ADIKAVI NANNAYA UNIVERSITY
I MTECH (COMMON TO CST & CST with BIG DATA ANALYTICS) – II SEMESTER
MTCST201,MTBDA201: BIG DATA ANALYSIS
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Define Big Data. What are the characteristics of Big Data. Explain each character with suitable real time applications **(15M)**

Or

b) Compare data in a Warehouse and Data in Hadoop. Discuss similarities and dissimilarities **(15M)**

2. **a)** Explain Map Reduce concept and all building blocks of Hadoop **(15M)**

Or

b) Explain the concepts of HDFS. Also explain how command line interface in Java works in HDFS **(15M)**

3. **a)** Write Matrix multiplication program with Map Reduce concept. How to construct Basic template of a Map Reduce Program **(15M)**

Or

b) Write word count program with Map Reduce concept. Explain Bloom Filters **(15M)**

4. **a)** Explain Friends-of-Friends Algorithm in finding friends in a Social Network. **(15M)**

Or

b) Explain PageRank Algorithm. **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) Explain the concept of wrapper classes in Java

b) Explain Serializability

c) Compare sql databases and Hadoop

d) What is Hadoop Archives. Explain

e) Explain anatomy of a MapReduce Program

f) What are chaining Map Reduce jobs

g) What is Streaming In Hadoop

h) Explain Shortest Path Algorithm.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (COMMON TO CST & CST with BIG DATA ANALYTICS) – II SEMESTER
MTCST202, MTBDA202: CLOUD COMPUTING
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Explain Cloud computing delivery models and Services. **(8M)**

b) Discuss Communication Protocols and Process Coordination in Distributed Systems. **(7M)**

Or

c) Briefly explain Cloud Computing at Microsoft Azure. **(8M)**

d) Explain Responsibility sharing between user and cloud service provider. **(7M)**

2. **a)** What is the need of virtualization? Explain Full virtualization and Para virtualization. **(7M)**

b) Discuss Virtual Machine Monitors and Virtual Machines. **(7M)**

Or

c) Explain Start-Time Fair Queuing Scheduling Algorithm for Computing Clouds. **(15M)**

3. **a)** Explain Network File System (NFS), Andrew File System (AFS) and Sprite Network File System (SFS) of Distributive File Systems. **(8M)**

b) Discuss Google File System. **(7M)**

Or

c) Explain the Security of Virtualization **(8M)**

d) Discuss the Xoar: Breaking the monolithic design of the TCB. **(7M)**

4. **a)** How do we connect clients to cloud instances through Firewalls? **(8M)**

b) Explain the Security rules for application and transport layer protocols in EC2. **(7M)**

Or

c) How to install Hadoop on Eclipse on a Windows system **(8M)**

d) Explain the Case Study: Xen, a VMM based on para virtualization **(7M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) Challenges for Cloud Computing

b) The Zoo Keeper

c) Mechanisms for Resource Management

d) Two-Level Resource Allocation Architecture

e) Locks and Chubby.

f) VM Security

g) Cloud-based simulation of a distributed trust algorithm.

h) The GrepTheWeb Application.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (COMMON TO CST & CST with BIG DATA ANALYTICS) – II SEMESTER
MTCST203, MTBDA203: DATA SCIENCE WITH R
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** What are the different stages in a Data Science Project. Explain each stage **(15M)**

Or

b) What are the different ways of cleaning data. Explain **(15M)**

2. **a)** Two tasks, model evaluation and model validation measures the progress of machine learning methods. Draw a schematic diagram to show model construction and evaluation. How do you map problems to machine learning tasks? **(15M)**

Or

b) How do you build single variable models using categorical and numeric features? **(8M)**

c) How do you estimate the effects of over fitting? **(7M)**

3. **a)** Logistic regression is the most important member of a class of models called generalized linear models. How to build a logistic regression model for predictions. **(15M)**

Or

b) K-means is a popular clustering algorithm when the data is all numeric. Explain the complete K-Means procedure in R commands. **(15M)**

4. **a)** What is knitr? Explain the schematic of a knitr process. Give the technical details of knitr **(15M)**

Or

b) The essential record of work is running documentation. How to record history using version control **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) Visualization additionally gives you a sense of data distribution and relationships among variables. Explain different ways of visualizing data

b) Sampling is a process of selecting a subset of Population. Explain why we have to select data

c) How do we create a sample group

d) What are the different ways to measure distances and dissimilarities?

e) Explain different types of regressions.

