Industrial Visit to NRSC - ISRO

To

Government Degree College, Gambhiraopet
Rajanna Sircilla dist.
Department of TSKC.

D: 17/6/2022.

To
The Principal,
Govt. Degree College, Gambhiraopet
Rajanna Sircilla, dist.

Respected sir,

Sub: Department of TSKC. Request you to give permission for an Industrial visit to NRSC - ISRO - Reg. - Reg.

* * *

With the subject cited above, the department of TSKC in collaboration with department of Physics organising an Industrial visit to NRSC - ISRO on 24th June 2022 (Friday).

Hence, we request you, to give the permission for an Industrial visit to NRSC - ISRO.

Thanking you, Sir,

Yours faithfully,
R. Sneha
R. Sneha
TSKC mentor.

GOVERNMENT DEGREE COLLEGE
GAMBHIRAOPET
PIN:505304
Dist:Rajanna Sircilla

GOVERNMENT DEGREE COLLEGE
GAMBHIRAOPET
PIN:505304
Dist:Rajanna Sircilla

GOVERNMENT DEGREE COLLEGE, GAMBHIRAOPET

NOTICE

DT: 17/06/2022

All the students of B.A, B.Sc and B.Com I & II year are here by informed that the Department of TSKC organizing **an** Industrial Visit to **"NRSC-ISRO" on 24th June 2022 (Friday).**

Interested students register your names for the industrial visit on or before 22nd June 2022.

PRINCIPAL

PRNICIPAL
GOVT. DEGREE COLLEGE
GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST)T.S.

102 Registered Students List

S.No	Name of the Student	Group & year	Hall Ticket No.	Mobile No.
1.	L Ashwini	MPCS - I yr	210770864681021	8106311655
2.	S. Chandana	MPCS - I yr	210770864681039	7671830794
3.	P. Shruthija.	MPCS - I yr	1031	8340816491
4.	M. Shruthi	MPCS - I yr	1026	9542504941
5.	D. Deepika	BZC - I yr	210770864451013	9652310877
6.	A. Likitha	BZC - I yr	1001	9989627916
7.	K. Bhavani	BZC - I yr	1022	9581249[illegible]
8	N. Rakshitha	B.com - I yr	210770864021074	9492556[illegible]
9	G. Sai latha	B.com - I yr	1044	9505950[illegible]
10	K. Ninsi	B.com - I yr	1049	7781961[illegible]
11.	M. Roja	B.com - I yr	1061	7702781[illegible]
12	K. Rekha	B.com - I yr	1056	9553265[illegible]
13.	S. Pranitha	B.com - I yr	1094	9014193[illegible]
14	S. Soumya	B.com - I yr.	1107	8179983[illegible]
15.	A. Revathi	MPCS - I yr	200770864441001	9666954[illegible]
16.	T. Nikitha	BZC - I yr	200770844445045	98666622[illegible]
17.	A. Nandhini	BZC - II yr	5004	9701829[illegible]
18.	L. Manjusha	BZC - II yr	5010	8466943[illegible]
19.	S. Sai deepthi	BZC - II yr	5048	9515461[illegible]
20.	V. Srivani	BZC - I yr	200770 864445041	7013994[illegible]
21.	N. Madhuri	BZC - II yr	5028	9014924[illegible]
22.	G. Bhargavi	BZC - II yr	5013	6308303[illegible]
23.	E. Pravalika	BZC - I yr	5008	9347437[illegible]
24.	A. Keerthana	BZC - I yr	5001	9347541[illegible]
25.	V. Kavya	BZC - II yr	5040	7288034[illegible]
26.	M. Nikitha	BZC - II yr	5026	8340008[illegible]
27.	Md. Nayeem	MPCS - I yr	210770864681028	9392277[illegible]
28.	Ch. Somesh	MPCS - I yr	1010	9491595[illegible]
29.	P. Vamshi	MPCS - I yr	1034	9349473[illegible]
30.	R. Prashanth	MPCS - I yr	1036	7659094[illegible]
31.	V. Shiva Kumar	MPCS - I yr	1044	8858676[illegible]
32.	A. Yashwanth	MPCS - I yr	1001	2688845[illegible]

S.No	Name of the Student	Group & Year	Hall Ticket No.	Mobile No
33.	D. Madhu	B.Sc - II yr	210770864681012	9484746881
34.	Kousar Sulthana	B.Sc - II yr	210770864451021	9705264390
35	N. Deena	BA - II yr	210770861292016	9676695497
36	J. Anusha	B.Sc - II yr	200770864445016	9652423158
37.	G. Pavani	B.Sc - II yr	200770864445012	9652636209
38	G. Neeraja	B.Sc - II yr	200770864445015	9347988500
39	P. Anitha	B.Sc - II yr	200770864445029	8897150904
40	T. Nikitha	MPCS - II yr	200770864681018	7702848422
41	D. Manasa	MPCS - II yr	200708646 8004	6303499908
42	N. Divya	B. com - II yr	200770864402061	9666406704
43	N. Prathyusha	B. com II yr	2064	8688902339
44	N. Diwakar	B.Sc - II yr	200770866 1002	7569761718
45	T. Omkar	MPCS - II yr	210770864681032	8106800981
46	Ch. Karthik	BA - II yr	200770861290 11	6281041714
47	A. Yadagiri	B. com - II yr	200770861220 06	7702639165
48	K. Sai Goud	BA - II yr	200 770861290 24	8142538174
49.	N. Devendar	BA - II yr.	9034	9490308189

GOVERNMENT DEGREE COLLEGE * GAMBHIRAOPET * PIN:505301 Dist:Rajanna Sircilla

PRINCIPAL
GOVT. DEGREE COLLEGE
GAMBHIRAOPET
RAJANNA SIRCILLA (DIST) T.S.

Report :-

TSKC in collaboration with department of TSKC organized an industrial visit to NRSC-ISRO on 24th June 2022 (Friday). 49 students registered their names for this visit.

PRINCIPAL
GOVT. DEGREE COLLEGE
GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST.)

GOVERNMENT DEGREE COLLEGE
GAMBHIRAOPET
PIN:505304
Dist:Rajanna Sircilla

PRNICIPAL
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GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST)T.S.

PRNICIPAL
GOVT. DEGREE COLLEGE
GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST)T.S.

ప్రభుత్వ డిగ్రీ కళాశాల విద్యార్థుల ఇస్రో సందర్శన

గంభీరావుపేట, జూన్ 25(నిజం న్యూస్):

గంభీరావుపేట మండల కేంద్రంలోని ప్రభుత్వ డిగ్రీ కళాశాల ప్రిన్సిపల్ పిట్ట దాను విద్యా వైజ్ఞానిక యాత్రను తొందా తీసి ప్రారంభించారు. టూర్ లో భాగంగా వెళ్తున్న ఈ యాత్రలో విద్యార్థిని విద్యార్థులు మరియు అధ్యాపక బృందంతో శుక్రవారం రోజున హైదరాబాద్, జీడిమెట్ల లోని ఇస్రో (ఇండియన్ స్పేస్ రీసెర్చ్ ఆర్గనైజేషన్) నేషనల్ రిమోట్ సెన్సింగ్ సెంటర్ ని సందర్శించారు. ఇస్రో శాస్త్రవేత్తలు విద్యార్థులకు సాటిలైట్స్ తయారు చేసే విధానాలను, అవి అంతరిక్షంలో పనిచేసే పద్ధతుల

గురించి మరియు ఇంతకు పూర్వం జరిగిన చంద్రయాన్1, చంద్రయాన్2 వంటి ప్రయోగాల గురించి వివరించారు. మరియు భవిష్యత్తులో చేపట్టబోయే ఇస్రో కార్యక్రమాలను విద్యార్థులు ఆడిగి తెలుసుకున్నారు.ఆనంతరం విద్యార్థులు ఆర్యభట్ట, భాస్కర వంటి ఉపగ్రహాల మోడల్స్ పరిశీలించారు. ఇదంతా విజ్ఞాన మరియు వైజ్ఞానిక సందర్శనను ఏర్పాటుచేసిన ప్రిన్సిపాల్ కి విద్యార్థులు మరియు అధ్యాపక బృందం కృతజ్ఞతలు తెలిపారు.

నిజం 26 Jun 2022 https://epaper.nijamnews.in/clip/16343

గంభీరావుపేట ప్రభుత్వ డిగ్రీ కళాశాల విద్యార్థులు ఇస్రో సందర్శన

...విద్యార్థుల అర్యభట్ట, భాస్కర వంటి ఉపగ్రహాల మోడల్స్ పరిశీలించారు. ఇదంతా విజ్ఞాన మరియు వైజ్ఞానిక సందర్శనను ఏర్పాటుచేసిన ప్రిన్సిపాల్ కి విద్యార్థులు మరియు అధ్యాపక బృందం కృతజ్ఞతలు తెలిపారు

శంకరయ్య, మల్లేశం, దవయ్య తదితరులు పాల్గొన్నారు.

డిగ్రీ విద్యార్థుల విద్యావైజ్ఞానిక యాత్ర

గంభీరావుపేట : మండల కేంద్రంలోని డిగ్రీ కళాశాల విద్యార్థులు శుక్రవారం హైదరాబాద్ జీడిమెట్లలోని ఇండియన్ స్పేస్ రీసెర్చ్ ఆర్గనైజేషన్‌తో పాటు నేషనల్ రిమోట్ సెన్సింగ్ సెంటర్‌ని సందర్శించారు. ఎస్ఓడీ శాస్త్రవేత్తలు విద్యార్థులకు శాటిలైట్స్ తయారు చేసే విధానాలను అంతరిక్షంలో పని చేసే పద్ధతుల గురించి తెలిపారు. గతంలో జరిగిన చంద్రయాన్-1, చంద్రయాన్-2 ప్రయోగాల గురించి వివరించారు. భవిష్యత్తులో చేపట్టబోయే ఇస్రో కార్యక్రమాలను విద్యార్థులు అడిగి తెలుసుకున్నారు. ఆనంతరం విద్యార్థులు ఆర్యభట్ట, భాస్కర వంటి ఉపగ్రహ మోడల్స్‌ను పరిశీలించారు. విద్యార్థుల వెంట ప్రిన్సిపల్ పిట్ట దాను, అధ్యాపక బృందం ఉన్నారు.

గంభీరావుపేట ప్రభుత్వ డిగ్రీ కళాశాల విద్యార్థుల ఇస్రో సందర్శన.

సిరిసిల్ల.జూన్ 25,(స్మై న్యూస్): రాజన్న సిరిసిల్ల జిల్లా గంభీరావుపేట మండల కేంద్రంలోని ప్రభుత్వ డిగ్రీ కళాశాల ప్రిన్సిపల్ పిట్ల దాసు విద్యా వైజ్ఞానిక యాత్రను జెండా ఊపి ప్రారంభించారు.టాస్క్ లో భాగంగా వెళ్తున్న ఈ యాత్రలో విద్యార్థిని విద్యార్థులు అధ్యాపక

బృందంతో శుక్రవారం రోజున హైదరాబాద్, జీడిమెట్ల లోని ఇస్రో (ఇండియన్ స్పేస్ రీసెర్చ్ ఆర్గనైజేషన్), " నేషనల్ రిమోట్ సెన్సింగ్ సెంటర్ "ని సందర్శించారు.ఇస్రో శాస్త్రవేత్తలు విద్యార్థులకు సాటిలైట్స్ తయారు చేసే విధానాలను, అవి అంతరిక్షంలో పనిచేసే పద్ధతుల గురించి ఇంతకు పూర్వం జరిగిన చంద్రయాన్1, చంద్రయాన్2 వంటి ప్రయోగాల గురించి వివరించారు. భవిష్యత్తులో చేపట్టబోయే ఇస్రో కార్యక్రమాలను విద్యార్థులు అడిగి తెలుసుకున్నారు .అనంతరం విద్యార్థులు ఆర్యభట్ట, భాస్కర వంటి ఉపగ్రహాల మోడల్స్ పరిశీలించారు ..ఇలాంటి విజ్ఞాన వైజ్ఞానిక సందర్శనను ఏర్పాటుచేసిన ప్రిన్సిపాల్ కి విద్యార్థులు అధ్యాపక బృందం కృతజ్ఞతలు తెలిపారు.

GOVERNMENT DEGREE COLLEGE
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PRNICIPAL
GOVT. DEGREE COLLEGE
GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST)T.S.

Online Awareness Programme

"INTERNSHALA"

12

GOVERNMENT DEGREE COLLEGE, GAMBHIRAOPET

NOTICE

Dt: 4/08/2021

All the students of BA, B.Sc and B.Com are hereby informed that Department of TSKC organizing an Online Awareness Programme "Internshala" on 5th August 2021 at 11:00 AM. Students should attend the Programme without fail.

Principal

PRINCIPAL
G.D.C.Gambhiraopet
Dist:Rajanna Sircilla-505304

Students Attendance list:

Report:

An Online Awareness Programme projecting in the name of "INTERNSHALA" was organized for one day to the Students of this College. The Resource person Ms. M. Mounika aptly provided needfull and useful information in the programme. She briefly explained about INTERNSHALA website and explained how to register for any Course/workshop an Internship. The programme was indeed felt much useful to all the UG students of this College who participated in this session.

All ~~the~~ BA, B.Com & B.Sc Students actively participated in the session.

PRINCIPAL
GOVT. DEGREE COLLEGE
GAMBHIRAO
RAJANNA SIRCILLA

GOVERNMENT DEGREE COLLEGE, GAMBHIRAOPET, DIST. RAJANNA SIRCILLA

INTERNSHALA

AWARENESS PROGRAMME
ON
5TH AUGUST 2021

Resource Person
Ms. M MOUNIKA(B.Tech(ECE))

Organised by
Department of TSKC

For
B.Sc at 11:00 AM

https://us04web.zoom.us/j/71143994844?pwd=N1dXNlgxY0ZTbmZDMUdXSzhmT0Fmdz09

BA & B.Com at 12:30 PM
https://us04web.zoom.us/j/71143994844?pwd=N1dXNlgxY0ZTbmZDMUdXSzhmT0Fmdz09

GOVERNMENT DEGREE COLLEGE GAMBHIRAOPET

ISP 23

Most preferred categories of Internships


Marketing


Research


Operations


Graphic Designing


Content Writing

PRNICIPAL
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GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST.)T.S.

Two days Training Programme On
68 Arithmatic & Reasoning.

GOVERNMENT DEGREE COLLEGE, GAMBHIRAOPET

NOTICE

DT: 4/04/2022

All the students of B.A, B.Sc and B.Com are informed that Department of TSKC organizing "Two Days Training Programme on Arithmetic and Reasoning" on 6th April 2022 and 7th April 2022 at 10:00AM. Students should attend the Programme without fail.

PRINCIPAL

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GOVT. DEGREE COLLEGE
GAMBHIRAOPET-505304
RAJANNA SIRCILLA (DIST)T.S

Attendance

S.NO	Name of the Student	Group/Year	Contact details	Signature
01	D. Manusha	B.Com(CA)	9849373151	Manu
02	K. Rakesh	B.com	7893845417	Rakesh
03	E. Nikhitha	B.com (CA)	8978319631	Nikhitha
4	K. Soumya	BSC.MPCI	7702874736	K.soumya
5	N.Deepthi	BSc MPCS	9949394416	N.D
6	K.Arun Raj	B.Com	8466833739	
7	V. Divya	BSc MPCS	7671024378	V.Divya
8.	J. Pavani	Bsc.Bzc	7893466478	J Pavani
09.	A. Kiran.	Bsc. Bzc	9121882637.	A. Kiran.
10	M. Soumya	B.sc MPCs	190770864680l6	M. Soumya
11.	S. Sudharani	BSC. BZC	190770864465019	S.Sudharani
12.	S. Sandhyarani	BSC. BZC	190770864450l6	S.Sandhyarani
13	ch. Divya	BSC. BZC	190770864450003	ch.Divya
14	G. Rekha	BSC. BZC	190770864450008	G. Rekha
15	Y. Mounika	BSC. BZC	190770864450008	Y. Mounika
16	J. Shivani	BSC. MPC	~~190770864440001~~ 7893923347	J. Shivani
17	D. Analika	BSC. BZC	~~190770864450006~~ 9030216403	D. Analika
18	D. Ramya	BSC. BZC	~~190770864468044~~ 9652717843	D. Ramya
19	A. Kiran	BSC TSZC	190771721445005	A. Kiran
20	P. Vinay	BSC TSZC	~~190771721445028~~ 9100198129	Vinay P
21.	B. Nikhitha	BSC.MPCS	9849582464	B. Nikhitha

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RAJANNA SIRCILLA (DIST)T.S.

Report :

Mr. Srihari, TASK Trainer addressed the Students. All the final year students actively participated in the one week session. TSRC in collaboration with TASK organised one week workshop on Life skills and Interview skills. The students were trained to give PPT Presentation, Group discussions, JAM sessions, Team work, Inter personal skills and Interview skills.

Provided the skills with regard to General Arithematic, Reasoning (verbal & Non verbal) and Communication within the limited slot of time.

GOVERNMENT DEGREE COLLEGE
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PIN:505304
D: Rajanna Sircilla

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RAJANNA SIRCILLA (DIST.)

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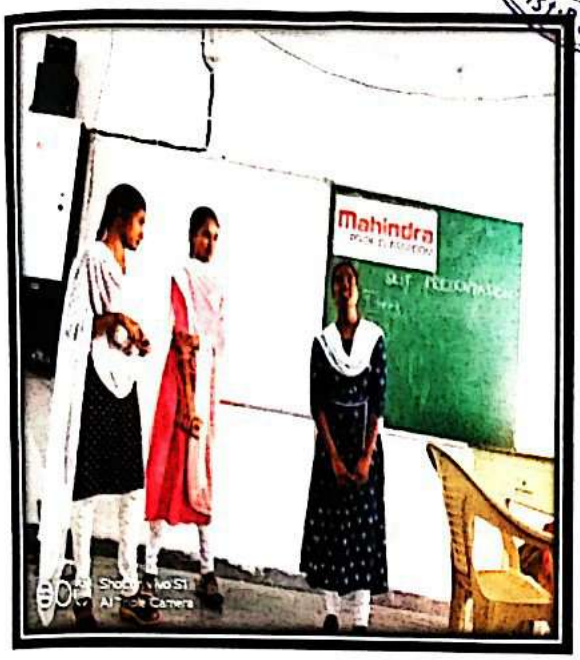

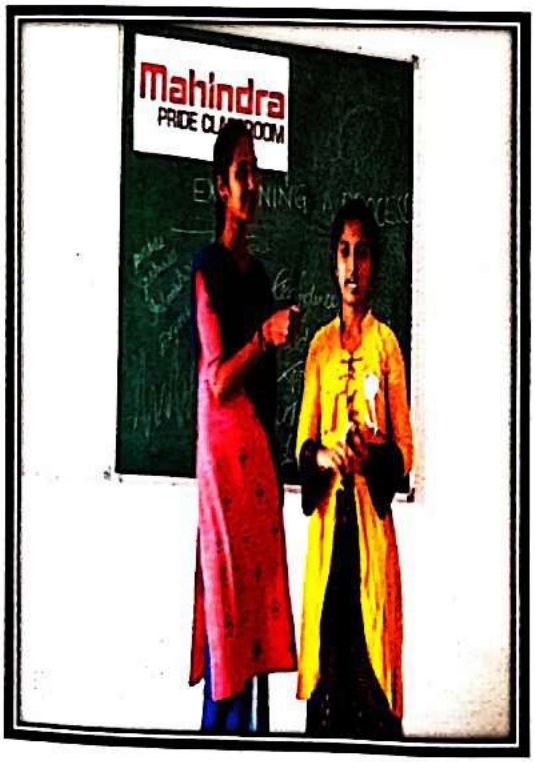

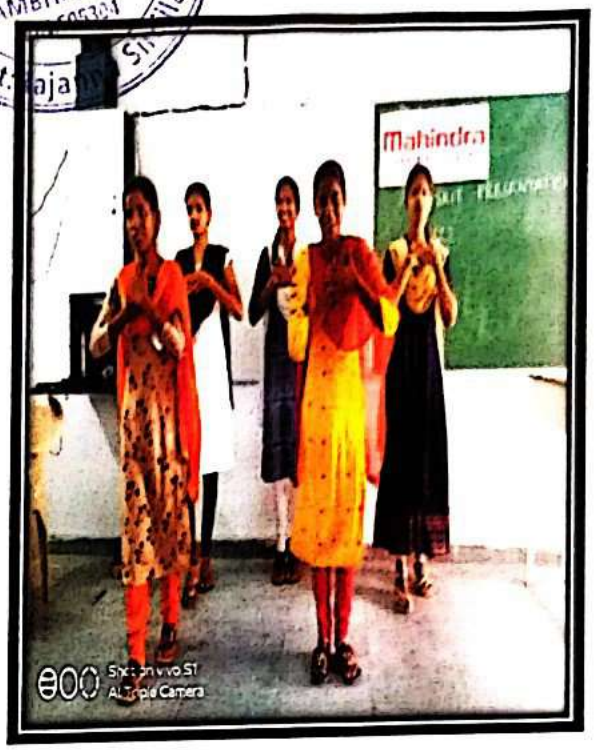

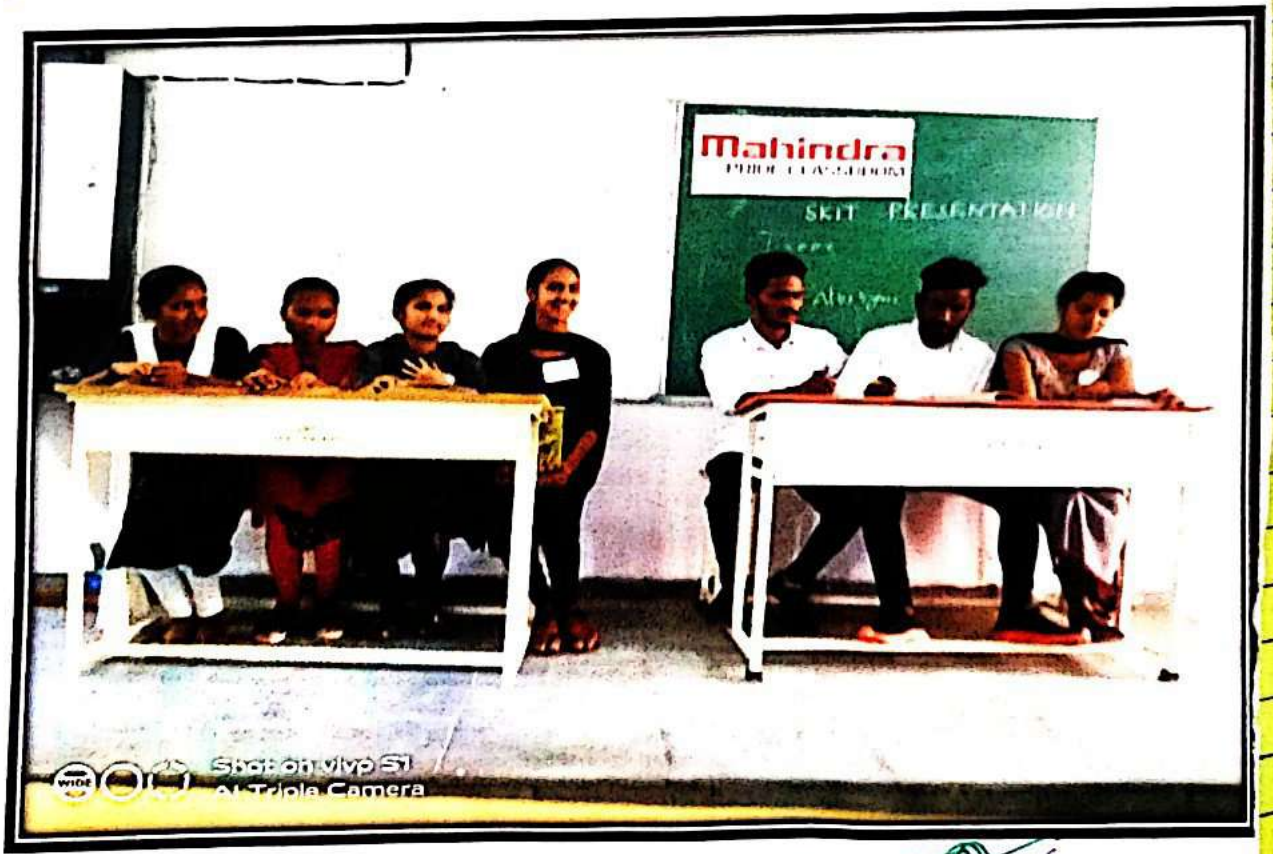

Mahendra Pride Classroom Session

24

GOVERNMENT DEGREE COLLEGE GAMBHIRAOPET FIN:505304 Dist:Rajanna Sircilla

GOVERNMENT DEGREE COLLEGE, GAMBHIRAOPET

NOTICE

Dt: 5/11/2021

All the students of BA, B.Sc and B.Com Final Year are hereby informed that Department of TSKC organizing "Mahendra Pride Classroom Session" from 8th November 2021 to 13th November 2021 at 10:00 AM in Room No 3. Students should attend the Programme without fail.

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G.D.C.Gambhiraopet
Dist:Rajanna Sircilla-505304

Student's Attendance List

S.NO	Name of the Student	Group	Mobile NO.	Sign.
1)	J. Pavani	BSc(BZC)	7893466478	J. Pavani
2)	G. Sanithyarani	BSC.(BZC)	9963508245	G.Sandhyarani
3)	S. Sudha rani	BSC.(BZC)	9182801529	S.Sudha rani
4)	G. Rekha	BSc (BZC)	7207356108	G.Rekha
5)	J. Shivani	BSC(MPC)	7893923347	J.Shivani
6)	V. Divya	BSC(MPCS)	7671024378	V.Divya
7)	K. Soumya	BSC(MPCS)	7702874736	K.Soumya
8)	N. Deepthi	Bsc (mpcs)	9949394416	N.Deepthi
9)	K. Arun Raj	B. Com (C.A)	8466833739	K.Arun Raj
(c)	P. Naveen	B.com (C.A)	6300235507	P.Naveen
11)	K. Rakesh	B.Com (C.A)	7893845479	K.Rakesh
12)	V. pavani	Bsc mpcs	9618845714	V.pavani
13)	B. Nikhitha	BSC(MPCS)	9849 582464	B.Nikhitha
14)	T. Anolika	BSC(MPCS)	7702848922	T.Anolika
15)	N. Srija	BSC(MPCS)	9949036194	N.Srija
16)	S. Kasthuri	BSC(MPCS)	8008830242	S.Kasthuri
17)	Vinay. P	Bsc(BZC)	9100198129	Vinay.P
18)	A. Kiran.	Bsc.(BZC)	9121882637	A.Kiran.
19)	Y. Mounika	BSc(BZC)	7672000261	Y.Mounika
20)	D. Anolika	BSC(BZC)	9177334260	D.Anolika
21)	D. Ramya	BSC.(BZC)		D.Ramya
22)	CH. Divya	BSC.(BZC)	8520836672	CH.Divya
23)	P. Nandhini	BSC(BZC)	7660856702	P.Nandhini
24)	B. Mounika	BSC(BZC)	9346690793	B.Mounika
25)	G. Shruthi	BSC(MPCS)	9849548378	G.Shruthi
26)	MD. Sajith	BSC(MPCS)	9951979211	MD.Sajith
27)	S. Sampath	BSC.(MPCS)	9505913578	S.Sampath
28)	M. Soumya	BSC.(MPCS)	7286876830	M.Soumya
29)	Y. Mounika	BSC(BZC)	7672000261	Y.Mounika
30)	P. Nandhini	BSC(BZC)	7660856702	P.Nandhini
31)	S. Kalyani	BSC(BZC)	8008830242	S.Kalyani

Report :-

TSKC Organised a training programme on Arithemetic and Reasoning. All the final year students of B.A, B.Sc and B.Com students participated in this two-days training programme. TASK resource person S. Mahesh address the students. He covered many topics like Simplification, Averages, percentages, Ages, Blood relations etc. This programme is very useful for the students those who are preparing for Government Jobs and also private jobs.

Nearly 60 students participated in this session. Students participated actively.

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RAJANNA SIRCILLA (DIST)T.S.

STUDENT STUDY PROJECT

(JIGNASA-2021-22)

On

Perception of Farmers on Crop diversification

By:
M.NIKITHA BZC II
J. PAVANI BZC III
V. KAVYA BZC II
G. REKHA BZC III
P. VINAY BZC III
P. POOJITHA BZC II

SUPERVISOR:
Smt. B SRIVALLI
Lecturer in Botany

DEPARTMENT OF BOTANY
GOVT DEGREE COLLEGE, GAMBHIRAOPET
RAJANNA SIRCILLA DIST.

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Guide & Supervisor

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Dist:Rajanna Sircilla-505304

GOVERNMENT DEGREE COLLEGE Dist:Rajanna Sircilla

CERTIFICATE

Certified that the project entitled "PERCEPTION OF FARMERS ON CROP DIVERSIFICATION" is a bonafide of the project work carried out by the candidates M. Nikitha, J.Pavani, G.Rekha, P.Vinay, V.Kavya and P. Poojitha under the guidance of Smt.B.Srivalli, Assistant Professor, Department of botany, Government Degree College, Gambhiraopet.

M.NIKITHA BZC II Year
J. PAVANI BZC III Year
V. KAVYA BZC II Year
G. REKHA BZC III Year
P. VINAY BZC III Year
P. POOJITHA BZC II Year

SUPERVISOR:
Smt. B SRIVALLI,
Assistant Professor,
Govt. Degree College,
Gambhiraopet.

PRINCIPAL
GDC.Gambhiraopet
Dist:Rajanna Sircilla-505304

DECLARATION

We hereby declare that the project work entitled "PERCEPTION OF FARMERS ON CROP DIVERSIFICATION" is a bonafide record of the original work carried out under the supervision of Smt. B. Srivalli, Assistant Professor, Department of Botany, Government Degree College, Gambhiraopet, in partial fulfilment of the requirements for the award of Degree of Bachelors of Science in Botany and No part of this work has been previously formed the basis of any other degree or diploma.

M.NIKITHA BZC II Year
J. PAVANI BZC III Year
V. KAVYA BZC II Year
G. REKHA BZC III Year
P. VINAY BZC III Year
P. POOJITHA BZC II Year

SUPERVISOR:
Smt. B SRIVALLI,
Assistant Professor,

PRINCIPAL
GDC.Gambhiraopet
Dist:Rajanna Sircilla-505304

ACKNOWLEDGEMENT

The present work was carried out under the guidance and constant supervision of Smt. B.Srivalli, Assistant Professor, Department of Botany, Government Degree College, Gambhiraopet. We wish to place on record our sincere gratitude and deep indebtedness to our esteemed guide for suggesting the topic and for valuable guidance, advice, help and through the project research.

We are very grateful to our college principal Sri Pitla Dass garu for encouraging us. We extend our gratitude to B. Praveen Kumar garu, Lecturer in Chemistry, Y .Anjaneyulu garu, Lecturer in English and R.Sneha, TSKC Mentor in editing the project.

Our sincere thanks to all our Teaching and Non Teaching Staff Government Degree College, Gambhiraopet for providing facilities for completing the project. Last, but not least our gratitude to our classmates A.Kiran, P.Pravallika, Bhavyasai, M.Aruna, M.Naveena for their valuable support and help.

M.NIKITHA BZC II Year

J. PAVANI BZC III Year

V. KAVYA BZC II Year

G. REKHA BZC III Year

P. VINAY BZC III Year

P. POOJITHA BZC II Year

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I. TITLE:

PERCEPTION OF FARMERS ON CROP DIVERSIFICATION

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II. Hypothesis:

Developing awareness on crop diversification to farmers.

III. Aims and Objectives of the Project:

- To develop the awareness in farmers on crop diversification.
- To motivate farmers for crop diversification.
- To spread the advantages of crop diversification.
- To know the problems of the farmers.
- To identify the opportunities in Gambhiraopet and Mustabad mandal regarding crop diversification.
- To encourage the farmers on moving to crop diversification.

B Sarali
Guide & Supervisor

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IV. REVIEW OF LITERATURE:

The State government plans its cropping pattern based on demand supply situation duly taking into consideration factors like soil health, atmosphere, and water availability. At a review meeting held on 12th September 2021, the officials of the agriculture department told Chief Minister Sri K. Chandrasekhar Rao garu, that it was not advisable to encourage paddy cultivation, because of the Central Government's decision not to purchase even a single kg of rice variety being produced in Telangana.

