PRN		QP Code	CS-184

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third YearB.Tech. (CS)	**Day &Date**	Tuesday, 14/05/2019
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	Differentiate between single-processor system and Multiprocessor system. Explain Symmetric and Asymmetric multiprocessing system with neat diagram.	8	2	1
	B	What is Operating System? Explain the components of computer system with neat diagram.	7	1	1
2	A	For the following set of process find the average waiting time using Gantt chart for i) SJF ii) Priority scheduling process Burst time Priority p1 5 5 p2 3 4 p3 8 3 p4 2 1 p5 1 2 The process has arrived in the order p2, p1, p4, p3 and p5.	8	3	2
		Attempt any one of B & C			
	B	What do you mean by PCB? Where is it used? What are its contents? Explain	7	1	2
	C	Explain process states with a diagram. What is the need for a context switch?	7	2	2
3	A	What is a semaphore? Explain how a semaphore can be used so that statement S1 of process P1 is always executed first, and only then statement S2 of process P2 is executed.	8	3	3
	B	Explain the critical section problem with example. What are the requirements for solution of critical section problem	7	2	3
4	A	Describe the LRU 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.	8	3	4
		Attempt any one of B & C			
	B	Distinguish between static memory allocation and dynamic memory allocation	7	2	4
	C	Explain external & internal fragmentation in memory management	7	2	4
5		**Attempt any one of A & B**			
	A	Define file system. Explain the different directory structure.	8	1	5
	B	With the help of a neat diagram explain Paging and Swapping	8	2	5

PRN		QP Code	CS-184

Que No		Question	Marks	BL	CO
		Attempt any twoof C, D & E			
	C	Explain the different file protection schemes	6	2	5
	D	Explain file system mounting operation.	6	2	5
	E	Explain the following i) file types ii) file operation	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 Asynchronous and Synchronous I/O methods	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	Distinguish between a STREAMS driver and a STREAMS module.	6	1	5
	E	How the I/O-related portions of the kernel are structured in software layers	6	1	5

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PRN		QP Code	CS-025

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

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Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Tuesday, 07/05/2019
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. Suppliers(sid: integer, sname: string, address: string) Parts(pid: integer, pname: string, color: string) Catalog(sid: integer, pid: integer, cost: real) 1] Find the pnames of parts for which there is some supplier. 2] Find the snames of suppliers who supply every red part. 3] Find the pnames of parts supplied by Acme Widget Suppliers and by no one else. 4] For each part, Find the sname of the supplier who charges the most for that part. 5] Find the sids of suppliers who supply only red parts. 6] Find the sids of suppliers who supply a red part and a green part.	8	6	4
	B	List and Explain different Joins in SQL with example	7	1	1
2	A	Draw E-R diagram for banking application, with following assumptions. There are multiple banks and each bank has many branches. Each branch has multiple customers. Customers have various types of accounts. Some Customers also had taken different types of loans from these bank branches. One customer can have multiple accounts and Loans	8	6	2
		Attempt any one of B & C			
	B	What are the different levels of data abstraction	7	2	1
	C	Explain different mapping cardinalities with example.	7	2	1
3	A	Explain bitmap index with example.	8	2	5
	B	Compare Open Hashing with Closed Hashing.	7	4	5

Que No		Question	Marks	BL	CO
4	A	Apply different applicable normal forms on the schema given in un-normalized form. Grade_report (StudNo, StudName, Branch, Mentor, CourseNo, Ctitle, InstructName, InstructLocation, Grade)	8	3	3
		Attempt any one of B & C			
	B	Explain Canonical Cover and Closure of set of functional dependency.	7	1	3
	C	Explain Third Normal Form (3NF) and Boyce Codd Normal Form (BCNF) with example.	7	1	3
5		**Attempt any one of A & B**			
	A	What are different locking modes used in lock-based protocols? Give compatibility matrix.	8	1	6
	B	Explain Graph-based protocols for concurrency control.	8	1	6
		Attempt any two of C, D & E			
	C	Draw and Explain abstract transaction model.	6	1	6
	D	Describe the following terms i] Equivalent Schedules ii] Serializable Schedules	6	1	6
	E	Explain recoverable schedule and non-recoverable schedule.	6	1	6
6		**Attempt any one of A & B**			
	A	Explain use of checkpoint for data recovery.	8	2	1
	B	Explain Deferred database modification and Immediate database modification.	8	2	1
		Attempt any two of C, D & E			
	C	Explain Deadlock Detection and Recovery mechanisms.	6	2	1
	D	What is starvation? Give different techniques to avoid starvation.	6	2	1
	E	Explain how stable storage can be implemented.	6	2	1

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PRN		QP Code	CS-238

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

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Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Thursday,16/05/2019
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.*

Que No		Question	Marks	BL	CO
1	A	Identify two clusters in following data using Agglomerative Hierarchical clustering technique Object: A, B, C, D, E X1: 4, 9, 13, 40, 46	5	3	3
		Attempt any one of B & C			
	B	Design root node of a Decision Tree to determine driving risk using following Data Driving Risk Table Age / Car Type / Road lanes / Risk < 25 / Family / 1 / High < 25 / Family / 4 / Low < 25 / Sports / 1 / High < 25 / Sports / 4 / Low > 25 / Sports / 1 / Low > 25 / Family / 4 / Low > 25 / Truck / 1 / Low < 25 / Truck / 1 / High < 25 / Truck / 4 / Low	10	3	3
	C	Use data in Q.1 B to predict driving risk for attributes as age < 25 ,Road lanes = 4 and Car Type = Sports, using Bayesian Classifier.	10	3	3
2		**Attempt any three of A, B, C & D**			
	A	Explain learning rate in regression.	5	2	1
	B	Explain different learning techniques.	5	2	1
	C	Explain hypothesis function for multiple linear regression.	5	2	1
	D	What is gini index? How is it calculated.	5	2	1
3		**Attempt any three of A, B, C & D**			
	A	Explain Content based recommender system.	5	2	1
	B	Explain the gradient decent learning algorithm for multilayer perceptron.	5	2	1
	C	How Similarity is measured in clustering Techniques?	5	2	1
	D	Explain Bayesian Classifier.	5	2	1

<table>
<tr><th colspan="2">Que No</th><th>Question</th><th>Marks</th><th>BL</th><th>CO</th></tr>
<tr><td>4</td><td>A</td><td>i) Calculate linear regression parameters for following data.

