Vidya Jyothi Institute of Technology (Autonomous)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

(Aziz Nagar, C.B.Post, Hyderabad -500075)

Minutes of Board of Studies (BoS) Meeting held in virtual mode on 14-07-2021.

Members Present:
Signature

1. Dr.K. Lakshmi Narayan	Chairman	
2. Dr. Y. Rajashekar Reddy	(JNTUH) Nominee	
3. Dr.A.Ramu	Member	
4. Dr P.Anantha Lakshmi Narayana	Member	
5. Dr. V.Nagaraju	Member	
6. Dr. P.Suresh	Member	
7. Mrs. G.Srilatha	Member	
8. Dr. R. Ramakrishna	Member	
9. Dr. K. Kondala Rao	Member	
10. Mr. J.Govardhan Reddy	Member	
11. Mrs M.N.L.Anuradha	Member	

Item Number 1: Approval of B. Tech II Year I Semester Syllabi (R-20)

The Chairman of Board of Studies (BoS) presented the syllabi of B. Tech II Year I Semester for the following subject:

Table 1:

S.No.	Name of the Course	Year / Semester	Programme
1	Mathematical and Statistical Foundations	II/ I	B.Tech (CSE-DS)
2	Probability & Statistics for AI	II / I	B.Tech (AI)

After discussing various aspects of the syllabi, the committee passed the following resolution.

Resolution: The members after thorough discussion, approved the syllabi of above courses mentioned in Table: 1. and the syllabi is as per Annexure 1

Noted and Approved

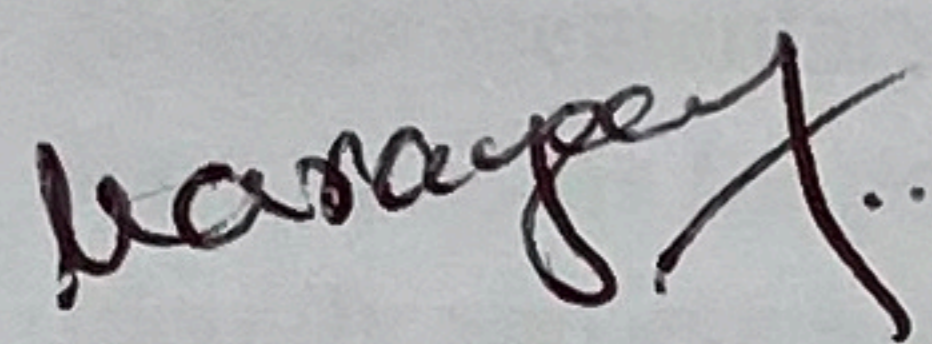**Item No.2: To approve panel of examiners**

The chairman emphasized the necessity of panel of examiners. Their services shall be utilized in the preparation of end semester question paper(s) evaluation of end semester examination answer scripts and that they will be paid with remuneration as per the recommendations of college finance committee (CFC) and approval of Board of Governors (BoG). The chairman is authorized to contact any other examiner if required.
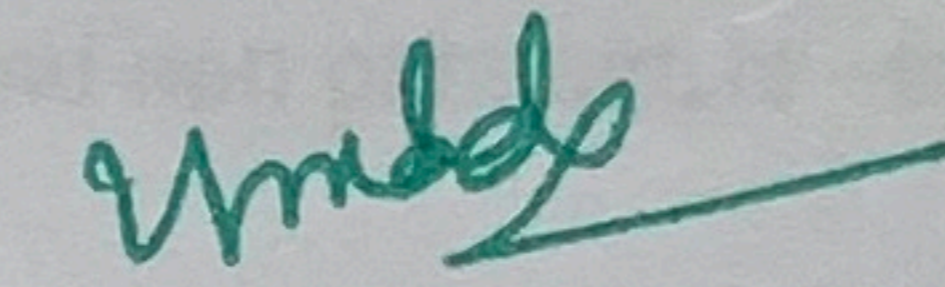
Resolution 1: The board has discussed and finalized panel of examiners for B.Tech II year I Semester as per Annexure 2
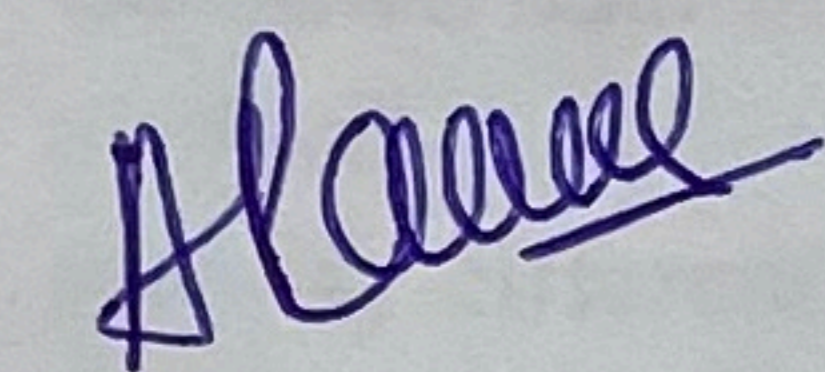
Resolution 2: It is resolved unanimously to pay the remuneration to the examiners as approved by the BoG.
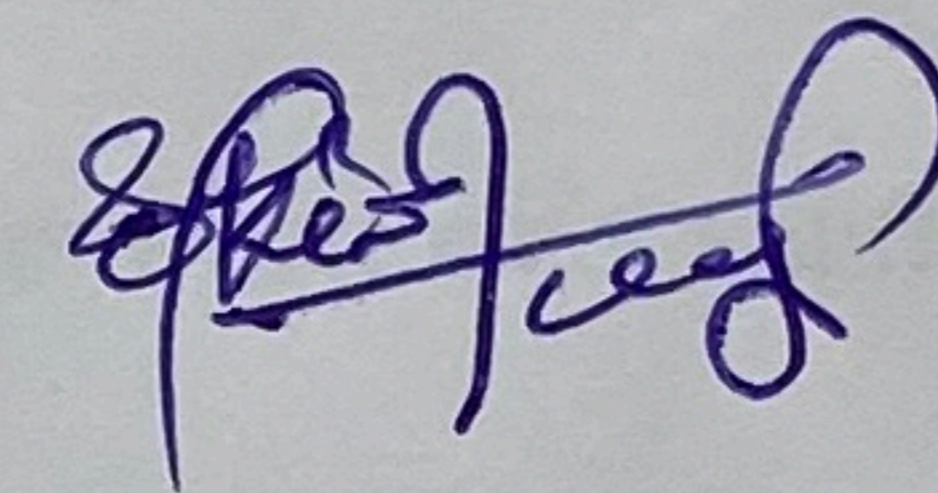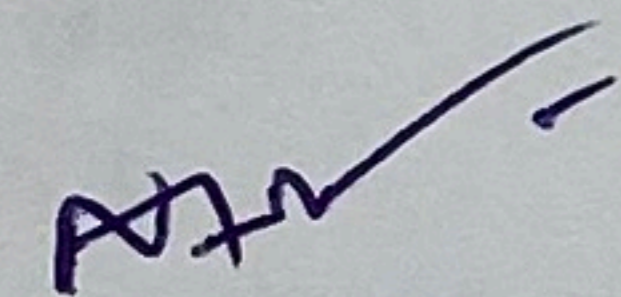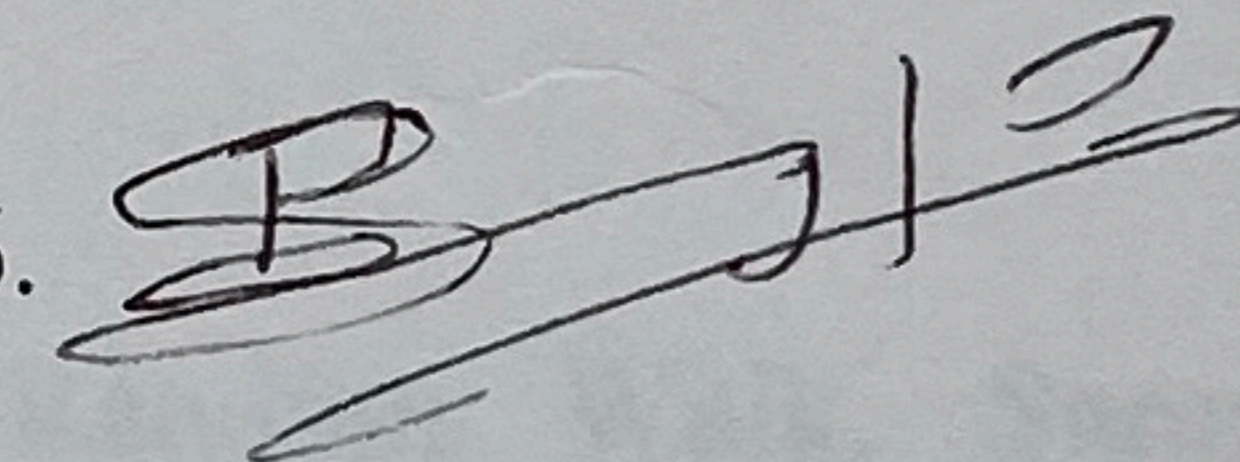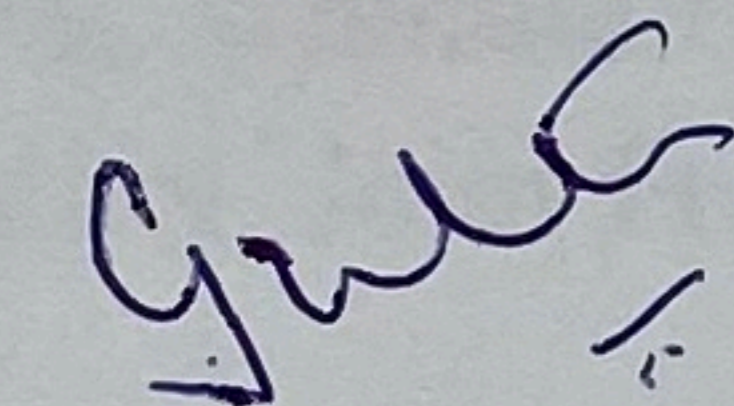
Noted and approved.

