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CSE71

New Horizon College of Engineering, Bangalore

Autonomous College affiliated to VTU, Accredited by NAAC with 'A' Grade & NBA

Semester End Examinations Feb 2022

Web Technologies

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	Define the standard structure of html document with sample html code for login form	10	L1	CO1
b)	Explain http request phase and response phase	10	L2	CO1
	OR			
2 a)	Define the following tags i)<a > ii)<img> iii)<h1> iv)<table> v)<form>	10	L1	CO1
b)	Demonstrate how html form elements are used to create a html form with text box, password, radio button, check box submit and cancel button	10	L2	CO1
	Module 2			
3 a)	Illustrate the levels of style sheet with example html code	10	L2	CO2
b)	How would you apply the repetition property on images present in background.	10	L3	CO2
	OR			
4 a)	Illustrate the concept of conflict resolution	10	L2	CO2
b)	Consider the following information. Display the category of movie as the definition list, movie names as the un ordered list and for each movie display heroes as ordered list. Consider list items according to the category. Draw these concepts and design the html document	10	L3	CO2
	Module 3			
5 a)	Use 5 different java script string methods on the string "**All the best**" to display the output.	10	L3	CO3
b)	Examine the keyboard input and screen out put with sample code and output	10	L4	CO3
	OR			
6 a)	Draw the array concept to create, declare and initialize arrays in JavaScript	10	L3	CO3
b)	Examine the event handling procedures in JavaScript.	10	L4	CO3
	Module 4			
7a)	Write any two positioning elements and moving elements in dynamic document using JavaScript in detail.	10	L1	CO4
b)	Examine element visibility with suitable code.	10	L4	CO4
	OR			
8 a)	Describe Stacking elements with an example.	10	L1	CO4
b)	Derive an XHTML document using JavaScript script, that contains three short paragraphs of text, stacked on top of each other, with only enough of each showing so that the mouse cursor can be placed over some part of them. When the cursor is placed over the exposed part of any paragraph, it should rise to the top to become completely visible.	10	L4	CO4
	Module 5			
9 a)	Interpret classes and objects with its syntax and examples in PHP.	10	L5	CO5
b)	Evaluate any four control statements in PHP with an example.	10	L5	CO6
	OR			
10a)	Prioritize how GET and POST methods are important with suitable code snippets.	10	L5	CO5
b)	Justify and write the PHP program to store page views count in SESSION, to increment the count on each refresh, and to show the count on web page.	10	L5	CO6

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CSE72

New Horizon College of Engineering, Bangalore

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Semester End Examinations Feb 2022

SOFTWARE TESTING

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	Draw the flowchart for the traditional triangle problem.	**5**	**L1**	**CO1**
b)	Describe the currency convertor problem with suitable diagram.	**5**	**L1**	**CO1**
c)	Illustrate the improved version of next date problem.	**10**	**L3**	**CO1**
	OR			
2 a)	Define the following: i) Test case, ii) Incident, iii) Fault, iv) Error, v) Failure	**5**	**L1**	**CO1**
b)	Describe the commission problem.	**5**	**L1**	**CO1**
c)	Illustrate SATM functionalities with suitable sketch of various communication screens that helps in describing the problem statement.	**10**	**L3**	**CO1**
	Module 2			
3 a)	Explain the various parts in a decision table by using commission problem as an example.	**10**	**L2**	**CO2**
b)	Recommend test cases for the following variations by applying the equivalence class partitioning technique by considering the output range. Use next date function as an example. i) Weak Normal Equivalence Class ii) Strong Robust Equivalence Class	**10**	**L5**	**CO2**
	OR			
4 a)	Explain decision table and its technique to solve triangle problem.	**10**	**L2**	**CO2**
b)	Recommend test cases for the following variations by applying boundary value analysis technique by considering the triangle problem as example: i) Normal boundary value testing ii) Worst-case boundary value testing	**10**	**L5**	**CO2**
	Module 3			
5 a)	Design a structured triangle program, Construct the program graph, and find DD-paths, DD-path graphs for triangle problem	**10**	**L6**	**CO3**
b)	Examine various test coverage metrics as defined by Miller.	**10**	**L4**	**CO3**
	OR			
6 a)	Design the commission problem and its DD path graph. Construct the du-paths for stocks, locks sales commission variables.	**10**	**L6**	**CO3**
b)	Inspect a slice based testing and show slices on any 4 variables?	**10**	**L4**	**CO3**
	Module 4			
7a)	Illustrate the following terms a) Mutant b) Killed Mutant c) Live mutant d)Mutant operators e) Mutation score	**10**	**L3**	**CO5**
b)	Examine different roles in a review and explain their responsibilities	**10**	**L4**	**CO4**
	OR			
8 a)	Illustrate with an example different mutation operators generate mutants for the triangle problem	**10**	**L3**	**CO5**
b)	Investigate various stages involved in industrial strength inspection process	**10**	**L4**	**CO4**
	Module 5			
9 a)	Illustrate the various locators in selenium IDE.	**10**	**L3**	**CO6**
b)	Examine the characteristics and uses of various commands used in selenium IDE.	**10**	**L4**	**CO6**
	OR			
10a)	Illustrate the steps involved in selenium web driver installation	**10**	**L3**	**CO6**
b)	Examine the different annotations present in testing	**10**	**L4**	**CO6**