<table>
<tr><td>X</td><td>Y</td></tr>
<tr><td>5</td><td>21</td></tr>
<tr><td>10</td><td>38</td></tr>
<tr><td>15</td><td>62</td></tr>
<tr><td>20</td><td>83</td></tr>
<tr><td>25</td><td>101</td></tr>
</table>

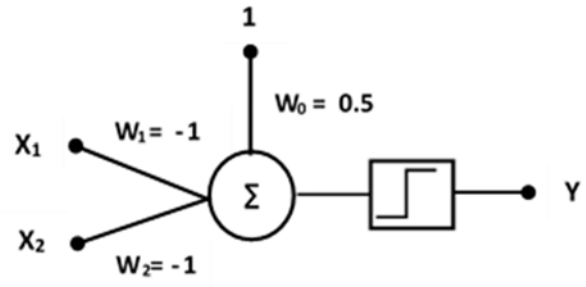
ii) Predict whether a loan will be sanctioned to a person with given attributes based on given data set using K-nn with K=1.

<table>
<tr><td>Age</td><td>Income</td><td>Cards</td></tr>
<tr><td>30</td><td>35000</td><td>2</td></tr>
</table>

<table>
<tr><td colspan="4">Training Data</td></tr>
<tr><td>Age</td><td>Income</td><td>Cards</td><td>Loan</td></tr>
<tr><td>35</td><td>35000</td><td>3</td><td>No</td></tr>
<tr><td>22</td><td>50000</td><td>2</td><td>Yes</td></tr>
<tr><td>63</td><td>200000</td><td>1</td><td>No</td></tr>
<tr><td>25</td><td>45000</td><td>2</td><td>Yes</td></tr>
<tr><td>59</td><td>175000</td><td>1</td><td>No</td></tr>
</table>
</td><td>15</td><td>3</td><td>3</td></tr>
<tr><td>5</td><td colspan="5">Attempt any two of A, B & C</td></tr>
<tr><td></td><td>A</td><td>For following confusion matrix of an animal classifier, determine accuracy, precision and recall parameters.

<table>
<tr><td colspan="2" rowspan="2"></td><td colspan="2">Actual Class</td></tr>
<tr><td>Animal</td><td>Non Animal</td></tr>
<tr><td rowspan="2">Predicted class</td><td>Animal</td><td>15</td><td>3</td></tr>
<tr><td>Non Animal</td><td>1</td><td>12</td></tr>
</table>

Comment on the classification performance of this classifier.</td><td>10</td><td>4</td><td>2</td></tr>
<tr><td></td><td>B</td><td>Analyze the following Artificial Neural with hardlimit Thresholding function and determine the logical operation it has implemented.</td><td>10</td><td>4</td><td>2</td></tr>
</table>

Que No		Question	Marks	BL	CO
					
	C	A dataset to be used for predicting weight is given below. Is it suitable for making prediction? Why? Height (inches) | Weight (Kg) 36 | 25 42 | 38 48 | 55 54 | 60 60 | 65	10	4	2
6		**Attempt any four of A, B, C, D & E**			
	A	What are the reasons of incorporating recommender system in information systems?	5	2	1
	B	What is machine learning? Explain architecture of machine learning system.	5	2	1
	C	What is overfitting in linear regression? How can overfitting be avoided?	5	2	1
	D	Explain activation functions used in an artificial neural network.	5	2	1
	E	What is Data Cleaning? Explain techniques used for data cleaning.	5	2	1

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PRN		QP Code	CS-123

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	**Day &Date**	Saturday, 11/05/2019
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	Illustrate following substitution cipher techniques a. Monoalphabetic cipher b. Polyalphabetic Cipher	8	2	1
	B	Compare Symmetric and Asymmetric cryptographic system?	7	2	1
2	A	What are the principles of public key cryptosystems?	8	1	1
		Attempt any one of B & C			
	B	Explain with Block diagram, Encryption and Decryption in DES Algorithm	7	2	1
	C	Explain Block cipher design principles	7	2	1
3	A	Apply Diffie-Hellman key exchange algorithm to find out shared secret key for following data. q= 11, α=2, YA=9, YB=3	8	3	1
	B	What is MAC? What are the requirements of MAC?	7	1	2
4	A	Explain hierarchy of Certificate Authorities (CA's).	8	2	3
		Attempt any one of B & C			
	B	How are the certification authorities useful for distribution of public keys?	7	1	3
	C	What is Woo-Lam approach for authentication protocol	7	1	3
5		**Attempt any one ofA&B**			
	A	What are the functions provided by S/MIME?	8	1	4
	B	What are the operations performed in PGP	8	1	4
		Attempt any twoof C, D & E			
	C	Explain IPSec AH (Authentication Header) format	6	2	4
	D	Explain IPSec ESP (Encapsulating Security Payload) format	6	2	4
	E	How Key is derived from pass phrase in Pretty good privacy	6	2	4
6		**Attempt any one ofA&B**			
	A	Explain SSL Handshake protocol	8	2	4
	B	Explain SSL architecture	8	2	4
		Attempt any twoof C, D & E			
	C	List in detail the Key Features of Secure Electronic Transaction (SET) Protocol ?.	6	1	4
	D	What is SSL Record protocol	6	1	4
	E	What is TLS	6	1	4

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PRN		QP Code	CS-074-

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

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Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Thursday, 09/05/2019
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	What is Language Processor? What is the necessity of Language Processor? Illustrate Problem Oriented & Procedure Oriented Languages.	8	2	1
	B	What is Parse Tree? Explain Derivation and Reduction with example.	7	2	1
2	A	Which are the various data structures used and generated while designing a two pass Assembler? Illustrate with example.	8	2	2
		Attempt any one of B & C			
	B	Give assembly language statement format & explain different assembly language statements.	7	2	2
	C	What is Macro Expansion? Explain working of Macro Expansion Counter (MEC).	7	2	2
3	A	Given the following Macro MACRO COMPUTE &A, &B, &REG=BREG LCL &M &M SET 0 MOVER &REG, ='0' .SEND MOVEM &REG, &A + &M &M SET &M+1 AIF (&M NE B) .SEND MEND Show the contents of the data structures for the call COMPUTE AREA,15	8	3	2
	B	Explain different kinds of parameters in Macro.	7	2	2
4	A	Discuss major issues in code generator for expressions.	8	2	3
		Attempt any one of B & C			
	B	Discuss the PL features that contribute to the semantic gap between PL domain & Execution domain which is bridged by compiler.	7	2	3
	C	What is memory binding? Explain different types of memory allocation techniques.	7	2	3
5		**Attempt any one of A & B**			
	A	What is debugger? Illustrate dynamic debugging.	8	2	4
	B	What is Command Dialog? Explain the ways to implement Command Dialogs.	8	2	4
		Attempt any two of C, D & E			
	C	State and explain different types of editors.	6	2	4
	D	Explain the following Software tools - i) Profile Monitor ii) Test Data Generator	6	2	4

Que No		Question	Marks	BL	CO
	E	Explain the components of Programming Environments.	6	2	4
6		**Attempt any one of A & B**			
	A	What are overlays? Illustrate the execution of overlay structured program with suitable example.	8	2	3
	B	Illustrate the Program Relocation algorithm with suitable example.	8	2	3
		Attempt any two of C, D & E			
	C	Explain the following- i) Bootstrap Loader ii) "Compile-and-Go" Loader	6	2	3
	D	What are pure & impure interpreters?	6	2	3
	E	List & explain the functions of Loader.	6	2	3