The Bharatiya Janatha Party (BJP), the Congress and Left Parties have strongly opposed to State Government advisory. They said, farmers have a right to grow Paddy and it is the responsibility of the Government to purchase the Paddy Crop. The officials said the state produces a huge quantity of boiled rice. In the last Rabi season, the state government had procured 9.2 million tonnes of paddy, and this Kharif, another 5.5 million tonnes of paddy is being procured. Added to this, there are buffer stocks of another 7 million tonnes of paddy. However, the Central Government has made it clear that it won't be able to procure even a single kg of paddy, more than the prescribed quantity of 6 million tonnes through the Food Corporation of India, on the pretext of lack of demand in the country. Union Civil Supplies Minister Piyush Goel told a delegation of the state ministers that there were buffer stocks with the Centre sufficient for the next five years.

Professor Jayashankar Telangana State Agricultural University (PJTSAU) Vice Chancellor Dr V Praveen Rao suggested that, the state food look at alternative like Pulses, Oil Seeds which are climate resilient and carbon neutral crops.

The farmers union admit there is an immediate need to reduce the paddy area in the rabi season "But you can't force it on them all of a sudden. You need to create awareness on why they should reduce paddy area" Kanneganti Ravi, leader of Rythu Swarajya Vedika (RSV) told business line.

The Government advised the farmers to move on Crop diversification. Several farmers had not yet started farming and Farmers fell into a dilemma.

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V. RESEARCH METHODOLOGY

To know the opinion of the farmers on crop Diversification we opted for a survey method through questionnaire. We met nearly 300 farmers from various villages like Gambhiraopet, Narmala, Lingannapet and Dhammannapet from Gambhiraopet mandal. Namapur, Chikod, Mustabad Pothugal from mustabad mandal. Data has been collected from various village farmers. We asked them questions regarding crop diversification and their problems to move crop diversification. We have done this through random survey. From primary data we have extracted secondary information.

B Sovalu
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GOVERNMENT DEGREE COLLEGE :: GAMBHIRAOPET

STUDENT STUDY PROJECT – SURVEY

SUBJECT:: BOTANY

1. Farmer name ----------
2. Name of the village-------
3. Name of the mandal … Gambhiraopet/ Mustabad…..
4. Name of the district …… Rajanna Sircilla
5. Phone number----------
6. Area cultivated under irrigation …….Acres … Guntas.
7. Crop grown during (July 2020 to June 2021)

S .No	Crop Season	Crop Name	Crop Area	Yield	Market Price
1.	Kharif				
2.	Rabi				
3.	Zaid				

OPINION OF FARMERS ON CROP DIVERSIFICATION

S .No	Survey Questions	Yes	no	Don't know
1.	Is your soil suitable for crop diversificatior			
2.	Does crop diversification involve high risk?			
3.	Does crop diversification help to increase yielding?			

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4.	Does crop diversification help to increase net profit?			
5.	Does crop diversification require more Labour?			
6.	Does crop diversification lead to increased soil fertility?			
7.	Does High yielding seed varieties available for crop diversification?			
8.	Do you know crop diversification helps to control diseases?			
9.	Do you have marketing facility for other crops?			
10.	Is there any crops tampering by monkeys and pigs etc?			
11.	Did you know crop diversification is the adoption of new technologies and practices.			
12.	Do you need any motivational training programme for crop diversification?			
13.	Do you move to crop diversification if the Government provides MSP?			
14.	Are you ready to grow crops other than paddy?			
15.	Do you need any help from Government?			
16	Any suggestions			

DATE

SIGNATURE OF THE FARMER

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Survey by JIGNASA Students and Supervisor Smt. B. Srivalli at Gambhiraopet

Survey at Gambhiraopet

B. Srivalli
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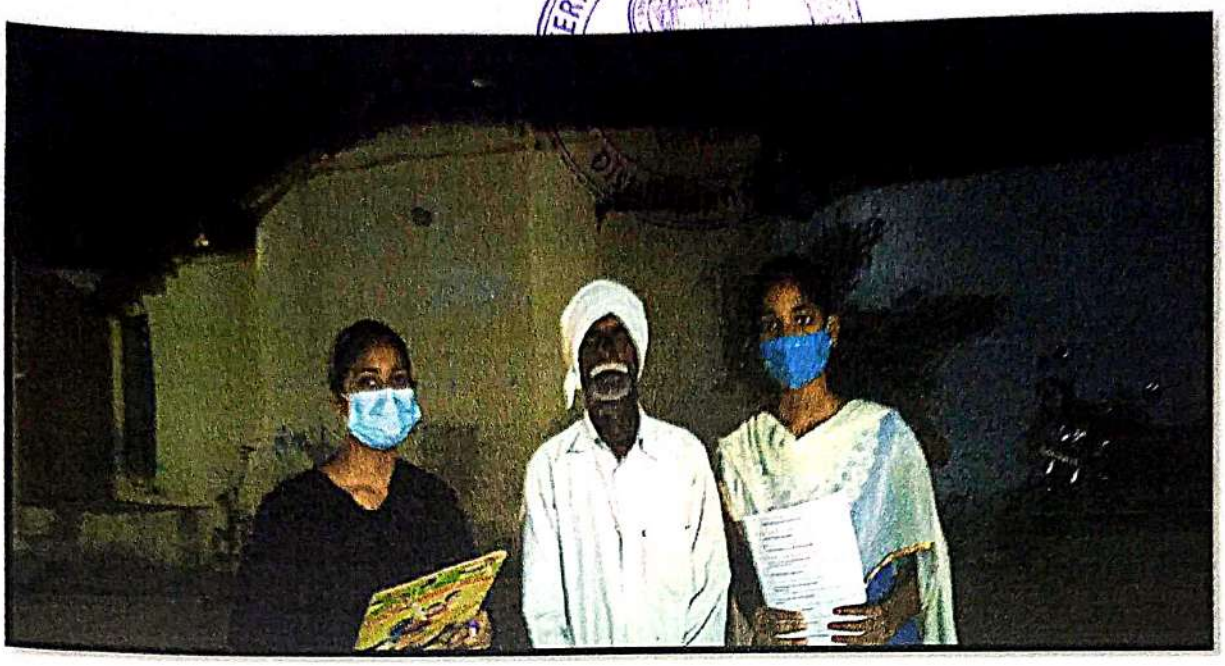
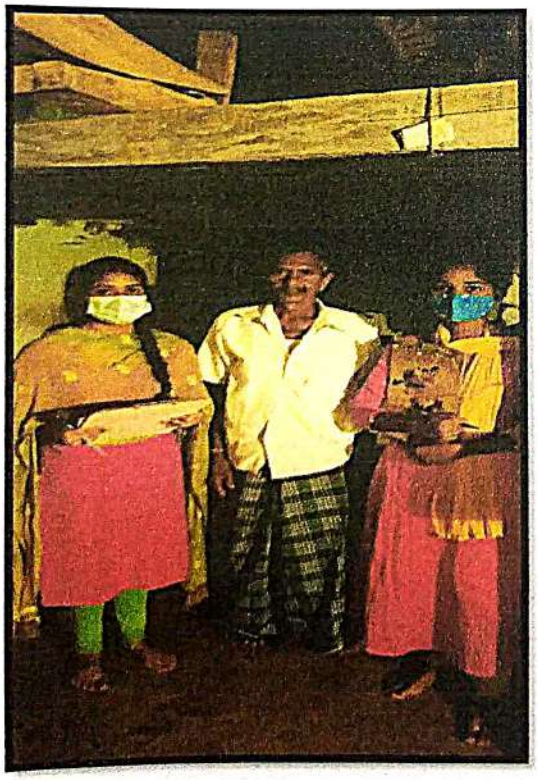
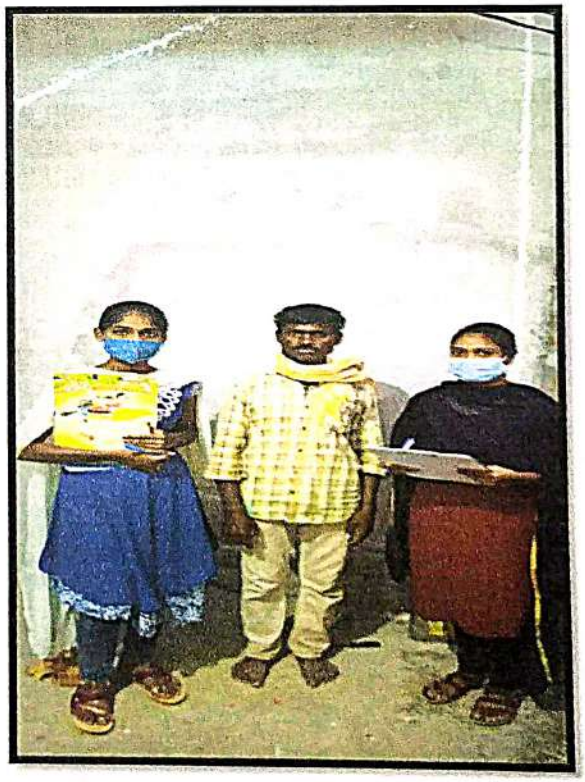


Survey at Cheekod, Musthabad Mandal by Nikhitha & Poojitha



Survey at Namapur



Survey at Musthabad

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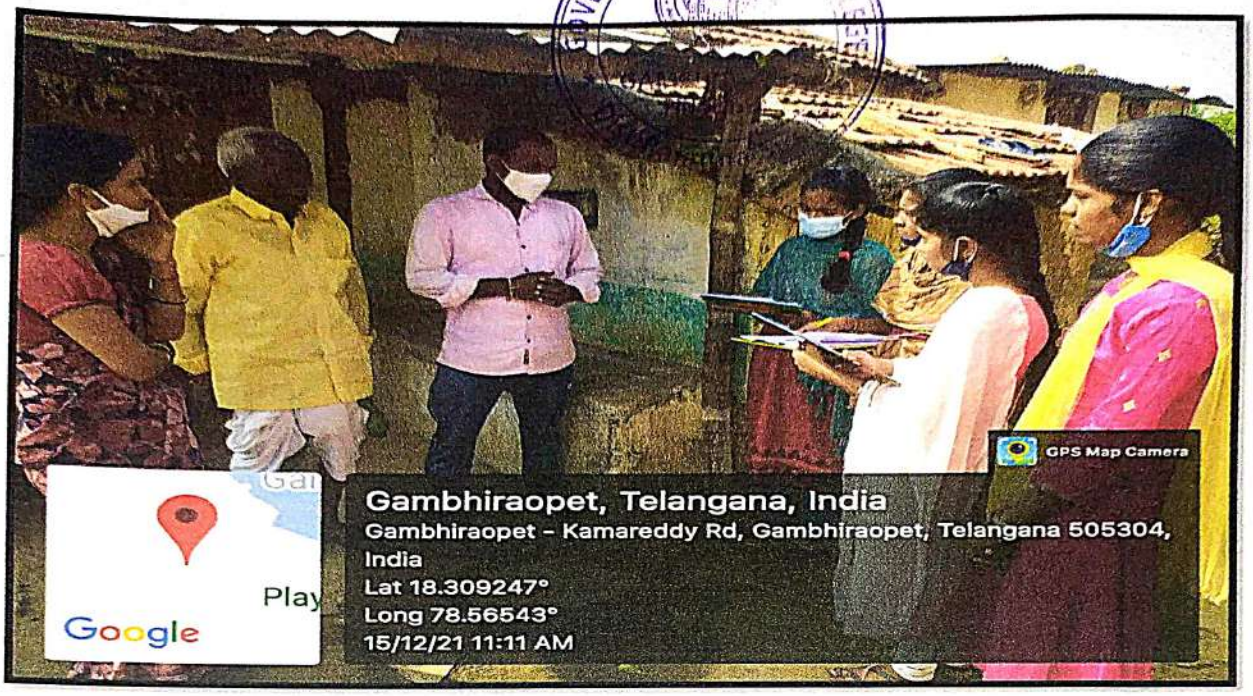

Survey at Musthafanagar Colony, Gambhiraopet Mandal

Survey at Narmala, Gambhiraopet Mandal

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PRESS CLIPPINGS ON OUR PROJECT

ప్రత్యక్ష అధ్యయనం.. రైతన్నకు పాయం

గంభీరావుపేట(సిరిసిల్ల): మండల కేంద్రంలోని ప్రభుత్వ డిగ్రీ కళాశాల విద్యార్థులు తరగతి గది నుంచి పంట పొలాల బాట పట్టారు. పాఠ్యాంశాల్లో నేర్చుకున్న అంశాల ను ప్రత్యక్ష అధ్యయనం చేశారు. పంట క్షేత్రాల్లో రైతులు చేస్తున్న వ్యవసాయ విధానాలను అడిగి తెలుసుకున్నారు. పంట మార్పిడితో కలిగే ప్రయోజనాలను రైతులకు అవగాహన కల్పించారు. చాలా మంది రైతులు సంప్రదాయ వ్యవసాయ పద్ధతులనే అనుసరిస్తున్నారని, అలాంటి వారికి ఆధునిక సాగు పద్ధతులు వివరించారు. పెట్టుబడులు తగ్గించి రాబడిపంటల గురించి వివరించారు. ప్రిన్సిపాల్ దాను, వైస్‌ప్రిన్సిపాల్ శ్రీవల్లి, విద్యార్థులు పాల్గొన్నారు.

అవగాహన కల్పిస్తున్న విద్యార్థులు

సాక్షి Thu, 16 December 2021
https://epaper.sakshi.com/c/64989289

Sakshi on 16th December 2021

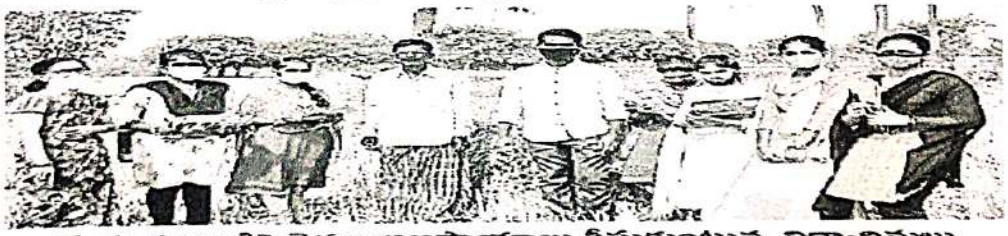
పంట మార్పిడిపై విద్యార్థుల సర్వే

గంభీరావుపేట, డిసెంబరు 15 : గంభీరావుపేట ప్రభుత్వ డిగ్రీ కళాశాల విద్యార్థులు 'స్టూడెంట్ స్టడీ ప్రాజెక్టు జిజ్ఞాసలో' భాగంగా బుధవారం పంట మార్పిడిపై సర్వే చేపట్టారు. వ్యవసాయ భూముల వద్దకు వెళ్లి విద్యార్థులు రైతుల అభిప్రాయాలు, ఇబ్బందులు తెలుసుకున్నారు. కార్యక్రమంలో వృక్ష శాస్త్ర అధ్యాపకురాలు శ్రీవల్లి పాల్గొన్నారు.

EENADU on 15th December 2021

పంట మార్పిడిపై ముచ్చట్లు

ON HD



పంట మార్పిడిపై రైతుల అభిప్రాయాలు తీసుకుంటున్న విద్యార్థినులు

గంభీరావుపేట, డిసెంబర్15: పంట మార్పిడిపై ఆయా గ్రామాల్లో రైతుల అభిప్రాయాలను మండల కేంద్రంలోని ప్రభుత్వ డిగ్రీ కళాశాల విద్యార్థులు బుధవారం క్షేత్ర స్థాయిలో తెలుసుకున్నారు. స్టూడెంట్ స్టడీ ప్రాజెక్టు 'జిజ్ఞాస' కార్యక్రమంలో భాగంగా గంభీరావుపేటతోపాటు ముస్తాబాద్ మండలాల్లోని ఆయా గ్రామాల్లో పంట మార్పిడి గురించి వారు రైతులతో ముచ్చటించి, అభిప్రాయాలను సేకరించారు. ఇక్కడ ప్రిన్సిపాల్ దాను, వైస్ ప్రిన్సిపాల్ శ్రీవల్లి, అధ్యాపక బృందం, విద్యార్థులు ఉన్నారు.

NAMASTE TELANGANA on 15th December 2021

B Srilatha
Guide & Supervisor

PRINCIPAL
GDC.Gambhiraopet
Dist:Rajanna Sircilla-505304

Primary Data:

Question No.	Yes	No	Don't Know
1	190	110	-
2	266	34	-
3	87	213	-
4	90	210	-
5	286	14	-
6	266	34	-
7	171	129	-
8	219	81	-
9	205	95	-
10	219	81	-
11	254	46	-
12	248	52	-
13	231	69	-
14	267	33	-
15	252	48	-

GOVERNMENT DEGREE COLLEGE GAMBHIRAOPET PIN: 505304 Dist:Rajanna Sircilla

B Sailu
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VI. ANALYSIS OF DATA:

Gambhiraopet is surrounded by 7 ponds. According to first question Out of 300 farmers 110(37%) farmers' fields are not suitable for crop diversification because their fields are under ponds.. 190(63%) farmers fields are suitable for crop diversification.

According to 2nd question they said (88.6%) crop diversification involves high risk for them because crops are being tampered by monkeys and pigs. They feel it is very expensive.

Farmers (29%) think that they may not get good yielding (Q.No 3). According to Q.No 4 they would not get good net profit.

99% farmers think that crop diversification needs more labour. They are scared of whether their investment returns or not.

57% farmers said that seeds are available for crop diversification Q.No7.

According to 8th Question, 73% farmers accepted that crop diversification helps to control diseases.

According to the 9th, 68% farmers said they have a market facility.

According to 10th Question 93% farmers are scared of monkeys and pigs. If the Government provides MSP and assurance 165(55%farmers) farmers ready to move crop diversification.

According to 11th Question 85% farmers accepted that they would know new technology if they moved to crop diversification.

According to 12th Question, they need training on crop diversification. If the government provides a minimum support price, 77%farmers ready to move crop diversification.

According to 14th Question, 56% farmers are ready to move crop diversification. According to 15th Question 8% farmers need help from Government loans for solar fencing and other defending mechanisms to secure monkeys and Pigs.

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VII. RESULTS OF THE SURVEY:

OPINION OF FARMERS ON CROP DIVERSIFICATION

Sl. No.	Q. No.	Name of the Village																		Percentage of Positive Response
		Gambhiraopet		Linganapet		Moraipalli		Narmala		Musthabad		Chikodu		Namapur		Pothugal		Total		
Total No.of Farmers		90		31		27		4		5		65		63		15		300		
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
1	1	40	50	20	11	26	1	3	1	4	1	28	37	57	6	12	3	190	110	63%
2	2	78	12	30	1	27	0	3	1	3	2	55	10	55	8	15	0	266	34	88.60%
3	3	28	62	6	25	21	6	2	2	2	3	6	59	21	42	1	14	87	213	29%
4	4	24	66	6	25	15	12	2	2	2	3	16	49	21	42	4	11	90	210	30%
5	5	87	3	23	8	27	0	3	1	5	0	63	2	54	9	14	1	286	14	99%
6	6	72	18	23	8	25	2	3	1	5	0	65	0	58	5	15	0	266	34	89.00%
7	7	51	39	15	16	23	4	3	1	5	0	30	35	34	29	10	5	171	129	57%
8	8	66	24	7	24	21	6	3	1	5	0	47	18	59	4	11	4	219	81	73%
9	9	67	23	10	21	24	3	3	1	5	0	53	12	34	29	9	6	205	95	68%
10	10	90	0	11	20	27	0	3	1	5	0	65	0	63	0	15	0	279	21	93%
11	11	72	18	28	3	27	0	3	1	5	0	54	11	54	9	10	5	254	46	85%
12	12	81	9	28	3	27	0	3	1	5	0	31	34	59	4	14	1	248	42	83%
13	13	71	19	26	5	22	5	3	1	5	0	41	24	52	11	11	4	231	69	77%
14	14	54	36	14	17	23	4	3	1	5	0	24	41	31	32	13	2	167	133	56%
15	15	73	17	28	3	27	0	3	1	5	0	39	26	63	0	14	1	252	48	84%

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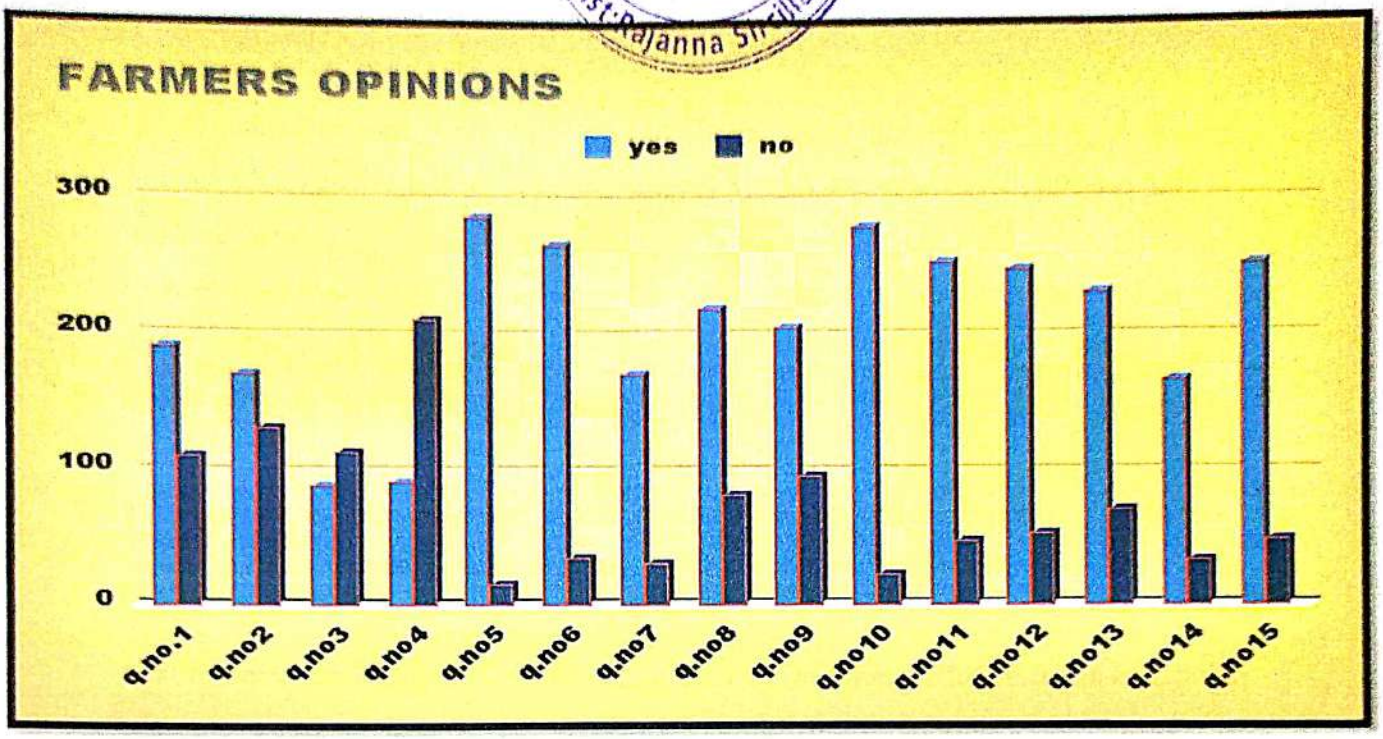
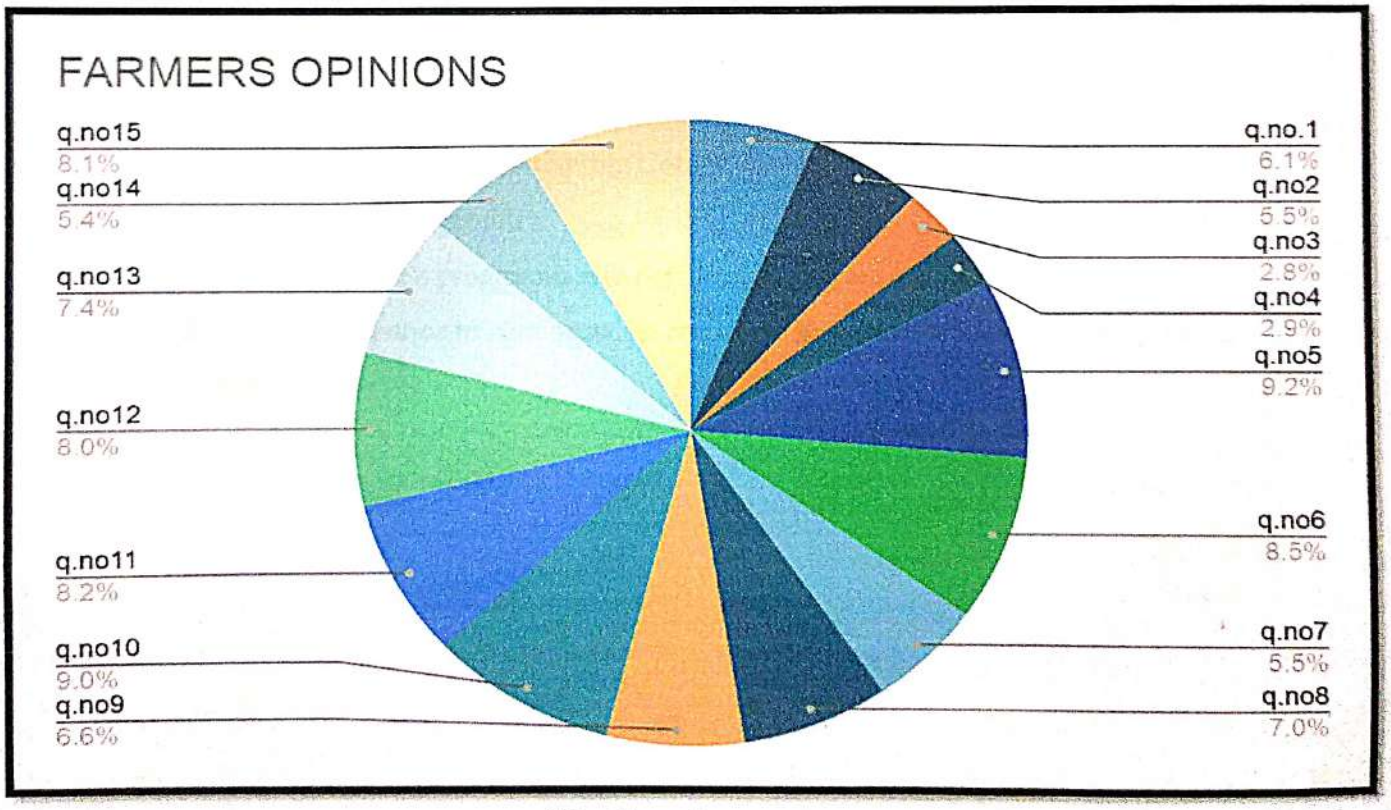


Bar Graph



Pie Graph

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VIII. FINDINGS

- Gambhiraopet is surrounded by 7 ponds. Fields under these ponds 37% are not suitable for crop diversification in this yasangi season. Because those fields are still wet condition.
- Remaining 63% fields are suitable for Crop Diversification. But farmers are in dialemma.
- Crops are being tampered by monkeys and pigs both in Gambhiraopet and Mustabad mandals. This is a terrible disadvantage to farmers.
- 60% farmers are not cultivating any crop in this yasangi season. Because if they grow paddy the government would not buy and if they grow alternative crops monkeys would spoil.
- Half of the farmers 167(56%) according to the 14th Question are interested in cultivating alternate crops. Due to our motivation some of the following farmers Started cultivation such as Groundnut, Cotton and Vegetables. (Eg: Swamy, Mallam, Sheela)
- One of the farmers Mr Swamy, Gambhiraopet has started growing Ground Nut Crop.
- Mr Kura Anjaiah, Gambhiraopet is arranged solar fencing in his field on his own to prevent from monkeys.
- Mr Mallam, Namapur is also cultivating Cotton.
- Ms Sheela is forming Vegetables.
- Farmers need awareness programmes in detail regarding crop diversification.
- Still they have the chance to start growing crops like nuvvulu, sunflower, Cotton, Pulses and Ground Nut etc.

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IX. SUGGESTIONS TO FARMERS

- Better to move crop diversification in this situation.
- Be ready to face the problems to overcome situations.
- Use solar fencing to protect crops from monkeys like MEDAK KRISHI VIGNANA KENDRAM.
- Using chemical repellents such as anthraquinone, butanethiol, methyl anthranilate, to keep away from crops.
- Taking help of Langurs.
- They should approach primary agriculture cooperative societies for seeds and credit.

Low Cost Ideas:

- Use of local dogs.
- Some people grouped together and patrolled the fields one by one daily.
- By using all these techniques, Farmers have to develop alternate crops like Kandi, Wheat, Maize, Ground nut, Vegetables, Cotton, Turmeric, Nuvvulu, Sunflower and Millets.

Suggestions to Government:

- Provide awareness programmes in rural area farmers on crop diversification.
- Give assurance to farmers on the minimum supporting price for alternate crops.
- Provide free solar fencing to the farmers of Gambhiraopet and Musthabad Mandal.
- Arrange food courts to Monkeys in these 2 mandals because these mandals are very near to forest area.

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X. CONCLUSION:

- Half of the farmers 167(56%) according to the 14th Question are interested in cultivating alternate crops.
- Due to our motivation some of the farmers Started cultivation such as Groundnut, Cotton and Vegetables.
- It is assumed that, we have been successful in working out through our project which is construed that it is being useful at least the marginal section of the farmer society.

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XI. REFERENCES:

- Speech by Chief Minister Sri K Chandra Shekar Rao garu, in different News Channels such as Etv, TV9, TV5 etc on 13th September 2021.
- Statement by Union Civil Supplier Minister of India Mr Piyush Goel on 21st December 2021 in Hindu News Paper.
- Statement by President of BJP Telangana & Karimnagar MP Mr Bandi Sanjay.
- Statement by Sri V Praveen Rao, Vice Chancellor of Professor Jayashankar, Telangana State Agricultural University on 15th September 2021.
- Statement by Mr Kanneganti Ravi, Union Leader of Raithu Swarajya Vedika (RSV) on 11th November 2021 in Times of India.

***

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Asst/Assoc. Professor Botany *GDC*

Gambhiraopet *in recognition of his/her participation as Teacher Mentor in Jignasa-Student Study Projects-State Level Presentation & Selection in the subject* Botany *for the academic year 2021-22.*

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STUDENT STUDY PROJECT 2021 – 2022

GOVERNMENT DEGREE COLLEGE GAMBHIRAOPET PIN:505304 Dist:Rajanna Sircilla

SPIRULINA SUSTAINABLE SUPER FOOD-AS FEED IN AQUACULTURE

SUBMITTED BY:

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DEPARTMENT OF ZOOLOGY

GOVERNMENT DEGREE COLLEGE GAMBHIRAOPET

CONTENT

TITLE OF THE PROJECT

SPIRULINA SUSTAINABLE SUPER FOOD-AS FEED IN AQUACULTURE

CERTIFICATE

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This is to certify that the dissertation entitled submittedSPIRULINA SUSTAINABLE SUPER FOOD-AS FEED IN AQUACULTURE to Satavahana University for the partial fulfillment of the requirements for the award of Degree of **Bachelor of Science** under the guidance of K.V.BIXAMAIAH, at **Government Degree CollegeGambhiraopet RajannaSircilla**, and the contents of the dissertation do not form the basis for the award of any other degree or diploma of the candidate from this or any other University elsewhere.

K.V.BIXAMAIAH.

PROJECT SUPERVISOR

PLACE:Government Degree College Gambhiraopet

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ABSTRACT

Spirulina is a microscopic filamentous aquatic cyanobacteria which form tangled massin warm alkaline lakes. It was discovered to overcome the killing problem over the world malnutrition and food crisis. In recent trends this single celled super food hadincorporated into the aquaculture as feed to the culturing fishes. As it has a good value of protein, better digestibility of protein and fat absorption this Spirulina had formulatedinto aqua diets. Spirulina flakes are being used in shrimp hatcheries for better growthand survival. It also used in milth fry and yearlings culturing, ornamental fisheries forgood pigmentation and into prawn industry for great commercial significance. This superfood also enhances the fish performance, increases RBC and blood profile, improves pigmentation, stress tolerance capacity, immune -competence and reproduction performance. Not only in aquaculture it is also a super cool food with high nutritive profile for human beings too as it eradicates malnutrition, reduces risk of cancer, anti-aging, anti-rickets, boosts immune system it acts as medicine to cure many diseases except liver failure .Hence due to these scientific values observed in this single celled algae this used as food in aquaculture as supplementary feed to obtain great yield with better quality andquantity.