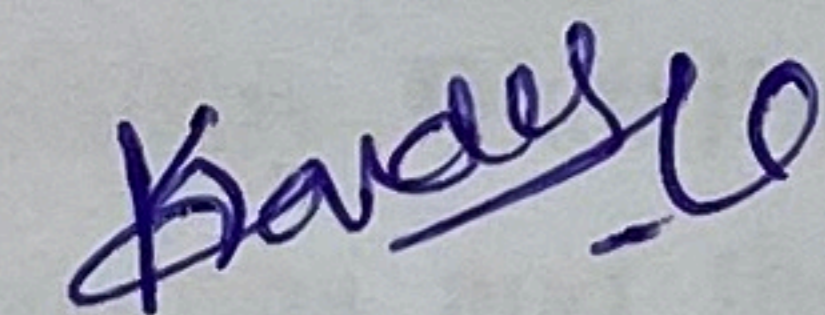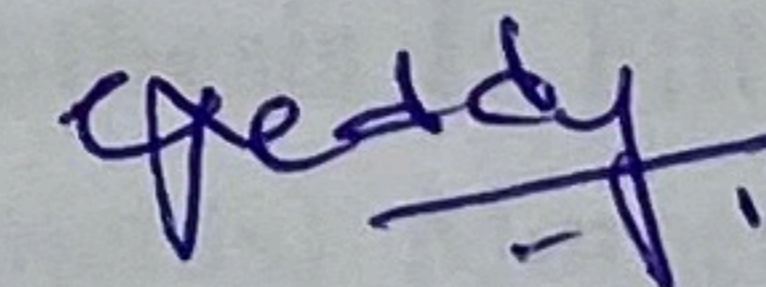**Signature of the members present:**

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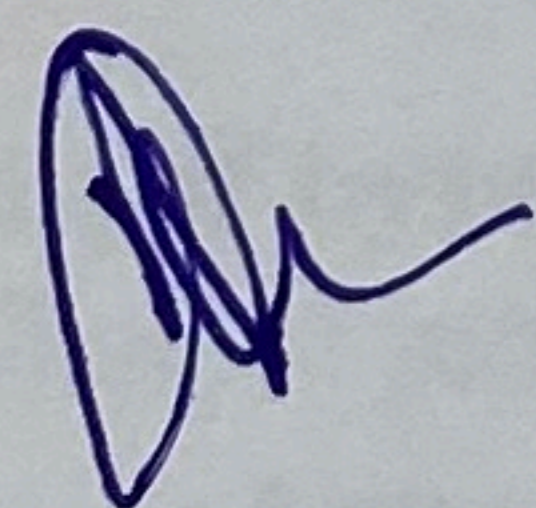2.

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Probability & Statistics for AI

B.Tech. II Year I Semester (AI)

L	T	P	C
3	0	0	3

Course Objectives:
1. To learn random variables that describe randomness or an uncertainty in certain realistic situation
2. To learn Binomial geometric and normal distributions
3. To learn Sampling distribution of mean, variance, point estimation and interval estimation and the testing of hypothesis and ANOVA
4. By using correlation to identify the strength and direction of a linear relationship between two variables and using regression to predict how much a dependent variable changes based on adjustments to an independent variable, you are empowered to make objective, data-driven decisions regarding your processes. To fit a desired curve by the method of least squares for the given data
5. To learn structure of ques and different types of ques.

