



**GOVERNMENT DEGREE COLLEGE, CHENNOOR,  
DIST. MANCHERIAL TELANGANA STATE**

**DEPARTMENT OF CHEMISTRY**

**JIGNASA STUDENT STUDY PROJECT 2021-22**

**PROJECT REPORT**

**ON**

**ANALYSIS OF SOFT DRINKS**





**PROJECT PREPARED BY:**

S.No.	Name of the Student	Class	Hall Ticket No.
1	P.Siddharth	B.Sc.(BZC)III YEAR	051-20-3213
2	B.Vanaja	B.Sc.(BZC)III YEAR	051-20-3202
3	K. Sai	B.Sc.(BZC)III YEAR	051-20-3211
4	K. Navyanjali	B.Sc.(BZC)II YEAR	051-21-3210
5	A. Supriya	B.Sc.(BZC)III YEAR	051-21-3201





Signature of the Lecturer

  
**PRINCIPAL**  
Govt. Degree College  
Channarayana  
Signature of the Principal.

## **AIM**

Comparative study and qualitative Analysis of different brands of Cool drinks available in market.

## **OBJECTIVES:**

To study the contents of the cool drinks with available equipment

To check the effects of cool drinks on health through the published articles.

To create awareness among health sensitive rural masses.

## **PURPOSE:**

In recent days soft drinks brands have been put in to various questions regarding their quality, news flashed that they contain harmful pesticides which aroused interest in knowing about the composition of these drinks consumed highly world-wide.

I wished to investigate if these claims were true. I am in touch with the Quantitative analysis and so, chose this project on determination of contents of cool drinks out of concern for public health.

## **INTRODUCTION:**

Soft drinks are complex mixtures containing variety of substance such as coloring compounds, flavoring agents, acidifiers, sweeteners, preservatives and caffeine.

The era of cool drinks began in 1952 but with the industrialization in India soft drinks marked its beginning with launching of Limca and Gold Spot by Parley group of Companies. Since then, the business was highly profitable and so many multinational companies like Pepsi and Coke launched their brands India. Now-a-days, it is observed, in general that majority of people viewed Sprite, Fanta and Limca to give feeling of lightness, while Pepsi and Thumsup to activate pulse and brain.

## **THEORY:**

Cool drinks of different brands are composed of alcohol, carbohydrates, carbon dioxide, phosphate ions etc. These soft drinks give feeling of warmth lightness and have a



tangy taste which is liked by everyone. Carbon dioxide is responsible for the formation of froth on shaking the bottle. This carbon dioxide gas is dissolved in water to form carbonic acid which is also responsible for the tangy taste. Carbohydrates are the naturally occurring organic compounds and major source of energy to our body. General formula of carbohydrates is  $C_x(H_2O)_y$ .

On the basis of their molecule size carbohydrates are classified as:-

- 1) Monosaccharide
- 2) Disaccharides and
- 3) Polysaccharides.

Glucose is a monosaccharide with formula  $C_6H_{12}O_6$ . It occurs in free-state in the ripened grapes and also in many sweet fruits. It is also present in human blood to the extent of about 0.1%.

Sucrose is one of the most useful disaccharides in our daily life. It is widely distributed in nature in juices, seeds and also in flowers of many plants. The main source of sucrose is sugar cane juice which contains 15-20% sucrose and sugar beet which has about 10-17% sucrose. The molecular formula of sucrose is  $C_{12}H_{22}O_{11}$ . It is produced by a mixture of glucose and fructose. It is non-reducing in nature whereas glucose is reducing.

Also, cool drinks are a bit acidic in nature and their acidity can be measured by finding their  $P^H$  value. The  $P^H$  values also depend upon the acidic contents such as citric acid and Phosphoric acid.