SPIRULINA IS THE BEST FOOD FOR TOMORROW... AN ANSWER TO THEWORLD HUNGER AND MALLNUTRITION.

INTRODUCTION OF SPIRULINA

According to recent and present census we are facing the problem of malnutrition and food crisis throughout the world due to many reasons. Hence, we can the daily requirement of nutrition by the intake of this super food Spirulina. The scientist named Dr.Darwin – who was analgal scientist. He discovered the spiral-shaped algae and designated it as Spirulina. It is a sea weed which is a blue-green algalbiomass, discovered in 16th century and hasbeen used as a daily food source. As Spirulina is considered as a powerful dietary supplement due to its high nutritional value. It is used by National aeronautics and Space administration and European space agency as a food supplement during space missions. Spirulina- it is defined as microscopic filamentous aquatic cyanobacterium which forms tangled mass in warm alkaline lakes. The word Spirulina is derived from Latin word and got this name due to its coil shaped structure (Spirula-small coil). The scientific name of Spirulina is *Corcussativus* .It is belonging to the family Iridaceae ; genus Spirulina and species platensis. In general there are many species have been reported in recent decades but among them *Spirulina platensis* and *Spirulina maxima* are highly cultivable. These are single-cell autotrophs with high nutritional value it is cultivated world wide and used as dietary supplement or whole food. And also used as a feed supplement aquaculture aquarium and poultry industry. Spirulina has been studied as a potential nutritional supplement for adults and children in getting cure from disease. In 16thcentury spanish invaders collected newfood from the lake and used as "Dihe" along with the sauce of tomatoes, peppers, fish and meat. In 1940, it was rediscovered by Dangeard nearlake Chad in Rift valley of East Africa. In 1964-65 Jean Leonard found this curious edible green cake in market of fort-lamy. In 1967 Spirulina was established as a wonderful future food source in International association ofapplied microbiology. In 1997 1st large-scale production plant was started in Africa near Mexico City. In India first initiative revolving around Spirulina production can be seen in Madurai, They worked to produce 150 Kgs of Spirulina per month with 15women production facility running about 40 Spirulinatanks. The cultivation of Spirulina is started to reduce the major problem faced and still facing in recent and present census in mal nutrition and food crises. This single cell autotrophs with high nutrition value cultivated worldwide and used as dietary supplement or whole food.

Later in recent trends it has incorporated in aquaculture due to following significance of Spirulina.This single cell protein Spirulina is used as ingredient in aquaculture as it has goodvalue of protein. As Spirulina has better digestibility of protein and fat absorption in Spirulina it is incorporated in diets due to better absorption.Spirulina flakes are being used in shrimp's hatcheries for better growth and survival. It also used in milth fry, yearlings culturing and in ornamental fishes for good pigmentation and in prawn for more commercial significance.Spirulina also enhances the fish performance, increases RBC count and blood profile, improvespigmentation, increases stress tolerance capacity and immuno-competence, and reproduction performance. Not only in aquaculture it is also a super cool food with high nutritive profile for human beings too.It eradicates malnutrition, reduces risk of cancer, anti-diabetic, boosts immune system, bloodpurifier, anti-ageing, balances blood circulation, anti- rickets and it works for many disorders exceptliver failure.

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AIMS AND OBJECTIVES

- To purchase the mother culture from organic culture farms.
- To prepare two types ofculture medium.
- To culture the Spirulina production in our college premises in different culture mediums.
- To use the Spirulina production as fish feed for our college pond fishes and to analyse the growth and weight of the fishes.
- Planning to bringing awareness among people about the benefits of Spirulina and encouraging forhome units for production of Spirulina in household purpose.

REVIEW OF LITERATURE

Use of *Spirulina* in Fish Culture

-ByShibly Noman

The use of blue green algae Spirulinain aquaculture has several potential advantages over the culture of fish. This seminar is to review the effect of using Spirulinain culture of different fishes as a replacement and nutrient supplement and its potentiality of using as an alternative source of protein in fish feed. Spirulinahas high quality protein content (58%), which is more than other commonly used plant sources. So it can be used as an alternative protein source in fish feed. Generally Spirulinais used in fish feed as a replacement of fish meal and a nutritional supplement. In case of Common carp (*Cyprinus carpio*) replacing fishmeal up to 10% with Spirulinashowed doubled weight gain up to 16.59 gm compared to the control group 8.37gm. The growth rate was found higher when *Pungasius sutchi* feeding with 5% Spirulinasupplement. The growth performance and the mean survival rate higher (100%) than the control group (80%) when Tilapia (*Oreochromis niloticus*) was fed with 5% dietary *Spirulina platensis*. Inclusion of 10% *S. platensis as* a natural pigment source resulted in the highest carotenoid deposition (1.2mg/l) which resulted better coloration in Rainbow trout. Using Spirulinain fish diet improves the haematological parameters and immune response and makes the cultured fish healthy and disease resistant. Only 5% inclusion of *S. platenssis* in the diet of Tilapia (*O. niloticus*) improved the haematological parameters where the Erythrocyte count (RBCs), Haemoglobin (Hb), Haematocrit (PCV), Mean Cell Volume (MCV), Mean Cell Haemoglobin (MCH) and Leucocyte count (WBCs) were significantly increased. Replacement of fishmeal with 100% Spirulinaalso reduced the cost of feed by reducing the incidence cost (46.21tk) compared to the control groups (83.21 tk) with 0% Spirulina. And all these findings prove use of Spirulinaas a potential nutritional supplement and a better alternative source of protein in fish feed with lots of beneficial effects.

The Significance of Spirulina Meal on Fishmeal Replacement in Aquaculture: A Review

-By Sebastian S. Mosha

In fish farming operations, feed accounts for more than half of the total variable operating costs. The costs are mainly contributed by protein source from feed ingredients. Therefore, the potential use of unconventional feed ingredients such as algae, as feed inputs in replacement of high-cost feedstuffs such as fishmeal has been increasing. Among unconventional algae feed ingredients, Spirulina which is a fast-growing cyanobacter of large size have been a possible alternative protein source for cultured fish due to high and good quality protein, vitamins and essential fatty acids contents, antioxidant pigments, antimicrobial activity, and anticancer properties. A review was conducted on the significance of Spirulina meal on fishmeal replacement in Aquaculture, mostly focus was on finfish culture. About 20 published online journal papers, from Research gate, Google scholar and other online platforms in aquaculture nutrition were reviewed. Among reviewed papers revealed that the amount of fish meal to be

replaced with Spirulina in the diet has been in a certain limit, with the positive growth performance, improving non-specific immuneactivity, enhancing good quality of fillets and increase the quality of eggs at the inclusion levels between 0.5 to 15%. Therefore, this review suggests that 1-20% inclusion level of Spirulina can be used to replace fish meal in a diet for effective low feeding costs in both omnivorous and herbivorous fish species.Fish Growth Performance; Herbivorous Fish; Immunostimulants; Omnivorous Fish; Spirulina Meal among unconventional algae feed ingredients, Spirulina which is a fast-growing cyanobacter of large size (0.5 mm) have been a possible alternative protein source for cultured fish. This is due to high and good quality protein, vitamins and essential fatty acids contents (gamma-linolenic acid), antioxidant pigments, such as carotenoids

(C-phycocyanin C-PC), antimicrobial activity, and anticancer properties. It also reported to increase feed utilization, physiological activity, stress response, starvation tolerance, disease resistance, and carcass quality. In addition, Spirulina can be produced by low-cost open pond technologies and are marketed as dry powders, and their nutritional profiles are well-documented.

SPIRULINA CULTIVATION: A REVIEW

-BY P. Saranraj

Blue-green algae (Cyanobacteria) are among the most primitive life forms on Earth.
Their cellularstructure is a simple prokaryote. They share features with plants, as they have the ability to perform photosynthesis. They share features with primitive bacteria because they lack a plant cell wall. Interestingly, they also share characteristics of the animal kingdom as they contain on their cellular membrane complex sugars similar to glycogen. Among blue-green algae, both edible and toxic species adapted to almost any of the most extreme habitats on earth. Edible blue-green algae, including Nostoc, Spirulina, and Aphanizomenon species have been used for food for thousands of years. Spirulinaare multicellular and filamentous blue green algae that has gained considerable popularity in the health food industry and increasingly as a protein and vitamin supplement to aquacultures diets. It grows in water, Can be harvested and processed easily and has very high macro and micro nutrient contents. Spirulina platensis, Zarrouk's medium, Mass cultivation and Protein content.

MATERIALS AND METHOD

MATERIAL:

The material we used for the culture set up and forculturing are following- Cement bricks, HDPE black and blue sheets, Bamboosticks, Green sun mesh, Binding wire, Mud pot; Hot air oven; Nylon cloth with 30µm size pore; pond water from our college, cooler motor of about 80-90watts, digital weighing machine, nutritive culture medium, spirulina mother cells, portable digital parameter kit, motar, bucket and one litre measuring mug.Nutritive medium is of two types –1.Sodium chloride, Eating soda- Sodium bicarbonate, Magnesium sulphate, and NPK- Nitrogen, Phosphorous, Potassium.2. Powder of Cow dung ash.

METHODOLOGY

The methodology of spirulina culturing includes seven steps they are:

- Construction of culture tank and shed.
- Filling the tanks.
- Preparation of the different culture medium.
- Purchasing of spirulina mother culture.
- Addition of Spirulina mother culture and further maintance.
- Harvesting of the production.
- Utilizing spirulina production as feed.

STEP-1:CONSTRUCTION OF CULTURE TANK AND SHED

We constructed the shed by using bamboo sticks and covered all sides with green sun mesh to allow the moderate amount of sunlight which is required for spirulina growth. Thenwe constructed two tank set -up in a rectangular form with different measurements in open area with maximum exposure to sunlight. The rectangular tank has equipped with a length of 5 feet, breadth 3.5 feet, and a depth of 25cm .With the above mentioned measurements we placed the cement bricks which is rolled out by black and blue tarpaulin sheaths one over the other. After the set-up has done we cleaned it once with a clean cloth to remove rock granules and dust granules.

STEP-2: FILLING THE TANK

The both tanks one is for spirulina culturing and other for stocking of mother inoculum has to be filled up with about 250 litre and150 litre of water respectively from our college water supply.

Then the filled tanks was covered with green sun mesh to avoid contamination and also to stabilize thermally then left it for overnight for proper settlement of water.

STEP-3: PREPARATION OF DIFFERENT CULTURE MEDIUMS

For the culturing of spirulina we need nutrition for the processed growth for that we have to prepare nutritive mediums. Here we used two types of mediums. Among them one of the nutritive medium for 250 litre tank constitutes about sodium chloride-2000grs/2kg ; sodium bicarbonate-2000grs/2kgs; N:P:K-125grs ; Magnesium Sulphate-46grs and for 150 litre tank sodium chloride-1200grs ; sodium bicarbonate-1200grs ; N:P:K-75grs ; Magnesium Sulphate-24grs weighed by digital weighing balance.The measured substances has to be taken into a container with water and stirred it up for 10-15 minutes to dissolve completely in water.

An another type of medium is cow dung ash : For this firstly we have to collect fresh dung from nearby cattle shed and make them into cake and left it to get dried completely for 2-3 days under sunlight for evaporation of whole moisture content in it. Then burn it into ashes and collect the ash and filter it with sieve and collect the powdered ash in a container. Now weighing 8grms of ash powder and add into 5 litre of water taken in mud pot and leave it for about 1-2 hrs for settlement.

STEP-4: PURCHASING OF SPIRULINA MOTHER CULTURE.

Parallelly we purchased 1 kg of spirulina mother culture from Shamshabad, NETRINS Spirulina organic farm at a cost of 1200Rs/-..

This mother cells has transferred into a container for its better survival and to habituate to the environment.

STEP-5: ADDITION OF SPIRULINA MOTHER CULTURE AND FURTHER MAINTANCE.

The mother culture which act as an inoculum for culturing of spirulina measure it with digital weighing machine. For every 100 litre of water we should add about 250 grms of spirulina.
According, to this ratio for 250 litre of water we should add about 625 grms of spirulina.
After the addition of spirulina stir the culture set up smoothly for about 5 minutes. And the remaining mother culture is inoculated for stocking it for further use.
Regular monitoring of water level and maintenance of optimum conditions is important for good yield. After the above mentioned guideline followed after 7-8 days weekly based nutritive medium should be added that includes: sodium bicarbonate-2000gr/2kgs ; N:P:K-125gr: Magnesium sulphate-46gr.

NOTE:

After the addition of nutritive medium and before the addition of spirulina we have to check the water parameters. After checking the optimum conditions only we should proceed the further steps.

PHYSICO-CHEMICAL PARAMETERS:

The water parameters are measured in morning and evening with regular time interval.
The sample from the set up should be collected by stirring it once and little deep by using a beaker.
The parameters includes pH, temperature, water level, color, and Electrical conductivity and alkalinity.

PH:

PH is a measure of hydrogen ion concentration in water/solution.

It is recorded with portable HANNA KIT TEST device.

The optimum level of pH that should maintain is about 8-11.

TEMPERATURE:

Temperature is a measure degree of hotness or coldness of water.
The optimum level of temperature that should maintain is about 22°c – 38°c.

WATER LEVEL:

The level of water is important for its survival as spirulina is aquatic organisms. The optimum water level that should maintain is about 20cm – 30cm.

COLOUR:

Light green to dark green.

PADDLE WHEEL SPEED/AERATION CAPACITY:

25 rpm speed.

Physico-chemical parameters culture set-up in morning and evening are given below.

DATES	PH Morning	PH Evening	Temperature Morning	Temperature Evening	Color Morning	Color Evening
18/3/22	7.5	7.6	26.0°c	27.6°c	Light green	Light green
19/3/22	7.5	7.5	24.6°c	26.7°c	Light green	Light green
20/3/22	7.9	7.8	24.6°c	26.8°c	Light green	Light green
22/3/22	7.9	7.9	24.0°c	27.4°c	Light green	Light green
24/3/22	8.0	8.0	23.°8°c	27.7°c	Light green	Light green
25/3/22	8.3	8.4	26.1°c	25.9°c	Light green	Light green
26/3/21	8.4	8.4	24.5°c	27.7°c	Light green	Light green
27/4/22	8..4	8.5	26.1°c	32.2°c	Light green	Light green
1/5/22	8.4	8.6	22.8°c	32.4°c	Light green	Light green
2/5/22	8.7	8.7	24.9°c	33.2°c	Light green	Light green
3/5/22	8.8	8.9	22.4°c	30.5°c	Light green	Light green
4/5/22	8.7	8.9	24.3°c	31.0°c	Green	Green
5/5/22	8.9	9.0	23.5°c	31.5°c	Green	Green
6/5/22	9.0	9.1	25.6°c	29.8°c	Green	Green
8/5/22	9.0	9.1	23.5°c	30.1°c	Green	Green
9/5/22	9.0	9.1	24.2°c	29.8°c	Green	Green
10/5/22	9.1	9.2	30.5°c	32.0°c	Green	Green
12/5/22	9.0	9.2	31.4°c	32.6°c	Green	Green
15/5/22	9.0	9.3	28.9°c	31.2°c	Green	Green

16/5/22	9.2	9.3	30.5°c	32.8°c	Green	Green
17/5/22	9.2	9.3	29.7°c	33.1°c	Green	Green
18/5/22	9.5	9.6	30.0°c	33.9°c	Green	Green
19/5/22	9.6	9.6	29.9°c	33.7°c	Green	Green
20/5/22	9.7	9.9	30.9°c	33.6°c	Green	Green
22/5/22	10	10.0	31.0°c	33.2°c	Dark green	Dark green
23/5/22	10.1	10.3	32.4°c	34.0°c	Dark green	Dark green
24/5/22	10.2	10.2	31.2°c	32.4°c	Dark green	Dark green
25/5/22	10.4	10.5	33.6°c	35.0°c	Dark green	Dark green

TABLE-1: PHYSIO-CHEMICAL PARAMETERS

STEP-6: HARVESTING OF THE PRODUCTION

After 45 days of careful monitoring and maintance the PH increased to 10 which indicates the production is ready to harvest. At this point we observe dark green colored thick layered colonies on surface of water. Now with the help of nylon cloth with pore size of 30µm filter the water and collect the biomass formed. Then spread over a plastic sheet as let it be dry under shady temperature for about 2-3 days then we obtain flakes of Spirulina.

STEP-7:UTILIZING SPIRULINA PRODUCTION AS FEED

Now the dried flakes are subjected to 50-100°c in hot air oven to arrest the bacterial growth by removing moisture content.
Then it allowed to get cool down and this was grinded in to powder and incorporated in feed ingredient for fish and feeded it with respective intervals of time.
High yielding and high growth rate is seen in fishes.

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OBSERVATIONS

- We observed that as days increases the color of changes from light green to dark green.
- We observed increase in PH.
- We observed the number of colonies increased.
- We observed thick dark green layer on water surface.
- We observed high yielding and great growth rate of fishes by using this Spirulina as feed.
- We observed greater tenderness and taste in fish meat.

RESULT

- By utilizing one kilogram of mother culture we got 5.6 kg of production.
- Each fish weighed about 1.5-2 kgs.
- Bulk amount of production has been seen.

CONCLUSION

- By the end of this project we got complete awareness about benefits of Spirulina.
- And we brought awareness about its dietary composition and need to use in daily intake.
- In fishery industry, by using spirulina as feed we can reduce the feed cost.
- And it a great substitute of protein content with many essential vitamins and minerals required for body growth.

GALLERY

FIG-B, C: CONSTRUCTION OF CULTURE SET-UP

FIG-D, E: MOTHER CULTURE

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FIG-F,G:COMPONENTS OF NUTRITIVE

FIG-J: ADDITION OF WATERFIG-K: ADDITION OF SPIRULINA

FIG-L: SPIRULINA IN MUD POTFIG-M: MEDIUM IS ADDED

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Signature of the Lecturer

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THANK YOU

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DEPARTMENT OF CHEMISTRY

2021-22

STUDENT STUDY PROJECT

ON

"ANALYSIS OF SOFT DRINKS".

GAMBHIRAOPET

GOVT DEGREE COLLEGE GAMBHIRAOPET

DEPARTMENT OF CHEMISTRY

2021-22

STUDENT STUDY PROJECT

SUPERVISOR: Dr.B.Bixamaiah, Astt Prof in chemistry

SUBMITTED BY:

SL.NO	Student Name	Class & Year	Signature
1	G.Rekha	B.Z.C III yr	G.Rekha
2	Y.Mounika	B.Z.C III yr	Y. Mounika
3	Ch.Divya	B.Z.C III yr	Ch. Divya
4	P.Nandini	B.Z.C III yr	P. Nandini
5	B.Mounika	B.Z.C III yr	B. Mounika.
6	M.Srinivas	B.Z.C III yr	M Srinivas

PRINCIPAL

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DEPARTMENT OF CHEMISTRY

2021-22

STUDENT STUDY PROJECT

GOVERNMENT DEGREE COLLEGE GAMBHIRAOPET PIN:505304 Dist: Rajanna Sircilla

CERTIFICATE

This is certify that I,II& III year B.Sc (M.P.C & B.Z.C) students participated in study project conducted by the department of chemistry under the supervision of **Dr.B.Bixamaiah** titled on "**ANALYSIS OF SOFT DRINKS** " regarding student study project for 2021-2022.

PRINCIPAL

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AIM

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

PURPOSE:

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

I wanted to conform if the claims were true another fact that made me to do so was this that I am in touch with the Quantitative analysis. So ,I chose this project on determination of contents of cold drinks out of curiosity.

INTRODUCTION

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

The era of cold drinks began in 1952 but the industrialization in India marked its beginning with launching of Limca and gold Spot by Parley group of Companies. since, the beginning of cold drinks was highly profitable and during many multinational companies launched their brands in idea like Pepsi and Coke. 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

Cold 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. The 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 ripen grapes in bones 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 flower of many plants. the main source of sucrose is sugar cane juice which contain 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. cold 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.

AIM: Comparative Study and Qualitative Analysis of different brands of cold drinks available in market.

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Apparatus:-

Test Tubes

Test Tube Holder

Test Tube Stand

Stop Watch

Beaker

Burner

P^H 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

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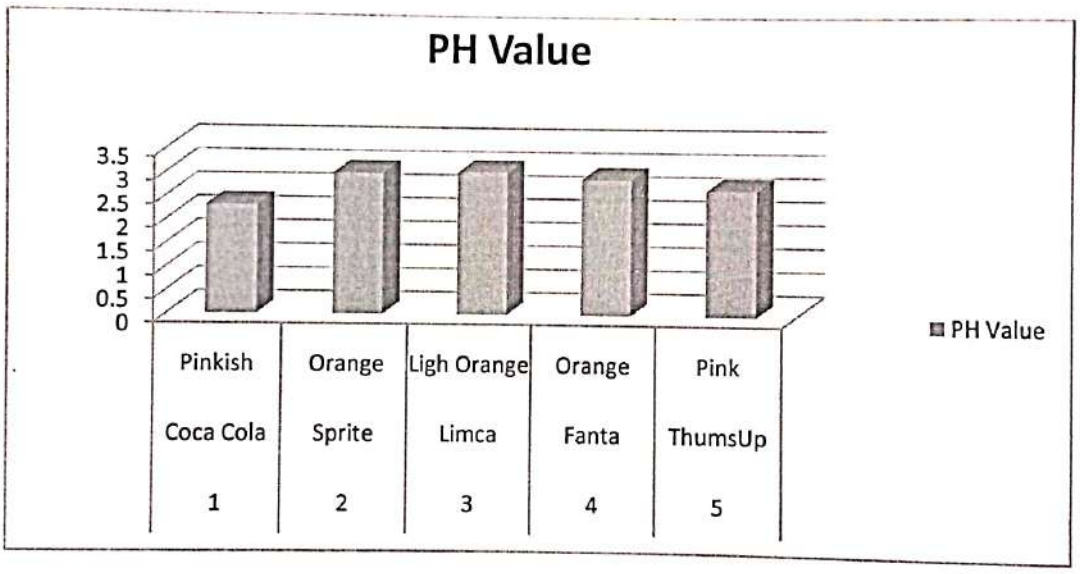
Detection of P^H

Experiment: Small samples of cold drinks of different brands were taken in a test tube and put on the P^H paper. The change in color of P^H paper was noticed and was compared with standard P^H scale.

Observation:

Sl.No	Name Of the Drink	Color Change	P^H Value
1	Coca Cola	Pinkish	2.3
2	Sprite	Orange	3
3	Limca	Ligh Orange	3.03
4	Fanta	Orange	2.9
5	ThumsUp	Pink	2.68



Inference:

Soft drinks are generally acidic because of the presence of citric acid and phosphorus acid . P^H values of cold rinks of different brands are different due to the variation in amount of acidic content.

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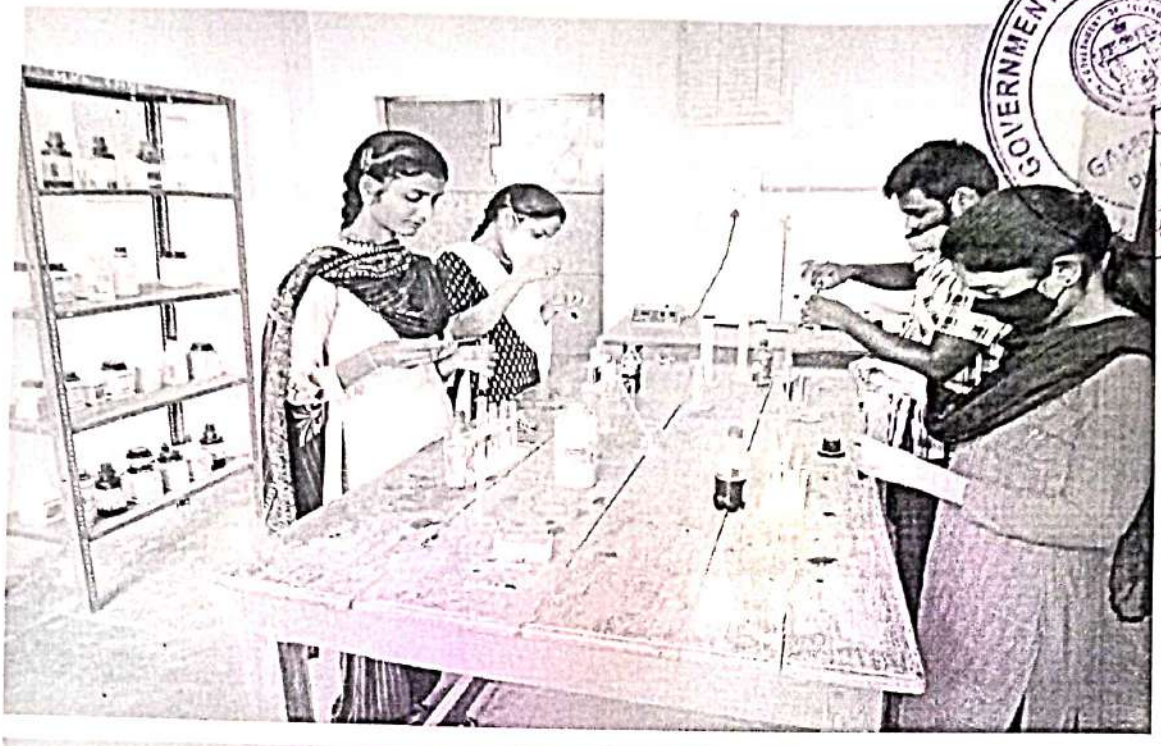

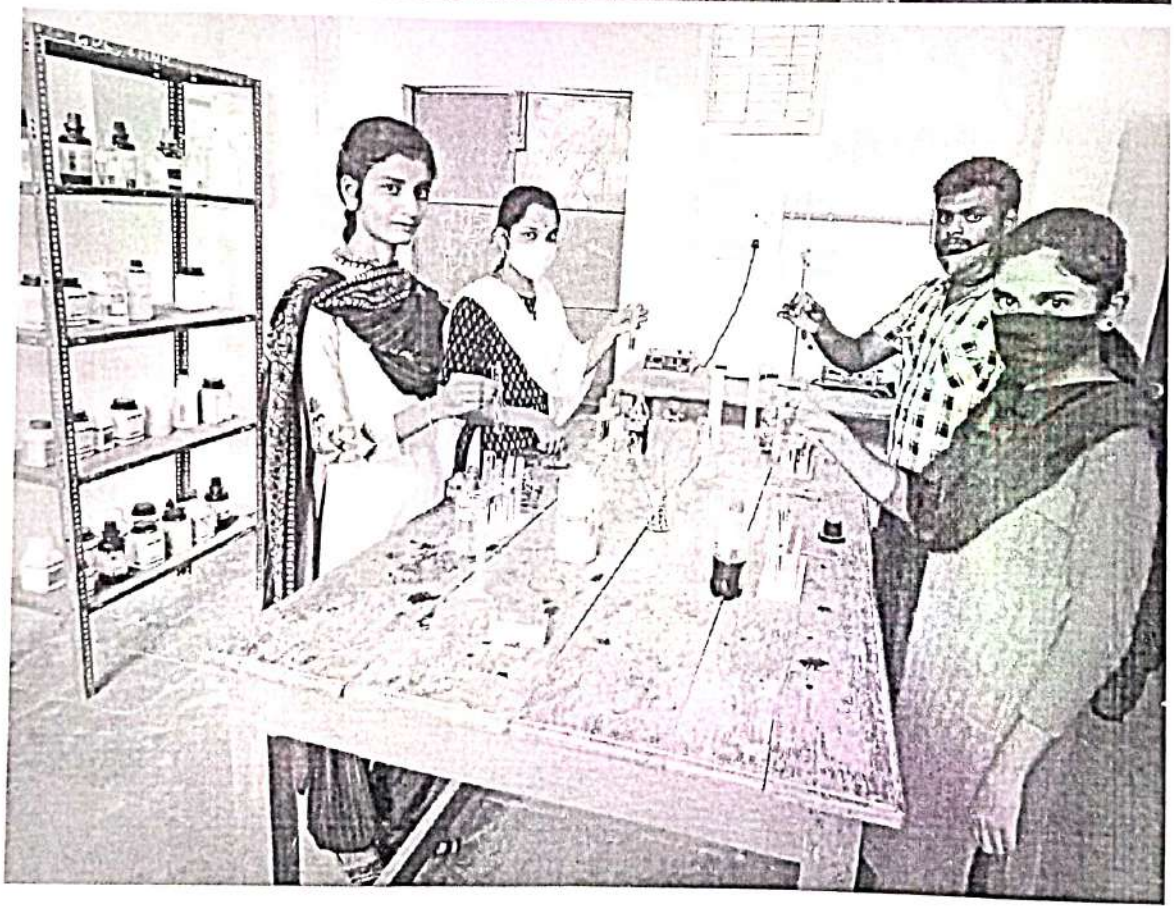

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TEST FOR CARBON DIOXIDE

Experiment: As soon as the bottles were opened one by one the sample the passed through line water .the line water termed milky

Observation:

Sl.No	Name Of the Drink	Time Taken (Sec)	Conclusion
1	Coca Cola	28	CO_2 is Present
2	Sprite	20	CO_2 is Present
3	Limca	38	CO_2 is Present
4	Fanta	36	CO_2 is Present
5	Thumsup	26	CO_2 is Present

All the soft drinks contain dissolved carbon dioxide in Water.. The carbon dioxide(CO_2) dissolves in water to form carbonic acid, which is responsible for its tangy taste.

$Ca(OH)_2(s)+CO_2(g)$----------CaCO3(s)+H2O(l)

Test For Glucose

Experiments: Glucose is a reducing sugar acid. its presence is detected by the following test:-

1.Benedict''s Reagent Test: Small Samples of cold drinks of different brand were taken in a test tube and a few drops of Benedicts reagent were added. The test tube was heated for few seconds. Formation of reddish color confirmed the presence of glucose in cold drinks.

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Observation:

S.No	Name Of the Brand	Quantity of drink Taken	Regent usedfor testing	Observation	Inference	Conclusion
1	Coca Cola	1ml	Benedict's Reagent	reddish color precipitate	0.52gm	glucose is present
2	Sprite	1ml	Benedict's Reagent	reddish color precipitate	0.106gm	glucose is present
3	Limca	1ml	Benedict's Reagent	reddish color precipitate	0.012gm	glucose is present
4	Fanta	1ml	Benedict's Reagent	reddish color precipitate	0.72gm	glucose is present
5	ThumsUp	1ml	Benedict's Reagent	reddish color precipitate	0.1gm	glucose is present

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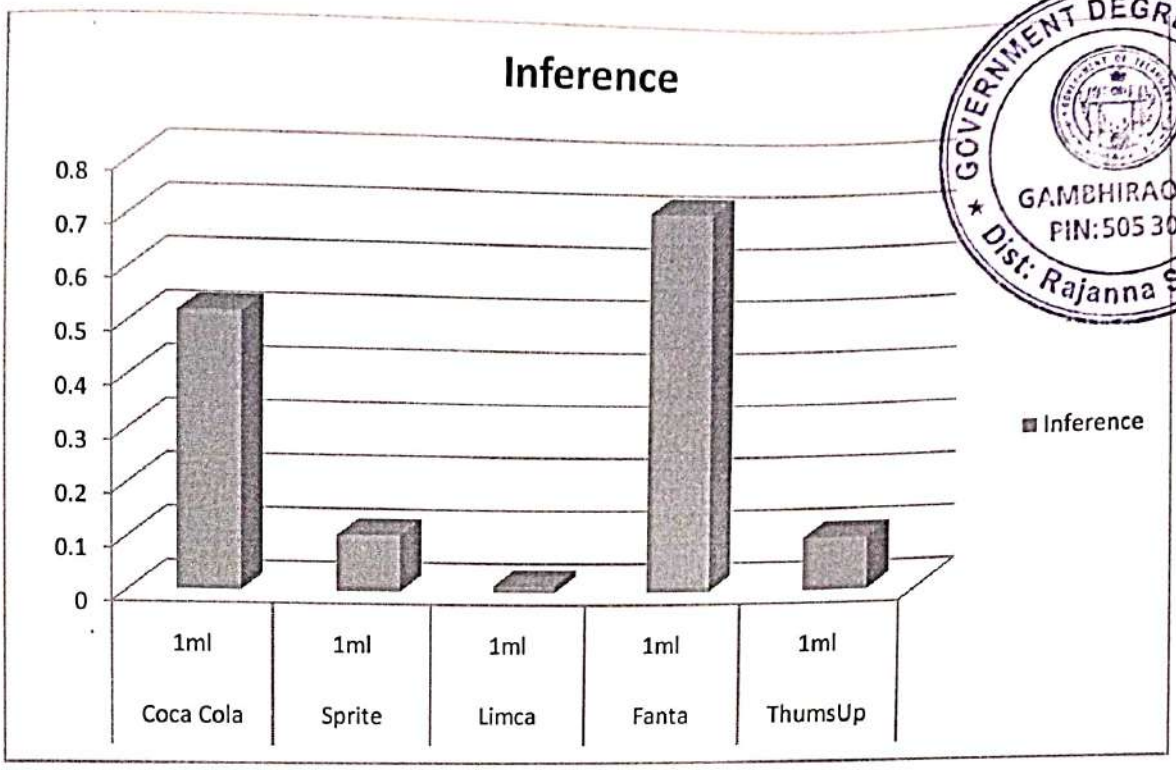

2.Fehling Reagent Test: Small samples of cold drinks of different brands were taken in a test tube and a few drops of Fehling's A Solution and Fehling's B Solution was added in equal amount .The test tube was heated in water bath for 10 minutes. Appearance of brown precipitate confirmed the presence of glucose in cold drinks.

