body armor.	12	6	4
4		**Attempt any twoofA, B & C**			
	A	What is the concept of B2B & B2C? Describe the E-Commerce in detail.	8	4	2
	B	Discuss - E retailing and Logistics in Garment Industry	8	4	2
	C	Describe the role of IT in textile industry. Explain - Textile value chain.	8	3	2

PRN		QP Code	CM-250

Que No		Question	Marks	BL	CO
5		**Attempt any twoofA, B & C**			
	A	Define Technical Textile. State advantages & disadvantages of technical textile. How the technical textiles can be classified. Give three examples in each sector.	8	1	3
	B	What is spinning? Discuss the carded and combed yarn manufacturing with flow chart?	8	1	3
	C	What is weaving and garmenting? Discuss the flow chart of weaving for warp and weft preparation?	8	6	3
6		**Attempt any twoofA, B & C**			
	A	What are the high performance fibres? Explain them with their properties for production of technical textile.	8	4	3
	B	Define Smart Textile. Discuss smart textile with reference to Advantages, Disadvantages. Properties Future design issues	8	1	3
	C	What is composite? Compile the technical details of Fibre Reinforced Composites (FRC).	8	3	4

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PRN		QP Code	CM-245

D.K.T.E. Society's TEXTILE AND ENGINEERING INSTITUTE, ICHALKARANJI.

(An Autonomous Institute)

Semester End Examination - Makeup 2018-19

Class - Program	Third YearB.Tech. (ME)	Day &Date	Thursday,27/06/2019
Course Code	TPLOE1	Time	10 am To 1 pm
Course Title	Machine Maintenance	Max.Marks	100

Instructions :

1. *All Questions are compulsory; assume suitable data if necessary and mention it clearly.*
2. *Mobile phones and programmable calculators are strictly prohibited.*
3. *Writing anything on question paper(except PRN), exchange/sharing of stationery, calculator etc. are not allowed.*

Que No		Question	Marks	BL	CO
1		**Attempt any fiveofA, B, C, D, E & F**			
	A	Compare breakdown maintenance and planned maintenance.	4	4	3
	B	Explain the terms MTBF & MTTR with suitable examples.	4	3	1
	C	Which properties of lubricant affect its selection?	4	3	1
	D	What is vibration monitoring? Explain with example	4	2	2
	E	Write a note on Erection, commissioning of a machine.	4	4	4
	F	Define Budget. Explain the factors responsible for effective budgeting	4	3	2
2	A	Write a note on inventory policy for 'A' category items	4	4	2
		Attempt any one of B & C			
	B	i)What is degree of planning? How it affects cost of maintenance? ii) "Condition based monitoring is planned maintenance at irregular intervals." Explain this statement.	12	5	3
	C	What are various approaches used for maintenance Budgeting? Explain Production Schedule Approach in detail.	12	5	3
3	A	Write a note on 'Debris analysis.'	4	3	2
		Attempt any one of B & C			
	B	Classify the machine failures by different ways. How failure analysis is helpful to improve productivity?	12	5	1
	C	Discuss in detail various types of planned maintenance.	12	6	4
4		**Attempt any twoofA, B & C**			
	A	State any two NDT (nondestructive testing) & their applications in inspection.	8	2	1
	B	State reasons for machine vibration & its effect on machine performance.	8	3	2
	C	"Performance monitoring is useful tool for condition based maintenance." Explain with suitable example.	8	4	4
5		**Attempt any twoofA, B & C**			
	A	Explain benefits of effective planning with suitable example.	8	4	4
	B	Under what conditions synthetic oils are preferred? State their types & uses.	8	3	1
	C	Explain different types of schedules for maintenance operations.	8	6	2
6		**Attempt any twoofA, B & C**			
	A	What are the primary functions of inventory management? Why are they termed as primary?	8	3	1
	B	How use of logic gates is beneficial in failure analysis?	8	3	3
	C	Explain VED analysis used for inventory management.	8	5	2

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