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PRN		QP Code	CS-050

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	Day &Date	Wednesday, 08/05/2019
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 releasing a buffer.	8	1	1
	B	Differentiate between disk i-node and in-core inode.	7	2	2
2	A	How can you allocate an in-core inode?	8	1	2
		Attempt any one of B & C			
	B	Illustrate UNIX file system in detail.	7	2	1
	C	Explain with proper diagram, architecture of UNIX operating system in detail	7	2	1
3	A	How can you awaken a sleeping process?	8	1	4
	B	What is a region? What does it contain? How can you attach a region to a process?	7	1	4
4	A	State & explain various data structures for processes	8	2	4
		Attempt any one of B & C			
	B	Elaborate the concept of mount table in detail.	7	2	3
	C	Write a short note on U-area of a process.	7	2	3
5		**Attempt any one ofA&B**			
	A	Explain how can you control process priorities in UNIX?	8	2	5
	B	List and explain various process system calls in UNIX.	8	2	5
		Attempt any twoof C, D & E			
	C	How can you create a new process in UNIX?	6	1	5
	D	Write an algorithm for handling signals.	6	1	5
	E	Write an algorithm for scheduling a process in UNIX.	6	1	5
6		**Attempt any one ofA&B**			
	A	Differentiate between swapping and demand paging	8	2	6
	B	Explain the principle of locality in UNIX OS.	8	2	6
		Attempt any twoof C, D & E			
	C	What is swap space? How can you allocate swap space using map table?	6	2	6
	D	What is the need for swap device? Explain its working in brief.	6	2	6
	E	Write a short note on swapper process.	6	2	6

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PRN		QP Code	CS-093

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

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Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	**Day & Date**	Friday, 10/05/2019
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	Explain detail about the role of lexical analyzer with the possible error recovery actions.	8	2	1
	B	Construct DFA for the following language: 1) All strings starting with 011. 2) All strings starting with 100 3) All strings ending with 011 4) All string with a as a substring i.e. 011 anywhere in the string.	7	3	1
2	A	Construct NFA for the regular expression (a* | b*)* using Thompson's Rule.	8	3	1
		Attempt any one of B & C			
	B	What are the phases of compiler? Explain each phase in detail. Also write down the output of each phase for expression, a: = b * c - d	7	2	1
	C	Explain briefly about input buffering: 1) Define regular expression with example. 2) Give the attributes of tokens and the reasons why it is called token	7	2	1
3	A	Construct LR(0) items for following grammar and show how SR and RR conflict occur : E -> T + E E - > T T - > i	8	3	2
	B	Compute First and Follow for following grammar and design predictive parsing table: S - > ACB | CbB | Ba A -> da | BC B -> g | ε C - > h | ε	7	3	2
4	A	What are the various methods of implementing three address statements? Explain with an example.	8	2	3
		Attempt any one of B & C			
	B	Explain about back patching with an example	7	2	3
	C	Write down the translation scheme to generate a three address code for assignment statements	7	2	3
5		**Attempt any one of A & B**			
	A	Explain stack allocation with example.	8	2	3
	B	Explain dynamic memory allocation strategies.	8	2	4
		Attempt any two of C, D & E			
	C	Explain activation record and its contents.	6	2	3
	D	Explain following parameter passing methods: 1) Call by value. 2) Call by value result.	6	2	4

Que No		Question	Marks	BL	CO
	E	Explain activation tree and control stack with example.	6	2	3
6		**Attempt any one of A & B**			

	A	Construct DAG and three address statements for following c program:
		I = 1;
		S = 0;
		While (I < = 10)
		{
		S = s + a[i][i];
		I = I + 1;
		}
			8	3	4

	B	Generate DAG representation of following code and list out the application of DAG. I = 1; While (I < = 10) Do Sum != a[i];	8	3	4
		Attempt any two of C, D & E			
	C	Explain principles sources of optimization.	6	2	4
	D	Explain register allocation and assignment with example.	6	2	4
	E	Discuss in detail about global data flow analysis.	6	2	4

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PRN		QP Code	CS-149

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

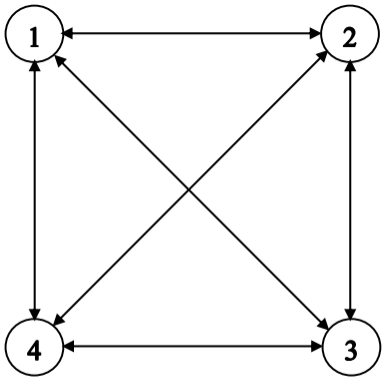
(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS)	Day & Date	Monday, 13/05/2019
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 Quick Sort. Compute its Complexity.	8	5	2
	B	Describe different asymptotic notations used in analysis of algorithms.	7	1	1
2	A	Compare Prim's and Kruskal's algorithm to find Minimum Cost Spanning Tree (MST).	8	4	2
		Attempt any one of B & C			
	B	Solve the following instance of Job Sequencing with deadlines Problem. n=5 (p1, p2, p3, p4, p5) = (45, 15, 20, 7, 65) (d1, d2, d3, d4, d5) = (1, 3, 2, 1, 2)	7	3	2
	C	Obtain a set of optimal Huffman codes for seven messages with relative frequencies (3, 5, 9, 13, 21, 25, 30)	7	3	2
3	A	Explain ε-approximation with examples.	8	4	4
	B	Explain different approximation schemes applicable on 0/1 knapsack.	7	4	4
4	A	Solve the following instance of reliability design problem with 3 stages. Cost of the system is 175. Cost of device in stage 1 is 40, stage 2 is 25 and stage 3 is 35. Reliabilities for 3 stages are 0.75, 0.85 and 0.6 respectively. Number of devices available in stage 1 are 3, stage 2 are 3 and stage 3 are 2.	8	3	3
		Attempt any one of B & C			
	B	Draw an optimal binary search tree where nodes are labeled as (do, if, while) and the events of successful and unsuccessful search are equi-probable.	7	3	3
	C	Solve the following instance of Travelling Sales-person problem (TSP) using Dynamic Programming Approach to find tour of minimum cost.  Directed Graph $\begin{bmatrix} 0 & 10 & 15 & 20 \\ 5 & 0 & 9 & 10 \\ 6 & 13 & 0 & 12 \\ 8 & 8 & 9 & 0 \end{bmatrix}$ Adjacency Matrix with Edge Length	7	3	3