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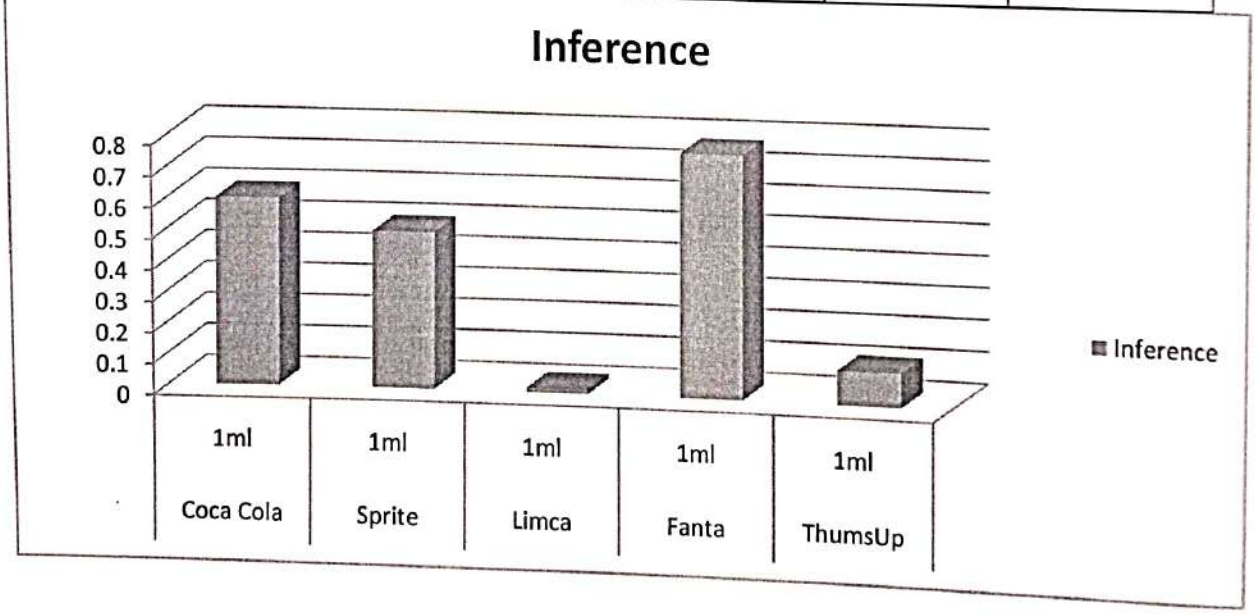
Observation:

S.No	Name Of the Brand	Quantity of drink Taken	Regent usedfor testing	Observation	Inference	Conclusion
1	Coca Cola	1ml	Fehling reagent	reddish color precipitate	0.6gm	glucose is present
2	Sprite	1ml	Fehling reagent	reddish color precipitate	0.5gm	glucose is present
3	Limca	1ml	Fehling reagent	reddish color precipitate	0.014gm	glucose is present
4	Fanta	1ml	Fehling reagent	reddish color precipitate	0.78gm	glucose is present
5	ThumsUp	1ml	Fehling reagent	reddish color precipitate	0.11gm	glucose is present



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Inference: All sample gave positive test for Glucose with Fehling's(A&B) Solutions.hence,all the cold rinks contain glucose.

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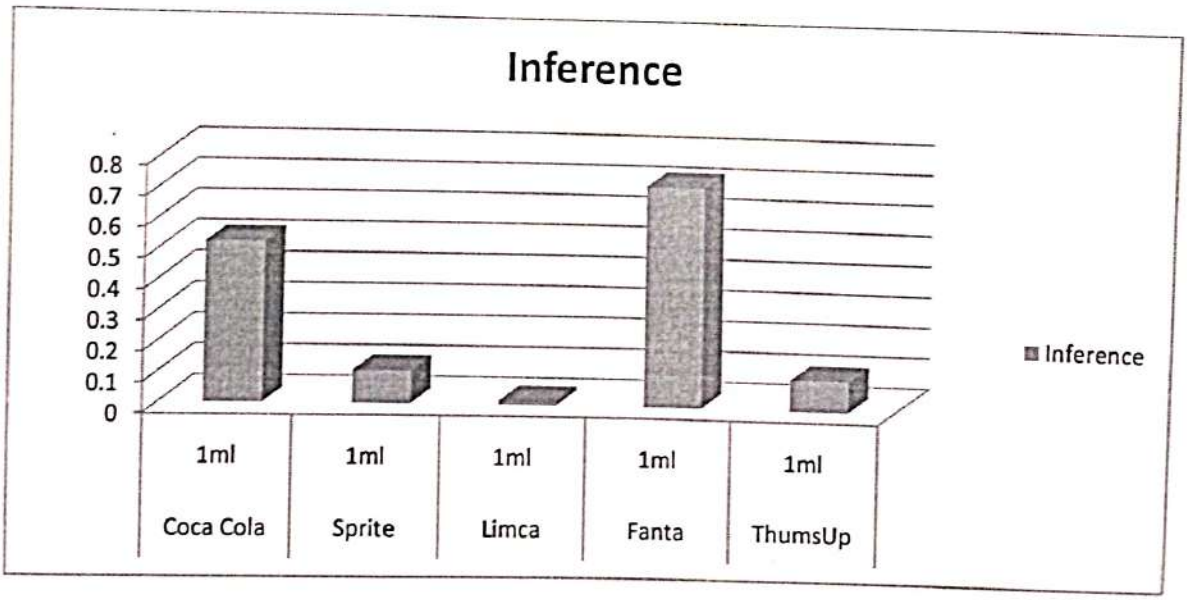
Test for Sucrose:

Experiment: 5ml samples of each brand of cold drinks were taken in separate china dishes and were heated very strongly until changes occur. black colored residue left confirmed the presence of sucrose in cold drinks.

Observation:

S.No	Name Of the Brand	Quantity of drink Taken	Observation	Inference	Conclusion
1	Coca Cola	1ml	Black Residue	0.52gm	Sucrose is present
2	Sprite	1ml	Black Residue	0.106gm	Sucrose is present
3	Limca	1ml	Black Residue	0.012gm	Sucrose is present
4	Fanta	1ml	Black Residue	0.72gm	Sucrose is present
5	ThumsUp	1ml	Black Residue	0.1gm	Sucrose is present



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Inference: All the brands of cold drinks contain sucrose . but, amount of sucrose varies in each brand of drink. Fanta contains highest amount of sucrose.

Test For Phosphate:

Experiment: Small samples of each brand of cold drinks were taken in separate test tubes and Ammonium Molybdate followed by concentrated Nitric Acid was added to it. The solution was heated. Appearance of Canary-Yellow precipitate confirmed the presence of phosphate ions in cold drinks.

Observation:

S.No	Name Of the Brand	Quantity of drink Taken	Chemicals used for testing	Observation	Inference	Conclusion
1	Coca Cola	1ml	Ammonium molybdate& Con.nitric acid	Canary yellow precipitate	0.012ppm	Phosphate is Present
2	Sprite	1ml	Ammonium molybdate& Con.nitric acid	Canary yellow precipitate	0.11ppm	Phosphate is Present
3	Limca	1ml	Ammonium molybdate& Con.nitric acid	Canary yellow precipitate	0.68ppm	Phosphate is Present
4	Fanta	1ml	Ammonium molybdate& Con.nitric acid	Canary yellow precipitate	0.42ppm	Phosphate is Present
5	Thumsup	1ml	Ammonium molybdate& Con.nitric acid	Canary yellow precipitate	0.38ppm	Phosphate is Present

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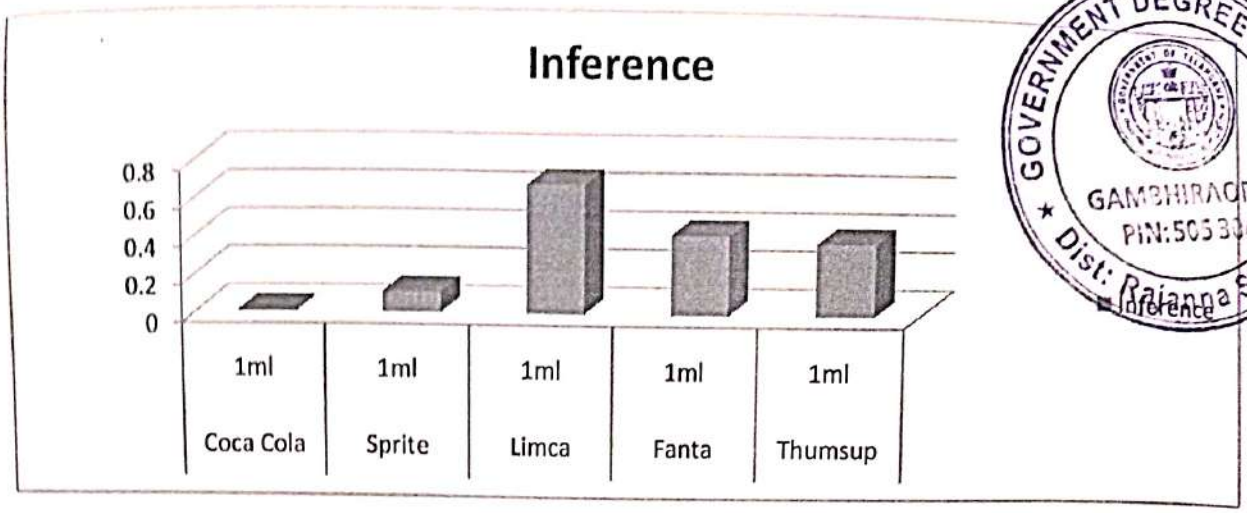

Inference: All the soft drinks samples gave positive test for phosphate ions. Hence, all the cold drinks contain phosphate

Test for Alcohol:

Experiment: Small samples of each brand of cold drinks were taken in separate test tubes and Iodine followed by KI and NaOH Solution was added to each test tube. Then the test tubes were heated in hot water bath for 30 minutes. Appearance of yellow colored precipitate confirmed the presence of alcohol in cold drinks.

The tests suggest that tha alcohol levels are as low as 10mg in every litter and this works out around 0.001% alcohol.

Small amount of alcohol may be present in a soft drinks .but,alcohol content must be lessthan 0.5% of the total volume of the drink.

Observation:

Sl.No	Name of the drink	Observation	Conclusion
1	Coca Cola	yellow precipitate	Alcohol is Present
2	Sprite	yellow precipitate	Alcohol is Present
3	Limca	yellow precipitate	Alcohol is Present
4	Fanta	yellow precipitate	Alcohol is Present

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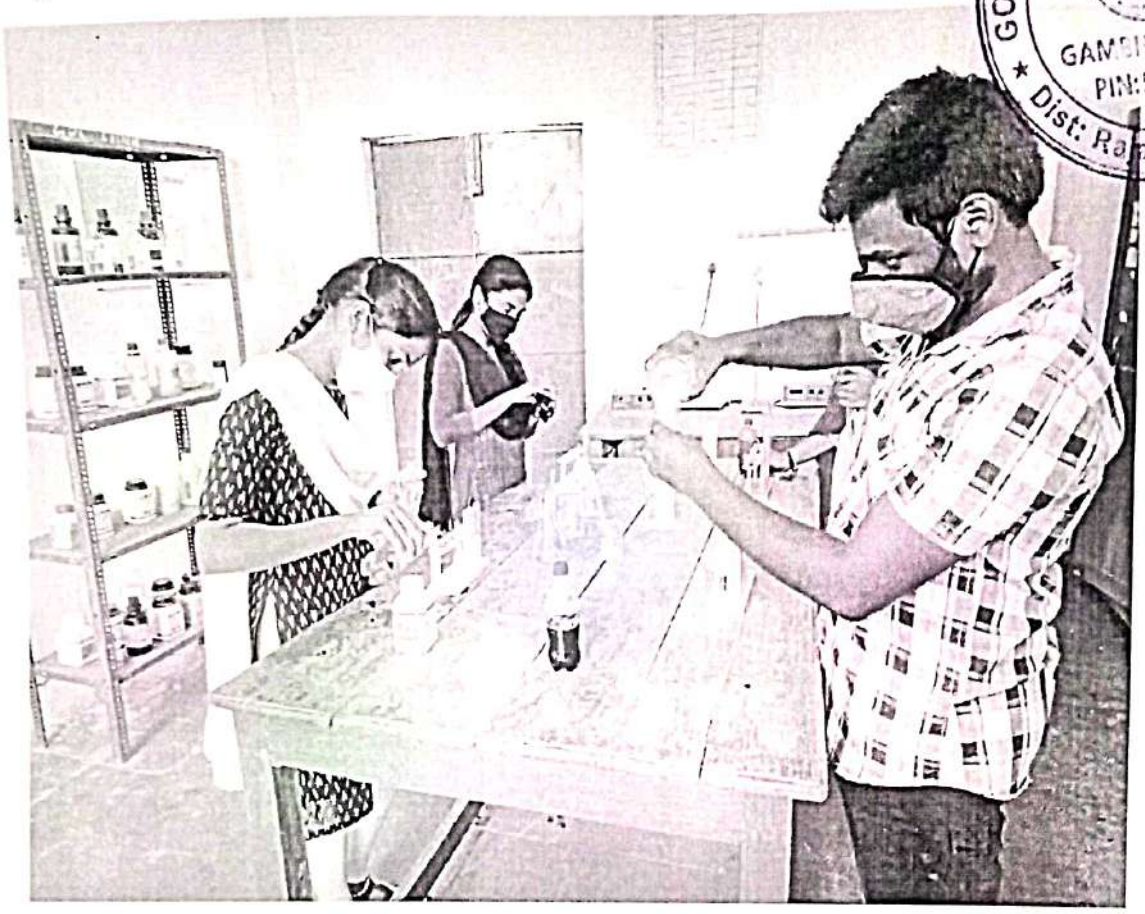
Inference: All the Cold drinks samples gave positive test for alcohol. hence, all the cold drinks contain alcohol.

$CH_3CH_2OH + 4I_2 + 6NaOH$----------$CH_3I + HCOONa + 5NaI + 5H_2O$



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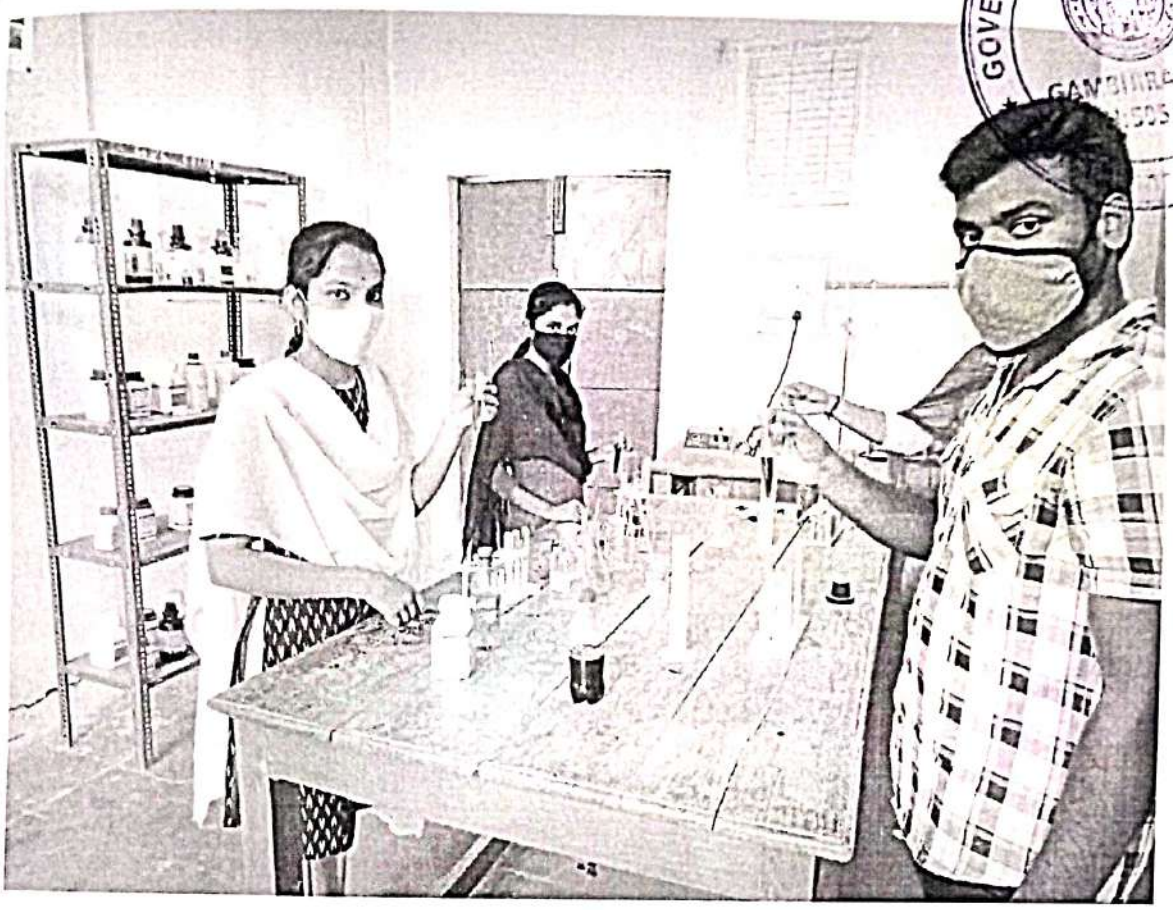

DIS-ADVANTAAGES OF COLD DRINKS:

- Soft drink 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 bodys natural ability to dissolve the calcium so they are also harmful for our bones.
- Soft drink contain "phosphoric acid" which has a P^H of 2.8 So they can dissolve a nail in about 4 days.
- Soft drink have also ability to remove blood so they are very harmful to our body.

USES OF COLD DRINKS:

- Cold drinks can be used as toilet cleaners.
- They can removed 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.

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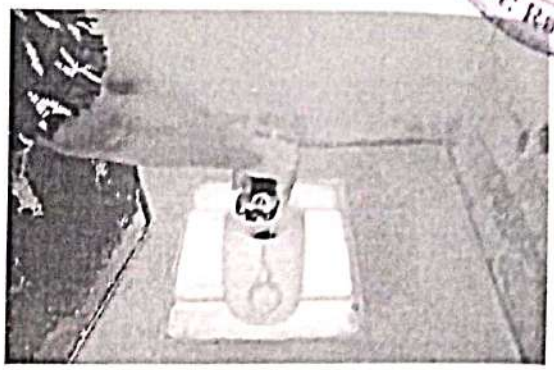
- They can lose a rusted boil.



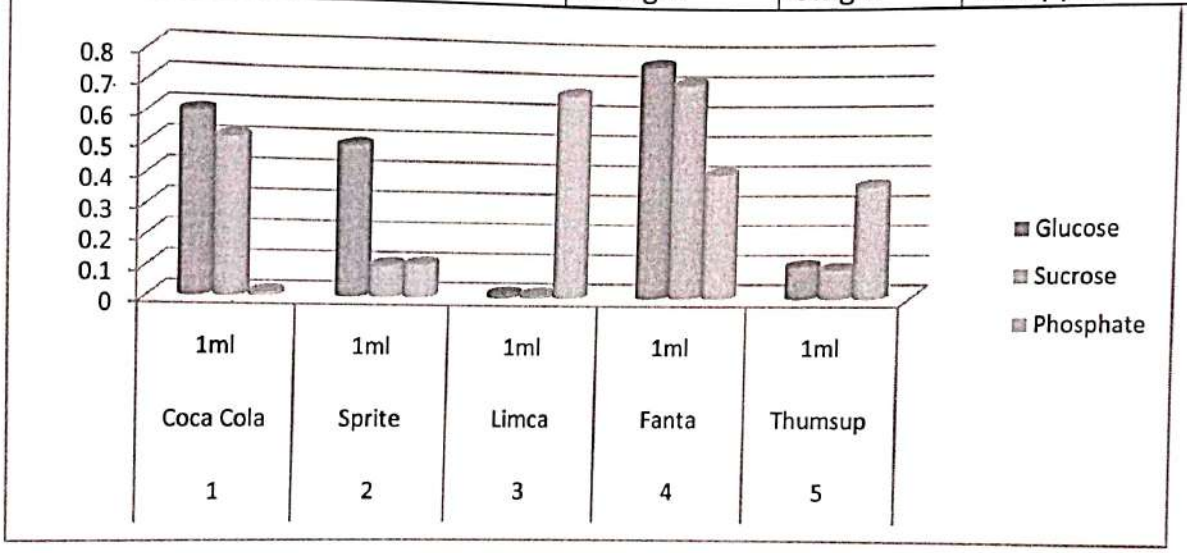
Precautions:

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 expaeriment.
- 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 hearing at yourself or your neighbor.

s Conclusion

S.No	Name Of the Brand	Quantity of drink Taken	Glucose	Sucrose	Phosphate
1	Coca Cola	1ml	0.6gm	0.52gm	0.012ppm
2	Sprite	1ml	0.5gm	0.106gm	0.11ppm
3	Limca	1ml	0.014gm	0.012gm	0.68ppm
4	Fanta	1ml	0.78gm	0.72gm	0.42ppm
5	Thumsup	1ml	0.11gm	0.1gm	0.38ppm



After conducting several tests, it was concluded that the different brands of cold drinks namely:

Coca Cola,Sprite,Limca,Fanta,thumsup all are contains glucose ,alcohol, sucrose, Phosphate and Carbondioxide. All cold drinks are acidic in nature on comparing P^H value of different brands.

- Coca cola is the most acidic and Limca is least acidic of all the five brands taken.
- Among the five samples of cold drinks taken, Sprite has the maximum amount of dissolved CO2 and Fanta has the minimum amount of dissolved CO2.
- Most of the soft drinks contain one or more of three common acids –citric acids, carbonic acids and phosphoric acid.

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Z

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

THANKING YOU

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GOVT DEGREE COLLEGE GAMBHIRAOPET

DEPARTMENT OF CHEMISTRY

2021-22

STUDENT STUDY PROJECT

ON

"OIL EXTRACTION TECHNIQUES USING GREEN SOLVENTS".

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GOVT DEGREE COLLEGE GAMBHIRAOPET

DEPARTMENT OF CHEMISTRY

2021-22

STUDENT STUDY PROJECT

SUPERVISOR: B.Praveen Kumar, LECTURER IN CHEMISRTY

SUBMITTED BY:

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CERTIFICATE

This is certify that I,II& III year B.Sc (M.P.C & B.Z.C) students participated in study project conducted by the department of chemistry under the supervision of **B.Praveen Kumar** titled on "**OIL EXTRACTION TECHNIQUES USING GREEN SOLVENTS** " regarding student study project for 2021-2022.

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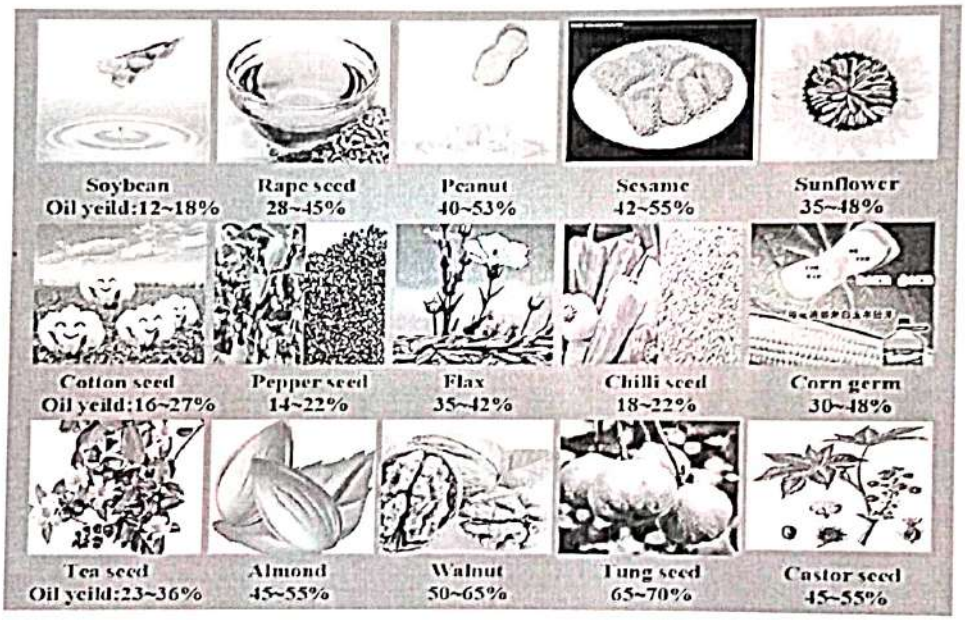
OIL EXTRACTION TECHNIQUES USING GREEN SOLVENTS

ABSTARCT :

The conventional technology used for oil extraction from oilseeds is by solvent extraction. In solvent extraction, *n*-hexane is used as a solvent for its attributes such as simple recovery, non-polar nature, low latent heat of vaporization (330 kJ/kg) and high selectivity to solvents. However, usage of hexane as a solvent has lead to several repercussions such as air pollution, toxicity and harmfulness. This study focuses on using of green solvents for the oil extraction by solvent extraction method.



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1. INTRODUCTION :

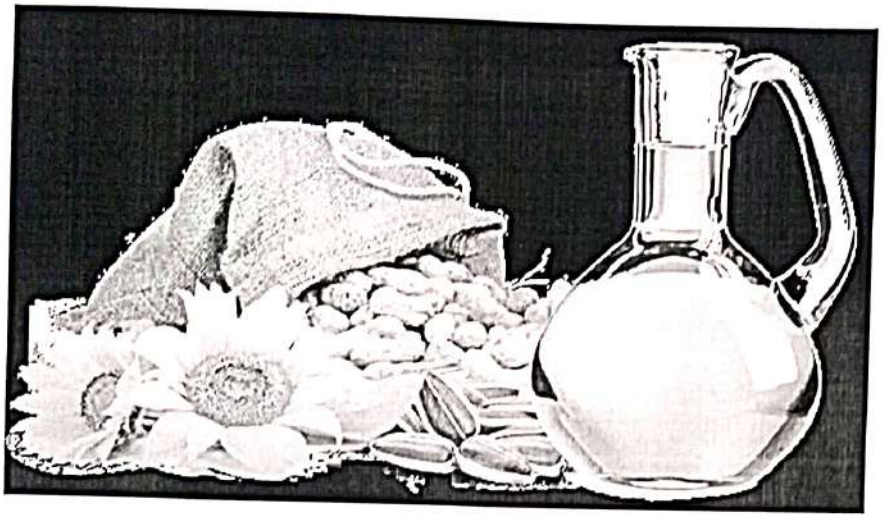
1.1 STATEMENT OF THE PROBLEM :

Conventional oil extraction from oilseeds has been performed by hydraulic pressing, expeller pressing and solvent extraction (SE). Among these methods, solvent extraction has been widely adapted for economical and practical concerns. In SE process, the oilseeds are washed with hexane, thereafter the hexane is separated from oil by evaporation and distillation [2]. Hexane has been widely used for oil extraction because of easy oil recovery, narrow boiling point (63–69 °C) and excellent solubilizing ability.

In contrary, while in extraction and recovery processes, hexane is released into environment that reacts with the pollutants to form ozone and photo chemicals [4]. Moreover, several studies revealed that hexane affects neural system when inhaled by humans because of solubility in neural lipids. Toxicity has been observed in piglets fed with de-fatted meal containing residual hexane which was left over after the process [5]. Therefore, health perspective, safety and environment concerns have triggered to look for a substitute to *n*-hexane without compromising the yield of oil. Hence, green solvents coupled with technology are a viable alternative for oil extraction. Green solvents and technology are aimed to develop an environment friendly process with simultaneous reduction of pollutants [6,7] for oil extraction. Hence, green technology such as aqueous enzymatic extraction (AEE)coupled with green solvents have huge potential to replace *n*-hexane without any compromise in oil recovery from the process. In addition, the opportunities and challenges of AEE have been given comprehensively to understand the merits and demerits of the technology. Green solvents arederived either from naturally (water and CO_2) or agricultural residues (terpenes) or petroleum sources, which have good solubilizing properties like conventional solvents.

1.2 AIMS AND OBJECTIVES:

To study about the various oil extraction techniques using green solvent



2. REVIEW OF LITERATURE:

Various solvents which are employed for oil extraction discussed here. Ionic liquids are non-aqueous salt solutions that comprise both anions and cations which can be maintained in a liquid state at moderate temperatures (0–140 °C) [10,11]. Ionic liquids are considered as green solvents or green 'designer' solvents for their manifold applications in petroleum and oil industry. Ionic liquids are eco-friendly in nature as these do not have the detectable vapour pressure, as a result, no pollution. In addition, these are non-flammable,and remain in liquid state for wide range of temperatures [12]. As these solvents possess both the ions and versatile physico-chemical characteristics, these have allowed to design a suitable solvent with specific conductivity, hydrophobicity , polarity, and solubility based on the nature of solute for efficient recovery [13]. Interestingly, because of these properties about 600 molecular solvents were employed in various processes Ionic liquids were used as solvent for extraction, catalysis and synthesis of various compounds. However, studies on application of ionic liquids for oil extraction are scanty and needs to substantiate the technical and economical viability. Ma et al. studied the extraction of essential oils using ionic liquids from *Schisandra chinensis* Baill fruit and projected that the ionic liquid coupled with microwave have reduced time, energy and eco-friendly. In other study, the ionic liquid

was used as a co-solvent for bio-oil extraction in a single step from microalgae. However, a meta-analysis study reported that the IL's should be chosen carefully and need to understand their adverse effects. Although, this method is promising but it needs more studies to substantiate the hypothesis of oil extraction from ionic liquids. Another promising green solvent such as switchable solvent has showed potential for oil extraction from soy bean flakes. In addition, super critical fluid, deep eutectic solvents, natural deep eutectic solvents and supramolecular solvents are gaining wide interest and there is a need to study their applicability in oil extraction.

Recent advances on 'green' approaches have great impetus in oil industry because ofgreen solvents i.e., terpenes (D-limonene, *p*-cymene and α-pinene). Terpenes are isoprene units (C_5H_8) derived chiefly from agriculture sources. For example, D-limonene isderived from citrus peels and employed in many applications. Similarly, *p*-cymene and α-pinene are derived from tree oils and pine forests respectively. Interestingly, these solvents have good Hansen solubility properties (HSP) to dissolve the like molecules. To determine the behaviour of given solvent, Hansen has proposed three properties which is also called Hansen properties based on the energy of dispersive (δ), dipolar (δ) and hydrogen bond forces (δh), between the molecules [8]. In a study, the terpenes were found to possess the characteristics of *n*-hexane that substantiate the capability to dissolve the like molecules. Moreover, terpenes are not only safer due to higher flash point, but also have slightly higher dissociating power due to slight differences in the dielectric constant in comparison with *n*-hexane [9].

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3. RESEARCH METHODLOGY:

Before, oil extraction it is necessary to reduce the size of oleaginous materials (seeds/fruits) either by grinding or flaking to gain much access by enzymes. Grinding ruptures the cell constituents and releases the oil. In case of grinding, factors such as structural and chemical constituents of oilseed, initial moisture content are to be determined to make judicious choice either for wet or dry grinding. Generally, oleaginous material with high moisture content can ground in wet condition, whereas for low moisture content oilseeds like rapeseed, peanut and soybean, drying is necessary. For example, grinding of coconut (high moisture content) in wet condition not only resulted higher oil yield but also alleviated drying step.