Course Outcomes: After learning the contents of this course the students must be able to:
1. To differentiate among random variables involved in the probability models which are useful for all branches of engineering.
2. Derive relationship among variety of performance measures using probability distributions.
3. Acquire elementary knowledge of parametric and non parametric –tests and understand the use of observing state analysis for predicting future conditions.
4. Identify and examine situations that generate using problems and able to solve the tests of ANOVA for classified data and apply proper measurements, Indicators and techniques of Correlation and regression analysis.
5. Identify different types of ques and select appropriate que for different situations.
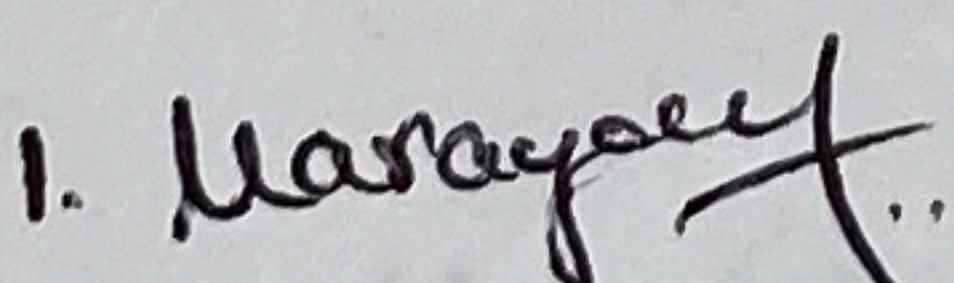
Syllabus:

Unit – I
Probability: Probability Distributions, Random Walk, Sample Space, Probability Density Function, Cumulative distribution Function, Independent Events, Mutual Exclusive, Conditional Probability, Joint Probability, Baye's theorem.