Que No		Question	Marks	BL	CO
5		**Attempt any one of A & B**			
	A	Give Backtracking solution to sum of subset problem.	8	2	3
	B	Explain the following terms with suitable example i] Live node ii] E-node iii] Dead node iv] Bounding Function	8	2	3
		Attempt any two of C, D & E			
	C	Draw and explain state space tree for 4 queens problem	6	2	3
	D	State n-queens problem and write an algorithm to test that no two queens are placed in same diagonal.	6	2	3
	E	Give solution to 0 /1 Knapsack problem using Backtracking method	6	2	3
6		**Attempt any one of A & B**			
	A	Explain NP Hard code optimization problems.	8	2	5
	B	Assume that travelling salesperson decision problem (TSP) is NP-hard; Prove that Directed Hamiltonian cycle (DHC) is also NP-Hard.	8	2	5
		Attempt any two of C, D & E			
	C	Explain the following terms i] Satisfiability ii] Reducibility	6	1	5
	D	Define NP-Complete and NP-Hard. Draw and Explain commonly believed relationship between NP-Complete and NP-Hard.	6	1	5
	E	Explain Clique decision problem with example.	6	1	5

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PRN		QP Code	CS-274

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third YearB.Tech. (ME)	**Day &Date**	Friday,17/05/2019
Course Code	CSLOE1	**Time**	10 am To 1 pm
Course Title	Internet of Things	**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	Design smart home system using IoT and explain IoT applications for smart home	8	6	1
	B	Explain IoT applications for smart energy system.	7	2	1
2	A	Explain the link layer and network layer IoT protocols in detail.	8	2	2
		Attempt any one of B & C			
	B	Explain the functional blocks of IoT.	7	2	2
	C	Explain the IoT enabling technologies.	7	2	2
3	A	Compare IoT and M2M technology.	8	4	2
	B	Explain network function virtualization (NFV).	7	2	2
4	A	Define sensor. Describe analog and digital sensor with example.	8	1	3
		Attempt any one of B & C			
	B	Define wireless sensor networking. Explain context based node operation.	7	2	3
	C	Explain EPC global architecture framework.	7	2	3
5		**Attempt any one ofA&B**			
	A	Explain key terms related to prototype design for creating the devices for IoT and M2M application.	8	2	3
	B	Define embedding. Explain embedded software and embedded hardware units.	8	2	3
		Attempt any twoof C, D & E			
	C	Explain the features of Galileo board.	6	2	3
	D	Explain IoT applications and features of BeagleBone board.	6	2	3
	E	Explain computing systems.	6	2	3
6		**Attempt any one ofA&B**			
	A	Describe key terms related to cloud computing platforms.	8	1	2
	B	Define cloud computing. Describe cloud computing paradigm.	8	1	2
		Attempt any twoof C, D & E			
	C	Explain cloud computing service models with neat diagram	6	2	2
	D	Explain IoT cloud based data collection and storage using services Xively	6	2	2
	E	Explain IoT cloud based storage and computing services using Nimbits.	6	2	2

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PRN		QP Code	CS-271

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (EL/ET)	**Day &Date**	Friday,17/05/2019
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. Robust b. Architecture Neutral c. Interpreted d. Distributed	8	2	2
	B	What is garbage collection in java?	7	1	2
2	A	Briefly explain access modifiers in java with example	8	2	1
		Attempt any one of B & C			
	B	What are the different variable available in java explain with example	7	1	1
	C	What is difference between primitive data type and non primitive data-type with example	7	1	1
3	A	Construct a program to search a number in an array	8	3	2
	B	Explain use of command line arguments with example to read name and roll_no of student from user	7	2	2
4	A	Explain the following terms with respect to exception handling. i) throw ii) finally	8	2	4
		Attempt any one of B & C			
	B	What is inner classes explain with example	7	1	2
	C	What is user defined exception? Explain with example	7	1	4
5		**Attempt any one of A & B**			
	A	Describe the uses of final and super keywords with respect to inheritance	8	2	3
	B	Briefly define what is an abstract class with example	8	2	2
		Attempt any two of C, D & E			
	C	Briefly explain method overriding with example	6	2	2
	D	What is use of super keyword explain with example	6	1	3
	E	What are the types of inheritance? Explain with example	6	1	3
6		**Attempt any one of A & B**			
	A	State four similarities between Interfaces and Classes	8	2	3
	B	Describe the levels of access protection available for packages	8	2	4

Que No		Question	Marks	BL	CO
		Attempt any two of C, D & E			

	C	public interface Foo
		{
		int k=4; /* Line 3 */
		}
		Which three pieces of codes are equivalent to line 3? Justify your answer.
		1.final int k = 4;
		2.public int k = 4;
		3.static int k = 4;
		4.abstract int k = 4;
		5.volatile int k = 4;
		6.protected int k = 4;
			6	3	3

	D	What is interface? What are the features of interface?	6	1	3
	E	What is package? Explain with example	6	1	4

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PRN		QP Code	CS-274

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (ME)	Day &Date	Friday,17/05/2019
Course Code	CSLOE1	Time	10 am To 1 pm
Course Title	Internet of Things	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	Design smart home system using IoT and explain IoT applications for smart home	8	6	1
	B	Explain IoT applications for smart energy system.	7	2	1
2	A	Explain the link layer and network layer IoT protocols in detail.	8	2	2
		Attempt any one of B & C			
	B	Explain the functional blocks of IoT.	7	2	2
	C	Explain the IoT enabling technologies.	7	2	2
3	A	Compare IoT and M2M technology.	8	4	2
	B	Explain network function virtualization (NFV).	7	2	2
4	A	Define sensor. Describe analog and digital sensor with example.	8	1	3
		Attempt any one of B & C			
	B	Define wireless sensor networking. Explain context based node operation.	7	2	3
	C	Explain EPC global architecture framework.	7	2	3
5		**Attempt any one ofA&B**			
	A	Explain key terms related to prototype design for creating the devices for IoT and M2M application.	8	2	3
	B	Define embedding. Explain embedded software and embedded hardware units.	8	2	3
		Attempt any twoof C, D & E			
	C	Explain the features of Galileo board.	6	2	3
	D	Explain IoT applications and features of BeagleBone board.	6	2	3
	E	Explain computing systems.	6	2	3
6		**Attempt any one ofA&B**			
	A	Describe key terms related to cloud computing platforms.	8	1	2
	B	Define cloud computing. Describe cloud computing paradigm.	8	1	2
		Attempt any twoof C, D & E			
	C	Explain cloud computing service models with neat diagram	6	2	2
	D	Explain IoT cloud based data collection and storage using services Xively	6	2	2
	E	Explain IoT cloud based storage and computing services using Nimbits.	6	2	2