Several factors are essential for the maximum recovery of oil from oilseeds. Application of enzymes either alone or in concoction can be determined based on the structure of oilseed, enzyme composition, type of enzyme, experimental conditions. For instance, heat treated soy bean flour separately treated with cellulase, pectinase, hemicellulase and protease (Alcalase 2.4 L from Bacillus licheniformis) enzymes, respectively. Among them, protease resulted higher yield (Alcalase 2.4 L) than rest of the enzymes. Similarly, in extruded soybean flakes, protease treatment resulted higher yield of oil (96.0%) than phospholipase (73.4%) treatment. Furthermore, when extruded soybean oil was treated with cellulase alone and with a mixture of cellulase and protease, no significant augmentation of soybean oil yields (68%) was observed. Aqueous extraction involves water as a medium to extract the oil from oilseeds. It is well known that the lipid molecules are amphipathic in nature and the water soluble components diffuse into water which culminates into emulsion formation. The emulsified oil in water can be de-emulsified by changing the temperature or deploying enzymes. Hence, in the process of AEE, enzymes are involved which segregate the desired extracted constituents without any damage. Recent investigations have unraveled the tremendous potential of AEE .

Moreover, this process is environmental-friendly, safer, healthier, simultaneous oil and

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protein extraction can be done without compromising the quality. In addition, it is cost effective as consumption of solvent is reduced and is effective in removal of anti-nutritional factors, toxins and avoids degumming process. These several merits make AEE a promising green technique not only for oilseed processing but also to extract the desired compound.

4. FINDINGS:

Best results achieved with aqueous enzymatic extraction (AEE) method from various oil seeds.

5. CONCLUSIONS AND SUGGESTIONS:

Green solvents are effective in consumption of solvent, reduction of downstream processing steps (reclamation of solvent) without causing any effect to other desired products. AEE coupled with green solvents could be economical, eco-friendly and safer.

6. REFERENCES:

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DEPARTMENT OF MATHEMATICSSTUDY PROJECT

ON

'VEDIC MATHEMATICS'

Submitted by:

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Project on
VEDIC MATHEMATICS

Abstract :

Vedic Mathematics is the the name given to the ancient Indian system of Mathematics that was rediscovered in the early 20th Century from ancient Vedas. The algorithms based on conventional Mathematics can be simplified and even optimized by the use of Vedic Mathematics.

Objectives:

- It helps a person to solve the problems 10-15 times faster.
- It reduces burden(need to learn tables up to 9 only).
- It is a magical tool to reduce scratch work and finger counting.
- It increases concentration .
- Time saved can be used to answer more questions.
- Logical thinking process gets enhanced.
- It provides one line answer.

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SQUARING OF NUMBERS ENDING WITH 5

(Last digits add to ten)

Conventional Method

65 X 65

65

X 65

325

390

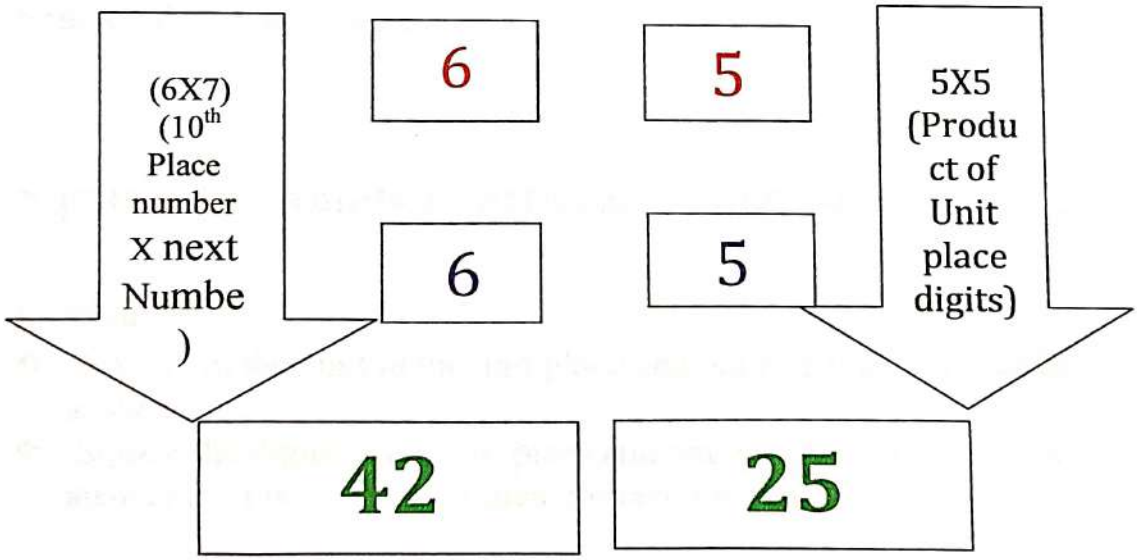
4225

Vedic Mathematics

65 X 65= 4225

Multiply the previous digit 6 by one more than itself.

Multiply last digits viz. (5X5) and write down 25 to the right of 42 viz. (6X7).



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Examples:

Square of 15 = 225

Square of 25 = 625

Square of 35 = 1225

Square of 45 = 2025

Square of 55 = 3025

Square of 65 = 4225

Square of 75 = 5625

Square of 85 = 7225

Square of 95 = 9025 etc….

Squaring of Numbers between 50 and 60

Method:

- Add 25 to the digit in the unit place and put it left hand part of the answer.
- Square the digits in the unit place and put it as the right hand part of the answer (if it is single digit then convert it to two digits)

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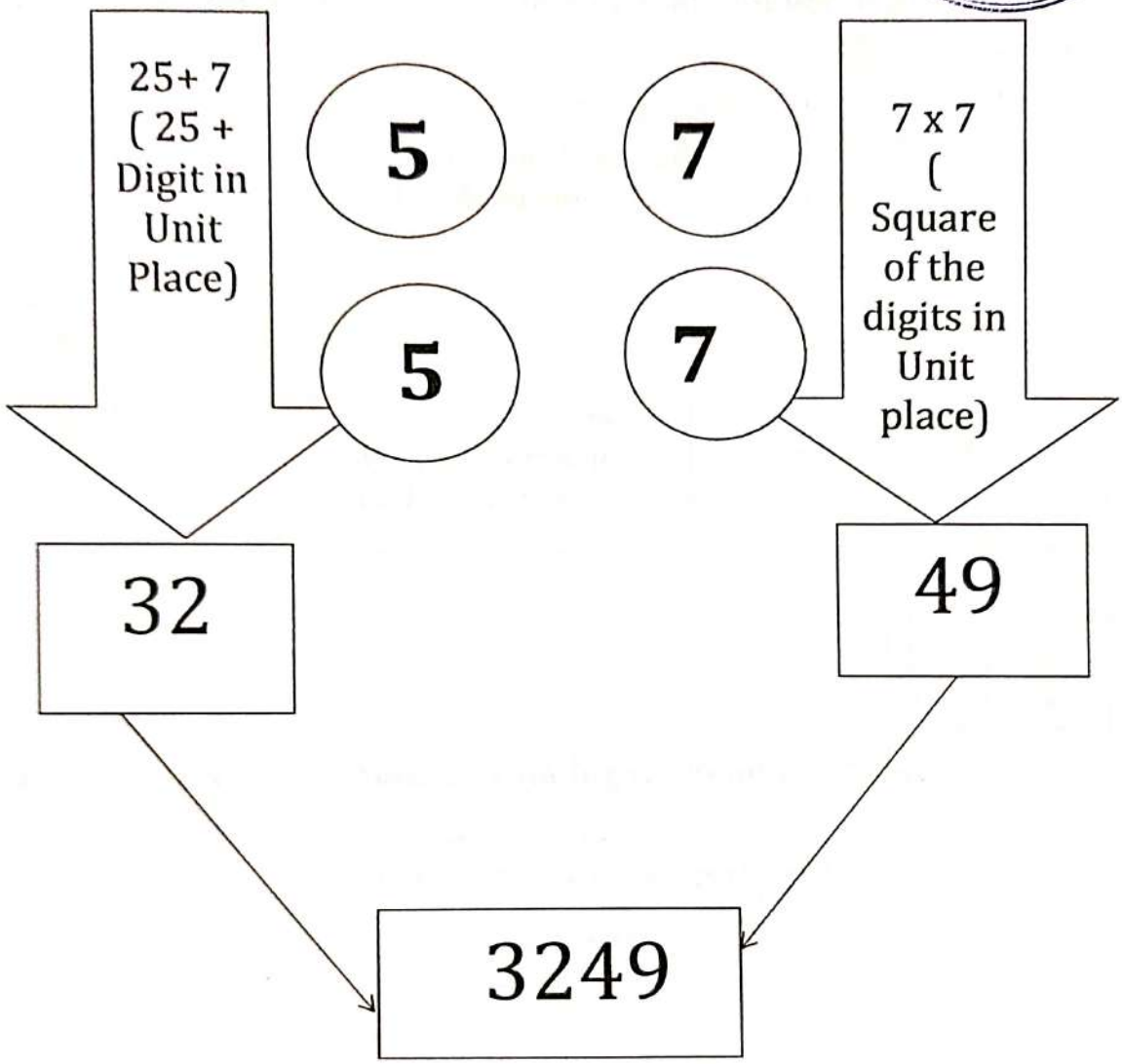
Example: Finding square of 57.



More Examples:

Square of 52 = (25+2=27, 2x2=04) = 2704
Square of 53 = (25+3=28, 3x3=09) = 2809
Square of 54 = (25+4=29, 4x4=16) = 2916
Square of 56 = (25+6=31, 6x6=36) = 3136 etc….

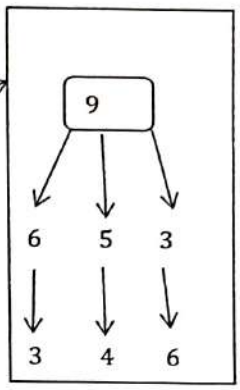
MULTIPLICATION OF NUMBERS WITH A SERIE OF 9'S

Case: 1. multiplying a number with an equal number of nines.

Subtract 1 from 654 and put it on left side of the answer

654
x 999
653 346

Subtract each of the Digit (653) from nine viz. 9-6, 9-5, 9-3

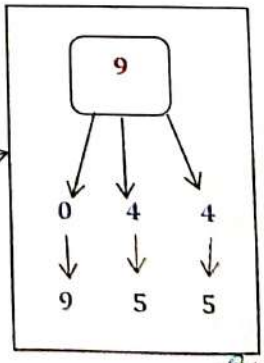


Case: 2. multiplying a number with higher number of nines.

Subtract 1 from 45 and put it on left side of the answer (add 0 to 45 & write it as 045)

045
x 999
044955

Subtract each of the Digit (044) from nine viz. 9-0 , 9-4, 9-4



Multiplication of numbers with a series of 1's :

Case - 1 : Multiplying equal Digit number with 11

Example: 32
x 11
352

- First we write the right - hand most digit 2 of first numbers as it is. (Answer =_____2).
- Next , we add 2 to number in left 3 and write 5. (Answer =_____52).
- Last, we write the left - hand most Digit 3 as it is(answer= 352).

Case - 2: Multiplication three digit number with 11:

Example: 652
x11
7172

- First we write the right - hand most digit 2 of first number as it is. (Answer =------2).
- Next , we add 2 to 5 and write 7. (Answer =_____72).
- Then next, we add 5 to 6 and make it 11. we write down 1 and carry over 1. (Answer =_____172).
- Last, we take 6 and add the one carried over to mke it 7. (Final answer = 7172)

Case - 3: Multiplication four digit number with 11:

Example: 3102
X 11
34122

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- We write down 2 as it is. (Answer=_____2).
- We add 2 to 0 and make it 2 .(Answer is_____22).
- We add 0 to 1 and make it 1. (Answer is_____122).
- We add 1 to 3 and make it 4. (Answer is_____4122).
- We write first digit 3 as it is. (Final Answer is 34122).

Case - 4: Multiplication six digit number with 111:

Example: 201432

X 111

22358952

- We write down 2 in the unit place as it is. (2)
- We move to the left and add(2+3) and write 5.
- We move to the left and add(2+3+4) and write 9.
- We move to the left and add(3+4+1) and write 8.
- We move to the left and add(4+1+0) and write 5.
- We move to the left and add(1+0+2) and write 3.
- We move to the left and add(0+2) and write 2.
- We move to the left and write single digit 2 as it is.
- Final answer 22358952.

Case - 5: Multiplication six digit number with 1111:

Example: 201232

X 1111

223568752

- We write down 2 in the unit place as it is. (2)
- We move to the left and add(2+3) and write 5.
- We move to the left and add(2+3+2) and write 7.
- We move to the left and add(2+3+2+1) and write 8.
- We move to the left and add(3+2+1+0) and write 6.

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- We move to the left and add(2+1+0+2) and write 5.
- We move to the left and add(1+0+2) and write 3.
- We move to the left and add(0+2) and write 2.
- We move to the left and write single digit 2 as it is.
- Final answer223568752.

CRISS-CROSS SYSTEM OF MULTIPLICATION.

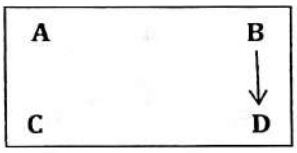
- This is the general formula applicable to all cases of multiplication.
- It means ' Vertically and Cross-Wise'.

Case - 1: Multiplication two digit number with two digit number:

Example:

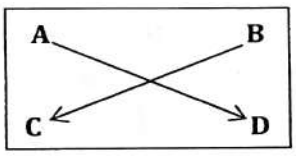
$$\begin{array}{r} 46 \\ \times\ 43 \\ \hline 1978 \end{array}$$

Step 1: 6 x 3 = 18 , Write down 8 and Carry 1.



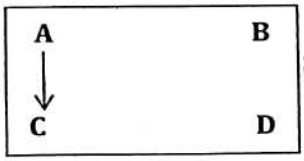
Step 1: B x D

Step 2: 4 x 3 + 6 x 4 = 12 + 24 =36 , add to it
Previous carry over value 1, so we have 37,
Now write down 7 and carry 3.



Step 2: A x D
+ B x C

Step 3: 4 x 4 = 16, add previous carry over value of 3 to get 19, write it down.
So we have 1978 as the answer.



Step 3: A x C

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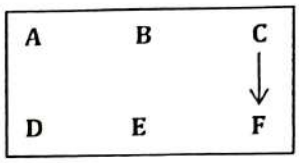
Case - 2: Multiplication three digit number with three digit number:

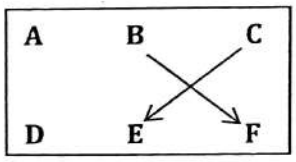
Example: 103
X 105
10815

Step 1: 3 x 5 = 15 , Write down 5 and Carry 1.



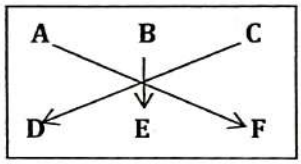
Step 1: C x F

Step 2: 0 x 5 + 3 x 0 = 0 + 0 =0 , add to it
Previous carry over value 1, so we have 1,
Now write down 1.



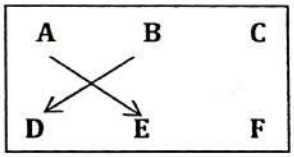
Step 2: B x F
+ C x E

Step 3: 1 x 5 + 3 x 1 + 0 x 0 = 5 + 3 + 0 =8
write it down as 8.



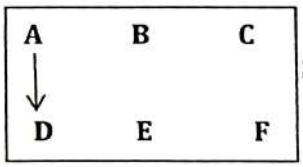
Step 3: A x F
+ C x D
+ B x E

Step 4: 1 x 0 + 0 x 1 = 0 + 0 =0 ,
Now write it down as 0.



Step 2: A x E
+ B x D

Step 5: 1 x 1 = 1,
Write it down as 1 .
So we have 10815 as the answer.



Step 3: A x D

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Characteristics of Criss-Cross multiplication:

- The number of steps used for any multiplication can be found using the formula (2 x no. of digits)-1.
- If there are unequal no. of digits in multiplicand and in multiplier, they should be made equal by inserting 0's at the appropriate places.
- The no. of steps used will be always an odd number.
- In this first and last step, second and second-to-last and so on are mirror images of each other.

CONCLUSION:

- To root out of fear of mathematics with short-cut techniques in Mathematics.
- To improve the quantitative and reasoning ability of all types competitive examination aspirants.
- To improve the speed of Mathematical calculations in not only competitive examination but also all levels of professionals in their daily life.

Reference:

1) VEDIC MATHEMATICS Text book by Jagadguru Swami BHRATI KRISNA TIRTHAJI MAHARAJA - Sankaracharya of Govardhana Matha, Puri.

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GOVT DEGREE COLLEGE GAMBHIRAOPET

DEPARTMENT OF PHYSICS

2021-22

STUDENT STUDY PROJECT

ON

"LEDS – POWER & MONEY SAVERS".

GAMBHIRAOPET

GOVT DEGREE COLLEGE GAMBHIRAOPET

DEPARTMENT OF PHYSICS

2021-22

STUDENT STUDY PROJECT

SUPERVISOR: N.ADIVISHNU, LECTURER IN PHYSICS

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DEPARTMENT OF PHYSICS

2021-22

STUDENT STUDY PROJECT

CERTIFICATE

This is certify that I,II& III year B.Sc (M.P.C & M.P.Cs) students participated in study project conducted by the department of physics under the supervision of **N.ADIVISHNU** titled on "**LEDS POWER & MONEY SAVERS** " regarding student study project for 2021-2022.

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TITLE OF THE PROJECT:

"LIGHT EMITTING DIODE (LED)" IS OUR BEST LIGHTING CHOICES TO SAVE OUR MONEY and POWER

Hypothesis

LED lamp of 7.5 watt emits the same amount of light as by the other lamps of 60watt and one of the fastest way to cut our energy bills.

AIMS AND OBJECTIVES

1. Switching to energy-efficient lighting.

2. By replacing our home's most frequently used light bulbs such as halogen incandescent CFL by LED light bulbs are available today for money saving.

3. LED light bulbs provides the choices in colors

REVIW OF LITERATURE

We use light bulbs everyday to brighten up our homes, dark corridors, streets and many more.

Lighting consumption constitutes about 30% of residential consumption as per a study by Ministry of Environment and Forest in India. Its contribution in your electricity bill may vary from 10-20% depending on your total bill. Although it may not be a major contributor in the electricity bill, the energy efficient options are fairly simpler to implement and provide higher rate of returns.

Latest technical advancements in lighting provide with a lot of options for energy savings today. The energy saving lighting options are a little expensive compared to the old incandescent options and old tubelights, but the payback time for them considering the savings it provides is quite short depending on the usage (mostly less than a year for average usage). Also the life of the new energy saving lighting options are far better than those of the old lights, which makes them much more attractive. There are several lighting options that are available in the market which are discussed below:

Incandescent Bulbs: The traditional yellow light bulbs which were available in various variants: 40W, 60W and 100W, are the most inefficient in terms of energy consumption. 90% of the energy they consume is lost as heat and only 10% is converted into useful light. Although they are still quite inexpensive (Rs 10/-) and a lot of households still use it, but they are the energy guzzlers. Many countries in the world have stopped producing them. Even if they are still there in working condition in several households, it makes a lot of sense to replace them with energy efficient options just from a cost saving perspective

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Tubelights: The fluorescent lamps are better than Incandescent bulbs (50-70% better in providing same amount of light) and they have been there in the market since quite some time. It started coming in the form of tubelights (something which most of us have known since our childhood) and later graduated to come in form of CFLs. In past tubelights used to come with electromagnetic ballast which caused the lights to flicker on start. Now a days we get electronic ballast which prevents the fluorescent lamps to flicker.

Most tubelights today have electronic ballast. Tubelights are also available in various variants: T12, T8 and T5. These numbers represent the thickness of the tubelight. The smaller the number, the higher the efficiency. ***T5 tubelights with electronic ballast are the best available fluorescent tubelight options in the market.*** A T12 tubelight with a electromagnetic ballast typically consumes 55W of electricity but a T5 with electronic ballast will consume only 28W of electricity (comparison is for a 4 feet tubelight). Thus a T5 provides about 50% electricity saving over a regular T12 tubelight. T8s are typically 38W tubelights and are better than T12s. Although T5s are little expensive, the payback is within a year. Also their life is quite good and they last for 3-4 years at least. Many companies give 1-2 year replacement warranty on T5s. Thus the payback happens within the warranty period.

CFLs: CFLs have been regarded as the best energy saving option in our country since quite some time. CFL is a variant of fluorescent lamps (or tubelights) but has a different application. CFLs act as a point source of light (light originating from one point) whereas tubelights are line source (tubelights have bigger lengths) and thus the area covered by tubelights is lot more than that of CFLs. This is the reason why a lot of people feel that CFLs produce lesser lights than tubelights. Even with equal wattage (2x14W CFLs) the amount of light is felt lesser than a T5 tubelight (of 28W) because of CFL being point source. CFLs being compact in size provide options to create smaller (lower wattage) bulbs that can cater to locations where tubelights provide extra brightness (more than required). CFLs provide up to 70% energy savings over a typical incandescent bulb. Although a little more expensive than a incandescent, payback happens within a year.

LEDs: LEDs are the latest and most efficient lighting option which is available in the market. Their electricity consumption is 50% less than that of CFLs and fluorescent lamps for the same amount of light. LEDs also are long lasting with a life of about 10-25 years and their performance remains the same throughout their lifetime (Tubelights and CFLs get dim with time). Although a little expensive (with a payback of about 2 years), the benefit with LEDs is that it is maintenance free. Once installed, it will not need any repair of change for at least 10 years. A lot of companies manufacturing LED options give replacement warranty for up to 10 years which makes the option even more attractive. The only drawback of LEDs is the angle covered by the light. CFLs and tubelights provide lights in 360° where as for LEDs the angle depends on the kind of reflectors used in the bulb. Some do provide larger angles so that is something that should be checked before buying.

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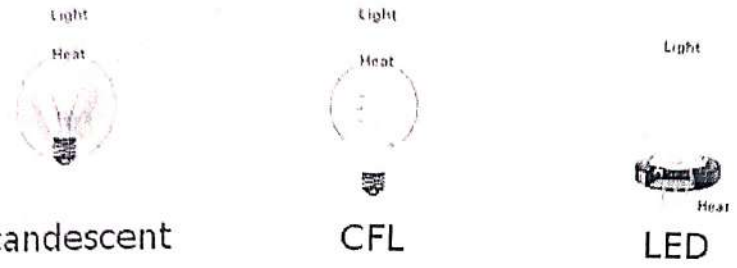
What is LED and how it differs from other types of lights?

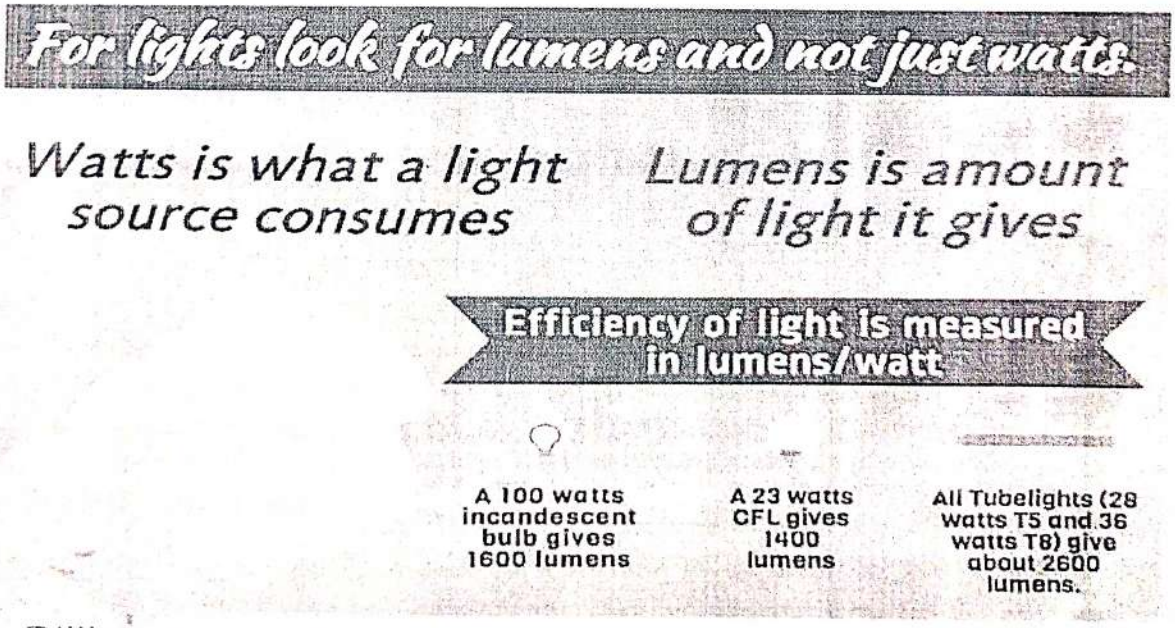
LEDs are a member of type of lighting most commonly referred as solid-state lighting. This type of lights illuminate when current passes through a semi conductor material. They produce more "light" and very less "heat". In comparison an incandescent bulb lights up when the filament in it heats up. Thus it releases 90% of its electricity as heat. CFLs or tubelights light up when electricity current is passed through tube containing gases. CFLs also release heat but less than incandescent and more than LEDs.

The other major difference is that LEDs are unidirectional (or emit light in a specific direction) but incandescent and CFLs emit light in all directions.



FOR LIGHTS LOOK FOR LUMEN AND NOT JUST WATTS

Wattage of the bulb or tubelight has been traditionally used as the measure of amount of light produced by it, but watts does not represent the actual amount of light produced. The amount of light produced is represented by a term called lumen. So to compare two lights, one should compare the lumen of output and the angle of delivery of light. Wattage just helps one estimate the power consumption



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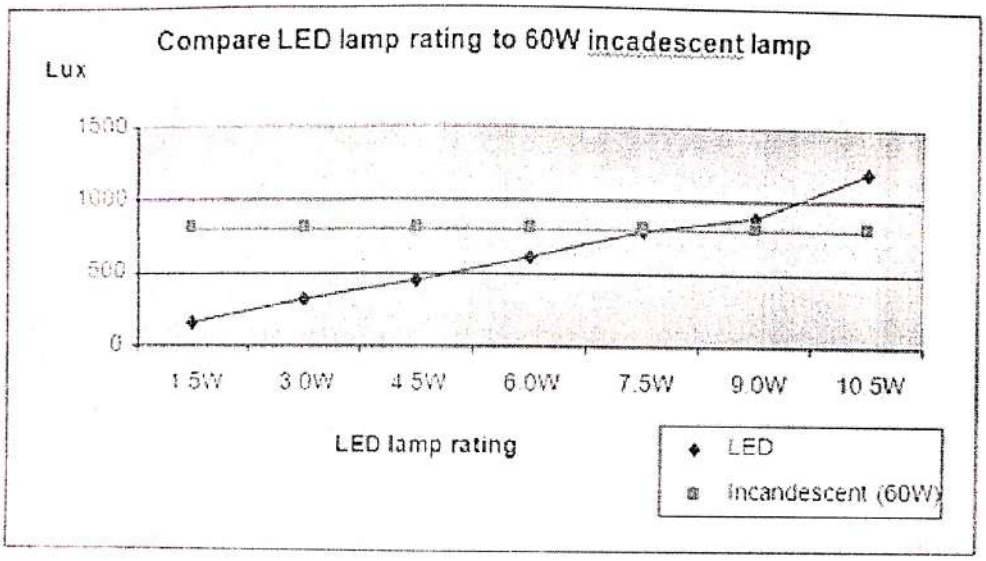
DATA COLLECTION: FOR"LIGHT EMITTING DIODE (LED)" IS OUR BEST LIGHTING CHOICES"

Observation: It was observed that the 60W incandescent lamp provided the same brightness as a 7.5W LED lamp, showing that LED lamps provide the same brightness at a lower wattage and power consumption compared to the incandescent lamps.

Lamp type	LED wattage and luminous intensity (lux)						
	1.5W	3.0W	4.5W	6.0W	7.5W	9.0W	10.5W
LED	163	327	458	610	785	883	1187
Incandescent (60W)	812	812	812	812	812	812	812



Conclusion: OUR LIGHTING CHOICES IS "LED"

LED lamps consume less power compared to an incandescent lamp in order to provide the same level of brightness.

References (Secondary sources) :

1. https://energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money
2. Incandescent light bulb - ttp://en.wikipedia.org/wiki/Incandescent_light_bulb
3. LED lamp - http://en.wikipedia.org/wiki/LED_lamp 4. LED lights vs incandescent - http://www.ehow.com/about_5447908_led-lights-vs-incandescents.html

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DATA COLLECTION : FOR " LED SAVES OUR MONEY"

Primary sources: Different lamps used in institutions located in Gamibhiraopet for estimation of monthly electric current bills.

1.Government Degree college, 2.Government Junior College, 3. ZPHS Boys.

4.ZPHS Girls, 5.MPPS T/M, 6.MPPS U/M, 7.Socail welfare Hostel

METHOD : Data collection by Questionnaire.

Questions that are asked related to this project are

1. How many rooms(principal, Headmaster, staffroom and office rooms any other)are there in your institution.
2. How many incandescent lamps(60watt) are used in your institution and what are their wattage
3. How many tubelamps(tublights)are used in your institution and what are their wattage.
4. How many CFL lamps are used in your institution and what are their wattage.
5. How many LED lamps are used in your institution and what are their wattage.
6. How many hours per day the lamps are used. Approximately.
7. How many days in a month your institution consumes electrical power. (Approximately)
8. How much your institution consumes Average Electrical power (in KWH or units) in a month.(please check current bills).
9. How much you paying monthly Electrical power bill?
10. If you are not using LED lamps in your institution, What is the reason?

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DATA ANALYSIS

Comparison of current bill: LED V/S Other Lamps

Sl. no	Name of the institution	No. of 60 W bulbs	Total Watts	Consumption In hours per day	Watt Hour	Kilo Watt Hour	KWH Per year	Bill Per Year IN RS
1	GDC	60	3600	08	450	3.6	8640	43200
2	GJC	25	1500	10	150	1.5	4500	22500
3	ZPHS (Boys)	23	1380	10	138	1.38	4140	20700
4	ZPHS (Girls)	25	1500	10	150	1.5	4500	22500
5	MPPS U/M	20	1200	10	120	1.2	3600	18000

WITH LEDS

Sl. no	Name of the institution	No. of LEDS REQ 9W	Total Watts	Consumption In hours per day	Watt Hour	Kilo Watt Hour	KWH Per year	Bill Per Year IN RS
1	GDC	60	540	08	67.5	0.54	1296	6480
2	GJC	25	225	10	22.5	0.225	675	3375
3	ZPHS (Boys)	23	207	10	20.7	0.207	621	3105
4	ZPHS (Girls)	25	225	10	22.5	0.225	675	3375
5	MPPS U/M	20	180	10	18.0	0.18	540	2700

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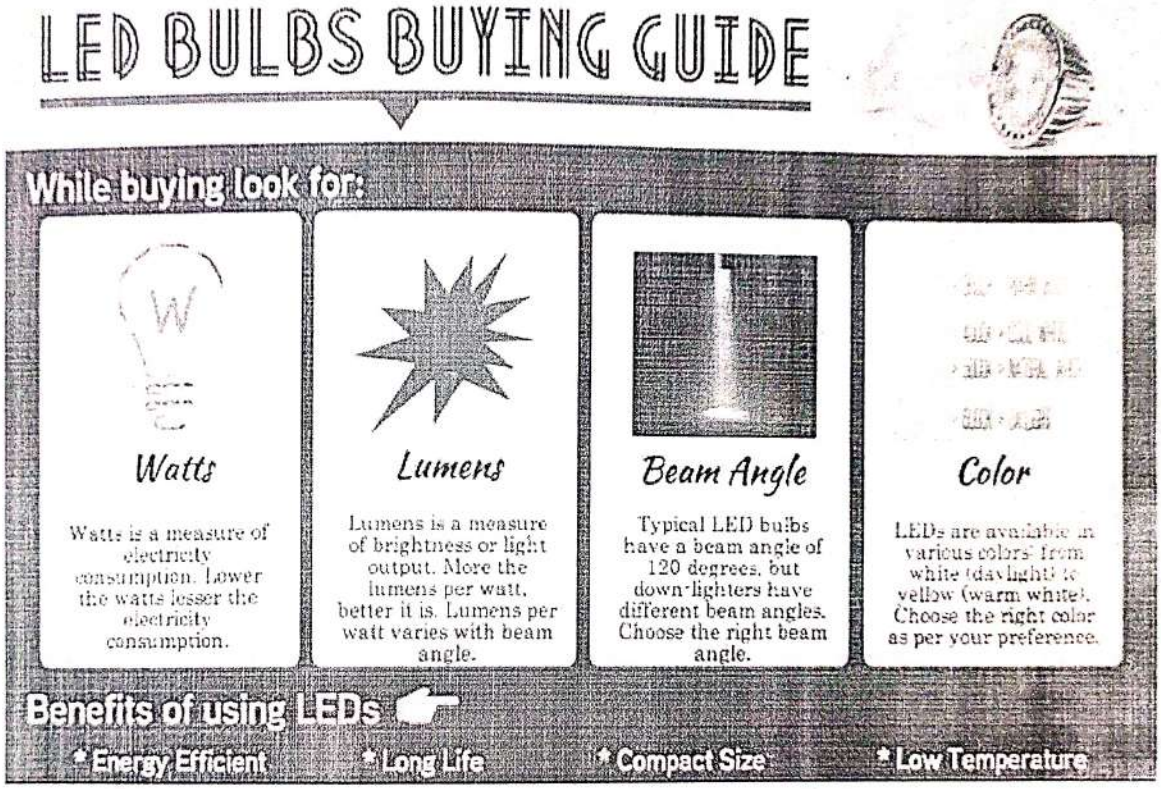
RESULT: From the above table we observe that Electrical power bill is less for LEDs

COCLUSION:"LIGHT EMITTING DIODE (LED)" IS OUR BEST LIGHTING CHOICES TO SAVE OUR MONEY

SUGGESTION: It is better to buy LED of a good brand or buy one that comes with a longer warranty.