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CSE741

New Horizon College of Engineering, Bangalore

Autonomous College affiliated to VTU, Accredited by NAAC with 'A' Grade& NBA

Semester End Examinations Feb 2022

FUNDAMENTALS OF DATA SCIENCE

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

Module 1

1 a)	Write the definition of data science? Identify the data investigation and data science operations life cycle phase of a online movie streaming the app?	**10**	**L1**	**CO1**
b)	Draw the venn diagram of data science? List the functionalities of substantive expertise of data science?	**5**	**L3**	**CO1**
c)	Illustrate with example about the list of data science library packages supported in Python? Also explain the python libraries with an example?	**5**	**L3**	**CO1**

OR

2 a)	Describe the life cycle phase of an online food delivery app in which customer orders food and chain of restaurants connected ? Explain the steps in detail?	**10**	**L1**	**CO1**
b)	Illustrate the linear regression model in data science? List few example data science area which is using linear regression?	**5**	**L3**	**CO1**
c)	Identify how mathematical knowledge and statistical knowledge plays major role in data science? Give examples?	**5**	**L3**	**CO1**

Module 2

3 a)	Explain the five steps to perform data science? explain all the five steps based on the Titanic data set which contains the following features such as PassengerId, Pclass, Name, Sex, Age, Ticket ,Fare and the target class is Survived	**10**	**L2**	**CO2**
b)	Compare the structured and unstructured data? What are the datatypes or methods used in data science to handle the structured and unstructured data?	**5**	**L4**	**CO2**
c)	Examine the nominal and ordinal data of a student database and university database? Explain the datatypes which can be used in the nominal data?	**5**	**L4**	**CO2**

	OR			
4 a)	Compare the quantitative data and qualitative data? List the quantitative and qualitative attributes of the following example? a) Coffee shop data b) Social media data c) University data	**10**	**L2**	**CO2**
b)	Analyse the data science steps with an example of Iris dataset which contains 4 features such as sepal length, sepal width, petal length and petal width and a target variable FlowerTypes are Setosa,Versicolor and Virginica?	**5**	**L4**	**CO2**
c)	Analyse the various level of measurements of data with an example? which level of data is mostly used in data science applications? Give examples?	**5**	**L4**	**CO2**
	Module 3			
5 a)	Illustrate the laws of conditional probability with an example.	**10**	**L3**	**CO3**
b)	Categorize the types of random variables used in data science contexts.	**10**	**L3**	**CO4**
	OR			
6 a)	Compute the differences between inferential statistics or descriptive statistics with an example.	**10**	**L3**	**CO3**
b)	Illustrate the sampling techniques with an example.	**10**	**L3**	**CO4**
	Module 4			
7a)	Derive the procedure for the Naïve Bayes algorithm.	**10**	**L4**	**CO5**
b)	Examine the significance of **K-NN and SVM** algorithms.	**10**	**L4**	**CO5**
	OR			
8 a)	Derive K-means algorithm with an example dataset.	**10**	**L4**	**CO5**
b)	Derive Random forest algorithm with an example dataset.	**10**	**L4**	**CO5**
	Module 5			
9 a)	Evaluate the various types of graphs used in data visualization.	**10**	**L5**	**CO6**
b)	Justify how visual representations are better in analytics as compared to doc/report forms of information to understand the in-depth perspectives.	**10**	**L5**	**CO6**
	OR			
10a)	Interpret the differences between Bar graph and Histogram. Decide the purpose and use of the same in data science.	**10**	**L5**	**CO6**
b)	Evaluate the strategy of presenting the data in effective method of visualization.	**10**	**L5**	**CO6**