## RESEARCH METHODOLOGY & DATA COLLECTION

**Comparative Study and Qualitative Analysis of different brands of cool drinks available in market.**

### Apparatus:-

Test Tubes

Test Tube Holder

Test Tube Stand

Stop Watch



Beaker

Burner

p<sup>H</sup> Paper Tripod Stand

China Dish

Wire Gauge

**Chemical Required:-**

Iodine Solution

Potassium Iodide

Sodium Hydroxide

Lime Water

Fehling's A&B Solution

Concentrated Nitric Acid

Benedict Solution

Ammonium Molybdate

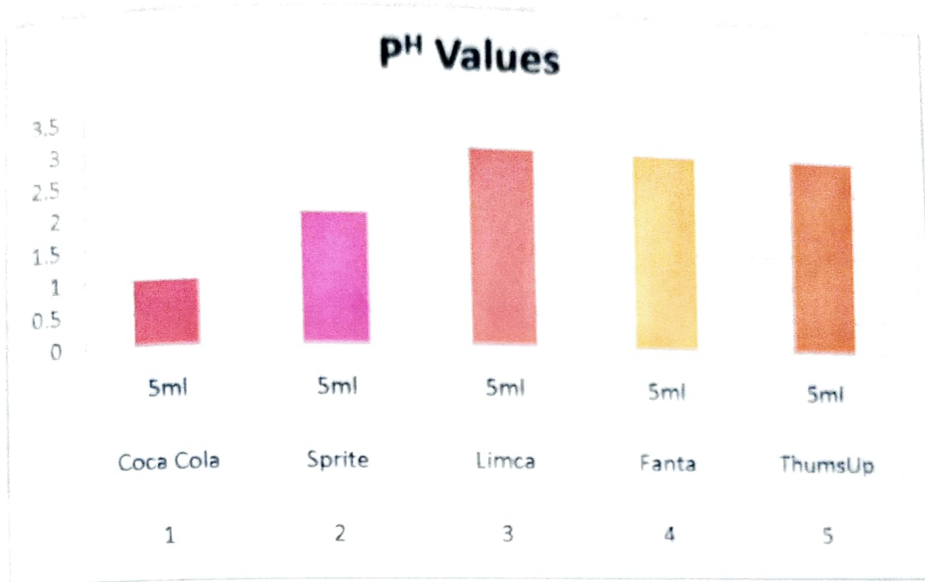
**Detection of P<sup>H</sup>:**

**Experiment:** Small samples of cool drinks of different brands were taken in a test tube and add few drops of Ph indicator(Qualigens Universal Indicator). The change in color of samples was noticed and it was compared with standard P<sup>H</sup> scale.

**Observation:**

Sl.No	Name Of the Drink	Quantity of Drink Taken	Colour Change	P <sup>H</sup> Value
1	Coca Cola	5ml	Red	1.0
2	Sprite	5ml	Pinkish	2.0
3	Limca	5ml	Orange Pink	3.0
4	Fanta	5ml	Light Orange	3.0

5	ThumsUp	5ml	Dark Orange	3.0
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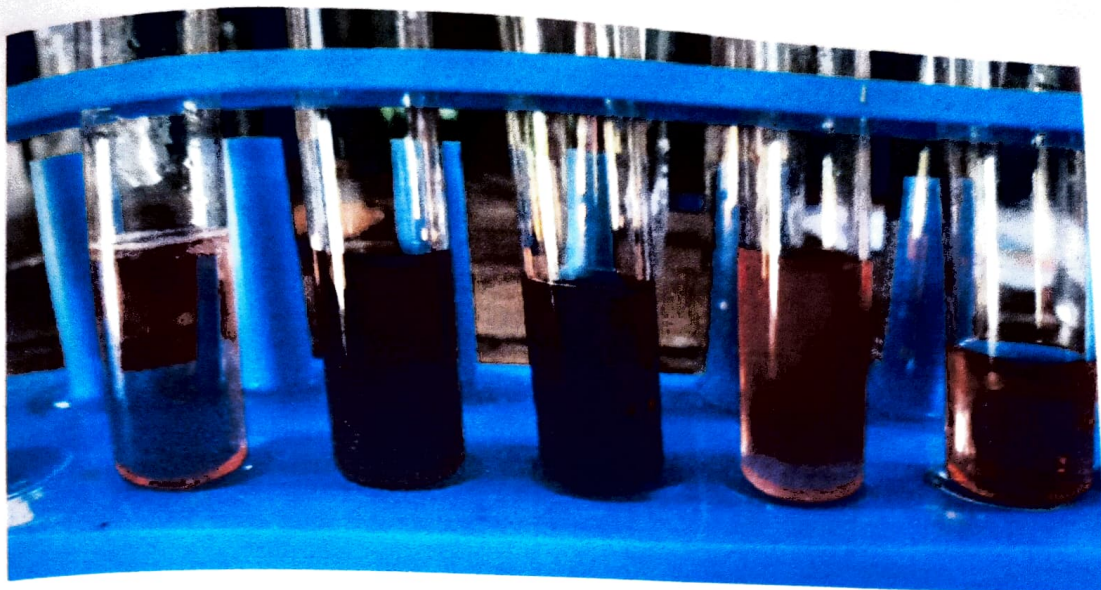