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DEPARTMENT OF PHYSICS

2021-22

STUDENT STUDY PROJECT

ON

"VARIATION OF TEMPERATURE WITH TIME IN SOLAR RADIATION".

GAMBHIRAOPET

GOVT DEGREE COLLEGE GAMBHIRAOPET

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2021-22

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DEPARTMENT OF PHYSICS

2021-22

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CERTIFICATE

This is certify that I,II& III year B.Sc (M.P.C & M.P.Cs) students participated in study project conducted by the department of physics under the supervision of **N.ADIVISHNU** titled on "**Variation Of Temperature With Time In Solar Radiation** " regarding student study project for 2021-2022.

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CONTENTS

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INTRODUCTION

Solar energy is the energy emitted by the sun in the force of short wave length radiation. This shoart-wavelength radiation enters Earth's atmosphere and penetrates the earth's surface. This radiation is absorbed by earth and the objects on it which raises their temperature. The warm objects heradiate heat but due to their comparatively low temperat-ure, the infrared rays they emit one of long wave length.

This long wave length radiation is unable to pass through glass, air or water. It can be trapped in glass jairs and green-houses. This holding of heating energy that arrived as shoart wavelength radiation and changed to long wave-length infrared radiation is called the Green House Effect.

The air around the earth acts as a selective filter for radiation. The shoart wave

wave length radiation passes through the atmosphere easily but long-wave radiation does not.

Objectives:-

The heating effect of solar energy may be due to some of the following factors.

* Short wavelength radiation entering Earth's surface.
* Change of short wavelength radiation into long wavelength radiation.
* Trapping of long wavelength radiation.

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Procedure:

Put a thermometer inside the jar and cover it as shown in fig (a). place jar in sunlight and another thermometer simultaneously outside the jar also in sunlight as shown in fig (b). Observe the variations in temperature of two thermo meters with time. Note which thermometer reaches a higher temperature. Repeat the observation by taking water inside the jar as shown in the fig (c). Observe if water also traps long-wavelength infra-red rays. plot a graph between time and temperature.

Main Precaution:

Sufficient time should be given for observing any visible changes in temperature.

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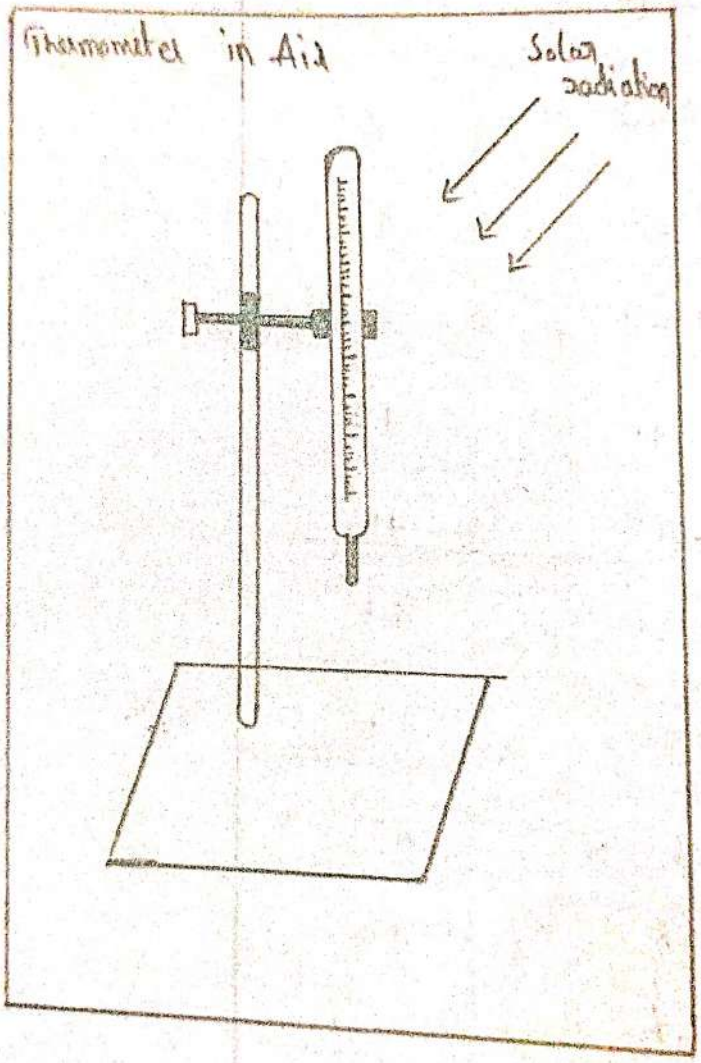
Observations:

① Changes in temperature with air inside the jar:

Least count of thermometer:

S.No	Time (Minutes)	Temperature
1	10.40 AM	35
2	11.00	42
3	11.20	39
4	11.40	42
5	12.00	46
6	12.20	46
7.	12.40	47
8	01.00PM	47
9.	1.20	44
10	1.40	45
11	2.00	46
12	2.20	45
13.	2.40	44
14.	3.00	46
15	3.20	45
16	3.40	43

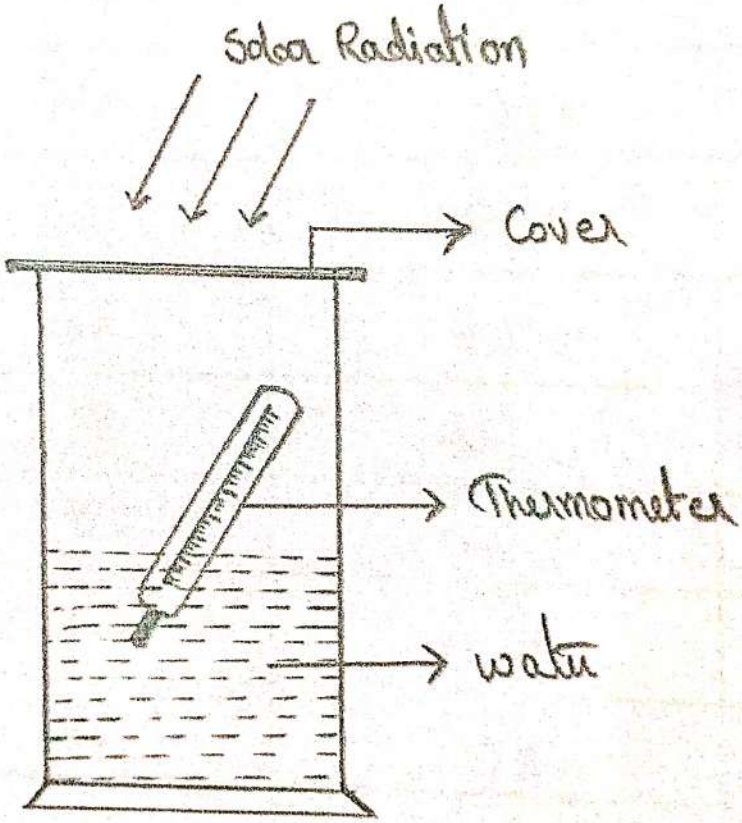


8. Changes in temperature outside the jar:

Least count of the thermometer:

S.No	Time (minute)	Temperature
1	10.40 AM	29
2	11.00	32
3	11.20	30
4	11.40	31
5	12.00	33
6	12.20	33
7	12.40	34
8	1.00PM	34
9	1.20	34
10	1.40	35
11	2.00	33
12	2.20	35
13	2.40	33
14	3 00	36
15	3.20	35
16	3.40	35

Thermometer in water :



3. Changes in temperature with water inside the jar :-

Least count of the thermometer :

S.No	Time (Minutes)	Temperature
1	10.40AM	40
2	11.00	42
3	11.20	40
4	11.40	40
5	12.00	40
6	12.20	41
7	12 40	40
8	1.00 PM	42
9	1.20	41
10	1.40	40
11	2.00	41
12	2.20	40
13	2.40	41
14	3.00	42
15	3.20	42
16	3.40	41

Conclusions:

From the experiment it is observed that the temperature is increasing with respect to time when thermometer is placed inside the jar from 10.40AM to 1.00 PM, and then decreases slowly.

The same phenomenon is observed in the remaining cases. But the temperature curve inside the jar is at faster rate than the ambiant temp and it is because the short waves from sun are trapped and converted into long wave force rays cause more temperature.

The green house effect also makes that hazardous gasses emitting from industries or air polution will force as a cloud that will not allow the sun radiation outside the earth surface and the temp of earth's surface will increase which is more danger for the existance of creatures. Hence it should be avoided by increasing the plantation, reducing the air pollution.

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DEPARTMENT OF MATHEMATICSSTUDY PROJECT

ON

'VEDIC MATHEMATICS'

Submitted by:

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Project on
VEDIC MATHEMATICS

Abstract :

Vedic Mathematics is the the name given to the ancient Indian system of Mathematics that was rediscovered in the early 20th Century from ancient Vedas. The algorithms based on conventional Mathematics can be simplified and even optimized by the use of Vedic Mathematics.

Objectives:

- It helps a person to solve the problems 10-15 times faster.
- It reduces burden(need to learn tables up to 9 only).
- It is a magical tool to reduce scratch work and finger counting.
- It increases concentration .
- Time saved can be used to answer more questions.
- Logical thinking process gets enhanced.
- It provides one line answer.

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SQUARING OF NUMBERS ENDING WITH 5

(Last digits add to ten)

Conventional Method

65 X 65

65

X 65

325

390

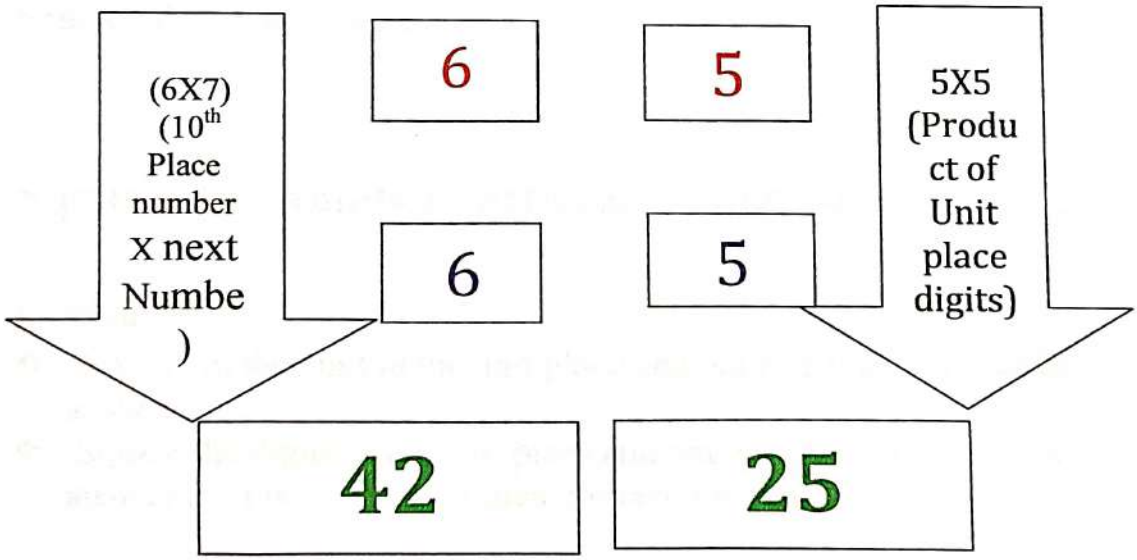
4225

Vedic Mathematics

65 X 65= 4225

Multiply the previous digit 6 by one more than itself.

Multiply last digits viz. (5X5) and write down 25 to the right of 42 viz. (6X7).



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Examples:

Square of 15 = 225

Square of 25 = 625

Square of 35 = 1225

Square of 45 = 2025

Square of 55 = 3025

Square of 65 = 4225

Square of 75 = 5625

Square of 85 = 7225

Square of 95 = 9025 etc….

Squaring of Numbers between 50 and 60

Method:

- Add 25 to the digit in the unit place and put it left hand part of the answer.
- Square the digits in the unit place and put it as the right hand part of the answer (if it is single digit then convert it to two digits)

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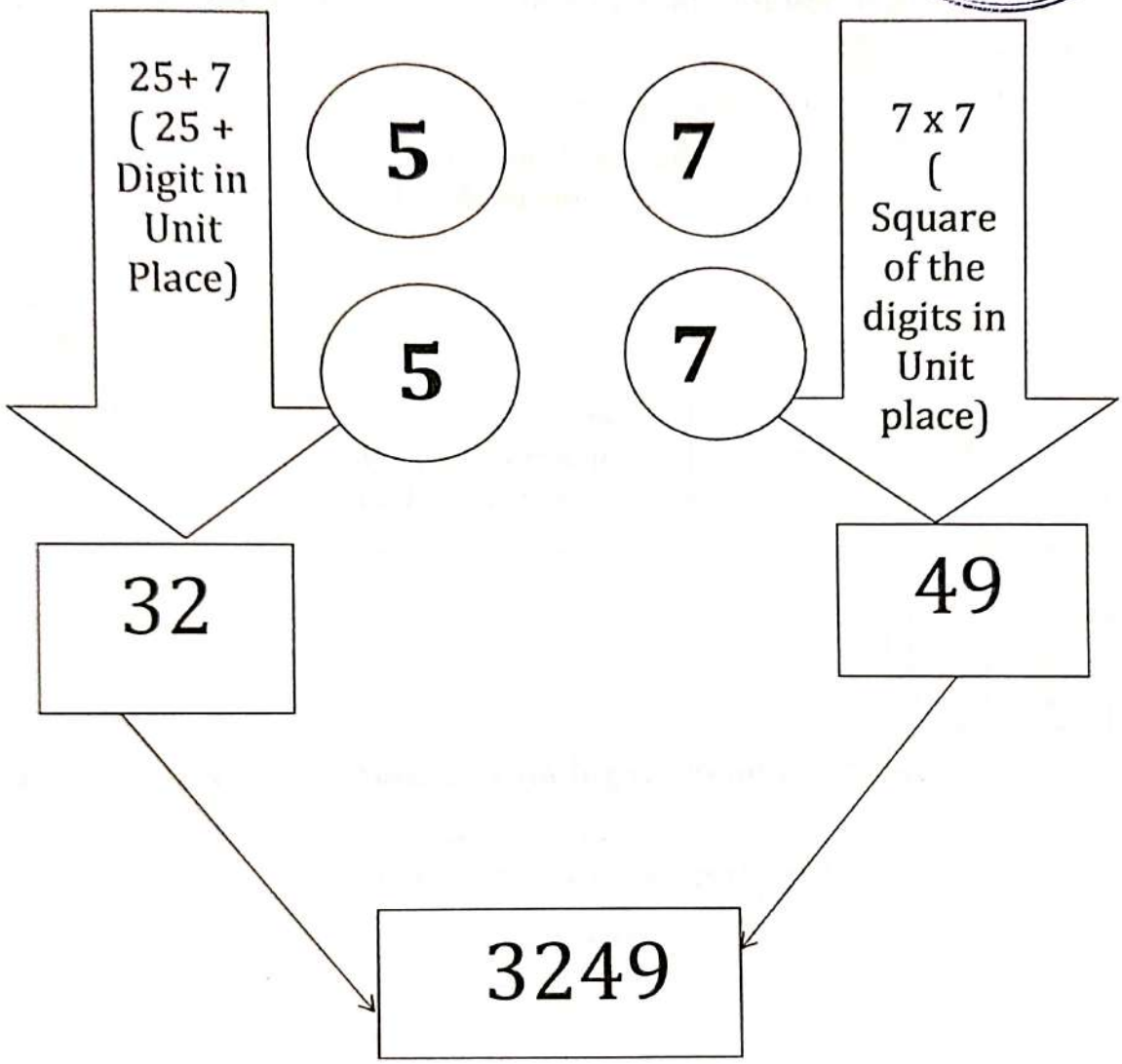
Example: Finding square of 57.



More Examples:

Square of 52 = (25+2=27, 2x2=04) = 2704
Square of 53 = (25+3=28, 3x3=09) = 2809
Square of 54 = (25+4=29, 4x4=16) = 2916
Square of 56 = (25+6=31, 6x6=36) = 3136 etc….

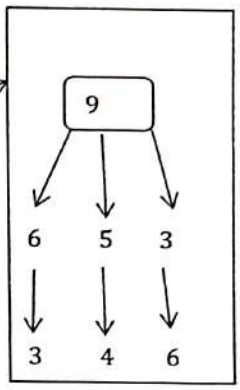
MULTIPLICATION OF NUMBERS WITH A SERIE OF 9'S

Case: 1. multiplying a number with an equal number of nines.

Subtract 1 from 654 and put it on left side of the answer

654
x 999
653 346

Subtract each of the Digit (653) from nine viz. 9-6, 9-5, 9-3

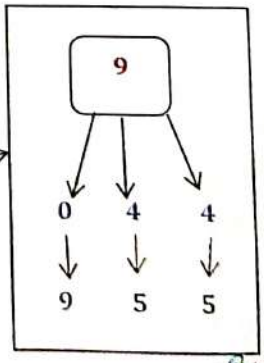


Case: 2. multiplying a number with higher number of nines.

Subtract 1 from 45 and put it on left side of the answer (add 0 to 45 & write it as 045)

045
x 999
044955

Subtract each of the Digit (044) from nine viz. 9-0 , 9-4, 9-4



Multiplication of numbers with a series of 1's :

Case - 1 : Multiplying equal Digit number with 11

Example: 32
x 11
352

- First we write the right - hand most digit 2 of first numbers as it is. (Answer =_____2).
- Next , we add 2 to number in left 3 and write 5. (Answer =_____52).
- Last, we write the left - hand most Digit 3 as it is(answer= 352).

Case - 2: Multiplication three digit number with 11:

Example: 652
x11
7172

- First we write the right - hand most digit 2 of first number as it is. (Answer =------2).
- Next , we add 2 to 5 and write 7. (Answer =_____72).
- Then next, we add 5 to 6 and make it 11. we write down 1 and carry over 1. (Answer =_____172).
- Last, we take 6 and add the one carried over to mke it 7. (Final answer = 7172)

Case - 3: Multiplication four digit number with 11:

Example: 3102
X 11
34122

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- We write down 2 as it is. (Answer=_____2).
- We add 2 to 0 and make it 2 .(Answer is_____22).
- We add 0 to 1 and make it 1. (Answer is_____122).
- We add 1 to 3 and make it 4. (Answer is_____4122).
- We write first digit 3 as it is. (Final Answer is 34122).

Case - 4: Multiplication six digit number with 111:

Example: 201432

X 111

22358952

- We write down 2 in the unit place as it is. (2)
- We move to the left and add(2+3) and write 5.
- We move to the left and add(2+3+4) and write 9.
- We move to the left and add(3+4+1) and write 8.
- We move to the left and add(4+1+0) and write 5.
- We move to the left and add(1+0+2) and write 3.
- We move to the left and add(0+2) and write 2.
- We move to the left and write single digit 2 as it is.
- Final answer 22358952.

Case - 5: Multiplication six digit number with 1111:

Example: 201232

X 1111

223568752

- We write down 2 in the unit place as it is. (2)
- We move to the left and add(2+3) and write 5.
- We move to the left and add(2+3+2) and write 7.
- We move to the left and add(2+3+2+1) and write 8.
- We move to the left and add(3+2+1+0) and write 6.

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- We move to the left and add(2+1+0+2) and write 5.
- We move to the left and add(1+0+2) and write 3.
- We move to the left and add(0+2) and write 2.
- We move to the left and write single digit 2 as it is.
- Final answer223568752.

CRISS-CROSS SYSTEM OF MULTIPLICATION.

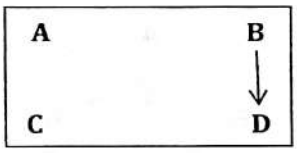
- This is the general formula applicable to all cases of multiplication.
- It means ' Vertically and Cross-Wise'.

Case - 1: Multiplication two digit number with two digit number:

Example:

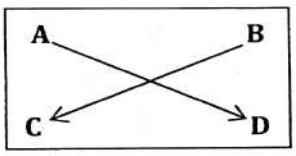
$$\begin{array}{r} 46 \\ \times\ 43 \\ \hline 1978 \end{array}$$

Step 1: 6 x 3 = 18 , Write down 8 and Carry 1.



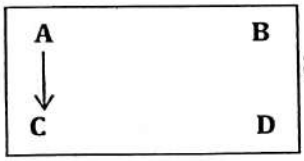
Step 1: B x D

Step 2: 4 x 3 + 6 x 4 = 12 + 24 =36 , add to it
Previous carry over value 1, so we have 37,
Now write down 7 and carry 3.



Step 2: A x D
+ B x C

Step 3: 4 x 4 = 16, add previous carry over value of 3 to get 19, write it down.
So we have 1978 as the answer.



Step 3: A x C

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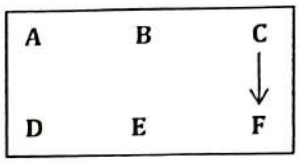
Case - 2: Multiplication three digit number with three digit number:

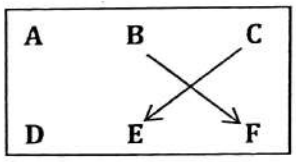
Example: 103
X 105
10815

Step 1: 3 x 5 = 15 , Write down 5 and Carry 1.



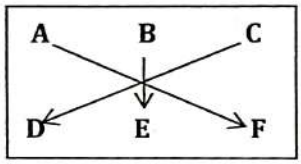
Step 1: C x F

Step 2: 0 x 5 + 3 x 0 = 0 + 0 =0 , add to it
Previous carry over value 1, so we have 1,
Now write down 1.



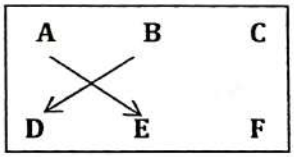
Step 2: B x F
+ C x E

Step 3: 1 x 5 + 3 x 1 + 0 x 0 = 5 + 3 + 0 =8
write it down as 8.



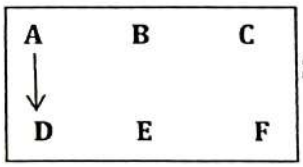
Step 3: A x F
+ C x D
+ B x E

Step 4: 1 x 0 + 0 x 1 = 0 + 0 =0 ,
Now write it down as 0.



Step 2: A x E
+ B x D

Step 5: 1 x 1 = 1,
Write it down as 1 .
So we have 10815 as the answer.



Step 3: A x D

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Characteristics of Criss-Cross multiplication:

- The number of steps used for any multiplication can be found using the formula (2 x no. of digits)-1.
- If there are unequal no. of digits in multiplicand and in multiplier, they should be made equal by inserting 0's at the appropriate places.
- The no. of steps used will be always an odd number.
- In this first and last step, second and second-to-last and so on are mirror images of each other.

CONCLUSION:

- To root out of fear of mathematics with short-cut techniques in Mathematics.
- To improve the quantitative and reasoning ability of all types competitive examination aspirants.
- To improve the speed of Mathematical calculations in not only competitive examination but also all levels of professionals in their daily life.

Reference:

1) VEDIC MATHEMATICS Text book by Jagadguru Swami BHRATI KRISNA TIRTHAJI MAHARAJA - Sankaracharya of Govardhana Matha, Puri.

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(Affiliated to Sathavahana University, Karimnagar)
RAJANNA SIRCILLA DISTRICT

DEPARTMENT OF ENGLISH

(2021-2022)

JIGNASA STUDENT STUDY PROJECT

ON

ENGLISH PHOBIA – CAN IT BE REMOVED – THE WAYS :: A CLOSE STUDY

SUBMITTED BY

1) Md. Sajith B.Sc. (MPCs) – III year H.T.No. 190770864680l7
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(Affiliated to Sathavahana University, Karimnagar)
RAJANNA SIRCILLA DISTRICT

Date: 30-11 -2021

DECLARATION

We, the students of Government Degree College Gambhiraopet, Rajanna Sircilla District declare that the work presented in this study project '**ENGLISH PHOBIA – CAN IT BE REMOVED – THE WAYS :: A CLOSE STUDY**' is original and carried throughout by us.

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CERTIFICATE

It is certified that this is a bonafide study project of the students from Department of English, Government Degree College, Gambhiraopet, Rajanna Sircilla District.

I congratulate the students for carrying out a wonderful study project '**ENGLISH PHOBIA – CAN IT BE REMOVED – THE WAYS :: A CLOSE STUDY'.**

Gambhiraopet,

Rajanna Sircilla District

Date: 30-11-2021

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Principal

(P. DASS)

Acknowledgement

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We are thankful to **P. KRISHAN MURTHY** In-charge of the Department of English and **ANJANEYULU YELAGONDA** lecturer in English, Government Degree College, Gambhiraopet, Rajanna Sircilla District for motivating and inspiring us in bringing out this work.

We are very happy to extend our thanks to Vice-Principal & In-charge of the Department of Botany **Smt. B. Srivalli** lecturer in Botany & In-charge of Department of Telugu **Sri. P. Dass** Government Degree College, Gambhiraopet, Rajanna Sircilla District for the co-operation in carrying out the project work.

We are extremely grateful to all the lecturers and students for their opinion and timely suggestions.

By

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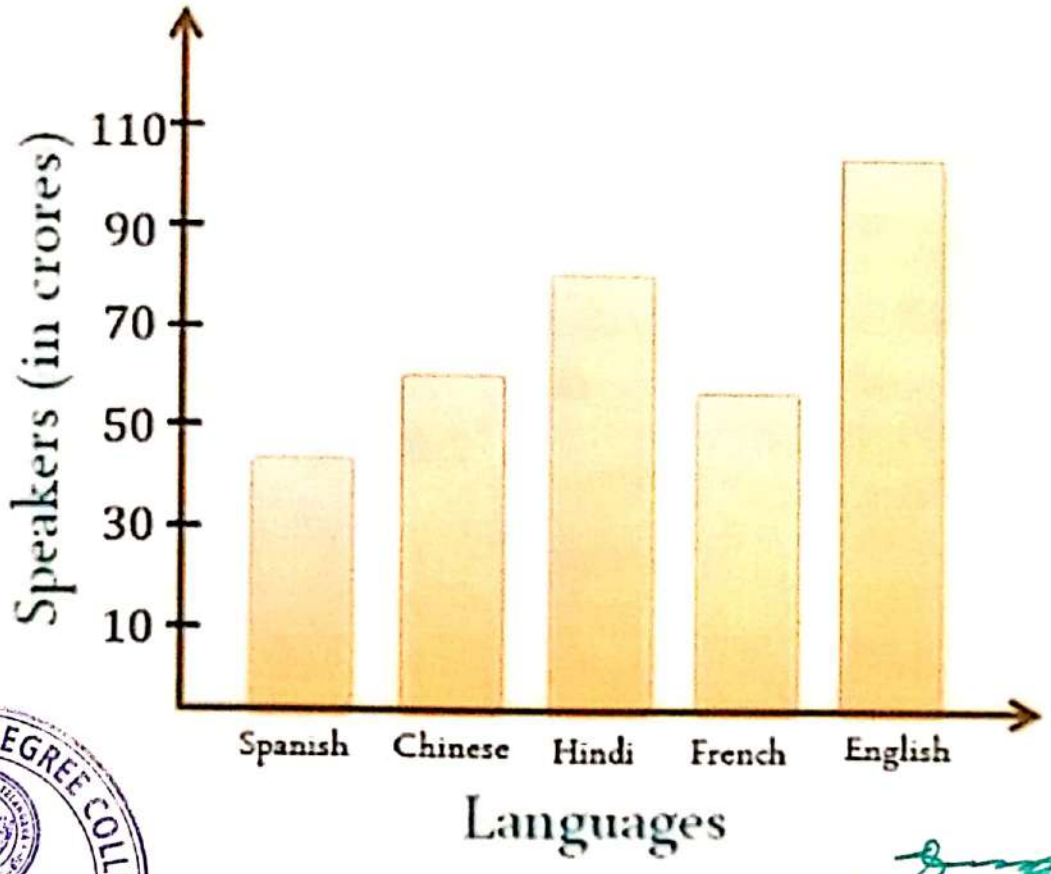
INTRODUCTION

IMPORTANCE OF ENGLISH

English plays an important role in our daily life. It is the massive means of communication. English language may not have the largest number of native speakers in the world it has widest reach of any language spoken today. English has become the **"lingua franca"** in many fields including Business, Politics, Science and technology. It is the working language of many international organization like NATO and the European global advertising. It is also the most used language of Internet, Accounting etc. English is the way to get access to a broader range of Information, connections.

IMPORTANCE OF ENGLISH WHEN COMPARED TO OTHER LANGUAGES



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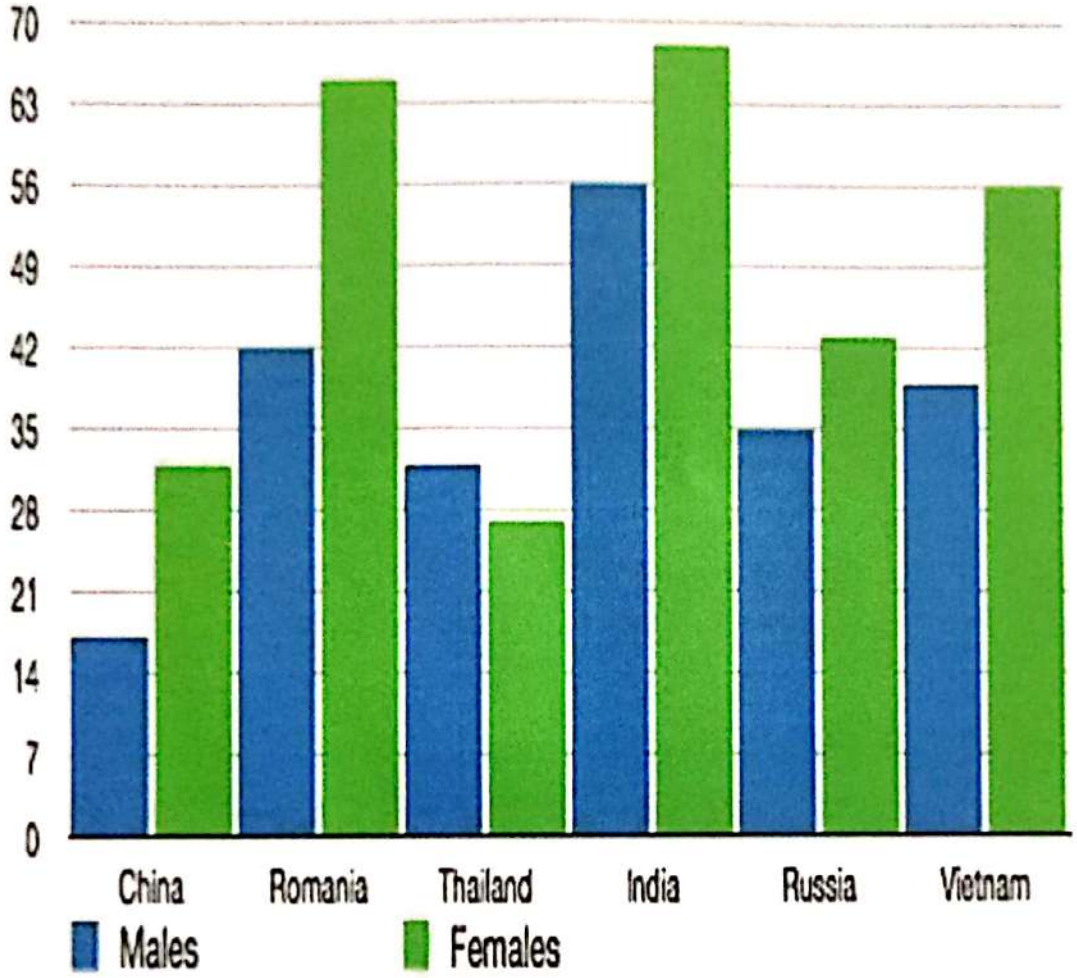
PERCENTAGE OF STUENTS FROM DIFFERENTCOUNTRIES PROFICIENT IN ENGLISH



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REASONS TO LEARN ENGLISH

The following are a few of the most common reasons why peoplearound the globe learn English.