f) Explain Quantifying model soundness

g) How to find relations between logistic models

h) How to explore your project using version control.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST) – II SEMESTER
MTCST204: INFORMATION SECURITY AND CRYPTOGRAPHY
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Briefly define the mono alphabetic cipher. What is the difference between a mono alphabetic cipher and a polyalphabetic cipher?
   b) Briefly explain the security services and mechanisms.
   c) Explain about Hill Cipher. Consider the plaintext "paymoremoney" and use the encryption key: $K=\begin{pmatrix}17 & 17 & 5\\ 21 & 18 & 21\\ 2 & 2 & 19\end{pmatrix}$ Find the cipher text. (5+5+5)

Or

   a) Write briefly about techniques used for Statistical anomaly detection.
   b) What are the contents of an audit record? **(10+5)**

2. **a)** Discuss the design principles of block cipher technique?
   b) How do you convert a block cipher into a stream cipher by using the Cipher Feedback mode? Explain.
   c) What is a Feistel Cipher? Name the Ciphers that follow Feistel Structure. **(5+5+5)**

Or

   a) Which four tasks are performed in each round of AES Cipher? Explain.
   b) Explain the Key Expansion process in AES. **(8+7)**

3. **a)** What are the criterion of cryptographic hash function?
   b) What is message authentication? How is it different from message integrity?
   c) Give the structure of CMAC. What is the difference between CMAC and HMAC? **(5+5+5)**

Or

   a) What are the requirements of Kerberos?
   b) Explain an authentication process of Kerberos in detail. **(5+10)**

4. **a)** Explain Secure socket layer in details?

Or

   b) What is e-mail security? Explain the technique for e-mail security?
   c) Differentiate between tunnel mode and transport mode of IPSec.
   d) Briefly explain Encapsulating IP Security Payload? **(5+5+5)**

Section-B (5 X 3 =15 Marks)

5. Write a Short Note on any FIVE of the following Section-B (5 X 3 =15 Marks)

   a) Fabrication
   b) Confusion and Diffusion
   c) RSA algorithm
   d) Blowfish algorithm
   e) Digital Certificates
   f) Biometric Authentication
   g) S/MIME Vs Pretty Good Privacy
   h) Virtual Election

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST) – II SEMESTER
MTCST205: ARTIFICIAL INTELLIGENCE
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Explain the characteristics of an AI technique. **(8M)**
b) Explain how state space approach be used for representing an AI problem **(7M)**

Or

c) Explain Hill Climbing algorithms **(15M)**

2. **a)** With suitable examples, explain the steps needed to convert a WFF in predicate logic to its equivalent clause form **(8M)**
b) Explain the operation of unification algorithm **(7M)**

Or

c) Explain the various approaches to knowledge representation and issues in knowledge representation **(15M)**

3. **a)** Discuss the use of Frames for default reasoning **(8M)**
b) Discuss different models for non monotonic reasoning **(7M)**

Or

c) Write short notes on
i. Bayes rule
ii. Scripts
iii. Dempster Shafer Theory **(15M)**

4. **a)** Explain the different types of expert systems with examples **(15M)**

Or

b) Explain Goal Stack Planning **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**
a) Heuristic Search
b) AND-OR Graphs
c) Computable functions and predicates
d) Representing is-a relationship
e) Rule based systems
f) Fuzzy Logic
g) Hierarchical Planning
h) Steps in Natural Language Processing.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST) – II SEMESTER
MTCST206: DIGITAL FORENSICS
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1.	**a)** Distinguish computer forensics and other related disciplines?	**(8M)**
	b) Explain how to establishing company policies?	**(7M)**
	Or	
	c) Explain an overview of a computer crime?	**(8M)**
	d) Explain how to analysing your digital evidence?	**(7M)**
2.	**a)** Discuss different Storage Formats for Digital Evidence?	**(7M)**
	b) Explain how to identify the nature of the case?	**(8M)**
	Or	
	c) Explain seizing digital evidence at the scene?	**(15M)**
3.	**a)** Explain how to Exploring Microsoft File Structures?	**(15M)**
	Or	
	b) Discuss different Computer Forensics Software Tools?	**(15M)**
4.	**a)** Addressing Data-Hiding Techniques?	**(8M)**
	b) What are the Specialized E-mail Forensics Tools?	**(7M)**
	Or	
	c) What are Acquisition Procedures for Cell Phones and Mobile Devices?	**(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) What is computer forensics?
b) Briefly explain how to develop computer forensics resources?
c) Explain E-mail abuse investigations.
d) What are proprietary formats?
e) Briefly discuss Windows validation methods?
f) Explain processing and handling digital evidence?
g) What are the different disk partitions?
h) Explain Mobile Device Forensics.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST with BIG DATA ANALYTICS) – II SEMESTER
MTBDA204: DATA MINING AND SOCIAL NETWORKING
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** what are the functionalities of data mining? Explain each with an example **(15M)**