### Inference:

pH values of different brands are different and all are acidic in nature. Almost all the brands tested are showing pH values in the range of 2-3 on 14 point scale which suggests that they are all highly acidic in nature. Of the tested samples, Coca-Cola may be relatively most acidic and Limca the least acidic.







### TEST FOR CARBON DIOXIDE:

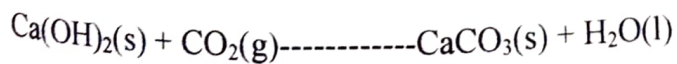
**Experiment:** As soon as the bottles were opened one by one the sample the passed through lime water.

#### Observation:

Sl.No	Name Of the Drink	Time Taken (Sec)	Conclusion
1	Coca Cola	28	CO <sub>2</sub> is Present
2	Sprite	20	CO <sub>2</sub> is Present
3	Limca	38	CO <sub>2</sub> is Present
4	Fanta	36	CO <sub>2</sub> is Present
5	Thumsup	26	CO <sub>2</sub> is Present

#### Inference:

All the soft drinks turned lime water milky suggesting all of them contain dissolved carbon dioxide in Water. The carbon dioxide (CO<sub>2</sub>) dissolves in water to form carbonic acid, which is responsible for its tangy taste.



#### Test for Glucose:



- for example, Fanta drinks are not good for our body at all because they contain very high levels of sugar and fooding colour, excess citric acid, phenylalanine as well as a host of artificial preservatives.

### **OVERAL CONCLUSION:**

- Our study has established the fact that there is presence of alcohol, sugar, glucose, phosphate, carbondioxide in the chose brands of cool drinks and also they are acidic in nature.
- Many studies have revealed the hazardous effects of the cool drinks on health like enamel reduction, osteoporosis, diabetic risk etc. where further investigation is required.

Also, when we cleaned toilets there was no difference between toilet cleaners and cool drinks used, which should have very attacking affect on our stomach tissues.

### **SUGGESTIONS:**

- As cool drinks are not proven to give any health benefit to the consumer, it must be consumed only for the purpose of pleasure.
- World statistics show, water and soft drinks costing the same price which suggests that the ingredients of the soft drinks are also cheap.
- Health susceptible individuals may be advised to refrain from consuming these drinks.
- As being used for toilet cleaning also, it is best suggested these drinks be avoided by all.

### **DIS-ADVANTAAGES OF COOL DRINKS:**

- Soft drinks are little more harmful than sugar solution. As they contain sugar in large amount which cause problems in diabetes patients.
- Soft drink can cause weight gain as they interfere with the body natural ability to dissolve the calcium so they are also harmful for our bones.
- Soft drinks contain "phosphoric acid" which has a  $P^H$  of 2.8. So they can dissolve a nail in about 4 days.
- Soft drink has also ability to remove blood so they are very harmful to our body.

### **USES OF COOL DRINKS:**

- Cool drinks can be used as toilet cleaners.
- They can remove rust spots from chrome car hampers
- They clean corrosion from car battery terminals.
- Soft drinks are used as an excellent detergent to remove grease from clothes.
- They can lose a rusted boiler.

### **Precautions:**

**Some of the precautions which need to be taken care of are:-**

- Concentrated solutions should be handled with immense care.
- Hands should be washed thoroughly after performing each experiment.
- If possible, one should wear hand gloves to prevent from any possible damage.
- If chemicals come into contact with your skin or eyes, flush immediately with copious amounts of water.
- Never leave burners unattended. Turn them off whenever your workstation.
- Never point a test tube or any vessel that you are heating at yourself or your neighbor.