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PRN		QP Code	CS-271

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (EL/ET)	**Day &Date**	Friday,17/05/2019
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. Robust b. Architecture Neutral c. Interpreted d. Distributed	8	2	2
	B	What is garbage collection in java?	7	1	2
2	A	Briefly explain access modifiers in java with example	8	2	1
		Attempt any one of B & C			
	B	What are the different variable available in java explain with example	7	1	1
	C	What is difference between primitive data type and non primitive data-type with example	7	1	1
3	A	Construct a program to search a number in an array	8	3	2
	B	Explain use of command line arguments with example to read name and roll_no of student from user	7	2	2
4	A	Explain the following terms with respect to exception handling. i) throw ii) finally	8	2	4
		Attempt any one of B & C			
	B	What is inner classes explain with example	7	1	2
	C	What is user defined exception? Explain with example	7	1	4
5		**Attempt any one of A & B**			
	A	Describe the uses of final and super keywords with respect to inheritance	8	2	3
	B	Briefly define what is an abstract class with example	8	2	2
		Attempt any two of C, D & E			
	C	Briefly explain method overriding with example	6	2	2
	D	What is use of super keyword explain with example	6	1	3
	E	What are the types of inheritance? Explain with example	6	1	3
6		**Attempt any one of A & B**			
	A	State four similarities between Interfaces and Classes	8	2	3
	B	Describe the levels of access protection available for packages	8	2	4

PRN		QP Code	CS-271

Que No		Question	Marks	BL	CO
		Attempt any two of C, D & E			

	C	public interface Foo
		{
		int k=4; /* Line 3 */
		}
		Which three pieces of codes are equivalent to line 3? Justify your answer.
		1.final int k = 4;
		2.public int k = 4;
		3.static int k = 4;
		4.abstract int k = 4;
		5.volatile int k = 4;
		6.protected int k = 4;
			6	3	3

	D	What is interface? What are the features of interface?	6	1	3
	E	What is package? Explain with example	6	1	4

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PRN		QP Code	CS-293

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (TC/TT/MMTT/TPE)	**Day & Date**	Monday,20/05/2019
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	With the help of neat diagram explain working of Relay	4	2	1
	C	Write note on Solenoid valve	4	2	1
	D	Explain Limit Switch with neat diagram. Write Advantages and Disadvantages of Limit Switch	4	2	1
	E	Explain Concept of Level measurement with the help of Ultrasonic Sensor	4	2	1
	F	Explain Operation of Capacitive type Proximity Sensor.	4	2	1
2	A	Explain various Ladder Logic symbols for Input and output	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	2	2
	C	Explain PLC SCAN cycle in detail	12	2	2
3	A	Write a Note on Retentive Timer	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 on 3 Motor sequentially with delay of 10 seconds	12	2	3
4		**Attempt any two of A, B & C**			
	A	Draw and Explain Disagreement Circuit and Latching circuit	8	3	2
	B	Explain Always on Always OFF and Oscillator Circuit	8	3	2
	C	Write Ladder program for Lightning Control System with neat wiring Diagram and based on following criteria: a) Any on 3 switches, SW1, SW2, SW3 if turned on can turn on the lighting on, but all three switches must be off before the lighting will turn off b) The 4th switch SW4 is a master control switch. If this switch is in ON position, the lights will be OFF and none of the other 3 switches have any control	8	1	2
5		**Attempt any two of A, B & C**			
	A	Write & Explain Ladder program for output an Pulse with on Time 5 second Off time 5 Sec	8	6	3
	B	Develop Ladder Program to control traffic light.	8	6	3
	C	Explain machine control terminology	8	2	3
6		**Attempt any two of A, B & C**			
	A	Explain benefits and Application of SCADA systems	8	2	4
	B	Explain objectives of SCADA system in details	8	2	4
	C	With neat diagram explain architecture of SCADA system	8	2	4

Que No	Question	Marks	BL	CO

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PRN		QP Code	CS-275

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (ME)	Day & Date	Friday,17/05/2019
Course Code	ELLOE2	Time	10 am To 1 pm
Course Title	ELECTRIC AND HYBRID VEHICLES	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	What is hybrid vehicle? Explain with suitable diagram.	8	2	2
	B	State advantages and disadvantages of electrical vehicles.	7	2	1
2	A	If lead acid battery is 8 volts and 2.5 Ahr what is the charging time required for it? If load requirement is of 7.5 amp how many such batteries are required and which configuration?	8	4	2
		Attempt any one of B & C			
	B	Explain series and parallel connection of batteries.	7	2	2
	C	Compare Lithium-ion battery with lead acid battery.	7	2	2
3	A	What is differential? Why do you need it?	8	3	3
	B	An induction motor runs at speed of 290 rpm at full load when connected to 50Hz supply determine the no of poles and the value of slip if the synchronous speed is 300 rpm.	7	2	2
4	A	Explain single phase induction motor in brief.	8	2	3
		Attempt any one of B & C			
	B	What are the different starting methods of single phase induction motor?	7	2	3
	C	Compare single phase induction motor with three phase .	7	2	2
5		**Attempt any one of A & B**			
	A	How speed of DC motor can be controlled? Explain with suitable example.	8	2	3
	B	How speed of Induction motor can be controlled?	8	2	3
		Attempt any two of C, D & E			
	C	Explain any one type of battery.	6	3	3
	D	Explain step down type chopper	6	3	3
	E	Explain emf equation for DC generator.	6	3	3
6		**Attempt any one of A & B**			
	A	Explain in brief how clutch works?	8	3	3
	B	What is transmission system in vehicle? What are the components of transmission system?	8	2	2
		Attempt any two of C, D & E			
	C	State different parameters of battery.	6	2	3
	D	What are the advantages and disadvantages of manual transmission?	6	2	2
	E	What is automatic transmission?	6	2	2

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PRN		QP Code	CS-268

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

(An Autonomous Institute)

Semester End Examination – SUMMER 2018/19.

Class - Program	TY-CSE/IT)	Day &Date	Friday,17/05/2019
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	Explain the syntax and use of following library functions of Arduino i) Serial.print ii) lcd.begin	4	2	3
	B	Explain the syntax and use of following library functions of Arduino i) loop ii) setup	4	2	3
	C	Explain the syntax and use of following library functions of Arduino i) lcd.setCursor ii) lcd.print	4	2	3
	D	Write various data types available in arduino/ embedded C along with their size.	4	2	3
	E	Answer following questions i) Which function is used to find the length of string? ii) In which language Arduino software was written? iii) What is the stable version of Arduino software? iv) Which is the default boot loader in Arduino Uno?	4	2	3
	F	Which are four functions in arduino for time	4	2	3
2		**Attempt any twoofA, B & C**			
	A	i) Draw and explain block diagram of mode 0 of timer 1 in 8051. Also draw the format of TMOD SFR. ii) Explain with logic diagram timer as a counter	8	2	2
	B	i) Explain interrupt structure of 8051. What is normal priority and how to change this priority? ii) Draw and Explain PCON SFR in 8051	8	2	2
	C	Explain UART in 8051 and explain different steps involved to receive data serially.	8	2	2
3		**Attempt any twoofA, B & C**			
	A	i) Write a program to generate square wave of 50% duty cycle of 1 KHz on pin P2.0 using timer 0. ii) Write an 8051 C program to toggle all bits of P2 continuously every 500 ms. Use Timer 1, mode 1 to create the delay.	8	4	3
	B	Program the 8051 in C to receive bytes of data serially and put them in P1. Set the baud rate at 4800, 8-bit data, and 1 stop bit.	8	4	3
	C	i) Write an 8051 C program to toggle only bit P1.5 continuously every 50 ms. Use Timer 0, mode 1 (16-bit) to create the delay. ii) Write an embedded C program for 8051 to generate any delay [8]	8	4	3