1) People who speak English have more job opportunities. Business need employees who can communicate fluently with English speaking partners and clients.

2) In the U.S or other English speaking countries, people who can't speak English are at a real economic disadvantage.

3) English is language of science and technology. English speakers have more opportunities to work with others in thesefields.

4) English makes it easier to travel because English is spoken as first or second language in so many different countries.

5) English may not be the most spoken language in the world, but it is the official language in large number of countries.

6) Many of the world's top books and music are published and produced in English.

7) English makes us easy to understand from all over the world, easy to make friends with people from every corner in the world.

8) English opens doors for you to get good job.

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BACKGROUND OF RESEARCH (HYPOTHESIS)

ENGLISH AS GLOBAL LANGUAGE

A global language acts as a "Lingua Franca", a common language that enables people from diverse back grounds and ethnicities to communicate on a more or less equitable basis.

Many would reasonably claim that, in the fields of business, academics, science, computing, education, transportation, politics and entertainment.

English is already established as the de facto lingua franca. The UN declares that our global community currently uses five official languages, those are English, French, Spanish, Russian andChinese.

The legacy of British imperialism has left many countries with the language thoroughly institutionalized in their courts, parliament, civil service, schools and higher education establishments. In other countries English provides a neutral means of communication between different ethnic groups.

NEED OF ENGLISH FOR ORAL COMMUNICATION

1) A Speech is the oral form of communication.

2) Without the oral form of communication the companies cannot interact with their customers.

3) The back-bone of oral communication is the language and the proper verbal exchanges.

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To speak in a manner that has an impact on the audience, the speaker must:

- To have command over the language.
- To make sure that the quality of speech is good.
- To use the messages in the speech should be effective.
- To use words such that the audience does not lose interest behumorous at times.
- To use words that win over the minds of the audience.
- Never use offensive words.
- To make sure that the speech delivers the message to the audience that the speaker has the knowledge about the top.
- To use correct pitch.
- To be in clear voice and pronunciation.

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OBJECTIVES

1) **Self-consciousness in front of large groups**

This is probably the most frequently named reason; people feel performance anxiety while speaking.

2) **Fear of appearing nervous**

For instance, if you see that a speaker is nervous, what doyou think? It's probably, poor him or her !.....

3) **Concern that others are judging you**

The tough love message concerning this fear of public speaking, is that people really don't care about you.

4) **Past failures**

Public speaking phobia is often learned behavior. You failed at some point in an important or high-profile speaking situation, andthe seed was planted.

5) **Poor or insufficient preparation**

If you haven't done your home case, you have homework there'sno reason you should succeed. If that's there case, you have no one to blame but yourself.

6) **Dissatisfaction with your abilities**

This one is a legitimate concern for any speaker. You should feel dissatisfied if your skills are below par. But dissatisfaction can an excellent spur toward improvement.

7) **Comparing ourselves to other**

Don't you dare! Your job is never to be an excellent speaker. Yourtask is to do your job well or pursue your passion, and interesting when you talk about it.

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8) I'm embarrassed by foreign accent

Many non-native speakers of English think that their level of English is not good simply because they don't have a native speaker accent.

9) Pronunciation

It can be difficult to pronounce English words. When speaking English, you have to consider not just word pronunciation but the connections between the words in the sentence.

10) Confidence

If you feel nervous and are afraid of making a mistake when speaking English, then confidence is your problem.

METHODOLOGY

Primary Data:

For the purpose of this research, the primary data is collected through a self- administered questionnaire.

Secondary Data:

Some of the secondary data are used in this research are from journals, websites, articles, books and newspaper cuttings.

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RESEARCH QUESTIONS

This study is made in order to answer the research questions.The phobia of speaking English at various levels.

DATA ANALYSIS AND FINDINGS

1) I always feel that other students are speaking better than Ido.

This statement also states that female respondents have higher phobia level compared to male, tending to agree with statement. The reason for these male students usually perceiving the situations positively so they have more confidence.

2) I am afraid that other students will have bad perception atme when I speak in front of class.

According to this statement we can say that females has more perception compared to male, and females have higher phobia levels

3) ***I'm afraid that my lecturers are ready to correct mistake Imake.***

According to this statement students are embarrassed for being corrected in front of others. Meanwhile the male students only 16% are afraid of being corrected. Male students are usually not afraid of being corrected in front of others as they usually perceive it positively.

4) It embarrasses me to volunteer the class.

According to this statement the students who have the phobia behind speaking English they feel discomfort when they want tovolunteer the class.

5) In class, I forget how to say things I have.

This statement clearly states that if we have the phobia of speaking English we are hesitated to say things as well as we feelto clarify our doubts.

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6) I never feel quite sure of myself when I'm speaking in class.

This statement says that the students who lack the confidence they fear to say any lectures in the class. Lack of confidence isthe main reason behind it.

7) I tremble when I'm going to have to speak in English.

This statement clearly says that in the class if we want to speak English we fear a lot because the students who are sitting in frontof us will point out our grammatical mistakes.

8) I start to panic and confused when I have to speak inEnglish without preparation.

According to this statement students who are lagging due to lackof self confidence and self consciousness will fear and most of them forget when they go on the Dias without fear.

9) Even when I prepared to speak English I get nervous.

This statement actually says that we are fully prepared. We will get nervous because we think that maybe I may not give correct pronunciations.

10) I tremble a lot to talk/speak in English in public places.

This statement means we are afraid a lot when speaking in publicplaces because due to phobia of English and panic or nervousnessthat they may criticize to each and every mistake.

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ANALYSIS -OPEN ENDED QUESTIONS

A) How do you feel exactly when you had to speak in Englishwhile communicating with other persons in front of a large group?

For better understanding, the researcher identified the causes given by the respondents through an open-ended questionnaire and the results were then tabulated into seven different causes of phobia and the causes identified are:

1) nervous/panic/shy
2) They rarely speak English
3) Afraid of audience
4) Poor in English
5) Speaking with people who are fluent in English
6) Lack of self confidence.
7) Afraid of perceptions of others

B) How do you feel when you forget to say things in class?

This question was developed in order to identify the phobia ofstudents when they had to speak in English.

1) Nervous/panic/shy
2) They rarely speak English
3) Afraid of audience.
4) Poor in English language

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C) How do you feel when you talk before your employed neighbour's moderately educated housewife?

This question was developed to test the knowledge of a moderately educated persons have more phobia of speaking English and suggested for spoken English training

D) How do you get information of flight at airport?

This question is developed to test the knowledge of a business person who frequently adapted to aviation.

We infer with this statement that so many business magnets depend upon other educated persons as they can't speak English.

IMPLICATIONS & RECOMMENDATIONS

To identify phobia of speaking English in the various levels of spectrum

In the classroom: phobia of speaking English can be reduced by conducting activities in the classroom.

I. INTERACTIVE SESSIONS

A) **JAM ACTIVITY:** JAM is aimed to test the quickness ofthe candidate in grasping & responding to a programme.

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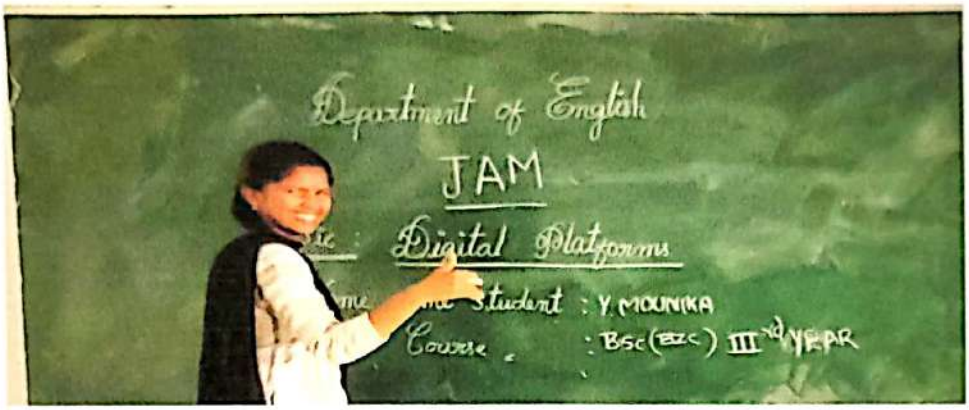

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B) **GD (GROUP DISSCUSSION):** enables the candidate to improve her skills.

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C) MOCK INTERVIEW: its main purpose is to point outones weaknesses and guide them to bring perfection by rectifying those.

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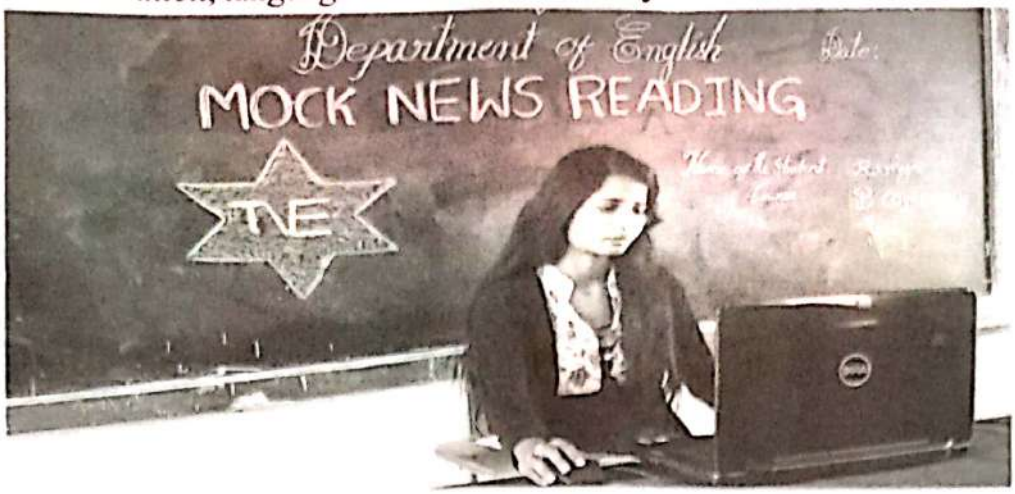
D) NEWS READING: It will enhance your knowledge about general information, language skills and vocabulary.



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II. SELF LEARNING

1) BY READING NEWSPAPER

2) BY READING JOURNALS

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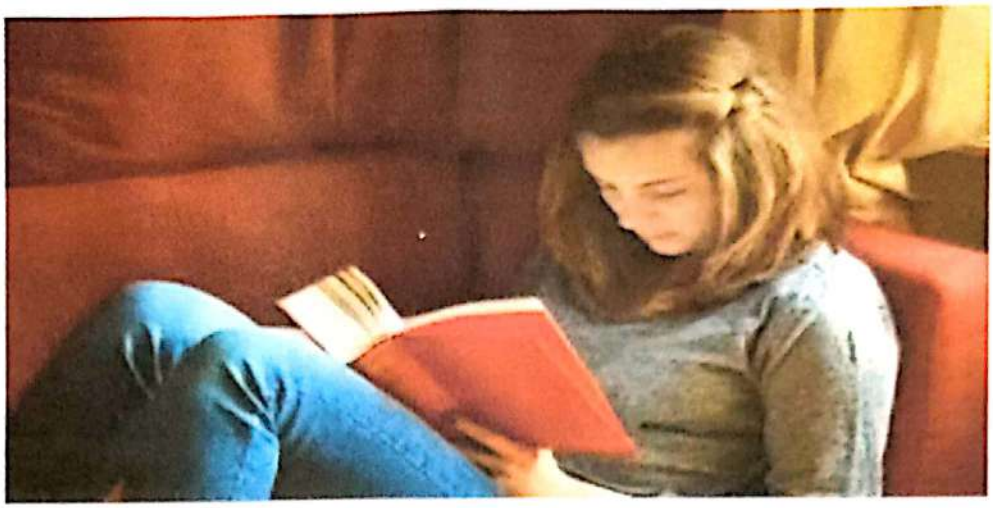
3) BY READING NOVELS



4) BY WATCHING ENGLISH MOVIES

HOUSE WIVES:

Most of the housewives have phobia of speaking English before educated neighbor. They have the passion to speak English since they recognize the social statusof English language.

CORPORATE SECTORS:

Most of the people get confused & feel anxious to get information in the enquiry in various corporate sectors such as banking, hospitals, educational institutions etc.

CONCLUSION

English Phobia is not a permanent one that will be continued forever. By practising, innovative, practical, self oriented, self determined, self planned, and situational adaptations could defiantly deduce and reduce the phobia of English completely for enjoying lively English communication.

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- Phobia free – Harold Levinson.
- Practical every day English – Steven Collins.
- The quick & easy way to effective speaking - Dale Carnegie.
- Feel the fear & do it anyway – Susan Jeffers.

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ENGLISH-
Students Study Project

GOVERNMENT DEGREE COLLEGE, GAMBHIRAOPET.

2021-2022 Study

ENGLISH PROJECT

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Topic : Sudha Murty ~ A complete woman as an Engineer, a writer and a Social Worker. —

Guided by the Dept. of English Faculty.

Names: 1) M. NIKITHA ~

BSc [BZC] ~ IInd year ~

2) E. Pravallika (II BZC)
3) G. Bhargavi (II BZC)
4) P. Gayathri (II BZC)
5) A. Keerthana (II BZC)

Very Good Presentation

04/5/2022

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1. M. Nikitha
BSC (BZC)
II year.

2021 - 2022

2 - E. Pravallika
II (BZC)

3. G. Bhargavi (II BZC)

4. P. Gayathri (II BZC)

5. A. Keerthana
(II BZC)

SUDHA MURTHY

ENGLISH - Students Study Project

Guided by the Faculty of English Dept.

SUDHA MURTHY

SUDHA MURTHY

A Complete Women as an

~ ENGINEER

~ WRITER

~ SOCIAL WORKER

"Sudha Murthy is an Indian Business Woman, Educator, author and Philanthropist, who is the chairperson of Infosys Foundation."

~ Early Life and Education :

Sudha Murthy married to co-founder of Infosys ~ N.R. Narayana Murthy.

Sudha Murthy Was born into a kannada Deshastha Madhva Brahmin family on 19 Aug. 1950 in Shiggon, haveri in Karnataka. She is married to co-founder of Infosys N.R. Narayana Murthy. She Was raised by her parents and maternal grand parents. These childhood experiences form historical basis for her first notable Work entitled "How I taught my grand mother to read". Murthy completed B. Eng in electrical and electronical engineering from B.V.B. college of Engineering and Technology and then a M. Eng. in computer science from Indian Institute of Sience.

~ The First Female Engineer ~ Sudha Murthy

Sudha Murthy became the first female Engineer hired at India's Largest auto manufacturer. TATA Engineering and Locomotive company [TELCO]. She joined the company as a development engineer in Pune and then worked in Mumbai and Jamshedpur in as well. She had written a post card to company's chairman complaining

~ We should always have some aim in life which we must try to achieve while being of help to others

— Sudha Murty

of "Men Only" gender bias at TELCO. As a result she was granted special Interviews and hired Immediately she later joined wideband Group of Industries at pune as Senior Systems analyst. In 1996 she started Infosys foundation and to date has been the Trustee of Infosys foundation and a visiting professor at PG, Centre of Bangalore University. She has also taught at christ University.

Philanthropy :

Murthy's Infosys foundation is a public charitable trust founded in 1996. It supports programs in the areas of education, rural development, healthcare, arts and culture, and destitute care. Its mission is to work in remote regions of Several States In India.

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~ Class does not mean huge
Possession of money

— Sudha Murty

SUDHA MURTY AND HER WRITINGS...

Being Author, Mrs. Murthy has published many stories. Sudha Murty has written and Published many books which include novels, non-fiction, travelogues, technical books and memoirs. Her books have been translated into all major Indian languages. She is also a columnist for english and kannada Newspapers. Murthy is best known for her contribution to literature in kannada and English. Dollar Bahu (Dollar - Daughter-in-law) a novel originally authored by her in kannada and later translated into english as Dollar Bahu, was adapted as televised dramatic series by zee tv in 2001. Sudha Murty has also acted in marathi film pitruroon and kannada film prarthana.

Sudha Murthy has Published Over Ninety-Five titles published in Sixteen Indian Languages.

Her writings had a flavour of common lives. She wrote on hospitality, her childhood, realizing views on donations and charity. Many of her kannada books got translated into English and some got adapted into

~ Of all the luxuries in life, the greatest luxury is getting freedom of the right kind.

— Sudha Murty

T.V. Series. Sudha Murty has received many awards at National and International level.

These are the 21 Sudha Murty books you will Absolutely Love!!

1. Wise And Otherwise.
2. How I Taught my Grandmother to Read and other stories.
3. Gently Falls the Bakula.
4. Mahashweta.
5. Dollar Bahu
6. The Day I Stopped Drinking Milk.
7. The Old Man and His God : Discovering the Spirit of India.
8. Grandma's Bag of Stories.
9. House of cards.
10. Three Thousand Stitches.
11. The Mother I Never Knew
12. The Magic of the Lost Temple.
13. Something Happened on the way to Heaven:
14. The Serpents Revenge: Unusual Tales from Mahabharata.
15. The Bird with Golden wings: Stories of wit & Magic.
16. The Man from the Egg: Unusual Tales about Trinity.
17. The Daughter from a wishing Tree.
18. The Gopi Diaries.

~ Vision without action is merely a dream.
Action without vision is merely passing time
But vision and Action together can
change the world.

— Sudha Murty.

Nice

19. The Upside Down King: Unusal Tales about Rama & krishna.

20. How the Onion Got Its Layers.

21. How the Sea Became Salty.

AWARDS

* 2004: Raja - Lakshmi Award by Sri Raja - Lakshmi Foundation in chennai.
* 2006: India's fourth highest civilian award 'PADMA SHRI'
* 2006: She also received the R.K. Narayan's Award for Literature.
* 2010: Daana chintamani Attimabbe Award by karnataka Govt.
* 2011: Murty was conferred honorary LL.D (Doctor of Laws) degrees for contributions to promote formal legal education and Scholarship in India.
* 2013: Basava Shree - 2013 Award was presented to Narayana Murthy and Sudha Murthy for their contributi -ons to Society.
* 2018: Murthy received the Crossword Book award in popular (Non-fiction) category.
* 2019: IIT kanpur awarded her Honorary Degree (Honoris Causa) of Doctor of Sience.

"There is a difference between loneliness and Solitude. Loneliness is boring, whereas in Solitude you can Inspect and examine your deeds and your thoughts."

— Sudha Murty.

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* National Award from Public Relation Society of India for Outstanding Social Service to the Society.
* Award for Excellent Social Service by Rotary South - Hubli.
* "Millenium Mahila Shiromani" award.

SUDHA MURTY'S SOCIAL COMMITMENTS

Remarkable

Sudha Murty is famous for many of philanthropist works. She aims to empower women. She spreads the awareness of rural education, public hygiene, poverty alleviation and much more. She imbibes the need to maintain clean India, hence building up toilets for public. She has been passionate in helping people in flood affected areas too.

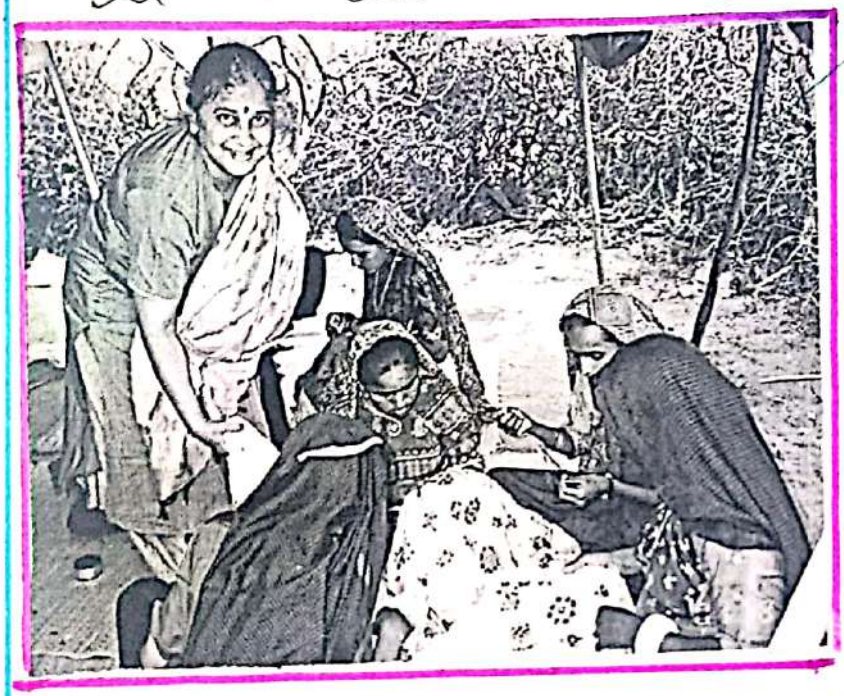
"

~ Rich or poor,

It is good to do our own work and be fit."

— Sudha Murty

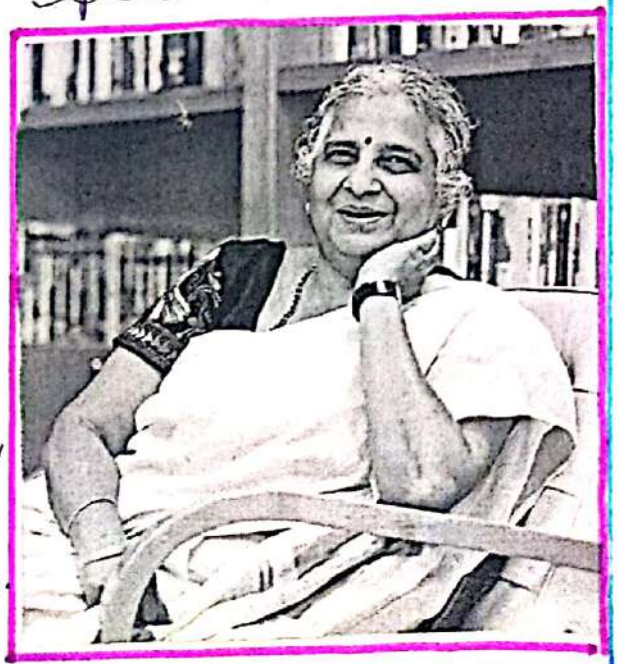
Sudha Murty has Successfully Initiated and anchored several programmes to Improve health care, education, disaster relief, women and youth



Empowerment and orphan care. She has also personally contributed to programs benefitting war widows, education scholarship and the arts. She has built 2,300 houses in flood-affected areas. She built around 70,000 libraries in schools so far. She is helping rural areas by building 16,000 toilets and many toilets in Bengaluru city also.

Why Sudha Murty is an Inspiration?

Sudha Murty stands by the belief that money always changes hands and giving back to society fosters significant good will. Her Noble beliefs are reflected in her active participation in social work for art and culture, public hygiene, health care, poverty alleviation, Women Empowerment and Education.



INSPIRING LIFE LESSONS FROM ~ SUDHA MURTY

* "If you try to please everyone, you will please no One, It's Impossible to lead your life for Other's happiness."
* "Usually, people who are Sensitive need more time to understand the real world."
* "Money is One thing which rarely unites and mostly divides people."
* "I realised then that only diseases and not honesty & Integrity are passed down to the next generation through genes."
* "A Fire cannot be extinguished with another fire. It is only water that can make a difference."
* "You may be rich enough to buy comfort & luxuries, but the Same money doesn't define class or give you the ability to purchase it."
* "You Should not be So Sensitive. Sensitive people Suffer a lot in life."
* "A cuckoo should never dance and a peacock should not try to sing! (Acknowledge all the troubles and failures in our lifes)"

* "We can give our children only two things in life which are essential. Strong roots and powerful wings. Then they make fly anywhere and live independently."

* "When someone gets cheated, that person gets upset not because they have lost money but because he or she realises that they have been foolish enough to be tricked."

* "Men can do certain things well and women other things. Men and women are complementary to each other. One need not prove one's strength."

* "With my experience in life, I want to tell you that having good relationships, compassion & peace of mind is much more important than achievements, awards, degrees or money.

* "Rich or poor, it is good to do our own work and be fit."

* "Life is an exam where the Syllabus is unknown and question papers are not set. Nor are there model answer papers."

"Done very well" "Keep it up".

— Sudha Murty.

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ENTER TO LEARN

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LEAVE TO SERVE

HISTORY - PROJECT WORK

Topic :— ANCIENT TEMPLES - INDIA

KAILASA TEMPLE

LAD KHAN TEMPLE

BRIHADISHVARA TEMPLE

SRI VIRUPAKSHA TEMPLE

KONARK SUN TEMPLE

THOUSAND PILLAR TEMPLE

KALESHWARA MUKTESWARA SWAMY TEMPLE

SHORE TEMPLE

LINGA RAJA TEMPLE

VEMULAWADA TEMPLE

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DECLARATION

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Dist. Rajanna Sircilla

We, the Students of Government Degree College for Gambhiraopet, Rajanna Sircilla District declare that the work presented in this Study project is original and carried throughout by us.

1. N. Dinesh Kumar.
2. Ch. Ajay.
3. D. Anil.
4. Ch. Karthek.
5. N. Devender
6. K. Saigoud.
7. K. Vamshi
8. E. Mahesh.
9. Ch. Kanakaraju.
10. B. Raju.

SUPERVISOR

DUSA VIJAY
DEPERTMENT OF HISTORY

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LAD KHAN TEMPLE

KAILASA TEMPLE :-

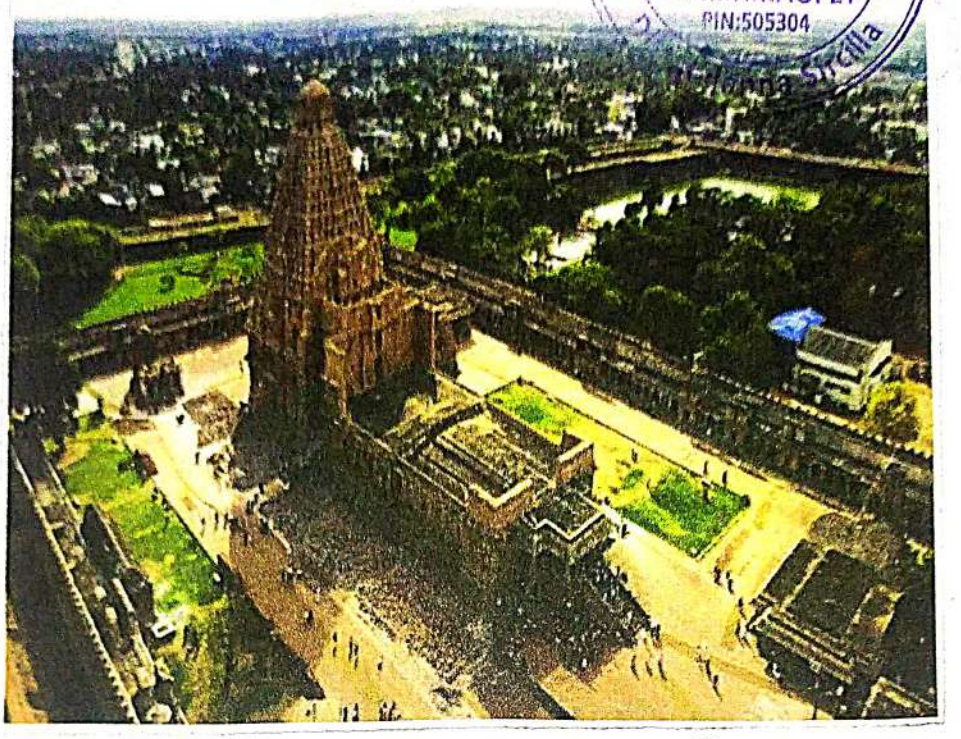
The kailasa or kailasanatha temple is one of the largest Indian rock-cut ancient Hindu temples located in the Ellora cares, maharashtra, India. A megalith carved out of one single rock it is considered one of the most remarkable care temple in India because of its size, architecture and sculptural treatment.

The kailasa temple (care-16) is one of the 34 care temples and monateries known collecitvely as the Ellora cares. its construction is generally attributed to the eigth century "RastraGuda" king krishna-I. The temple architecture shows transes of pallava and chalukya styles.

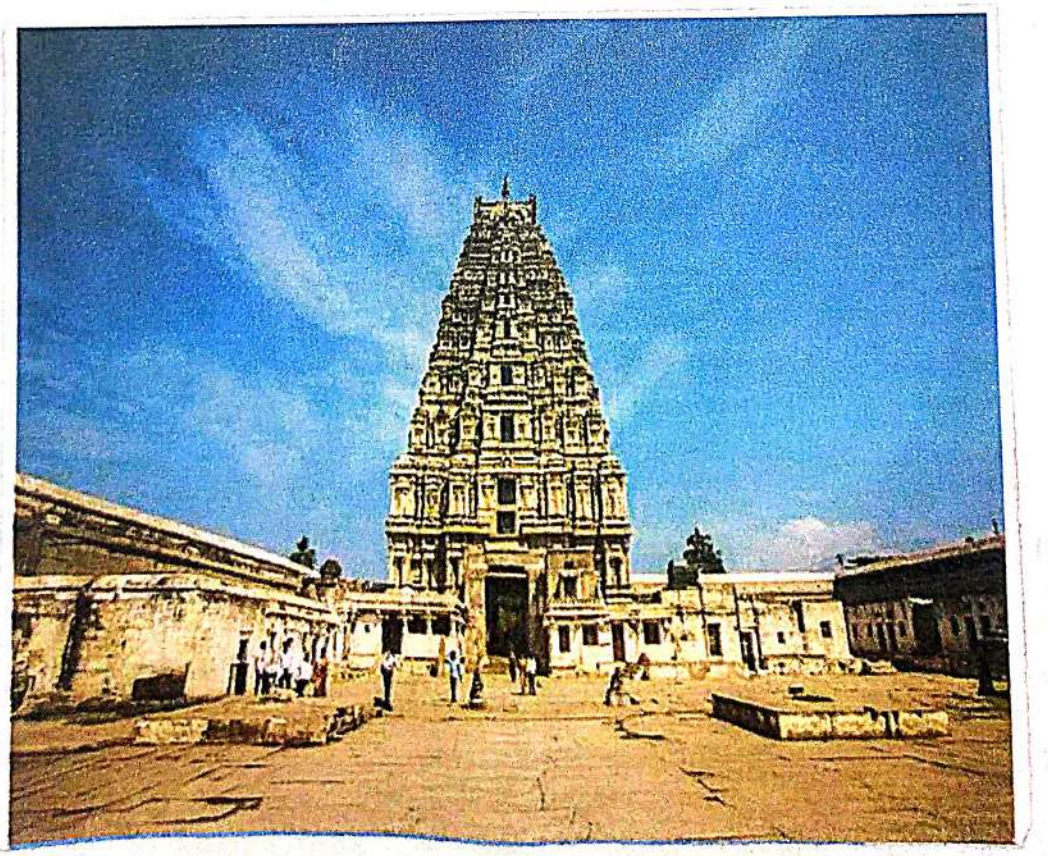
Affiliation : Hindusim
District : Aurangabad, maharashtra
Deity : kailashanatha (shiva)
Location : Ellora

LAD KHAN TEMPLE :-

The Lad khan Temple, dedicated to shiva is one of the oldest Hindus temples and is located in Aikole in the state of karnataka, India. It was built by the kings of the chalukya dynasty. It is located to the south of the Dunga temple, Aikole. The temple is named after a person named Lad khan. Who. [illegible]



BRIHADISHWARA TEMPLE



SRI VIRUPAKSHA TEMPLE

temple into residence for a short period and this is the oldest temple of Aihole.