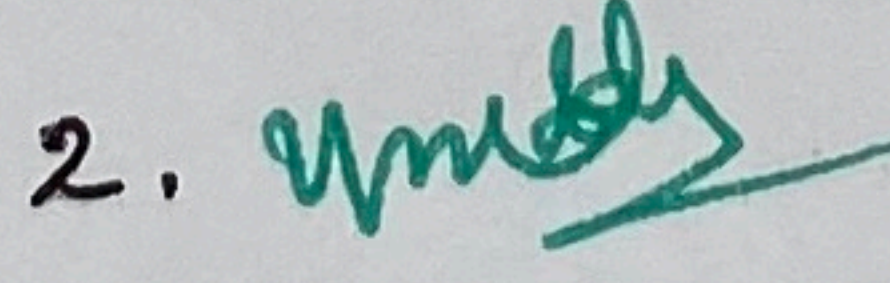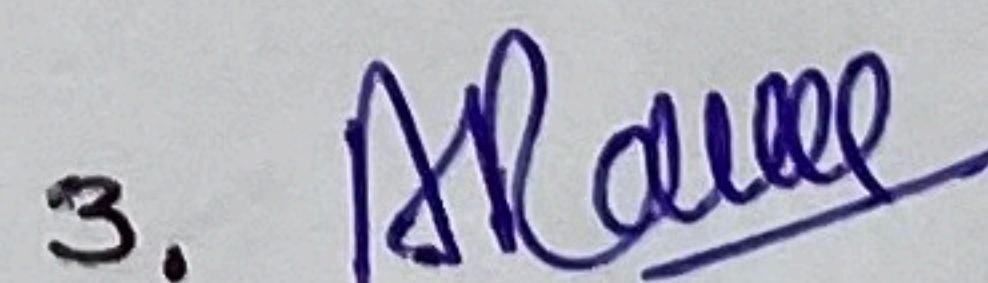
Unit – II
Probability Distributions & Testing of Hypothesis I: Fitting of Binomial, Poisson & Normal distributions and their properties (only Statements) Moment Generating Functions, mean and variance.
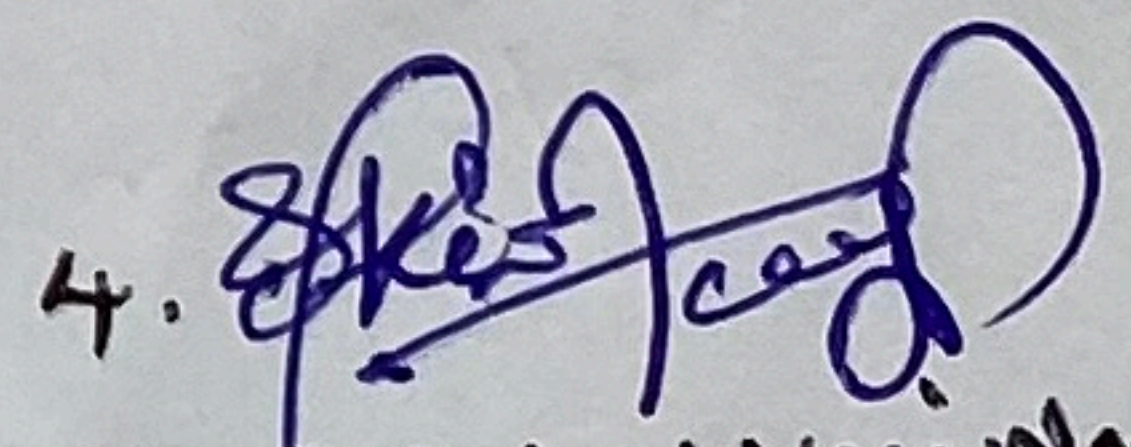
Testing of hypothesis for single mean and difference of means of large samples.
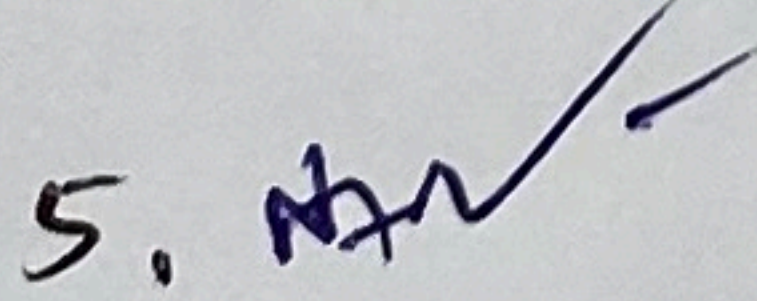Confidence interval for the proportions, Tests of hypothesis for the proportions- single and difference between the proportions for large samples.
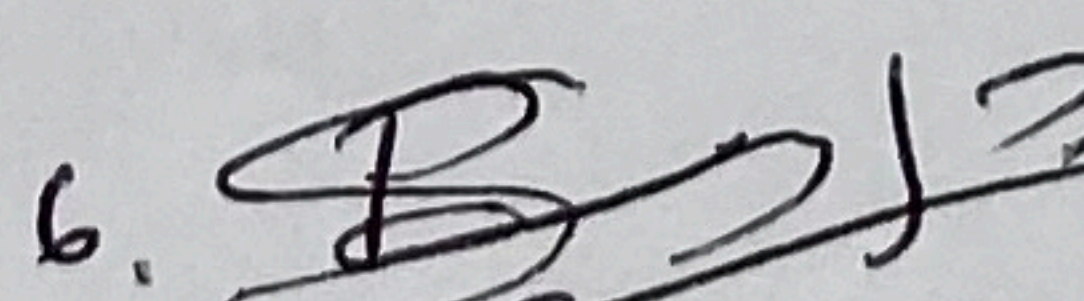
1. Narayana
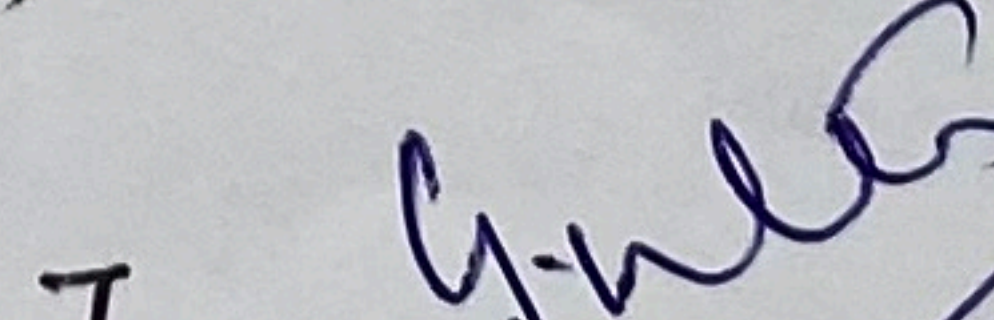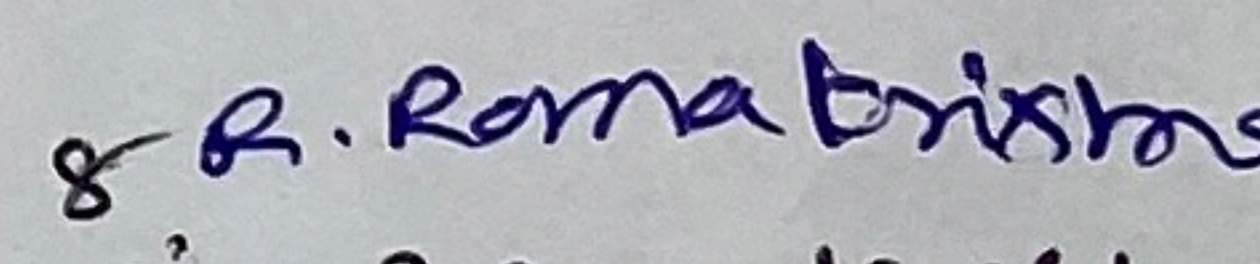(Dr. K. L. Narayana)
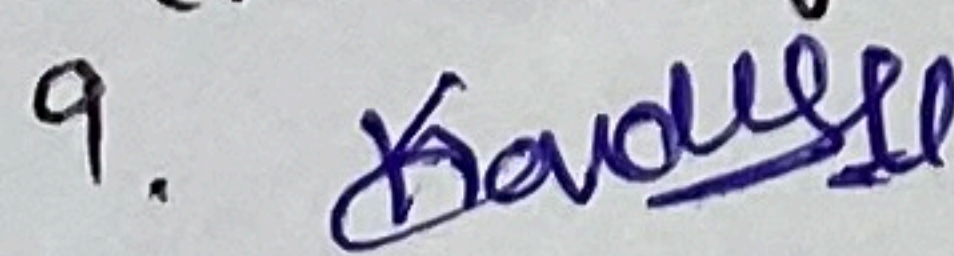
2. (Dr. Y. Rajasekhar reddy)
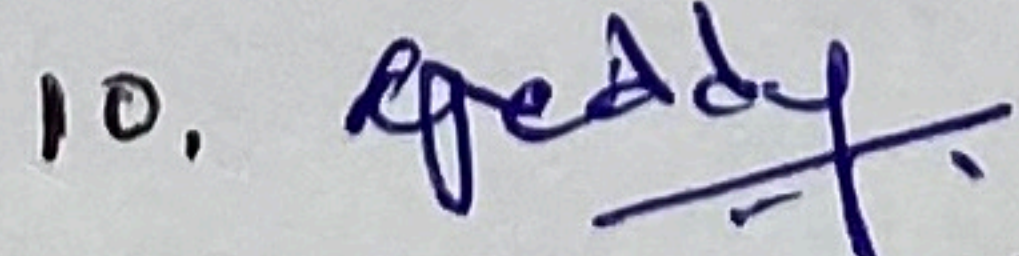
3. (Dr. A. Ramu)
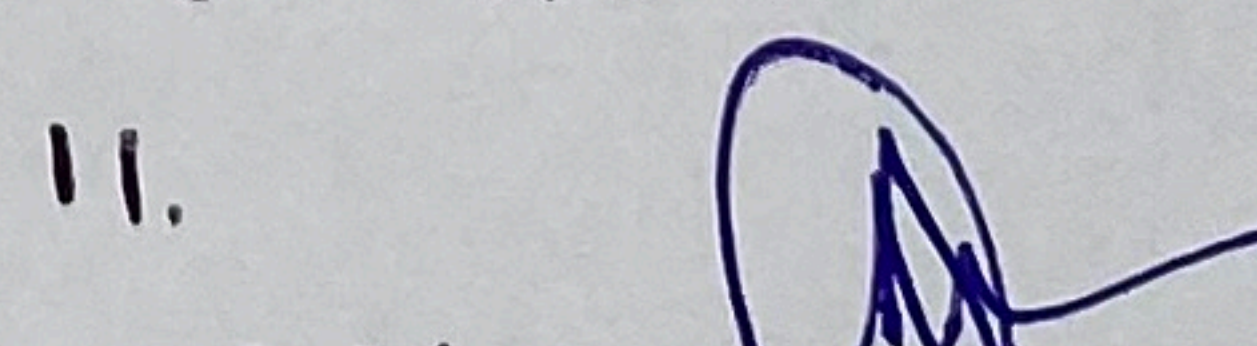
4. (Dr. P. A. Laxmi Narayana)

