# **EVIDENCES for CERTIFICATE COURSES**

### 2020-21

Date:16, July 2020

To

The Principal Kakatiya Government College Hanamkonda.

Sir,

SUB: Dept. Of Chemistry – Request for permission to start a certificate course in Chemistry – reg REF: Resolution taken in Departmental Meeting, dated 16-07-2020.

Adverting to the subject and reference cited above, a resolution is taken in Departmental meeting today i.e., 16-07-2020 to start a certificate course in Chemistry, entitled "Introduction to Molecular Spectroscopy" from 20-07-2020. The course is useful to all the students of B.Sc. . Duration of course will be one month.

Hence I request you to accord permission to start the above mentioned certified course.

Yours faithfully

Dr. B. Ramesh

Capetiment of Chemistry

WINAMANKONDA

### NOTICE

Department o Chemistry intends to conduct certificate course in chemistry entitled

A soduction to Molecular Spectroscopy" From 20th July,2020

Interested to dents of I/II/III year are instructed to enroll your names in the department of chemistration 16th July, 2020 through online mode.

- No. of man is in the certificate course; 60
- Last diagramstration: 19<sup>th</sup> July, 2020
- ◆ Commerciate of Contribute Course: 20<sup>th</sup> July 2020

Department of dismistry Incharge
Department of Chemistry
Cakathya G against College
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KAKATIYA GOVT COLLEGE

### Department of Chemistry

### KAKATIYA GOVERNMENT COLLEGE, HANAMKONDA

### Certificate Course in Chemistry

### Introduction to Molecular Spectroscopy

20/07/2020 -21/09/2020

### Syllabus

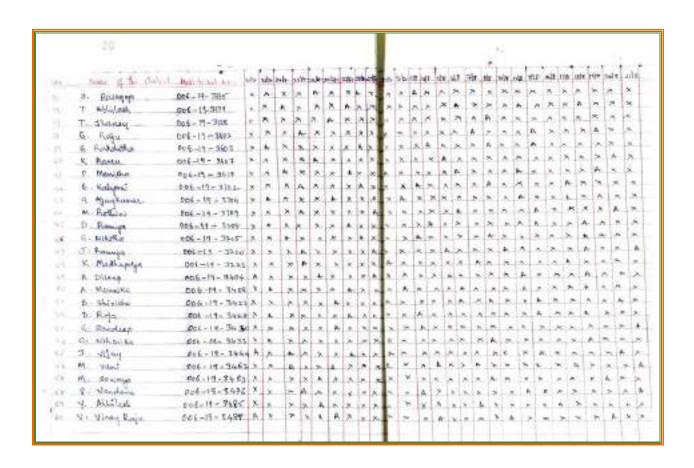
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- 2. Types of Molecular Spectra.
- 3. Selection Rules.
- 4. Determination of Bond Length of rigid diatomic molecules.
- 5. Introduction of IR Spectroscopy.
- 6. Energy lovels of Simple Harmonic Oscillator.
- 7. Modes of vibration in Poly atomic molorules.
- 8. Introduction of UV- Spectroscopy.
- 9. Bonding and Anti-bonding molecular orbitals.
- 10.Electronic energy levels of molecules  $(\sigma, \pi, n)$  and Types of electronic Transitions.
- 11. Chromo inco, Auxochrome, Bathochromic shift, Hypsochromic Shifts.
- 12. Principle MR spectroscopy.
- 13. Factors of thing chemical shift.
- 14. Basic principles of Mass Spectroscopy.
- 15. Determination of Molecular formula and mass spectrum of various components

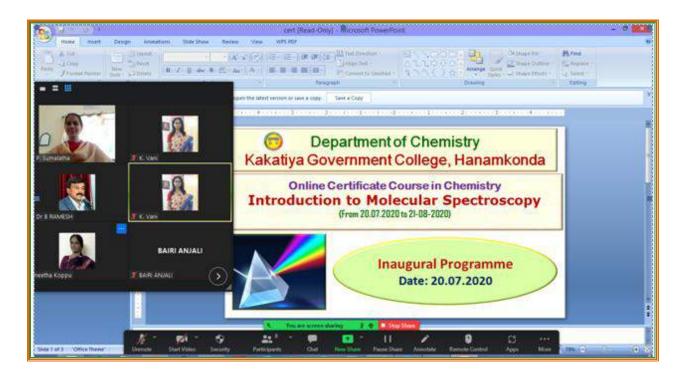
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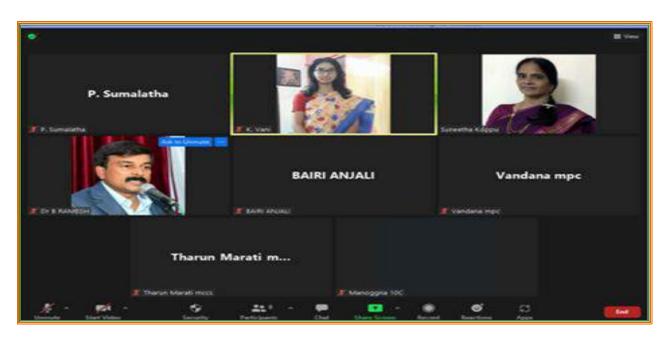
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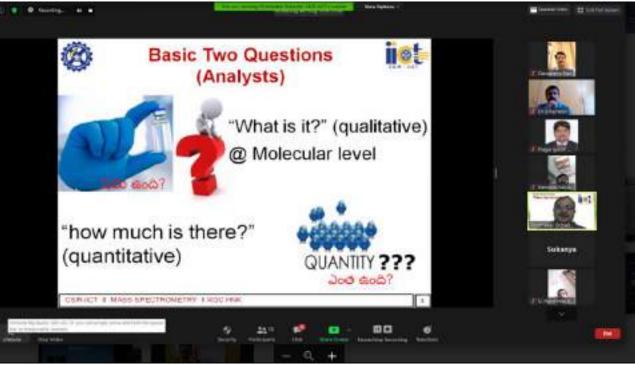
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### KAKATIYA GOVT.COLLEGE, HANAMKONDA Dist: WARANGAL., TELENGANA – 506001