### **Bibliography**

- Following books and websites were a source for my project.
- Comprehensive chemistry Lab manual
- [www.Google.com](http://www.Google.com)
- [www.Wikipedia.com](http://www.Wikipedia.com)
- [www.Unoregon.edu](http://www.Unoregon.edu)



## PROJECT ON "ANALYSIS OF SOFT DRINKS"

Name of the Student: K. NavyanjaliClass & Year: BSC 132C II<sup>nd</sup> yearTest conducted for presence of: Glucose

Method: 5ml sample of cold drinks of different brands were taken in a test tube and 1:1 ratio of Fehling's A solution and Fehling B solution was added. These solutions were heated for few minutes. The change in colour was noticed. And these solutions were centrifuged. The reddish brown colour precipitate was observed. We weighed this solution through the analytical weight machine and notified the readings

S.No	Brand Used	Amount	Inference
1	Sprite	5ml	3.0 gm
2	Fanta	5ml	2.5 gm
3	Limca	5ml	1.2 gm
4	Coca Cola	5ml	3.9 gm
5	Thumsup	5ml	1.4 gm

K. Navyanjali

Principal  
**PRINCIPAL**  
 Govt. Degree College  
 Chennai, Dist: Mancherial.

## PROJECT ON "ANALYSIS OF SOFT DRINKS"

Name of the Student: A. Supriya.

Class Year: B.S.C. B.Z.C (II<sup>nd</sup> year)

Test conducted for presence of: pH

Method: Small sample of cold drinks of different brands taken in different test tubes. Add few drops of universal indicator. The change in colour of samples was noticed, and it was compared with standardised pH scale.

S.No	Brand Used	Amount	Inference
1	cocacola	5ml	colour - Red pH value = 1
2	sprite	5ml	pinkish pH value = 2
3	limca	5ml	orangish pink pH value = 3
4	fanta	5ml	light orange. pH value = 3
5	thumsup	5ml.	dark orange pH value = 3.

A. Supriya.

*Supriya*  
**PRINCIPAL**  
 Govt. Degree College  
 Chennai, Dist: Mancherial.



PROJECT ON "ANALYSIS OF SOFT DRINKS"

Name of the Student: B. Vanaja  
 B.Sc - BZC, 3<sup>rd</sup> year

Test conducted for presence of: Test for phosphate

5ml of each brand of cool drinks were taken in separate test tubes and ammonium molybdate followed by concentrated nitric acid added to it. The solution was heated. Appearance of Canary-yellow precipitate confirmed the presence of phosphate ions in cool drinks. We weighted this solution through the analytical weighing machine and notified the readings.

No	Brand Used	Amount	Inference
1	Spriti	5ml	0.11 gm
2	Fanta	5ml	0.55 gm
3	Coca Cola	5ml	3.4 gm
4	Thums up	5ml	2.1 gm
5	limca	5ml	1.9 gm

Vanaja

*Princip*  
**PRINCIPAL**  
 Govt. Degree College  
 Chennai, Dist: Mancherial.

**Proceedings of the Commissioner Collegiate Education,  
Telangana :: Hyderabad.**

**Present: Sri.Navin Mittal, IAS**

Sub Collegiate Education- Jignasa Student Study Projects-2021– List of Selected Student Study Projects for State Level Presentation- Instructions- Issued- Reg.

Ref: File No. CCE-AC/JIGN/1/2021-ACADEMIC CELL Dated:15.09.2021

Commissionerate of Collegiate Education gives prominence to provide the opportunity to the students of all Government Degree Colleges to explore problems and challenges which have real world applications through project based learning. Learning through projects also increases the possibility of long-term retention of what students have learnt and establishes the linkage between theory and practice.

In view of the above, the Department has received a total of 855 Study Projects from all the Government Degree Colleges in 15 subjects. The projects were evaluated by a committee consisting of subject experts who have an aptitude for research and innovation. Out of 855 Projects, 285 projects have been selected in 15 subjects for state level presentation.