5. (Dr. V. Nagaraju)

6. (Dr. P. Suresh)

7. (Mrs. G. Srilatha)

8. R. Ramakrishna
(Dr. R. Rama Krishna)

9. (Dr. K. Kondala Rao)

10. (Mr. J. Govardhan reddy)

11. (Mrs. M N L Anuradha)

Unit – III

Testing of hypothesis II: Small Samples - t-distribution, F-Distribution, χ^2 distribution, ANOVA for one-way classified data

Unit – IV

Correlation, Regression & Curve Fitting: Coefficient of Correlation-Regression coefficients- The lines of Regression- The Coefficient of Rank Correlation.

Curve Fitting- Fitting a Straight line- Second Degree Polynomial- Exponential, Power Curve by Method of Least Squares.

Unit – V

Queuing Theory: Structure of a queuing system, Operating characteristics of queuing system, Transient and steady states, Terminology of Queuing systems, Arrival and service processes- Pure Birth-Death process Deterministic queuing models- M/M/1 Model of infinite queue, M/M/1 model of finite queue.

Text Books:

1. Jay L Devore, Probability and Statistics for Engineering and Sciences, Cengage Learning

2. Probability and Statistics, by T. K. V. Iyengar others, S. Chand Publications.

3. Fundamentals of Queueing Theory, by John F Shortle et.el. Fifth Edition, John Wiley & Sons.

References Books:

1. Fundamentals of Mathematical Statistics, by S C Gupta and V K Kapoor, S Chand.

2. Probability and Statistics for Engineers, by Richard Arnold Johnson, Irvin Miller and John E Freund, New Delhi Prentice Hall

1. *(signature)*
(Dr. K. L. Narayan)

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8. R. Ramakrishna

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Mathematical and Statistical Foundations

B.Tech. II Year I Semester. (CSE-DS)

L	T	P	C
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Course Objectives:

- To learn the Number Theory basic concepts useful for cryptography
- To Understand the theory of Probability, and discrete probability distributions.
- To acquire knowledge about Continuous probability distributions and Sampling
- To learn the procedure of testing of hypothesis for making inferences
- To identify the indicators and techniques of Correlation and regression analysis.

Course Outcomes:

After learning the contents of this course, the student must be able to

- Apply the number theory concepts to cryptography domain
- Apply the concepts of probability and distributions to some case studies
- Derive relationship among various performance measures using continuous probability distributions and sampling techniques.
- Acquire elementary knowledge of parametric and nonparametric –tests and understand the use of observing state analysis for predicting future conditions.
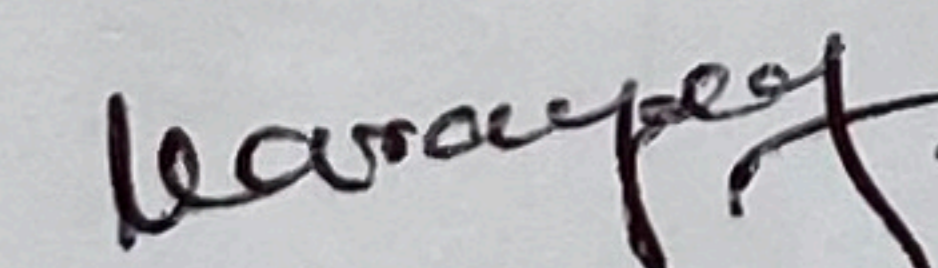- Apply proper measurements, Indicators and techniques of Correlation and regression analysis
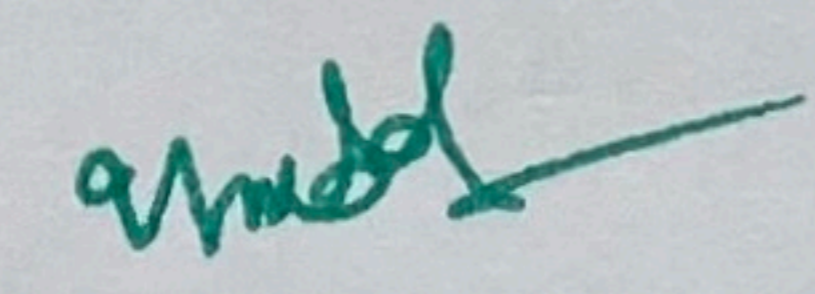
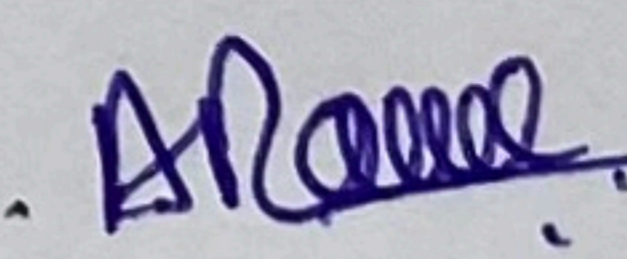**Syllabus:**

Unit - I

Greatest Common Divisors and Prime Factorization: Greatest common divisors, The Euclidean algorithm, The fundamental theorem of arithmetic, Factorization of integers and the Fermat numbers Congruences: Introduction to congruences, Linear congruences, The Chinese remainder theorem, Systems of linear congruences
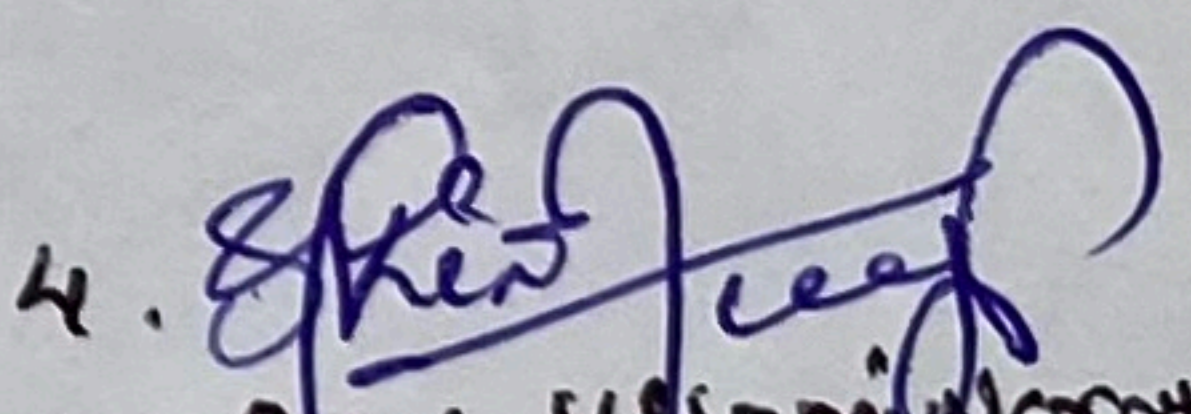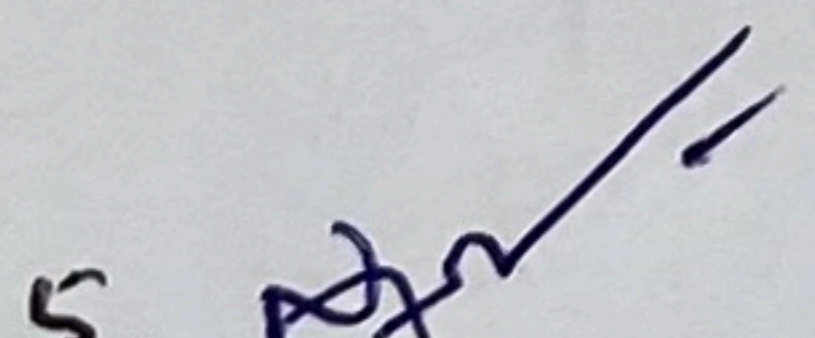
Unit - II