(Affiliated to Kakatiya University, Warangal)

(e-mail: warangal.jkc@gmail.com, website: https://gdcts.cgg.gov.in/hanamkonda.edu)

### DEPARTMENT OF CHEMISTRY

### CERTIFICATE OF ACHIEVEMENT

This is to certify that Mr. / Ms. \_\_\_\_\_\_ of

B.Sc. - I / II / III yr. has successfully completed the certificate course in

Introduction to Molecular Spectroscopy conducted by the

Department of Chemistry, during the period from: 20/07/2020 to
21/08/2020 and secured A grade

Course Coordinator

In-charge Dept.of Chemistry Principal

Date: 15" October, 2020

The Principal Kakatiya Government College Hanamkonda.

Sir

SUB: Dept. Of Chemistry – Request for permission to start a certificate course in Chemistry – reg. REF: Resolution taken in Departmental Meeting, dated 15th October, 2020.

Adverting to the subject and reference cited above, a resolution is taken in Departmental meeting today i.e.15-10-2020 to start a certificate course in Chemistry, entitled "Fundamentls of chromatography" from 17th, October 2020. The course is useful to all the students of B.Sc. Duration of course will be one month.

Hence I request you to accord permission to start the above mentioned certified course.

Yours faithfully

Dr. B. Ramesh Incharge, Dept. of Chemistry

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# Department of Chemistry KAKATIYA GOVERNMENT COLLEGE HANAMKONDA

A Certificate Course in Chemistry

### Fundamentals of Chromatography

#### Objectives

This course aircel at lenguing skills on one of various chromatographic techniques. Chromatography technique is used to separate the carious subcurpos of a mixture.

The applications range from a sample, verification of purity of a given compound to the quantitative determination of the components of the mixture.

Mode of the ocurie: The program soil be organized through ordine mode.

Course Duration: 10 Hours

Eligibility: II.Se. Second Final Year students

No of participants: 70

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### Course Module:

- 1. Classification of chromatographic methods
- 2. Principles and fundamentals of chromatography.
- 3. Principles and uses of Thin Layer Chromatography
- 4. Principles and uses of Paper Chromatography
- 5. Principles and uses of Column Chromatography
- 6. Principles and uses of Ion Exchange chromatography
- 7. Principles, working and use of Gas chromatography.
- 8. Programmed temperature gas chromatography.
- 9. Principles and applications of High Performance Liquid Chromatography.
- 10. Optimization of various chromatographic parameters and Data acquisition software.

Exertinant of Chemistry

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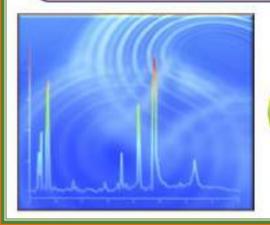
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# Department of Chemistry Kakatiya Government College, Hanamkonda

Online Certificate Course in Chemistry
Fundamentals of Chromatography

(From 17.10.2020 to 26-11-2020)



Inaugural Programme

Date: 17.10.2020

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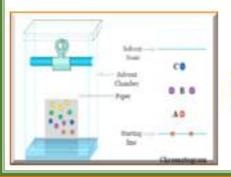
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# Department of Chemistry Kakatiya Government College, Hanamkonda

## Online Certificate Course in Chemistry Fundamentals of Chromatography

(From 17.10.2020 to 26-11-2020)



Valedictory Programme Date: 26-11-2020



## KAKATIYA GOVT.COLLEGE, HANAMKONDA Dist: WARANGAL., TELENGANA – 506001



(Affiliated to Kakatiya University, Warangal)
(e-mail: warangal.jkc@gmail.com, website: https://gdcts.cgg.gov.in/hanamkonda.edu)

### DEPARTMENT OF CHEMISTRY

### CERTIFICATE

This is to certify that Mr. / Ms. \_\_\_\_\_\_ of B.Sc. - I / II / III yr. has successfully completed the certificate course in Fundamentals of Chromotography conducted by the Department of Chemistry, during the period from: 17/10/2020 to 26/11/2020 and secured grade A

**Course Coordinator** 

In-charge Dept.of Chemistry Principal