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20CSE71A

New Horizon College of Engineering, Bangalore

Autonomous College affiliated to VTU, Accredited by NAAC with 'A' Grade & NBA

Semester End Examinations Feb 2022

SOFTWARE TESTING

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

Module 1

1 a)	Write the basic terminologies in software testing with example.	**5**	**L1**	**CO1**
b)	Describe program behavior and oracle with an example.	**5**	**L1**	**CO1**
c)	Explain the five classifiers to classify the testing technique.	**10**	**L2**	**CO1**

OR

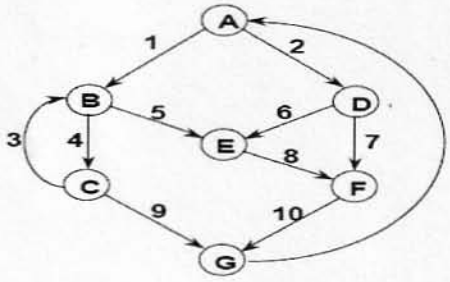
2 a)	Describe verification and validation in detail	**5**	**L1**	**CO1**
b)	Write short note on software quality and reliability with an example	**5**	**L1**	**CO1**
c)	Explain the principles of software testing.	**10**	**L2**	**CO1**

Module 2

3 a)	Compute normal BVA and worst case BVA for triangle program in detail using test cases	**10**	**L3**	**CO2**
b)	Examine the sate diagram for the ATM in detail	**10**	**L4**	**CO2**

OR

4 a)	Compute the McCabe's basis path method for the below graph and identify the set of basis path	**10**	**L3**	**CO2**



b)	Derive the decision to decision path for the commission problem using data flow testing	**10**	**L4**	**CO2**

	Module 3			
5 a)	Classify the different techniques for the integration testing with an example.	**10**	**L3**	**CO3**
b)	Examine the Stages of deployment testing in detail with neat diagram	**10**	**L4**	**CO4**
	OR			
6 a)	Illustrate the scenario testing for the next date function using story line and use case testing technique.	**10**	**L3**	**CO3**
b)	Examine various activities involved in beta testing with example.	**10**	**L4**	**CO4**
	Module 4			
7a)	Classify Exploratory and Iterative testing	**10**	**L3**	**CO5**
b)	Examine Test minimization strategy in Regression testing	**10**	**L4**	**CO5**
	OR			
8 a)	Categorize Adhoc testing and Pair testing	**10**	**L3**	**CO5**
b)	Analyze the test case selection method in Regression testing	**10**	**L4**	**CO5**
	Module 5			
9 a)	Illustrate how to access links and tables in Selenium Web driver	**10**	**L3**	**CO6**
b)	Discuss the locators in Selenium IDE	**10**	**L2**	**CO6**
	OR			
10a)	Illustrate an Automated selenium script to login into a webpage	**10**	**L3**	**CO6**
b)	Discuss the limitations of Web drivers	**10**	**L2**	**CO6**

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20CSE72A

New Horizon College of Engineering, Bangalore

Autonomous College affiliated to VTU, Accredited by NAAC with 'A' Grade & NBA

Semester End Examinations Feb 2022

Mobile Application Development

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	What do you understand from android debug and profile tool	10	L1	CO1
b)	Explain Android architecture with a neat diagram	10	L2	CO1
	OR			
2 a)	What is Android? Describe the basic building block of android	10	L1	CO1
b)	Explain the Android components and different types of android applications.	10	L2	CO1
	Module 2			
3 a)	Apply the use of Linear layout for an application that has employee details. Draw the layout and write the xml code for the same.	10	L3	CO2
b)	Analyze the Activity life cycle and different call back methods of activity life cycle with a neat diagram	10	L4	CO2
	OR			
4 a)	Apply the use constraint layout with two buttons with names, send and receive respectively. Draw the layout and write the xml code for the same.	10	L3	CO2
b)	Analyze and explain the concept of fragment life cycle in detail.	10	L4	CO2
	Module 3			
5 a)	Illustrate the types of intents with examples.	10	L3	CO3
b)	Explain broadcast receivers. Justify the use of heads up and status bar notification in android.	10	L5	CO3
	OR			
6 a)	Illustrate the life cycle of service with a neat diagram.	10	L3	CO3
b)	Design an app for Tourist spot with the below mentioned activities in Java code: i) Welcome page, ii) Display attractions of tourist spot iii) Webpage of the tourist spot	10	L5	CO3
	Module 4			
7a)	Examine briefly any 4 data storage options available in SQLite.	10	L4	CO4
b)	Justify and explain the steps of Asynchronous Task.	10	L5	CO5
	OR			
8 a)	With neat diagram organize the content provider architecture.	10	L4	CO4
b)	Design and develop Health Monitoring App using Android. The app will store the blood pressure, blood group and glucose level of patient in SQLite database.	10	L5	CO5
	Module 5			
9 a)	Explain the various methods for Signing & Versioning of apps.	10	L2	CO6
b)	Develop an android app to display map of your college locality using Java code.	10	L4	CO6
	OR			
10a)	Explain the various practices for security and privacy.	10	L2	CO6
b)	Assume you are given with the task of developing an application that creates an SMS alert to a given phone number. And Analyse to identify the appropriate methods to implement the same.	10	L4	CO6