The subject wise selected list of Jignasa Study Projects for State Level Presentations is placed in the Annexure - I

In this regard, all the Principals of GDCs as per the Annexure-I are directed to ensure that the Mentor/Supervising faculty shall guide the students and prepare them thoroughly for state level presentations. Further, the Principals also instructed to send the soft copies of full length Study Projects which are selected for State Level Presentations by 18<sup>th</sup> April, 2022 to [jignasa-ce@telangana.gov.in](mailto:jignasa-ce@telangana.gov.in) and instruct the faculty supervisors to submit the hard bound copies at the time of



S.No	District	Name of the GDC	Subject	Name of the Project	Name of the Supervisor
				Plants around the Landfills in Jangaon	
174	Jayashankar Bhupalpally	GDC Bhupalpally	Chemistry	An evaluation of the potential dangers of potassium bromate in bread upon health	Sandhya Rani. Bandi
175	Jogulamba Gadwal	GDC Gadwal	Chemistry	Biosynthesis of Silver nanoparticles using alternanthera sessilis leaf extract, and it's antibacterial, antifungal study	Haribabu
176	Jogulamba Gadwal	GDC Shantinagar	Chemistry	Estimation of fluoride	Dr K Chandra Mohan
177	Kamareddy	GDC Yellareddy	Chemistry	Food Adulteration	V. Shashidhar
178	Karimnagar	GDC (W) Karimnagar	Chemistry	Analysis of effect of Temperature on iodine content in common salt and its implications on Thyroidism	A.Shalini
179	Mancherial	GDC Bellampally	Chemistry	Comparative study on removal of fluoride from ground water by cost effective adsorbents	P.Swamy
180	Mancherial	GDC Chennoor	Chemistry	Analysis of soft drinks	U. Srinivas
181	Medak	GDC Narsapur	Chemistry	Determination of the hardness of water samples	L. Narender
182	Medchal	GDC Kukatpally	Chemistry	Biosynthesis of Silver nanoparticles from Mulberry fruit extract and their antioxidant activity	Dr.Vani Inavolu & Dr.P.Vinod Kumar Goud
183	Nizamabad	GDC Armoor	Chemistry	Effect of TDS on paddy crop yield	Rajesh A
184	Nizamabad	GDC Bheemgal	Chemistry	Soaps and detergents	B.Ravinder
185	Rajanna Sircilla	GDC Agraharam	Chemistry	Effect of temperature on solubility of Ionic solids	Dr B.Upender Reddy
186	Sangareddy	GDC (W)	Chemistry	Quantitative	A. Surya



Government of Telangana  
Commissionerate of Collegiate Education



**Certificate of Participation**

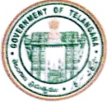
This certificate is awarded to Shri Naryanjali  
of GDC chennoor in recognition of  
his/her participation in Jignasa-Student Study Projects-State Level Presentation &  
Selection for the academic year 2021-22.

  
Academic Guidance Officer

  
Commissioner of Collegiate Education

Sponsored by State Project Directorate, RLISA





Government of Telangana  
Commissionerate of Collegiate Education



Certificate of Participation

This certificate is awarded to A. Sony  
of GDC Chennoor in recognition of  
his/her participation in Jignasa-Student Study Projects-State Level Presentation &  
Selection for the academic year 2021-22.

Academic Guidance Officer

Commissioner of Collegiate Education

Sponsored by State Project Directorate, RLISA



Government of Telangana  
Commissionerate of Collegiate Education



Certificate of Participation

This certificate is awarded to K. Sai  
of GDC chenoor in recognition of  
his/her participation in Jignasa-Student Study Projects-State Level Presentation &  
Selection for the academic year 2021-22.

Academic Guidance Officer

Commissioner of Collegiate Education

Sponsored by State Project Directorate, RLISA





Government of Telangana  
Commissionerate of Collegiate Education



Certificate of Participation

This certificate is awarded to A. Manoj  
of GDC Chennoor in recognition of  
his/her participation in Jignasa-Student Study Projects-State Level Presentation &  
Selection for the academic year 2021-22.

Academic Guidance Officer

Commissioner of Collegiate Education

Sponsored by State Project Directorate, RUSA



Government of Telangana  
Commissionerate of Collegiate Education



Certificate of Participation

This certificate is awarded to ch. Maheshwari  
of GDC Chennoor in recognition of  
his/her participation in Jignasa-Student Study Projects-State Level Presentation &  
Selection for the academic year 2021-22.