Or

b) Explain data discretization and concept hierarchy generation for numerical data **(15M)**

2. **a)** Show the working of apriori algorithm for frequent item set mining **(15M)**

Or

b) What are the different types of data that occur in cluster analysis? How it is pre-processed? **(15M)**

3. **a)** Explain how web social networks can be extracted and analysed **(15M)**

Or

b) Explain the evolution of communities in dynamic social networks **(15M)**

4. **a)** Model Based collaborative filtering algorithms outperform user based collaborative filtering algorithms. Justify. **(15M)**

Or

b) Recommendation algorithms based on PLSA and LDA models. **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) Demonstrate drill down and roll up operations on a data cube

b) Data dispersion measures

c) Algorithm for AOI

d) Non-linear SVM

e) Characteristics of web data.

f) Temporal analysis example

g) Hybrid user based and item based web recommendation system

h) Web mining.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST with BIG DATA ANALYTICS) – II SEMESTER
MTBDA205: MACHINE LEARNING
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** What is Machine learning? Explain different perspectives and issues in machine learning **(10M)**

b) What are the concepts of learning as search? **(5M)**

Or

c) Explain find – S algorithm with the given example. Give its application **(10M)**

Explain	SKY	AIR Temp.	Humidity	Wind	Water	Forecast	Enjoy sport
1	Sunny	Warm	Normal	Strong	Warm	Same	Yes
2	Sunny	Warm	High	Strong	Warm	Same	Yes
3	Rain	Cold	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Cool	Change	Yes

d) Explain basic decision tree algorithm **(5M)**

2. **a)** Explain basic decision tree algorithm **(10M)**

b) Explain how hypothesis space search is carried in decision tree learning **(5M)**

Or

c) Explain Back propagation algorithm. Mention its limitations **(7M)**

d) Discuss a general approach for deriving confidence intervals **(8M)**

3. **a)** Discuss maximum likelihood hypothesis for predicting probabilities in Bayesian learning **(7M)**

b) Explain Gibs algorithm **(8M)**

Or

c) Explain k- Nearest Neighbour Learning with example **(8M)**

d) Write a short note on Locally Weighted Regression, Case-Based Reasoning **(7M)**

4. **a)** Explain Hypothesis space search in genetic algorithms **(8M)**

b) How Genetic Algorithm can be parallelized? **(7M)**

Or

c) Write short notes on the following:
i. Learning First Order Rules **ii.** Sequential Covering Algorithms **(8M)**

d) Write above Genetic Programming Models of Evolution and Learning **(7M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) Explain designing a learning system

b) Write a short note on candidate elimination algorithm

c) Explain the Issues in decision tree learning

d) Explain about Multilayer networks

e) Briefly explain about Bayes theorem

f) Briefly write about Lazy and Eager Learning

g) What is Inverted Deduction? Explain

h) Explain what Genetic Programming is with example.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST with BIG DATA ANALYTICS) – II SEMESTER
MTBDA206: STATISTICAL COMPUTING FOR DATA ANALYTICS
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Data Analytics Lifecycle, is an approach to managing and executing analytical projects. This approach describes the process in six phases. Explain each phase. **(15M)**

Or

b) What are the benefits of doing a pilot program before a full -scale rollout of a new analytical methodology? Discuss this in the context with any example. **(15M)**

2. **a)** Visualize the descriptive statistics by taking any example **(8M)**
b) What are the different statistical formulae to summarize the data sets **(7M)**

Or

c) Explain Mean deviation, Standard deviation, Coefficient variance, Skewness, and Moments **(15M)**

3. **a)** Explain axioms of probability. Solve the following Problem
A total of 28 percent of American males smoke cigarettes, 7 percent smoke cigars, and 5 percent smoke both cigars and cigarettes. What percentages of males smoke neither cigars nor cigarettes? **(15M)**