b)	Examine the need of eigne value and eigen vectors and Covariance in Principal component analysis(PCA) and mention at least 3 uses of PCA in Solving Machine learning algorithms.	10	L4	CO5

OR

8 a)	Examine the need of Linear regression and Logistic Regression in real time, and also Illustrate the Mathematical intuition behind these 2 algorithms.	10	L4	CO5
b)	Derive using K-means algorithm to Divide the Datasets into 2 Clusters	10	L4	CO5

X	1	2	2	3	4	5
Y	1	1	3	2	3	5

Module 5

9 a)	Interpret the need of Tableau data visualization tool in data science? Interpret the dimension and measures in the tableau visualization?	10	L5	CO6
b)	Evaluate the procedure to incorporate charts automatically with the data chosen for analysis and explain the different types of charts available in Tableau.	10	L5	CO6

OR

10a)	Evaluate the different types of components in Tableau architecture & server in detail explaining each component.	10	L5	CO6
b)	Interpret how scatter plot and bar graphs are helping to furnish the effective visualization in data science. Justify by taking your own dataset as an example.	10	L5	CO6

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Semester End Examinations Feb 2022

FUNDAMENTALS OF DATA SCIENCE

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

Module 1

1 a)	Write and draw the various phases data science life cycle? Consider mobile app of online travel booking and list the life cycle phase of the particular app	10	L1	CO1
b)	Write the definition of data science and draw the data science Venn diagram? Explain the all the intersection of the Venn diagram with example?	5	L3	CO1
c)	Categorize how the statistician and data scientist consider the following terms such as Interpreting parameters, Confidence intervals and the role of explicit assumptions.?	5	L3	CO1

OR

2 a)	Consider Iris dataset contains 4 features such as sepal length, sepal width, petal length and petal width and a target variable FlowerTypes are Setosa, Versicolor and Virginica. Describe K-means and K-NN algorithm with as assumption of data?	10	L1	CO1
b)	Describe the nominal, ordinal, interval and ratio data? Illustrate each data from a real time example and justify the selection?	5	L3	CO1
c)	Categorize the application of data science in various fields. Briefly explain how data science can be used in the application of 'Website recommendation'?	5	L3	CO1

Module 2

3 a)	Explain the following distance measures with formula? a) Euclidian Distance b) Manhattan distance c) Chebyshev distance d) Minkowski distance	10	L2	CO2

b) Summarize Matrix and vector? Derive a python code to declare three dimensional matrix using numpy? 5 L4 CO2

c) Examine the matrix determinant with the step by step procedure to calculate a determinant value for a 3X3 matrix.? Explain the applications of determinant in data science? 5 L4 CO2

OR

4 a) Predict the k-mean clusters for the following data? Find the clusters? Explain the cluster formation in step by step? 10 L2 CO2

	X1	X2
A	2	3
B	6	1
C	1	2
D	3	0

b) Compare the following terms with example? 5 L4 CO2
a. eigen value Vs eigen vector
b.half plane Vs hyper plane

c) Explain projections? Compare the parallel projections and perspective projections with neat sketches? 5 L4 CO2

Module 3

5 a) If electricity power failures occur according to a Poisson distribution with an average of 3 failures every 20 weeks. Compute the probability that there will not be more than one failure during a particular week 10 L3 CO3

b) X random variable represent the success of launching a new laptop, which takes five options: 0, 1, 2, 3, or 4 as below. Compute the expected values of success with variance? 10 L3 CO4

Value	X=0	X=1	X=2	X=3	X=4
Probability	0.01	0.03	0.05	0.70	0.80

OR

6 a) Compute the Poisson probability for the following example: A life insurance salesman sells on the average 8 life insurance policies per week. Use Poisson's law to calculate the probability that in a given week he will 3 or more policies but less than 5 policies. (Note: Euler constant =2.718) 10 L3 CO3

b) Apply the correlation and covariance formula of X and Y given in the following table and compute the relation between X and Y? 10 L3 CO4