Random Variables and Probability Distributions: Concept of a Random Variable, Discrete Probability Distributions, Continuous Probability Distributions. Discrete Probability Distributions: Binomial Distribution, Poisson distribution.
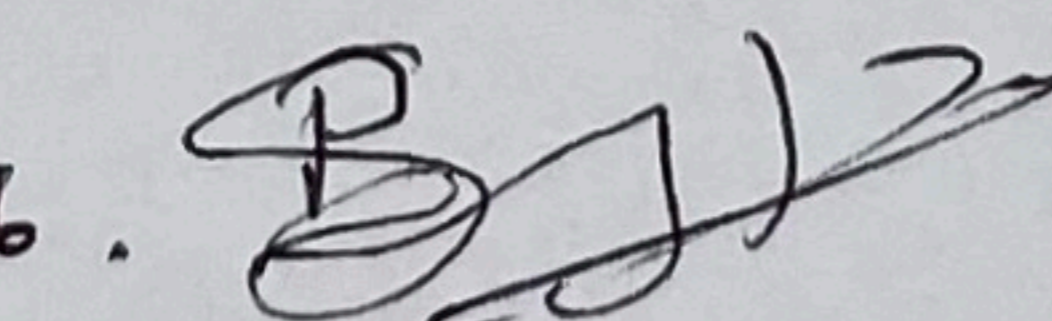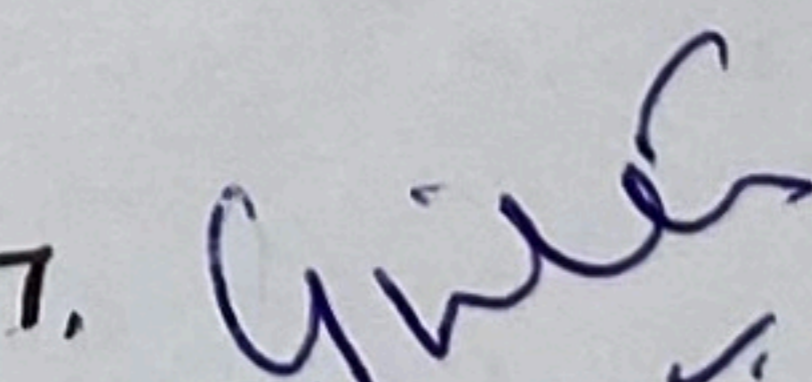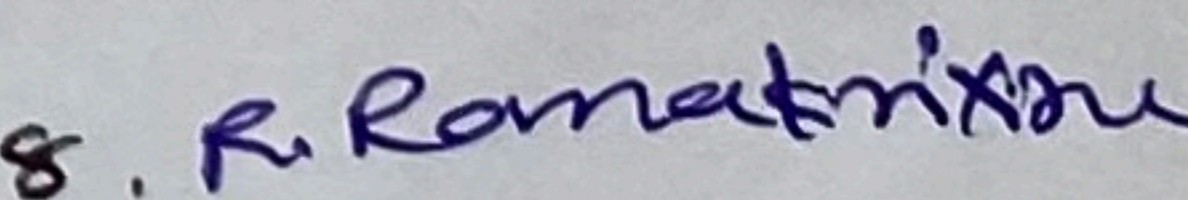
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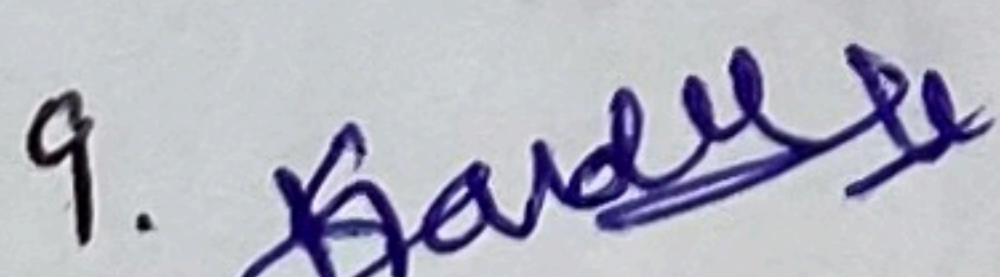2. *(Dr. Y. Rajasekhar Reddy)*
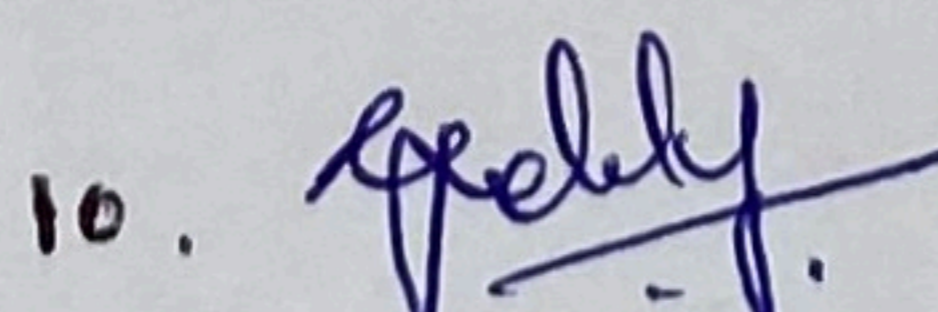3. *(Dr. A. Ramu)*
4. *(Dr. P.A. Lakshmi Narayana)*
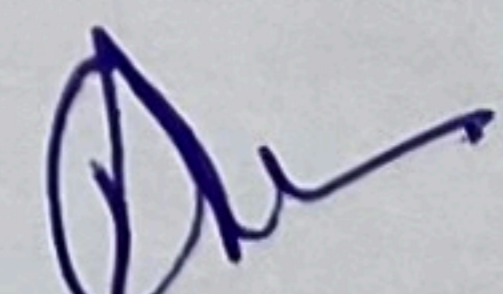5. *(Dr. V. Nagaraju)*
6. *(Dr. P Suresh)*
7. *(Mrs. G. Sri Latha)*
8. *(Dr. A. Rama krishna)*
9. *(Dr. K. Kondala Rao)*
10. *(Mrs. S. Govardhan Reddy)*
11. *(Mrs. MNL Anuradha)*

Unit - III

Continuous Probability Distributions & Estimation: Normal Distribution, Areas under the Normal Curve, Applications of the Normal Distribution, Normal Approximation to the Binomial, Sampling Distributions Random Sampling, Sampling Distributions, Sampling Distribution of Means and the Central Limit Theorem, Statistical Inference, Point and Interval Estimation methods. Estimating the Mean, Standard Error of a Point Estimate, Prediction Intervals.

Unit - IV

Tests of Hypothesis: Hypothesis concerning Single mean, Difference between Two Means, between Two Proportions for Two Samples, t–Distribution, F-Distribution, Chi-square test.

Unit - V

Simple Linear Regression and Correlation: Introduction to Linear Regression, The Simple Linear Regression Model, Least Squares and the Fitted Model, Properties of the Least Squares Estimators, coefficient of correlation, rank correlation.