Or

b) Explain Conditional Probability. Solve the following Problem using Baye's Formula
In answering a question on a multiple-choice test, a student either knows the answer or she guesses. Let p be the probability that she knows the answer and 1−p the probability that she guesses. Assume that a student who guesses at the answer will be correct with probability 1/m, where m is the number of multiple-choice alternatives. What is the conditional probability that a student knew the answer to a question given that she answered it correctly? **(15M)**

4. **a)** In Predictive Modelling explain, Linear regression, Polynomial Regression, Multiple Linear Regression and Multivariate Regression. **(15M)**

Or

b) Explain Coefficient of determination and Sample correlation coefficient **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) What kind of tools are used in model building phase.
b) Explain quartiles and deciles
c) Explain the concept of Kurtosis
d) Explain Central Limit Theorem
e) Explain different types of distributions
f) Explain Analysis of variance.
g) Explain chi-square test.
h) What is goodness of fit.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (COMMON TO CST & CST with BIG DATA ANALYTICS) – II SEMESTER
MTCST205, MTBDA205: INTERNET OF THINGS
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** What is the IoT? Explain Design guidelines for IoT **(15M)**

Or

b) Explain in detail application of Internet of Things in Smart Cities **(15M)**

2. **a)** Explain M2M. Distinguish between IoT and M2M **(8M)**

b) Explain SDN and NFV for IoT **(7M)**

Or

c) Explain IoT System Management with NETCONF-YANG **(8M)**

d) Explain limitations of SNMP **(7M)**

3. **a)** Explain Design Methodology for IoT **(15M)**

Or

b) Explain Logical Design of IoT suing Python. Explain various python packages used for IoT **(15M)**

4. **a)** What is Raspberry Pi. Explain Raspberry Pi Board and various interfaces in Raspberry pi. **(15M)**

Or

b) What is Cloud? Explain various Cloud Storage Models using in IoT **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) Explain Wireless Sensor Networks

b) Explain IoT in Environment

c) Explain Need for IoT Systems Management

d) Explain NETOPEER

e) Explain various data types used in Python

f) Explain basic building blocks of IoT Device

g) Explain Amazon Web Services for IoT

h) Explain Django Architecture.

ADIKAVI NANNAYA UNIVERSITY
I MTECH (COMMON TO CST & CST with BIG DATA ANALYTICS) – II SEMESTER
MTCST205, MTBDA205: WEB TECHNOLOGIES
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Write the structure of HTML Program **(8M)**
b) Explain how events are handled in JavaScript **(7M)**

Or

c) Design the static web page that display a marks table with three rows and three columns as shown below: **(8M)**

Marks1	Marks2	Marks3
90	90	99
81	80	82

d) Write a script that inputs several lines of text and a search character to determine the number of occurrences of the character in the text **(7M)**

2. **a)** Define an XML schema. Show how an XML schema can be created **(8M)**
b) Discuss the important features of XML which make it more suitable than HTML for creating web related services **(7M)**

Or

c) Explain the creation of namespaces in XML **(8M)**
d) List the rules of regular expression matching of Perl **(7M)**

3. **a)** Create a CGI form that inputs user name and outputs Hello followed by username **(8M)**
b) Briefly explain interface with CGI **(7M)**

Or

c) Briefly discuss about Life cycle of Servlet **(8M)**
d) Briefly explain about the declarations, expressions in JSP **(7M)**

4. **a)** Discuss different types of Conditional statements in PHP **(8M)**
b) Write a PHP program to demonstrate the passing a variable by reference **(7M)**

Or

c) Write the structure of PHP script with an example **(7M)**
d) What is the difference between explode () and split () functions in PHP? Explain with an example. **(8M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**
a) How DHTML and HTML differ from each other
b) How are the Cookies handled in Java Script
c) What is well-formed XML document?
d) Explain user defined functions in PERL
e) Write the difference between Http Request and Html Responses?
f) What are scalar data and scalar variables?
g) Discuss the casting of data types in PHP
h) How can we execute a PHP script using command line?

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST) – II SEMESTER
MTCST206: CYBER SECURITY
MODEL QUESTION PAPER

Time: 3hrs **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Discuss different information assets? **(8M)**

b) What is a threat? Briefly explain each threat? **(7M)**

Or

c) Explain Elements of information security? **(8M)**

d) What are the different types of controls? **(7M)**

2. **a)** Explain data leakage? **(7M)**

b) What are content analysis techniques? **(8M)**

Or

c) Discuss different security Standards? **(15M)**

3. **a)** Explain how to Develop the Metrics Process? **(15M)**

Or

b) Explain Risk Management Feedback Loops? **(15M)**

4. **a)** Explain Event Log Concepts? **(15M)**

Or

b) What are the features of a Good Backup Strategy? **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) What is information security?

b) What are the principles of data security?

c) Briefly discuss data protection?

d) Discuss information security policies?

e) What are different types of security metrics?

f) What is risk treatment?

g) Explain IIS Log Files?

h) What are the different types of backups?