X	Y
1	3
2	6
3	12
4	12
5	17

Module 4

7a) Examine and solve with the Naïve Bayes classifier algorithm, Find the Probability to plat cricket on 8th Day where conditions are: 10 L4 CO5
Temp=cool, Humidity= High, Wind = strong, outlook= sunny

Day	outlook	Temp	humidity	wind	Play cricket
1	sunny	hot	high	Weak	No
2	mild	hot	high	Strong	No
3	Overcast	Hot	mild	weak	Yes
4	Rain	mild	high	weak	yes
5	Rain	cool	normal	weak	yes
6	Rain	cool	normal	strong	no
7	Overcast	cool	mild	Weak	No

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20CSE732A

New Horizon College of Engineering, Bangalore

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Semester End Examinations Feb 2022

ARTIFICIAL INTELLIGENCE

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	Define AI. List out the disciplines involved in AI and also provide real time applications of AI	10	L1	CO1
b)	Explain problem characteristics with respect to heuristic search	10	L2	CO1
	OR			
2 a)	Write an algorithm for simple hill climbing and describe it in detail	10	L1	CO1
b)	Explain Missionaries and cannibal's problem and Monkey banana problem using AI.	10	L2	CO1
	Module 2			
3 a)	Draw the architecture of knowledge based agents and classify the issues in knowledge representation	10	L3	CO2
b)	Identify the difference between forward versus backward reasoning with examples	10	L4	CO2
	OR			
4 a)	Solve the Wumpus world example and apply your knowledge to find the gold in the Wumpus environment with all possible cases.	10	L3	CO2
b)	Examine the steps to involved in knowledge engineering process to construct the knowledge base with an example	10	L4	CO2
	Module 3			
5 a)	Illustrate the truth maintenance system(TMS) with an example.	10	L3	CO3
b)	Identify non-monotonic logic and default logic with example	10	L4	CO3
	OR			
6 a)	Illustrate and explain the Bayes' theorem with an example.	10	L3	CO3
b)	Derive Bayesian networks in detail	10	L4	CO3
	Module 4			
7a)	Characterize semantic net to represent the following sentences using partitioned semantic net: Every dog in town has bitten the constable. Every dog has bitten every mail carrier	10	L4	CO4
b)	Illustrate conceptual dependencies. How do you represent conceptual dependencies	10	L3	CO4
	OR			
8 a)	Identify how decision trees are used in learning	10	L4	CO4
b)	Illustrate script in detail. Use a script for ordering scene in restaurant.	10	L3	CO4
	Module 5			
9 a)	Evaluate the hierarchical planning in detail with an example.	10	L5	CO5
b)	Construct an algorithm for minimax(position , depth , players) and explain. Explain hierarchical planning.	10	L6	CO6
	OR			
10a)	Estimate iterative deepening in detail	10	L5	CO5
b)	Design blocks world problem in AI.	10	L6	CO6

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20CSE733A

New Horizon College of Engineering, Bangalore

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Semester End Examinations Feb 2022

Cyber Security, Forensics and Law

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	Describe the categories of Cyber Crimes with examples	10	L1	CO1
b)	Define Cyberstalking. How Stalking works?	10	L1	CO1
	OR			
2 a)	Define Cybercrime and Cyber Space. List the Cybercriminals.	10	L1	CO1
b)	Describe Human Based Social Engineering.	10	L1	CO1
	Module 2			
3 a)	Discuss the types of phishing scams.	10	L2	CO2
b)	Explain the types of Viruses.	10	L2	CO2
	OR			
4 a)	Summarize about Trojan Horses and Backdoors.	10	L2	CO2
b)	Distinguish between Steganography and Cryptography.	10	L2	CO2
	Module 3			
5 a)	Explain the Degrees of Unlawful Access to Computer.	10	L2	CO3
b)	Illustrate the Weak Areas of the ITA 2000.	10	L3	CO3
	OR			
6 a)	Explain Cybercrimes and other related Crimes punishable under Indian Laws.	10	L2	CO3
b)	Use the current scenario regarding Digital Signatures under the Indian IT Act.	10	L3	CO3
	Module 4			
7a)	Draw the process model for understanding a seizure and handling of forensics evidence legal framework.	10	L3	CO4
b)	Identify the needs for Computer Forensics.	10	L4	CO5
	OR			
8 a)	Draw the network hacking steps.	10	L3	CO4
b)	Investigate in the Digital forensics- phase-wise outputs.	10	L4	CO5
	Module 5			
9 a)	Identify the challenges in Forensics of the Digital Images and Still Camera.	10	L4	CO6
b)	Derive an illustration on real life use of forensics.	10	L4	CO6
	OR			
10a)	Identify the Toolkits for Hand-Held Device Forensics.	10	L4	CO6
b)	Examine iPod Forensics.	10	L4	CO6