Text Books:

1. Kenneth H. Rosen, Elementary number theory & its applications, sixth edition, Addison-Wesley, ISBN 978 0-321-50031-1
2. Jay L Devore, Probability and Statistics for Engineering and Sciences, Cengage Learning.
3. Probability and Statistics, by T. K. V. Iyengar others, S. Chand Publications

Reference Books:

1. S C Gupta and V K Kapoor, Fundamentals of Mathematical statistics, Khanna publications
2. Probability and Statistics for Engineers, by Richard Arnold Johnson, Irvin Miller and John E Freund, New Delhi Prentice Hall.
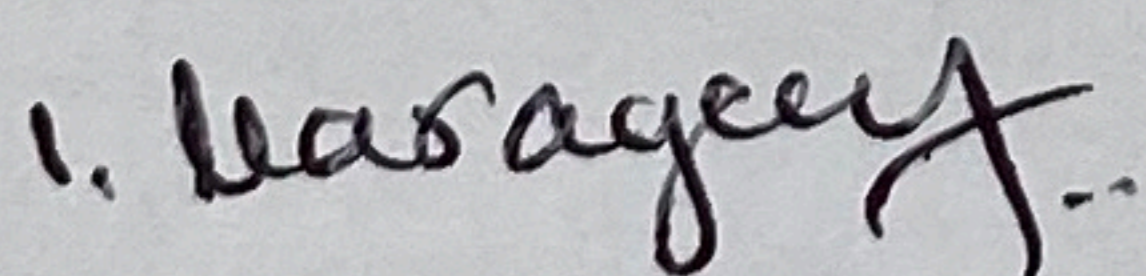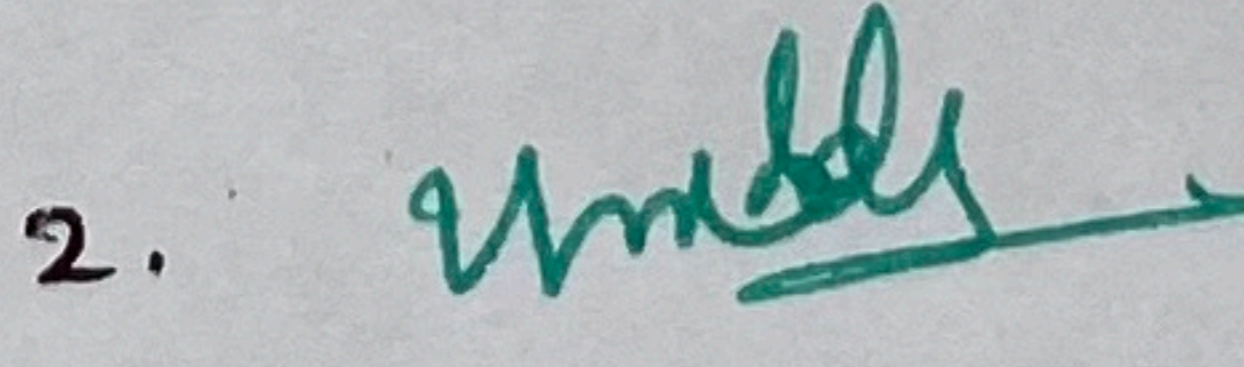
PANEL OF EXAMINERS

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   Cont. No. 9440496134, E-mail: viswanag2007@gmail.com

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   ummrao@sreenidhi.edu.in

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9. Dr. K. Govardhan, Asst. Professor, Gitam University, Hyderabad. Cont.No. 9703746894, E-mail:
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10. Dr. A. Nagaraju, Professor, Sreedattha Group of Institutions, Hyderabad.
    Cont. No. 9492751907, E-mail: animoni_nagaraju@yahoo.co.in

11. Dr A. Ramu, Professor, BITS Pilani, Hyderabad.
    Cont.No.9010202826, E-mail: praveen@hyderabad.bits-pilani.ac.in

12. Dr. Hara Gopal, Professor, BITS Pilani, Hyderabad. Cont.No.9849083995
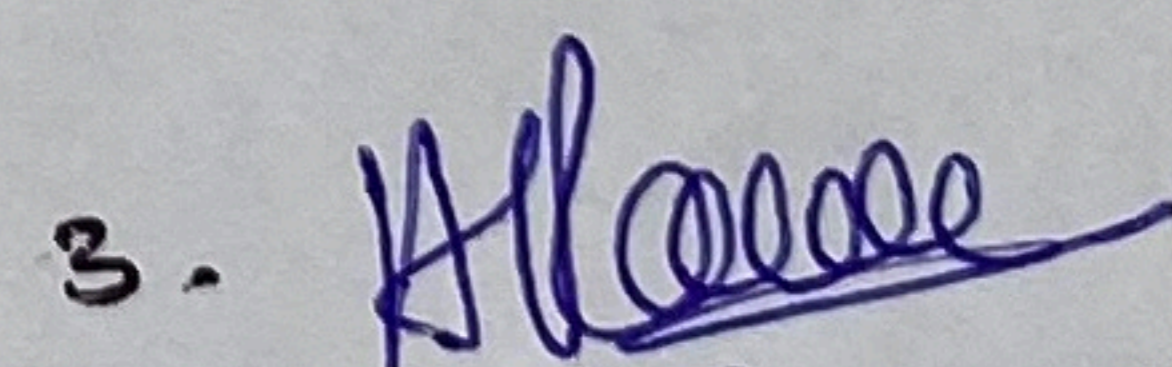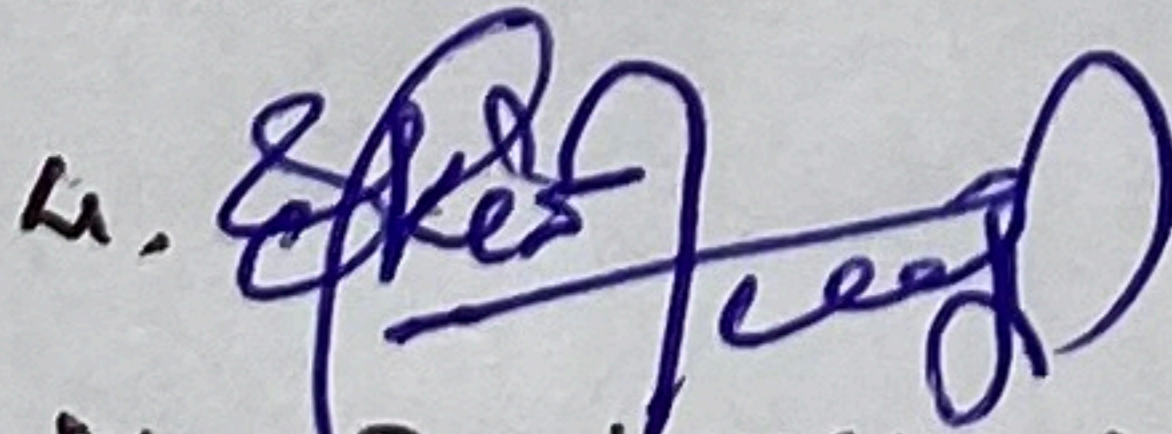   E-mail: haragopalvajjha@gmail.com