PRN		QP Code	CS-268

Que No		Question	Marks	BL	CO
4		**Attempt any twoofA, B & C**			
	A	Draw circuit diagram for interfacing DAC0800 with Intel 8051 microcontroller. Also write embedded C program to generate sine wave at P1.0	8	6	2
	B	Draw interfacing diagram of stepper motor with 8051 microcontroller. Write a program to operate the motor	8	6	2
	C	Interface 4 x 4 matrix keyboard to 8051 and write logic to detect the key press.	8	6	2
5		**Attempt any twoofA, B & C**			
	A	i) Draw the memory map of internal ROM and RAM of Intel 8051 microcontroller (show various memory sections and specify starting and ending address of each section) ii) Explain alternate functions of port 3.	8	2	1
	B	i) Draw and explain architecture of 8051 ii) Draw the flow graph of assembly process to generate executable file	8	2	1
	C	i) Compare Microcontroller and microprocessor ii) Enlist features of 8051 microcontroller	8	2	1
6		**Attempt any twoofA, B & C**			
	A	Draw interfacing diagram of seven segment LED display with Arduino Uno board. Write a program to display character '8'	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	CS-294

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (TT/TP/TC/TF)	**Day & Date**	Monday,20/05/2019
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	Draw and Explain the general model of ERP.	8	2	1
	B	Describe the role of consultant, vendors, and users in ERP implementation.	7	1	1
2	A	Explain the guidelines for ERP implementation.	8	2	1
		Attempt any one of B & C			
	B	Write a note on- 'Building an MIS'.	7	1	1
	C	Write a note on- 'Customization in ERP implementation'.	7	1	1
3	A	Describe the SAP R/3 software with its markets.	8	1	2
	B	Explain Sales and distribution module of SAP R/3 software.	7	2	2
4	A	Summarize the difference between E-commerce and E-business.	8	2	3
		Attempt any one of B & C			
	B	Explain various revenue models used in E-commerce.	7	2	3
	C	Describe the firm's value chains.	7	2	3
5		**Attempt any one of A & B**			
	A	What is consumer behavior? Explain the modified general model of online consumer behavior.	8	2	4
	B	What is an online social network? Explain types of social networks and online communities.	8	2	4
		Attempt any two of C, D & E			
	C	Summarize the online retail advantages and challenges.	6	2	4
	D	Explain the use of web transaction logs in marketing.	6	2	4
	E	Describe the benefits of auctions.	6	2	4
6		**Attempt any one of A & B**			
	A	Explain Internet audience and online consumer behavior in detail.	8	2	4
	B	What is economic viability? Explain the key strategic factors for economic viability in industry and firms.	8	2	4
		Attempt any two of C, D & E			
	C	Summarize the possible frauds and abuses in auctions.	6	2	4
	D	Explain the Virtual Merchants business model in online retailing.	6	2	4
	E	Describe Online Banking and Brokerage in online financial services.	6	2	4

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PRN		QP Code	CS-295

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (All Textiles)	**Day &Date**	Monday,20/05/2019
Course Code	MBLOE1	**Time**	2:30 pm To 5:30 pm
Course Title	COSTING (Open Elective)	**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	Following data available of Kalmeshwar Machineries Pvt. For the month of March 2019. Stock on 1/3/2019 Raw Material 45,500 Finished goods 35,800 Work in Progress 13,000 Stock on 31/3/2019 Raw Material 60,500 Finished goods 17,000 Work in Progress 6,000 Purchases of raw material 50,000 Direct Wages 30,400 Factory Expenses 15,800 Office Expenses 8,700 Selling expenses 8,800 Distribution Expenses 6,500 Additional Information- Kalmeshwar Machineries Pvt Ltd planning to maintain 15 percent profit on cost of sale. You are required to prepare cost sheet for the month of march 2019. Also Calculate the percentage of work expenses to direct wages, Percentage of work cost to prime cost, Percentage of office expenses to cost of production, selling expenses to cost of goods sold and distribution expenses to cost of goods sold.	15	6	3
	B	Define Cost and Costing. Explain in detail classification of cost	15	1	5
2	A	What do you mean by cost audit? Explain the importance of cost audit.	10	1	4
		Attempt any one of B & C			
	B	As future a buddy manager you are working in textile company where labour turnover ratio is high. Which strategies you would like to implement to control and reduce the labour turnover?	10	3	2
	C	Define Labour Turnover and explain in detail causes of labour turnover.	10	1	2
3	A	The following particulars are related to new machine: Purchase price 4, 00,000 Rent for total area half yearly 15, 000 General Lighting for the total area 40,000 per month Forman's salary 6,000 per month Insurance Premium for the machine 12,000 per year Departmental Overheads for the machine 8,000 per month Consumable Stores Power -2units per hour at Rs 2 per unit. The estimated life of the machine is 10years and scrap value at the end of 10th years is 50,000/- .	10	5	3

Que No		Question	Marks	BL	CO
		The machine is expected to run 40,000 hours in its life time. The machine occupies 25% of total area. The foreman devoted 1/6th of his time for the machine. General lighting for machine is 25%. Supervisor also devoting 1/4th time for observing new machine. His total monthly salary is Rs 12000/- You are required to calculate Machine hour rate of new machine with proper working note.			
		Attempt any one of B & C			
	B	Define Machine Hour rate. What are the advantages and disadvantages of machine hour rate system? .	10	1	3
	C	Explain in detail classification of overheads	10	1	3
4	A	A contractor prepare is accounts for the year ending 31st December each year. He commenced a contract on 1st April 2018. The following information relates to the contract as on 31st December 2018 as : Material Issued 2,51,000 Labour Charges 5,56,000 Salary to Foreman 81,300 A Machine costing Rs 2, 60,000 has been on the site for 146 days, its working life is estimated 7 years and scrap value after 7 years is 15,000. A Supervisor, who is paid Rs. 8000 Per Month has devoted one-half of his time to this contract. All other expenses and administration charges amount to Rs. 1,36,500 Material in hand at the site Rs. 34,400 on 31st December, 2018 The contract price is Rs. 20, 00,000. On 31st December 2018 two third of the contract was completed. The architect issued certificates covering 50 percent of the contract price and the contract had been paid Rs. 7, 50,000 on the account. You are required to prepare a contact account. And also calculate profit at 50 % work completion, 2/3 work completion and 100 percent work completion.	7	5	4
	B	What do you mean by Job Costing? Define procedure of job costing.	7	1	4
		Attempt any twoof C, D & E			
	C	A Dinesh company has 7 different items in its inventory. The firm wishes to introduce an A B C inventory system. Suggest a breakdown of the items into A (60% to 70 %), B (25% to 20%), & C (15% to 10%) on total cost.Part Code Average Number of Units Cost per unit (Rs) JJ 10,000 60.80 KK 10,000 01.30 LL 05,000 102.40 MM 15,000 03.00 NN 16,000 11.00 DD 14,000 10.28 AA 30,000 03.40	8	4	1
	D	Calculate EOQ in amount and Quantity as per the following data available. The Shivam Company uses about 10,000 ring traveler per month for spinning department. The ring traveler cost Rs 1.50 per unit. Carrying cost is estimated to be 20 Percent on an average inventory investment on an annual basis. The cost to place an order is Rs. 24.	8	3	1
	E	Explain techniques of costing	8	1	1