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20CSE742A

New Horizon College of Engineering, Bangalore

Autonomous College affiliated to VTU, Accredited by NAAC with 'A' Grade & NBA

Semester End Examinations Feb 2022

DEEP LEARNING

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

Module 1

1 a)	Explain the Activation functions used in neural networks with neat sketch.	10	L2	CO1
b)	Illustrate the perceptron learning algorithm and state the Limitations of the early perceptron.	10	L3	CO1

OR

2 a)	Discuss about Loss Functions for regression and classification used in Neural Networks.	10	L2	CO1
b)	Apply the single layer perceptron neural network for implementing AND and OR Logic Gates. Assume the suitable values for W_1, W_2 and b.	10	L3	CO1

Module 2

3 a)	Explain about Auto encoders and its Applications.	10	L2	CO2
b)	Analyze various optimization methods.	10	L4	CO2

OR

4 a)	Explain about RBM and its architecture with neat sketch.	10	L2	CO2
b)	Analyze how do the hyperparameters affect the training of the Deep Neural Networks.	10	L4	CO2

Module 3

5 a)	Examine the use of LSTM over simple Recurrent Neural Network.	10	L4	CO3
b)	Estimate the output matrix for the input data and kernel by using the Convolution neural network (Apply convolution, Relu and Pooling) with S=2, P=0, Apply Avg. pooling with stride=2.	10	L5	CO4

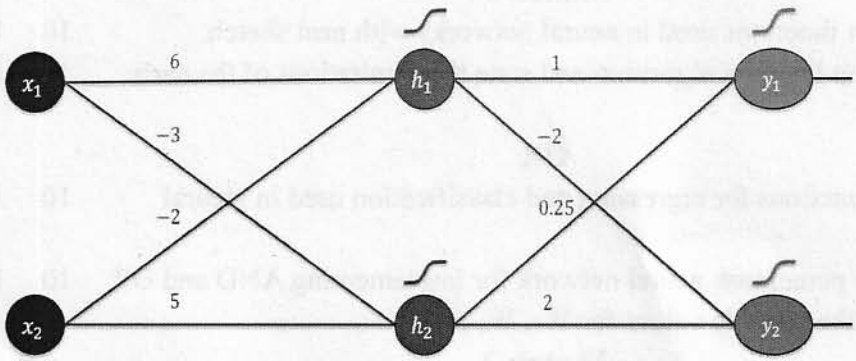
3	2	4	5	3	1	1
2	3	4	1	2	1	1
2	3	1	1	1	3	1
4	1	2	4	5	4	4
5	3	1	2	3	1	2
1	2	3	3	4	1	3
1	1	1	2	2	3	2

Kernal

1	2	1
2	4	2
1	2	1

OR

6 a)	Identify how higher order feature learning is done in pretrain phase of Deep Belief Networks.	10	L4	CO3
b)	Estimate Forward pass components of the Hidden layers and output layers with input values {x1=4, x2=3}.Assume b1=0.35 and b2=0.60.	10	L5	CO4



Module 4

7a)	Explain about the variations of training and tuning Recurrent Neural Networks	10	L2	CO5
b)	Recommend tuning methods to improve the performance of Convolutional Neural Networks	10	L5	C05

OR

8 a)	Explain the output layer parameters of Deep Neural Network. Explain with an example model.	10	L2	CO5
b)	Recommend debugging methods to resolve common issues occurs in Long Short Term Memory variant of Recurrent Neural Networks	10	L5	CO5

Module 5

9 a)	Explain how Dynamic Structures are used to accelerate data processing systems in detail	10	L2	CO6
b)	Illustrate preprocessing techniques used to improve the data quality for the image processing applications	10	L3	CO6

OR

10a)	Explain about Natural Language Models in detail and also explain how these are used to overcome the curse of dimensionality	10	L2	CO6
b)	Illustrate the role of Deep Neural Networks in translating sequences in one language to another language	10	L3	CO6