Academic Guidance Officer

Commissioner of Collegiate Education

Sponsored by State Project Directorate, RIISA




Department of Chemistry  
Contribution to future Employment  
opportunities: 2021-2022.

26''

circular

All the students of B.Sc (B2) and previous completed students are here by is conducting M.Sc (Chemistry) and B.Ed Entrance Coaching from 18/5/2022. So, all the students are registered of their names in Chemistry Department. The classes will be start 18/5/2022 on words. The interested students may join the coaching and may avail this opportunities.

Dept. of Chemistry

  
(U. Srinivas)

- (i) M.Sc Entrance Coaching
- (ii) B.Ed Entrance Coaching.

  
**PRINCIPAL**  
Govt. Degree College  
CHENNOOR, Dist: Mancherial (T.S)



Dt: 18/5/2022.

Department of Chemistry arranged  
M.Sc (Chemistry) Entrance Coaching and B.Ed  
Entrance Coaching for B.Sc (B.Z.C) <sup>3<sup>rd</sup> year</sup>  
and Previous completed students.

The following students are register-  
ed in M.Sc Chemistry & B.Ed Entrance Coach-  
ing in that classes.

Sl. NO	H.T. NO.	Name of the student	Group.
1)	051-20-4001.	A. Sushmitha.	B.P.C-3 <sup>rd</sup>
2)	051-20-4004	A. Manoj	M.P.C-3 <sup>rd</sup>
3)	4008.	Ch. Akanksha.	"
4)	4010.	N. Anju.	"
5)	4012.	R. Bhasker	"
6)	051-20-3001	A. Sandhya.	B.Z.C-3 <sup>rd</sup>
7)	051-18-3001	A. Supraja.	"
8)	051-20-3213.	P. Sidhartha	"
9)	051-20-3209	J. Supraja.	"
10)	051-20-3202	B. Vanaja.	"
11)	"	K. Jyothi	"

PRINCIPAL

Govt. Degree College

CHENNOOR, Dist. Mancherial (T.S.)



S/NO	Date	TOPIC
01	18/5/22	Kohl-Rauch, transport number
02	19/5/22	Nomenclature of Co-ordination Compounds.
03	20/5/22	Amino Acids, Heterocyclic Compounds
4	24/5/22	Carbo Hydrates.
5	25/5/22	Kinetics. <del>Th</del>
6	26/5/22	Thermodynamics.
7	27/5/22	Colloids, Adsorptions.
8	31/5/22	Hydroxy Compounds.
9	1/6/22	Electro Chemistry.
10	7/6/22	Electro Chemistry
11	8/6/22	Kinetics.
12	9/6/22	Thermodynamics.

S/NO	Name	H.T. NO.	19	20	24	25	26	27	31	1	7	8	9	10	11
1)	A. Sashmitha	051-20-4001	1	2	3	4	5	5	6	7	8	9	10	11	12
2)	A. Manoj	4004	1	2	2	3	3	4	5	6	7	8	9	10	11
3)	Ch. Akanksha	4008	1	1	2	3	4	5	6	6	7	8	8	8	8
4)	N. Anju	4010	0	1	2	3	4	5	6	7	8	9	10	10	10
5)	R. Bhasker	4012	0	0	1	2	3	4	5	6	6	7	8	8	8
6)	A. Sandhya	20-3001	1	2	3	4	5	6	7	8	9	10	11	11	11
7)	A. Supraja	18-3001	0	1	1	2	3	4	4	5	6	7	8	9	9
8)	P. Sidharthy	20-3213	1	1	2	3	4	4	5	6	7	8	9	10	10
9)	J. Supraja	3209	1	2	3	4	5	6	7	8	9	9	10	10	10
10)	B. Vanaja	3202	0	1	1	2	3	4	5	6	7	7	8	8	8
11)			1	2	3	4	5	6	7	7	8	9	10	10	10
12)			1	1	2	3	4	5	6	7	8	9	10	10	10
13)			0	1	2	3	4	5	5	6	7	7	8	9	9
14)			0	0	1	2	3	3	4	5	6	7	8	9	9
15)			1	2	3	4	5	6	7	8	9	10	11	11	11



KU B.Ed.