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PRN		QP Code	CS-272

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (ET/EL)	**Day &Date**	Friday,17/05/2019
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	Distinguish between traditional and mechatronics systems with suitable examples.	8	4	1
	B	Justify a pick and place manipulator is a mechatronics system with neat sketch.	7	5	1
2	A	Explain the working and construction of following sensors with neat sketches: a. Incremental encoder b. Reed switch	8	2	1
		Attempt any one of B & C			
	B	Explain the factors affecting selection of sensors.	7	2	1
	C	Explain tactile sensor with its applications.	7	2	1
3	A	Enlist various types of DAC. Explain any one in detail with neat sketch.	8	2	1
	B	Explain various interfacing requirements in signal conditioning.	7	2	1
4	A	Explain with neat sketch a basic hydraulic system and its components.	8	2	1
		Attempt any one of B & C			
	B	Explain any one pneumatic valve with neat sketch.	7	2	1
	C	Explain the Coanda effect and advantages and limitations of fluid logic systems.	7	2	1
5		**Attempt any one ofA&B**			
	A	Enlist various applications of PLC. Explain any one in detail.	8	2	1
	B	Define PLC. Explain block diagram and components of PLC with neat sketch.	8	2	1
		Attempt any two of C, D & E			
	C	Explain the concept of majority circuit with neat sketch.	6	2	1
	D	Explain the concept of Physical Vs Programmed components in PLC.	6	2	1
	E	Explain latching and disagreement circuits used in PLC programming.	6	2	1
6		**Attempt any one of A & B**			
	A	There are two tanks T1 and T2, to be filled with water by a single pump. When the first tank is full, circuit should automatically start to fill tank T2 by closing valve V1 of tank T1 and opening valve V2 of tank T2. When T2 is full, pump should turn OFF and a Red LED should turn ON to show that both tanks are full. Devise a ladder diagram for the same with addressing.	8	5	4
	B	Explain the types of counters used in PLC programming with examples.	8	2	1

PRN		QP Code	CS-272

Que No		Question	Marks	BL	CO
		Attempt any two of C, D & E			
	C	Explain delay on timer with suitable example.	6	2	1
	D	Explain concept of SCADA with applications.	6	2	3
	E	Devise a ladder diagram with suitable addressing for Traffic Signal Control problem with following conditions – a. I1 and I2 are ON, Red Light is ON b. I2 and I3 are ON, Yellow Light is ON c. I1 and I3 are ON, Green Light is ON d. I1, I2 and I3 are simultaneously pressed, System STOPS.	6	5	4

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PRN		QP Code	CS-269

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (CS,IT)	Day & Date	Friday,17/05/2019
Course Code	MELOE2	Time	10 am To 1 pm
Course Title	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	Distinguish between traditional and mechatronics systems with suitable examples.	8	4	2
	B	Justify a pick and place manipulator is a mechatronics system with neat sketch.	7	5	2
2	A	Explain performance terminology of sensors.	8	2	1
		Attempt any one of B & C			
	B	Define and classify sensors.	7	4	1
	C	Explain the factors affecting selection of sensors.	7	2	1
3	A	Explain w.r.t signal conditioning – a. Sample and hold circuit b. Multiplexer	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	Distinguish between hydraulics and pneumatics system with suitable examples.	7	4	1
	C	Explain with neat sketch a basic hydraulic system and its components.	7	2	1
5		**Attempt any one of A & 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 two of C, D & E			
	C	Explain Always ON and Always OFF contacts in PLC programming.	6	2	1
	D	Enlist various applications of PLC. Explain any one in detail.	6	2	1
	E	Explain the terms used in machine control terminology.	6	2	1
6		**Attempt any one of A & B**			
	A	Explain ON Delay Timer with an industrial example.	8	5	3, 4
	B	A ladder program is to be designed for water level control system. When the Low level sensor, L1 is ON, it will turn ON the pump, P. When the water reaches High level, High Level sensor, L3 is ON which will turn the pump OFF. Then a Heater, H, is on for 20 sec. Finally the water starts draining through Drain valve, DV and the tank will be emptied till low level is reached again. Draw the ladder for system with suitable addressing.	8	5	3, 4

Que No		Question	Marks	BL	CO
		Attempt any two of C, D & E			
	C	Explain PLC system fault finding in detail.	6	2	1
	D	Explain concept of SCADA with applications.	6	2	1
	E	Explain various terms and symbols related to basic PLC ladder program.	6	2	1

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PRN		QP Code	CS-296

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (All Textiles)	Day &Date	Monday,20/05/2019
Course Code	MELOE3	Time	2:30 pm To 5:30 pm
Course Title	INDUSTRIAL AUTOMATION	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 automation. Explain different types of automation.	8	2	1
	B	Explain basic elements of a automated system.	7	2	1
2	A	Describe economic and social aspects of automation.	8	2	1
		Attempt any one of B & C			
	B	Describe fundamentals of transfer lines.	7	2	1
	C	State forms of a computer process control.	7	2	1
3	A	Describe the principles of material handling.	8	2	1
	B	Explain AGV, types, Advantages and limitations and applications.	7	2	1
4	A	Describe the applications of logic gates.	8	2	3
		Attempt any one of B & C			
	B	Define sensors and explain with neat sketch proximity sensor.	7	2	3
	C	Write a note on sequential logic systems.	7	2	3
5		**Attempt any one ofA&B**			
	A	Describe Robot joint notation scheme with neat sketch.	8	2	1
	B	Describe basic components and symbols used in PLC ladder programming.	8	2	1
		Attempt any twoof C, D & E			
	C	Explain work cell control.	6	2	1
	D	Explain concept of interlock with neat sketch different types of interlocks.	6	2	1
	E	Draw a majority circuit using PLC ladder program.	6	2	1
6		**Attempt any one ofA&B**			
	A	Describe any one material handling equipment with net sketch.	8	3	2, 4
	B	Elaborate various components of automation used in material handling system.	8	3	2, 4
		Attempt any twoof C, D & E			
	C	Explain effect of automation on individual and society.	6	2	1
	D	Explain ASRS with a neat sketch.	6	2	1
	E	Enlist various application of automation in industry.	6	2	1