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20CSE743A

New Horizon College of Engineering, Bangalore

Autonomous College affiliated to VTU, Accredited by NAAC with 'A' Grade& NBA

Semester End Examinations Feb 2022

ROBOTICS

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	Describe the four basic robot configurations available commercially.	7	L1	CO1
b)	With a neat sketch explain the three degrees of freedom associated with the robot wrist	7	L2	CO1
c)	Illustrate the speed of motion in industrial robots.	6	L3	CO1
	OR			
2 a)	Describe different application of robots in various fields.	7	L1	CO1
b)	Identify the specifications of an industrial robot and with its configuration.	7	L2	CO1
c)	Classify the robots by drawing the coordinates of motion.	6	L3	CO1
	Module 2			
3 a)	Illustrate the salient features of stepper and servo motor with limitations.	7	L3	CO2
b)	Explain the function of a pneumatic drive in a robot with a neat sketch.	7	L3	CO2
c)	List the types of electrical drives used in robot actuation.	6	L1	CO2
	OR			
4 a)	Classify the performance characteristics of electrical, pneumatic & hydraulic actuators.	7	L3	CO2
b)	Illustrate the working of external and internal grippers.	7	L3	CO2
c)	List out the advantages and disadvantages of a pneumatic gripper.	6	L1	CO2
	Module 3			
5 a)	Draw and explain the principle of working of the following sensors: i. Inductive proximity sensor ii. Slip sensor.	7	L1	CO3
b)	Illustrate machine vision system with a sketch.	7	L3	CO3
c)	Identify the number of quantization levels, the quantization level spacing, the resolution, and the quantization error for a amplified continuous signal (0-5)V.	6	L4	CO3
	OR			
6 a)	Define and explain the principle of the following sensors with suitable sketches. i. Piezo elecric sensor ii. Touch sensor	7	L1	CO3
b)	Illustrate the segmentation methods used in vision system with suitable example.	7	L3	CO3
c)	An analog video signal is generated for each line of the 512 lines and is scanned at the rate of 33.33ms. The sampling capability of the A/D converter is 10ns. Examine the sampling rate and number of pixels that can be processed per line.	6	L4	CO3

Module 4

7a)	Explain the various programming methods used in robotics with examples and discuss the features of each.	6	L2	CO4
b)	Select various difficulties associated with the inverse kinematic solution and explain 'geometric approach' used in inverse kinematic problem.	6	L3	CO4
c)	Analyze VAL language, discuss the basic commands and explain the structure of the program for a typical pick and place operation.	8	L4	CO6

OR

8 a)	Demonstrate briefly the kinematics and dynamics of a robot.	6	L2	CO4
b)	Illustrate forward & inverse kinematics equations of manipulator for a particular position.	6	L3	CO4
c)	Write a VAL robot program to perform pick and place operation on the conveyer system. It consists of two conveyors running parallel with center distance of 600 mm at same level. An industrial robot is fixed centrally between the conveyors. The robot is used to transfer work pieces from conveyor 1 to 2 at a constant speed. Analyse and draw a schematic view of the system. Assume all necessary dimensions.	8	L4	CO6

Module 5

9 a)	Discuss in detail, various methods available for the analysis of robot economics.	7	L2	CO5
b)	Illustrate the features of safety sensors & safety monitoring of robots.	7	L3	CO5
c)	Analyse a critical note on the steps that a company should follow during implementing robotics.	6	L4	CO5

OR

10a)	Explain about robot welding.	7	L2	CO5
b)	Illustrate the economics of robot implementation with help of 'pay back' method	7	L3	CO5
c)	Analyse the working of automated guided vehicles with (a) Component –based DCS (b) Design with field bus technology	6	L4	CO5

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20CSE744A

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Semester End Examinations Feb 2022

COMPUTER VISION

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

Module 1

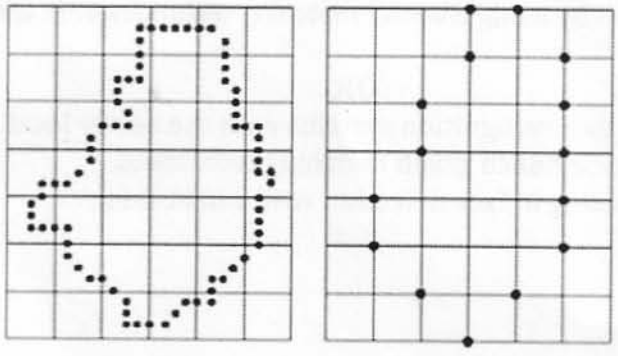
1 a)	Define Computer Vision. List the different types of images. Explain basic operations on Grayscale images.	10	L1	CO1
b)	Explain why a median filter is able to smooth images without introducing blurring.	10	L2	CO1