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST) – II SEMESTER
MTCST206: IMAGE PROCESSING
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Explain the elements of Digital Image Processing System with a neat diagram **(15M)**

Or

b)Explain terms: Neighbours of a Pixel **,** Adjacency, Connectivity, Regions, and Boundaries **,** Distance measures **,** Image Operations on a Pixel Basis **(15M)**

2. **a)** Define and explain low pass filters and high pass filters in brief **(7M)**
b) Define and edge. Explain various edge enhancement filters **(8M)**

Or

c) Discuss histogram techniques for Image enhancement: Histogram specification (Matching.**,** Histogram Equalization , Local enhancement. **(15M)**

3. **a)** Explain Lossy compression and Lossy predictive coding **(15M)**

Or

b) Explain the Morphological Algorithms: Boundary Extraction, Region Filling **(15M)**

4. **a)** Distinguish Global Processing via the Hough Transform and via the Graph-Theoretic Techniques. **(15M)**

Or

b) What is Thresholding? Explain about Global Thresholding **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) How do you acquire an image? Explain in detail
b) What is Image Sampling and Quantization?
c) Compare one dimension and two dimension DFT
d) Distinguish between spatial domain techniques and frequency domain techniques of Image enhancement
e) Explain about the Dilation and Erosion
f) Draw the relevant diagram for source encoder and source decoder
g) Explain the Detection of Discontinuities: Point Detection, Line Detection, Edge Detection
h) Explain about Region-Based Segmentation

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST with BIG DATA ANALYTICS) – II SEMESTER
MTBDA206: PARALLEL AND DISTRIBUTED DATABASES
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** What is parallel processing? Explain Parallel DBMS Architectures **(15M)**

Or

b) Illustrate Serial External Sort and Parallel External Sort Algorithms **(15M)**

2. **a)** Explain briefly Parallel indexing Structures **(15M)**

Or

b) Illustrate Parallel sort-merge Nested loop sub collection join algorithm **(15M)**

3. **a)** Explain Parallel Hash sub collection join algorithm **(8M)**

b) What is deadlock and define deadlock handling in distributed systems **(7M)**

Or

c) Differentiate Serial and parallel execution scheduling **(15M)**

4. **a)** Explain Timestamp Concurrency Control Algorithms. **(15M)**

Or

b) Explain Eager and Lazy Protocols in Centralized and Distributed environments **(15M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) PHJ Algorithm

b) Parallel Query Optimization

c) Parallel Collection-Equi join algorithm

d) Mixed Parallelism

e) Views in Distributed Databases

f) Parallel Partitioned Sort

g) Distributed 2PL

h) Failures in Distributed DBMS

ADIKAVI NANNAYA UNIVERSITY
I MTECH (CST with BIG DATA ANALYTICS) – II SEMESTER
MTBDA206: NATURAL LANGUAGE PROCESSING
MODEL QUESTION PAPER

Time: 3hrs. **Max. Marks: 75**

SECTION-A (4 X 15 = 60 M)
Answer ALL Questions

1. **a)** Briefly explain about models and algorithms. **(15M)**

Or

b) Explain Regular Expressions and Finite-State automata **(15M)**

2. **a)** Draw and Explain shift-reduce parsing in natural language processing **(15M)**

Or

b) Describe probabilistic parsing in Natural language processing **(15M)**

3. **a)** Explain about architecture of Natural Language Generation Systems **(15M)**

Or

b) Briefly discuss about Problems in Machine Translation **(15M)**

4. **a)** Briefly explain design features of Information Retrieval Systems. **(15M)**

Or

b) Why should researchers in information retrieval care about standards? **(8M)**
c) Explain about Text Normalization Process in Information Retrieval Systems **(7M)**

Section-B (5 X 3 =15 Marks)

5. **Write a Short Note on any FIVE of the following**

a) What are the challenges of NLP?

b) Explain about Morphological Parsing.

c) Discuss about Probabilistic Parsing.

d) What are the application of NLG?

e) What is language model based IR?

f) Define Information Retrieval?

g) Define tokenization.