1. (Dr. L Narayan)   2. (Dr.Y. Rajasekher Reddy)   3. (Dr. A Rama)
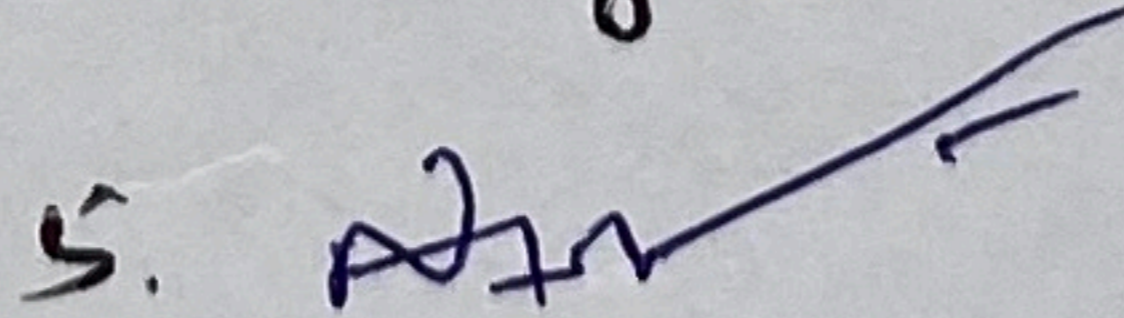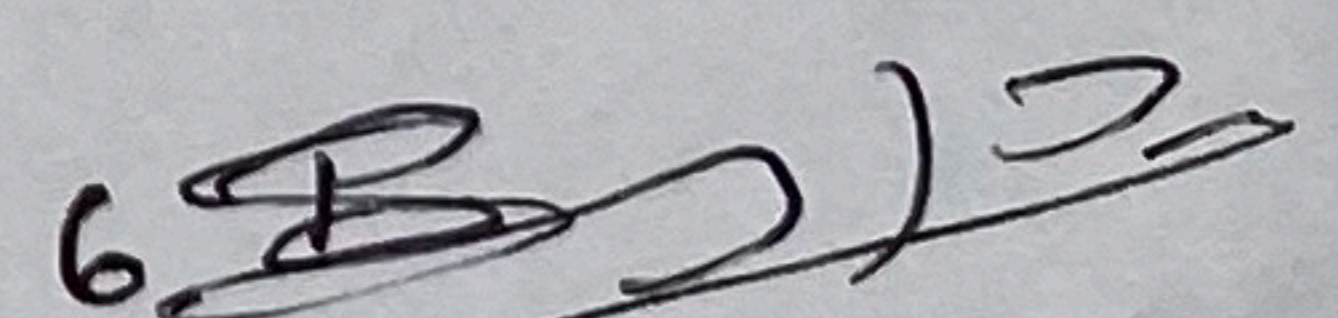
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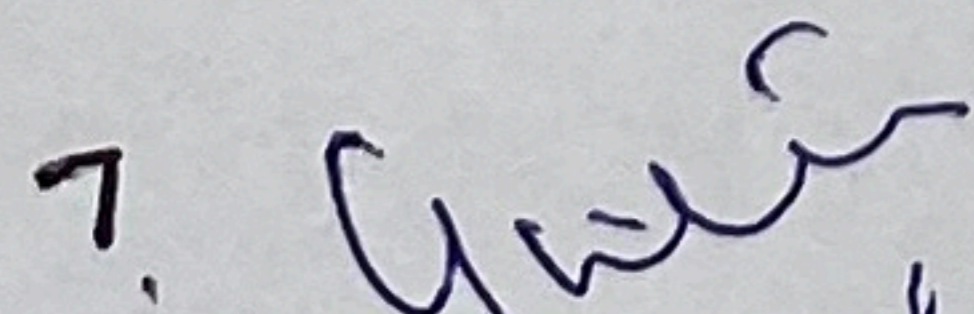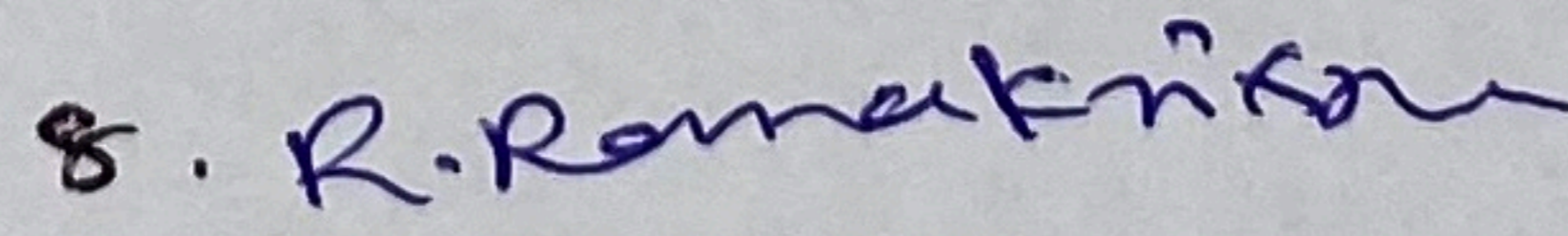4. (Dr.P.A.Lakshmi Narayana)   5. (Dr. V. Nagaraju)   6. (Dr.P. Suresh)

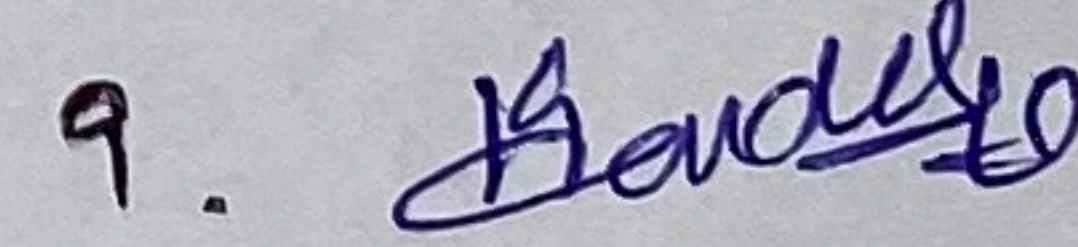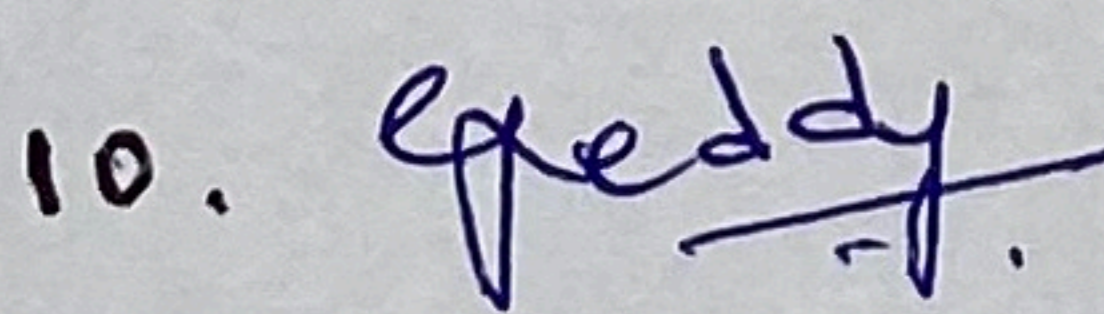7. (Mrs. G. Srilatha)   8. (Dr. A. Ramakrishna)   9. (Dr. K. Kondala Rao)

10. (Mrs. J. Govardhan Reddy)   11. (Mrs. M N L Anuradha)