OR

2 a)	Explain the purpose of a median filter. Why are 2-D median filters sometimes implemented as two 1-D median filters applied in sequence?	10	L1	CO1
b)	Summarize the types of edge detection methods and also Identify the effective method of edge detection with a justification.	10	L2	CO1

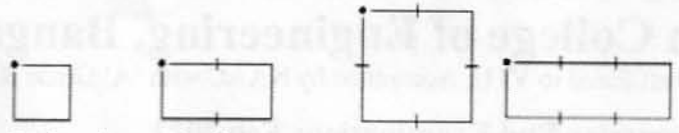
Module 2

3 a)	Define chain codes. Explain 4 directional and 8 directional chain code with a neat diagram.	10	L2	CO2
b)	Solve 4-directional and 8-directional chain code using digital boundary with resampling grid superimposed and result of resampling.	10	L3	CO3



OR

4 a)	Summarize simple and an improved algorithm for object labelling and counting.	10	L2	CO2
b)	Solve the following and find the chain codes, difference, and shape number.	10	L3	CO3



Order 4 Order 6 Order 8

Module 3

5 a)	Illustrate foot-of-normal method in hough transform with a neat sketch.	10	L3	CO4
b)	Compare and contrast linear Hough transform and circular Hough transform in terms of parameters.	10	L4	CO4
	OR			
6 a)	Illustrate iris location using Hough transform with a neat sketch. Apply the strategy to estimate the gain in speed.	10	L3	CO4
b)	Distinguish between Hough transform and RANSAC for detecting straight line.	10	L4	CO4
	Module 4			
7a)	Solve Lucas– Kanade algorithm to generalize parametric motion models in conjunction with a hierarchical search algorithm	10	L3	CO5
b)	Examine different surface representations to integrate 3D range scans.	10	L4	CO5
	OR			
8 a)	Identify the number of issues need to be addressed to estimate the depth from the amount of defocus.	10	L3	CO5
b)	Compare and contrast Parametric motion model and spline based motion model with an example.	10	L4	CO5
	Module 5			
9 a)	Analyse the mixture of gaussian models and neural network for face detection.	10	L4	CO6
b)	Interpret the traffic signs by using chamfer matching technique with the neat flowchart.	10	L5	CO6
	OR			
10a)	Distinguish the earliest face recognition systems with the newer local feature analysis and elastic bunch graph matching techniques.	10	L4	CO6
b)	Interpret the use of boosting in face detection with a neat sketch	10	L5	CO6

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20NHOP710

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Semester End Examinations Feb 2022

DATA ANALYTICS

Duration: **3 hrs** Max. Marks: **100**

Answer five full questions choosing one complete question from each module.

	Module 1			
1 a)	List out the different phases in Data analytics in detail.	10	L1	CO1
b)	Discuss about the challenges in Data Analytics.	10	L2	CO1
	OR			
2 a)	Identify the 3 types of Data ware housing techniques and explain each in detail.	10	L1	CO1
b)	Discuss why Blackberry becomes a failure company and Samsung becomes successful in market.	10	L2	CO1
	Module 2			
3 a)	Categorize the various vertica Analytics platform in detail.	10	L3	CO2
b)	Draw a neat diagram and explain about the working of K safety algorithm in detail.	10	L3	CO2
	OR			
4 a)	Classify the various SQL types in detail with examples.	10	L3	CO2
b)	Compute the different Compression and Encoding techniques in vertica.	10	L3	CO2
	Module 3			
5 a)	Find the difference between Vertica segmentation and Replication techniques with examples.	10	L1	CO3
b)	Compare and Contrast with examples Automatic and Manual projections in vertica.	10	L2	CO4
	OR			
6 a)	List out the various functions used for live aggregate projections with examples	10	L1	CO3
b)	Explain about Database Desginer in detail.	10	L2	CO4
	Module 4			
7a)	Examine on audience analysis and acquisition analysis with a suitable example.	10	L4	CO5
b)	"Google Analytics is popular web analytics tools". Justify your answer.	10	L5	CO5
	OR			
8 a)	Investigate on KISSMETRICS tool with its advantages and features.	10	L4	CO5
b)	Prioritize the types of dashboards and metrics for every dashboard.	10	L5	CO5
	Module 5			
9 a)	Examine on the steps to follow in Marketing Analytics.	10	L4	CO6
b)	Interpret on types of segmentation used in market research analysis	10	L5	CO6
	OR			
10a)	Characterize stages in target marketing strategy development with diagram.	10	L4	CO6
b)	Evaluate on marketing strategy used by company Bristol Myers Squibb.	10	L5	CO6