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PRN		QP Code	CS-270

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third Year B.Tech. (IT and CSE)	**Day & Date**	Friday,17/05/2019
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	Explain the key activities of maintenance and production department.	4	2	1
	B	Explain the importance of spect sheet in manufacturing industry	4	2	1
	C	Explain different categories of merchandiser.	4	2	2
	D	Define and explain all the parameters with one example i) Merchandising ii) Marketing iii) Merchandise iv) Merchandiser	4	1	2
	E	Explain stages of product life cycle.	4	2	1
	F	Explain the key concepts of marketing.	4	2	2
2	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	Apply your knowledge and give the answer for the following case. A buyer want to select a new vender for future order. As per the priority list different vender selection criteria on which buying house can select a vender.	12	3	2
	C	Apply your knowledge and give the answer for the following case. An FMCG manufacturing company analyzed lot of time is getting wasted in many of the activities and company wants to improve their performance. How these wastages can be classified in TIMWOOD wastages. Suggest one technique to reduce TIMWOOD wastage.	12	3	1
3	A	Explain the concept of CM cost and cost per minute in merchandising	4	2	2
		Attempt any one of B & C			
	B	Define sourcing and explain different types of sourcing with advantages and disadvantages of each type.	12	1	3
	C	Define Standard operating procedure. Explain symbols used in making SOP. Explain the importance of SOP in industry.	12	3	1
4		**Attempt any two of A, B & C**			
	A	Explain different types of samples of product development	8	2	3
	B	Define BOM. How merchandiser takes help of BOM in costing.	8	1	2
	C	Define teck-pack. Explain the content of teck pack	8	1	1

PRN		QP Code	CS-270

Que No		Question	Marks	BL	CO
5		**Attempt any two of A, B & C**			
	A	Explain the roles and responsibilities of merchandiser	8	2	2
	B	Create time and action calendar for any one product and explain its importance.	8	6	2
	C	Explain the steps involved in costing for merchandiser.	8	2	2
6		**Attempt any two of A, B & C**			
	A	Explain pre and post shipment documents used in export	8	2	4
	B	List all inco terms and explain each term with an example.	8	1	4
	C	Explain the importance of supply chain management. Explain with suitable example how supply chain management helps in cost reduction.	8	1	3

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PRN		QP Code	CS-276

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third YearB.Tech. (ME)	**Day &Date**	Friday,17/05/2019
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	Explain need of maintenance of any machine.	4	4	3
	B	Explain ''Optimum planned maintenance"	4	3	1
	C	Which are the types of solid lubricant?	4	3	1
	D	Compare objective & subjective inspections	4	2	2
	E	How machine failure analysis can help to minimize breakdowns?	4	4	4
	F	Discuss advantages of maintenance budget.	4	3	2
2	A	What is overhauling operation of a machine?	4	4	2
		Attempt any one of B & C			
	B	Which are the techniques used for machine inspection in condition based maintenance? Explain in detail.	12	5	3
	C	How PERT & CPM techniques are useful in planning function? Explain.	12	5	3
3	A	Define following: i)Plant availability & Plant capacity utilization	4	3	2
		Attempt any one of B & C			
	B	Why there is a need for conservation of lubricant? Explain how storage & handling of lubricant helps to achieve it.	12	5	1
	C	Define failure analysis. Explain fault tree analysis technique in detail.	12	6	4
4		**Attempt any twoofA, B & C**			
	A	Explain planned maintenance cycle in detail.	8	2	1
	B	Explain wear particle count method & SOAP used for inspection.	8	3	2
	C	State significance of vibration characteristics for condition based maintenance.	8	4	4
5		**Attempt any twoofA, B & C**			
	A	Explain planning function. What are its characteristic features?	8	4	4
	B	Explain use of adsorption, chemisorptions, chemical reaction to reduce coefficient of friction.	8	3	1
	C	What are the different styles of maintenance? Give their merits & demerits.	8	6	2
6		**Attempt any twoofA, B & C**			
	A	Explain various analyses used in inventory management with their suitability.	8	3	1
	B	What is procedure of making schedule for maintenance operations?	8	3	3
	C	What is maintenance costing? Explain maintenance cost control programme in detail.	8	5	2

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PRN		QP Code	CS-273

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

(An Autonomous Institute)

Semester End Examination - Summer 2018-19

Class - Program	Third YearB.Tech. (EL/ET)	**Day &Date**	Friday,17/05/2019
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	compare - Natural and Synthetic fibres	4	1	1
	B	Define Nonwoven. State its classification and advantages.	4	2	4
	C	Describe different types of yarns	4	3	2
	D	Differentiate 'Traditional textile & Technical textile	4	4	3
	E	Explain the yarn count systems. Calculate Denier and Tex from 80's Ne.	4	5	3
	F	What is MIS? State its functions and advantages	4	1	4
2	A	Describe the various classifications 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".	12	4	4
3	A	How to design and develop ' High Visibility fabrics'	4	1	4
		Attempt any one of B & C			
	B	What are the UV rays? Discuss its types? How technical textiles suitable as UV protective Clothing. Explain – UPF, EPF & CPF.	12	6	3
	C	What is EPF & RF? Discuss their negative effects on health? How to block electromagnetic radiations by using textiles?	12	5	3
4		**Attempt any two of A, B & C**			
	A	Define Technical Textile. Discuss the 12 sectors of technical textiles. Give three examples in each sector. State advantages & disadvantages of technical textile	8	3	2
	B	How fibres can be converted into Yarn in spinning process? Discuss the carded and combed yarn manufacturing with flow chart?	8	4	2
	C	State the conversion process of yarns into fabric in Weaving? Discuss the fabric production with flow chart?	8	3	2
5		**Attempt any two of A, B & C**			
	A	What are the high performance fibres? Explain them with their properties for production of technical textile.	8	2	3
	B	Define Smart Textile. Discuss smart textile with reference to Advantages, Disadvantages. Properties Future design issues	8	1	3

PRN		QP Code	CS-273

Que No		Question	Marks	BL	CO
	C	What is composite? State the functions of fibre and Matrix. Compile the technical details of Fibre Reinforced Composites (FRC).	8	5	3
6		**Attempt any two of A, B & C**			
	A	What is the concept of B2B & B2C? Describe the E-Commerce in detail.	8	4	4
	B	Discuss - E retailing and Logistics in Garment Industry	8	1	4
	C	Why IT is necessary for textile industry. Explain - Textile value chain.	8	3	4

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