# TS Ed.CET - 2022 - RANK CARD

(CONDUCTED BY OSMANIA UNIVERSITY, HYDERABAD)



Application No : 3210648493  
 Candidate's Name :  
 Date of Birth : 25/05/2001  
 Father's Name : KALAGURA BAPU  
 Mother's Name : KALAGURA RENUKA  
 Gender : FEMALE  
 Category : SC

Area	
Osmania University(OU)	
PII	
NO	
NCC	
NO	
Sports	
NO	
CAP	
NO	

Hall Ticket No. 2216106009



K. Jyoti

Total (Max. Marks)	150	State Rank	1582
Marks Secured	75.104449	Status	QUALIFIED

NOTE: Admission is subject to fulfillment of the eligibility qualifications.

*A. Ramakrishna*  
CONVENER

The above are the particulars of marks, rank secured by you in the TS Ed.CET-2022 for admission into B.Ed (Two Year) Course for the year 2022-2023.

- NOTE:
1. Qualifying marks for candidates other than SC & ST Categories is 38.
  2. No minimum qualifying marks for SCs & STs.
  3. NO provision for re-totaling, re-valuation or for personal verification of Answer sheets.
  4. If there is any discrepancy in personal data, the candidate is requested to bring it to the notice of the Convener for necessary corrections at the earliest.
  5. The candidates should preserve this Rank Card carefully and they have to submit it at the time of admission.
  6. Getting rank in the entrance test does not automatically entail a candidate for admission. As per NCTE (Recognition norms and procedure) Regulations 2014, the admission is subject to the fulfillment of following conditions.
    - a. In any Bachelors Degree i.e. B.A, B.Com, B.Sc, B.Sc (Home Science), BCA, BBM, B.A (Oriental Languages), BBA or in the Masters Degree, securing at least 50% aggregate marks.
    - b. Bachelors in Engineering or Technology with 50% aggregate marks or any other qualification equivalent thereto.
    - c. However, candidates belonging to the reserved categories viz., SC/ST/BC and other reserved categories should have secured 40% marks in the qualifying examination.
    - d. Candidates should be required to produce marks memo and pass certificate at the time of Counseling for Admission.
    - e. Candidates possessing MERS/BSC (AG) BVSC, BHM/ITB, Pharm and such other professional and job oriented degree courses viz., LL.B are not eligible for admission into B.Ed course.
    - f. Candidates possessing a Master Degree without having undertaken Under Graduate study are not eligible for admission.

Place

*K. Jyoti*  
**PRINCIPAL**  
Govt. Degree College  
MUNICOR, Dist. Mancherial





Acknowledgement Card

Phase - I

Acknowledgement No: 28236

Candidate Details :

HT.No: 72086820176

Name: PANAGANTI SIDDHARTHA

Father's Name: PANAGANTI HARAN KUMAR

Category: SC

Parental Income: Lower

Rank: 1132

Gender: M

Date of Birth: 19-11-1996

Region: OU

Special

Category

Provisional Allotment Details :

Allotted College:

Siddhartha Degree & PG College, Vanavilasaaram, Hyderabad

Course:

M.Sc. Microbiology

Allotted Category:

PAY\_SC\_UNR\_GEN

Allotted in:

Phase I

College Type

OU Affiliated

Payment Type

Payment

Payment Details

Payment Transaction ID: C21998249

Payment Date: 28-10-2022 11:26:23

Course Fee Rs: 33700.00/-

Fee paid Rs: 800.00/- (Inclusive Green Fund)

Instructions to candidates

1. Report to the respective college and submit the acknowledgement card.
2. Produce all original certificates for final verification within the stipulated time.
3. After final verification the candidate should collect Allotment letter and joining report from the college authorities. The signed copy of joining report along with the original TC have to be submitted at the college.
4. Bring two sets of photocopies (Xerox) of all certificates for submission at the respective colleges.
5. After payment of Tuition Fee if the candidate cancels the provisionally allotted seat, the candidate will forfeit the Counselling Fee of Rs. 500/-.
6. Unreserved Hostel accommodation is available for girls & boys.
7. No guarantee for hostel accommodations in OU.
8. Hostel admissions will be given as per OJ hostel admission guidelines.

*[Signature]*

PRINCIPAL  
Govt. Degree College  
CHENNGUR, Dist: Manterial

*[Signature]*

CONVENER  
CPGET - 2022