Affiliations : Hinduism
District : Bagalkot
Deity : shiva
Location : Aihole
State : karnataka
Country : India.

BRIHADISHVARA TEMPLE :-

Brihadishvara Temple, also called Rajarajeshvaram or Peruvudiyar koyil, is Hindu temple dedinoted to shiva located Thanjavur, Tamil nadu, India. It is called as Dhakshina meru (meru of south) Built by Raja Raja chola I between 1003 and 1010 A D. The temple is a part of the UNESCO World theritage site. known as Great living chola Temples. along with the chola dynasty era Gangaikonda cholapuram Temple.

Affiliation : Hinduism
District : Thanjavur District
Deisty : shiva
festivals : maha shivaratiri
State : Tamil nadu
Creator : Raja Raja chola I

SRI VIRUPAKSHA TEMPLE :-

virupaksha Temple is located in Hampi, Ballari district of karnataka, India. It is part of the

Group of monuments at Hampi, designated as a UNESCO world Heritage site. The temple was built by Lakkanna Dandesha, a nayaka (chieftain) under the rule of Deva Raya II of the Vijayanagar Empire.

Hampi capital of the vijayanagar empire on the banks of the Tungabhadra River.

Affiliation : Hinduism
District : Bellary
Deity : Virupaksha
Location : Hampi
State : Karnataka

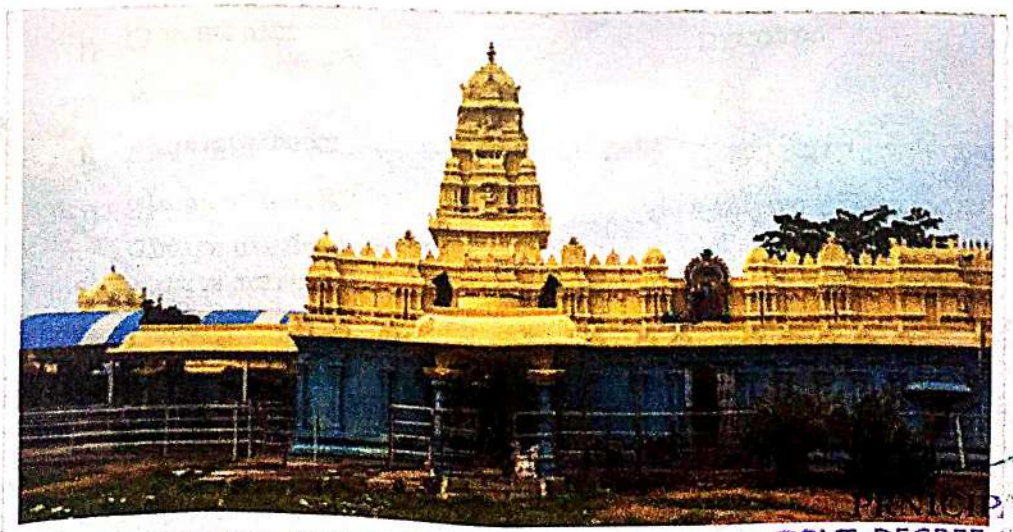
KONARK SUN TEMPLE :

Konark Sun Temple is a 13th century CE SUN temple at Konark about 35 kilometer (25m) northeast form puri on the coastline of Odisha, India. The temple is attribut to king Narasingha Deva I of the Eastern Ganga Dynasty.

Dedicated to the Hindu sun god surya. It is also called as "surya Devalaya". Architecture or kalinga Architecture

Location : konark, Odisha, India

TOUSAND PILLER TEMPLE



KALESHWARA TEMPLE.

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THOUSAND PILLAR TEMPLE :-

The Thousand piller Temple or Rudreshwara Swamy Temple is historic Hindu temple located in the town of Hanamakonda. It is denoted to Lord Shiva, vishnu and surya.

Thousand pillar Temple, along with warangal Fort and Ramappa Temple" are added to list of world Heritage sites recognised by UNESCO.

Appliation : Hinduism

Deity : Shiva, vishnu, surya

Locarion : Hanamakonda, India, warangal

State : Telangana

country : India

Creator : Rudra Diva

KALESHWARA MUKTESWARA SWAMY TEMPLE :-

kaleshwara mukteswara swamy temple is a Hindu temple located in kaleshwara, Bhsopalpally, Telagana, India

It is site of temple of the Hindu Lord shiva. The temple of significant because of two shiva lingal that are found ona single pedestal. These Linga named Lord shiva and Lord "yama". collectively. one of three shiva temples mentoned in Trillinga Desha and of three tinges

SHORE TEMPLE

KALESHWARA TEMPLE

Affiliation : Hinduism
District : Bhoopalpally
Deity : Lord shiva
State : Telagana
country : India
Architecture : Dravidian type

SHORE TEMPLE :-

The shore Temple (built in 700-728 A.D) is so named because it overlooks the shore of the Bay of Bengal. It is a structral temple, built with blocks of granite dating from the 8th century A.D. the site was busy port during the reigon of Narasimha varman II of the pallava Dynasty As one of the Group of monuments at mahabalipuram, it has been classified as a UNESCO world Heritage site since 1984

Affiliation : Hinduism
Location : mamallapuram or mahabalipuram, kanchi-puram District
State : Tamil Nadu.

LINGA RAJA TEMPLE :-

"Lingaraja Temple" is a Hindu temple dedicated to shiva and is one of oldest temple in Bhubaneswar, the capital of East Indian state of odisha. The temple

LINGA RAJA TEMPLE

LINGA RAJA TEMPLE.

is the most prominent landmark of Bhubaneshwar city and one of the major tourist attraction of the state.

The Linga Raja Temple is the largest temple in Bhubanswar. The temple represents the quintessence of the kalinga architecture and culminatng the medieval stages of architecture of tradition at Bhubonshwar

Affiliation : Hinduism

District : khurda

Deity : shiva As Lingraja

Adi shiva (maheswara, Tribuvaneshwara, Bhubaneswara).

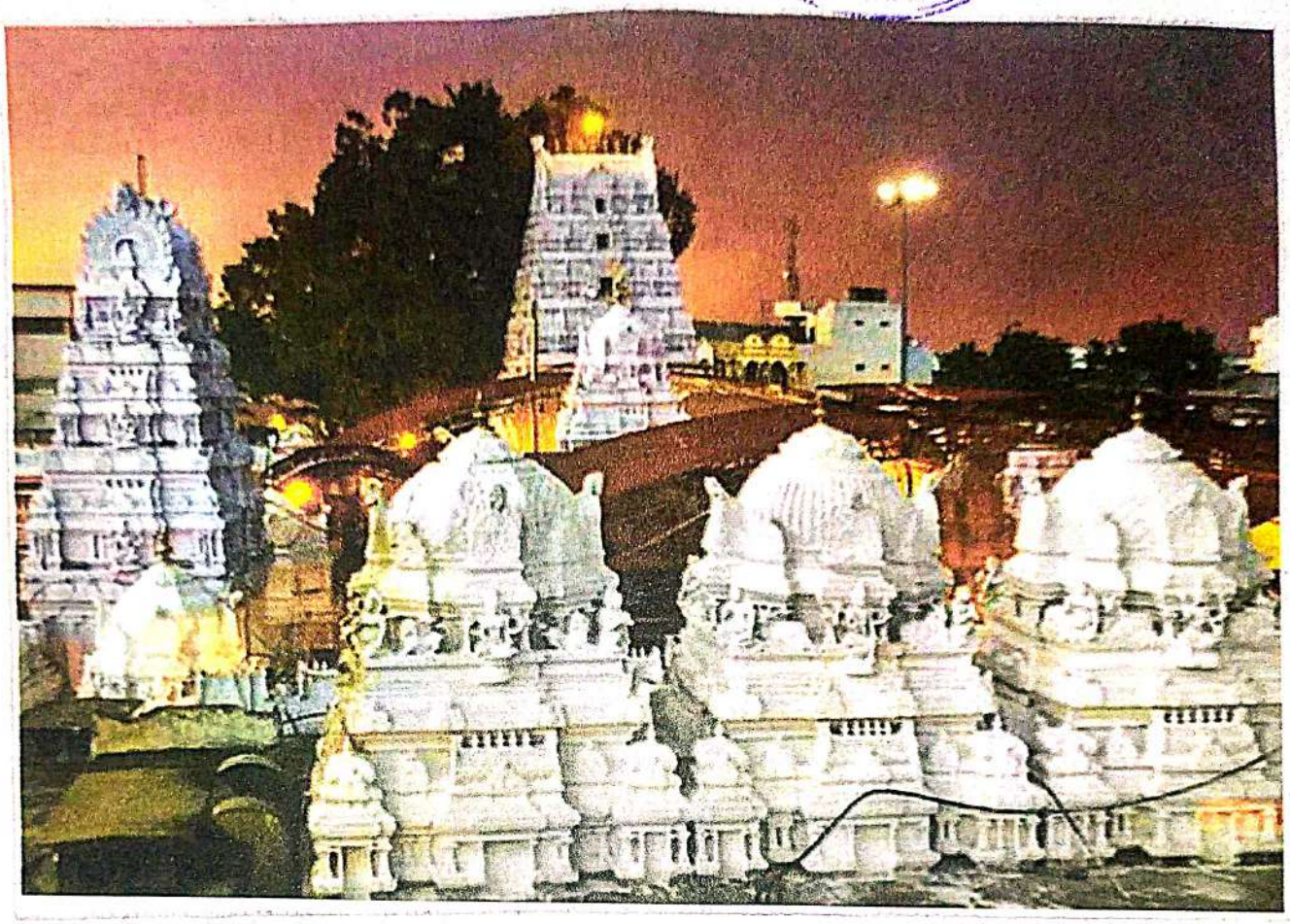
Festivals : shivarathri

Location : Lingaraja temple Road. old Town, Bhuvaneshwar.

State : odisha

Architecture type : kalinga Architecture

Creator : Jajati keshari



SRI RAJA RAJESHWARA TEMPLE· VEMULAWADA

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VEMULAWADA TEMPLE :-

Sri Raja Rajeshwara kshetram (Chalta place) is one of the most famous Hindu temples in Telagana, dedicated to Lord Shiva. It is located in the town of vemulawada, Telagana, India.

Affiliation : Hinduism

District : Sircilla

Deity : Raja Rajeshwara swamy (Shiva)

Festivals : Shiva Rathri, Sri Rama Navami, Bonalu, Dasara and Bhathukamma

Location : vemulawada

State : Telagana

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DEPARTMENT OF ECONOMICS

2021-22

A STUDENT STUDY PROJECT

ON

SOCIO-ECONOMIC CONDITIONS

OF

FISH VEGETABLE AND FRUIT STREET VENDERS

IN

GAMBHIRAOPET VILLAGE

GOVT DEGREE COLLEGE ,GAMBHIRAOPET

DEPARTMENT OF ECONOMICS

2021-22

STUDENT STUDY PROJECT

GOVERNMENT DEGREE COLLEGE
GAMBHIRAOPET
PIN:505304
Dist:Rajanna Sircilla

SUPERVISOR: B.SRINIVAS, LECTURER IN ECONOMICS

Submitted by

Sl.No	Name of the student	CLASS & YEAR	College ID	Signature of the student
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2	K.ESHWAR	BAIII YEAR	19077086129515	K. Eshwar
3	N.JANSI	BAIII YEAR	19077086129522	JANSI
4	P.BHASKER	BAII YEAR	19077086129525	P. Bhasker
5	CH.BHARGAVI	BAII YEAR	20077086129008	Ch. Bhargavi
6	T.POOJITHA	BAII YEAR	20077086129052	Poojitha
7	T.ARCHANA	BAII YEAR	20077086129538	ARchana
8	P.MEGHANA	BAIIYEAR	20077086129038	P. meghana
9	P.SUPRIYA	BAII YEAR	20077086129039	P. Supriya
10	A.VARSHA	BAII YEAR	20077086353001	A. varsha
11	M.RACHANA	BAII YEAR	210770861291026	Rachana
12	G.LAVANYA	BAIIYEAR	210770861291014	Lavanya

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DEPARTMENT OF ECONOMICS

2021-22

STUDENT STUDY PROJECT

GOVERNMENT DEGREE COLLEGE
GAMBHIRAOPET
PIN:505304
Dist:Rajanna Sircilla

CERTIFICATE

This is to certify thatL.Venkatesh K.Eshwar N.Jansi P.Bhasker CH.Bhargavi T.Poojitha T.Archana P.Megana P.Supriya A.Varsha M.Rachana and ,G.Lavanya the students of B.A.-I,II and III year of this college have participated in the study project conducted by the Department of Economics under the supervision of Sri B.SRINIVAS titled on '' **A Study Project on Socio-Economic Conditions of Fish Vegetable and Fruit Street Vendors in GAMBHIRAOPET''** village regarding STUDENTS STUDY PROJECT for 2021-22

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STUDENT STUDY PROJECT

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INTRODUCTION: The Indian Economy greatly depended on agriculture and related activities. There are different types of fruits produced and consumed across the country. Street Fruit vendors are usually locally selling various types of fruits in limited quantities. These vendors source a variety of fruits in bulk from wholesalers and sell them in the local market to the end consumers. Street fruits vendors are an integral part of urban informal economy. It is virtually impossible to imagine life in India without associating it with life on the streets. Fruit vendors are a source of our primary food items. It is the presence ignoring the religious, class, caste and gender denomination of people. Many physically challenged persons who are poor cannot do any work depend on this business. Fruits give energy and good health.

By historical perceptive also we note that Kautilya in his book the Arthasatra points out 6^{th} century B.C there was mobile fruits and vegetable vending and soup centers at the boundary line of the city to know the entry of unofficial and unwanted persons. So it is a part of social life. It cannot be vanished. Their contribution to the larger economy needs to be understood and accepted. This is community based rather than motivated by profit. They sell more fresh more easily available and more seasonal than we find in the big stores and malls.

STATEMENT OF THE PROBLEM: Gambhiraopet village is the 5^{th} most populous city in Rajanna Siricilla District. It is the fourth largest and fastest growing Rural settlement in the district. It is famous for fish industry and dairy products. It is situated on the bank of the Upper Manair river. The village has 20,000 population within its villages surrounding limits. It has the literacy of 52.27%. The city is agricultural centre and road junction for other mandals. Trade and Agriculture is growing fast in the village day by day.

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OBJECTIVES OF THE STUDY:

- To examine the social conditions of fish vegetable and fruit street vendors
- To find out the economic status of the vendors
- To recognize the aspects that make fruits vendors a vulnerable section
- To find out solutions to the problems of street fruit vendors

RESEARCH METHODOLOGY: As per the GRAMA PANCHAYATHI of GAMBHIRAOPET data almost 100 street fruit vendors are throughout the village. We have chosen 10% of random sample method. The smaller but focused samples are more often needed rather than large random samples. The data was empirically collected, analyzed and results are evaluated on the data obtained. The interview was done on an informal mode.

1) Primary data: a) Street visits b) Questionnaire of survey 2) Secondary data: a) GRAMA PANCHAYATHI Gambhiraopet information

   The study focuses age, sex, marital status, educational status, assets owned, dwelling, working hours, monthly income, monthly expenditure, amenities enjoyed, savings , profession of the children, nature of family system, health issues etc.

Age Dimension: It is important to know the age dimension of fruit vendors involved in the business which reflects the intensity of unemployment.

Table:

Category	Respondents	Percentage
Below 30	31	31%
30-40	41	41%
40-50	18	18%
Above 50	10	10%

The above table shows 41% of the fruits vendors are under the category of 30-40 age group and 31% of the vendors are under the category of below 30 age group which indicates unemployed youth. Only 10% of the respondents came under above 50 group.

Martial Status: The study reveals the martial status of the fruits vendors to know whether the income is viable to feed the family earned by the vendors and whether the family members help the vendors in fruits vending. It showed that 79% of fish vegetable and fruit street vendors are married and 18% are unmarried.

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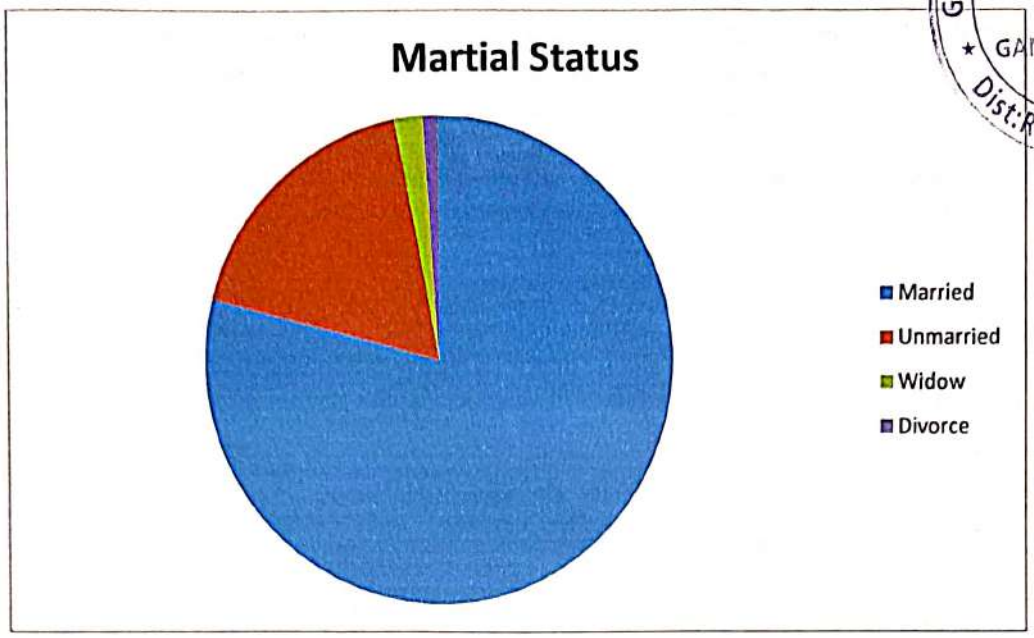
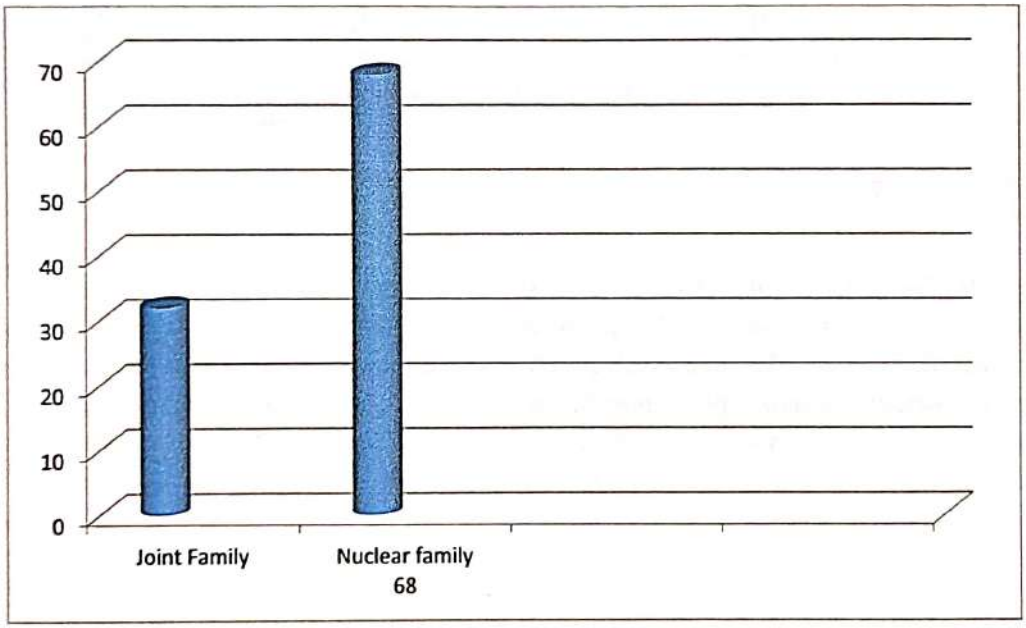


Type of Family: The study was conducted regarding the type of family whether they have joint family or nuclear family maintaining family relations in the context of modernized world searching for employment.



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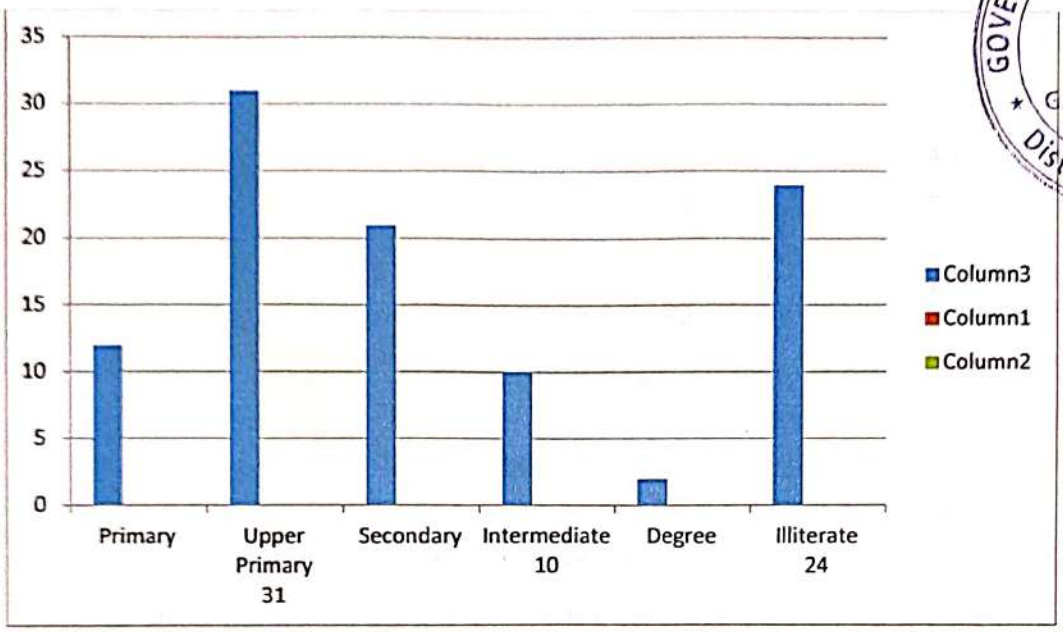
The above graph shows that 68% of vendors are having nuclear families leaving their parents at the villages visiting them once in a month and sending money for their feeding. Only 32% of the vendors are having joint families spending happy moments with the family members.

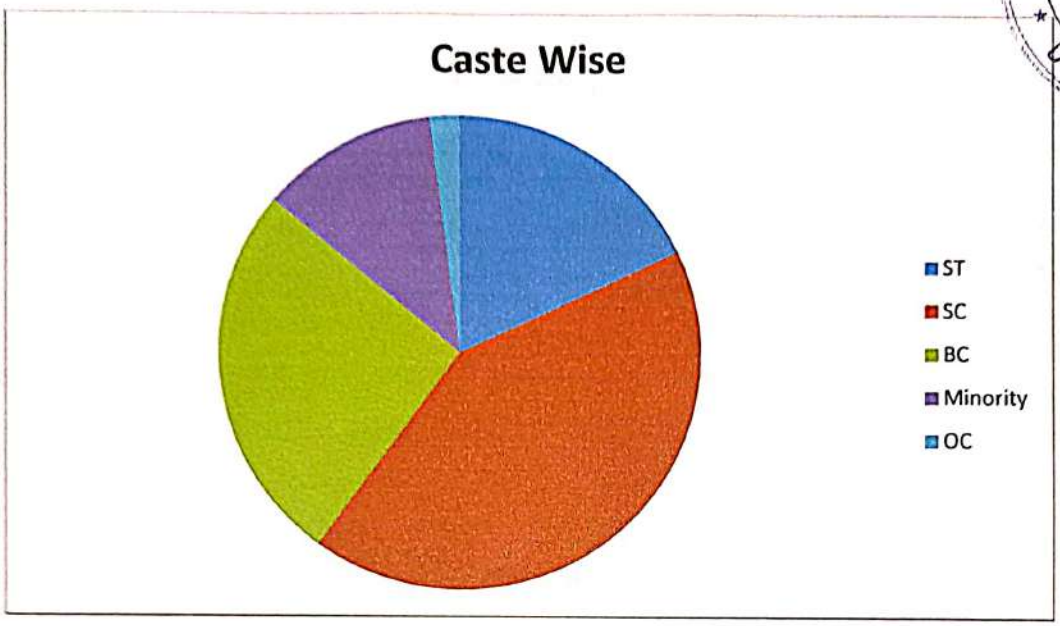
Educational Status: Education plays key role in the development of a person. It is very important o know the educational profile of the fruit vendors and the reasons for backwardness of their educational sector.



The above line graph shows that 12 persons have completed their primary education out of hundred persons. 31 persons finished their upper primary level which is the highest figure in the survey and 21% of vendors completed their secondary education. The survey indicated only 2% of vendors took their degree.24% of vendors are illiterate mostly who are migrated from other states. It is noticed that the financial condition of the family is poor to educate the vendors and when they are grown they see them as breadwinners of the family pushing them into the business.

Community Dimension: It is important to know that what community people are involved in fruits vending mostly in the streets. It is also important to know the status of unprivileged and underprivileged sections of the people engaged in fruits business. The knowledge and other

resources are still in the hands of upper caste people. The underprivileged people make some traditional products and invest a little amount to start petty business.



Community wise vendors

The above diagram shows that 42% of fish vegetable and fruit street vendors belong to SC community and 26% belong to BC community. 8% vendors came from ST community and 12% from Minority. It reveals only 2% vendors from OC category in the city. It indicates still most of weaker sections of the people are engaged this kind of business lack of proper higher education and poverty conditions.

Dwelling Status: The village expanded to 05 Sqkm. to each direction. The fish vegetable and fruit street vendors have their residence out skirt of the village having two or single room mostly. It is significant to notice the left over fruits would be stored in the house. They don't have separate cold storages.

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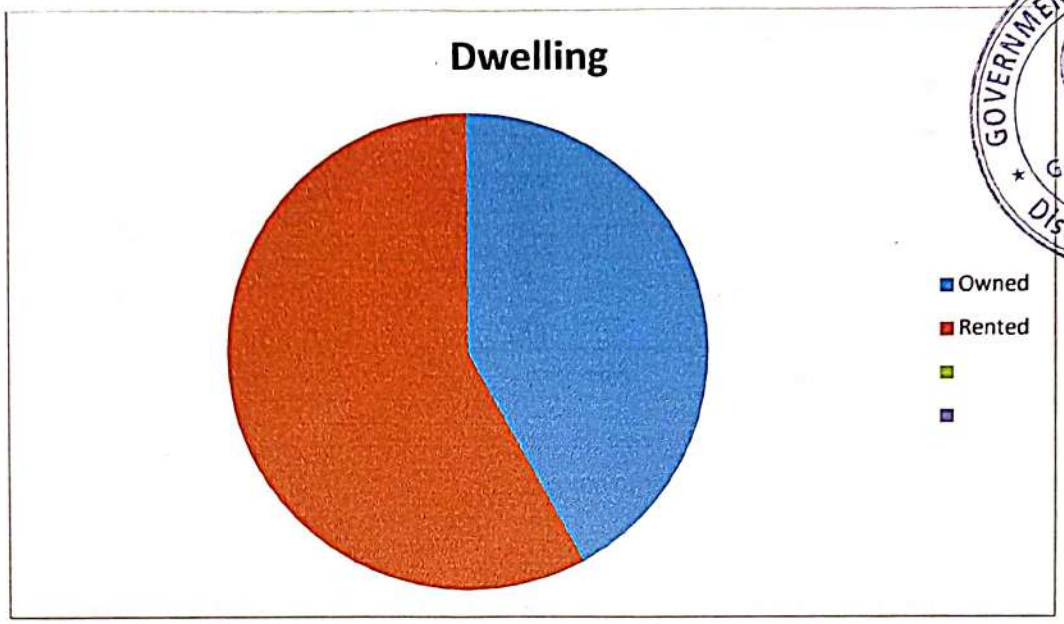
The below diagram shows that 58% of fruits vendors are residing in rented houses. These people migrated from rural villages and started fish vegetable and fruits vending business and some of the vendors are from other states. The remaining 42% vendors are having own houses residing nearby villages.



Dwelling of the vendors

Economic Condition: The income earnings are not considerable amount of the fruit vendors. For a family of five at least Rs.200 is needed to fulfill daily needs. The following figure shows their average monthly income. 27% of the road side vendors are earning 3000-5000 monthly i.e.per day Rs.150.which is not viable to meet their minimum needs.37% of the vendors fall under the category of 5001-7000 which is the highest income group earners. 29% of the vendors are getting 7001-9000 and only 7% of the vendors are getting between 9001-11000.These vendors depend on the earnings of their children and other family members for the family needs.

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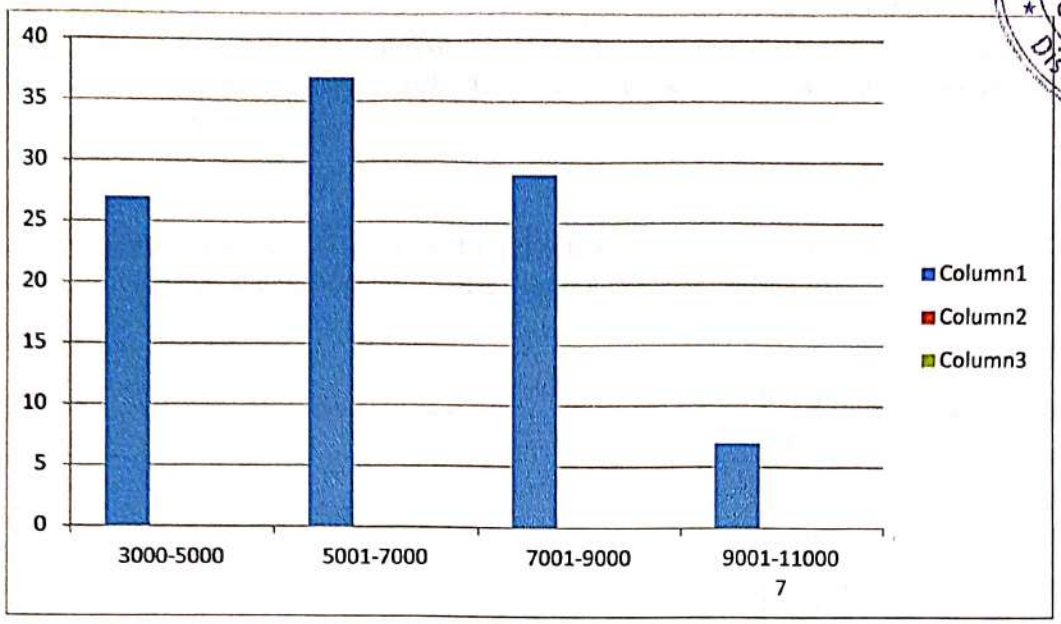

Average monthly income of the vendors

Expenditure Pattern: The study also revealed the average monthly expenditure pattern of the vendors on food, cloth, entertainment, medicine, festivals, electricity, transport, drinking water.

Table:

Sl.No.	Item	Average Amount spent(month)
01	Food	3000
02	Clothing	500
03	Medicine	500
04	Drinking water	200
05	Festivals	1000
06	Entertainment	100
07	Transport	200
08	Electricity	300

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It is noted that the vendors are spending Rs.3000 on food almost 50% of the income. Though they sell the fruits they are not taking fruits as a part of food. They spend Rs. 300 on Electricity more than drinking water. It is also observed that they are spending on meat and chicken during the festivals only not regular intervals. They are incurring average monthly expenditure Rs.5800 excluding services.

Assets owned: Survey was conducted on assets owned by the vendors in the houses such as cycle,motor cycle, T.V, Computer, Cooler ,Agriculture land, Refrigerator.

Table:

Sl.No.	Assets owned	Percentage(100 Respondents)
01	Cycle	26%
02	Motor cycle	68%
03	T.V	87%
04	Computer	00%
05	Cooler	66%
06	Refrigerator	38%
07	Agriculture land	18%
08	Mobile	100%

It is observed that 68% of the vendors motor cycles and 66% of the vendors having coolers. But none of the vendors have computer. 87% of the vendors have T.Vs and only 18% of the vendors are having agriculture land. With the communication revolution 100% vendors are having mobiles for their communication.

Source of Credit: This study project also focused on the source of credit for their business. To start their small fruits vending business Rs.20000=00 is required for which most of the vendors depend on private money lenders paying high rate of interest. In unseasonal days of business and between the days of business they are taking small amounts from local money lenders for one month who rotates money by lending daily wise.

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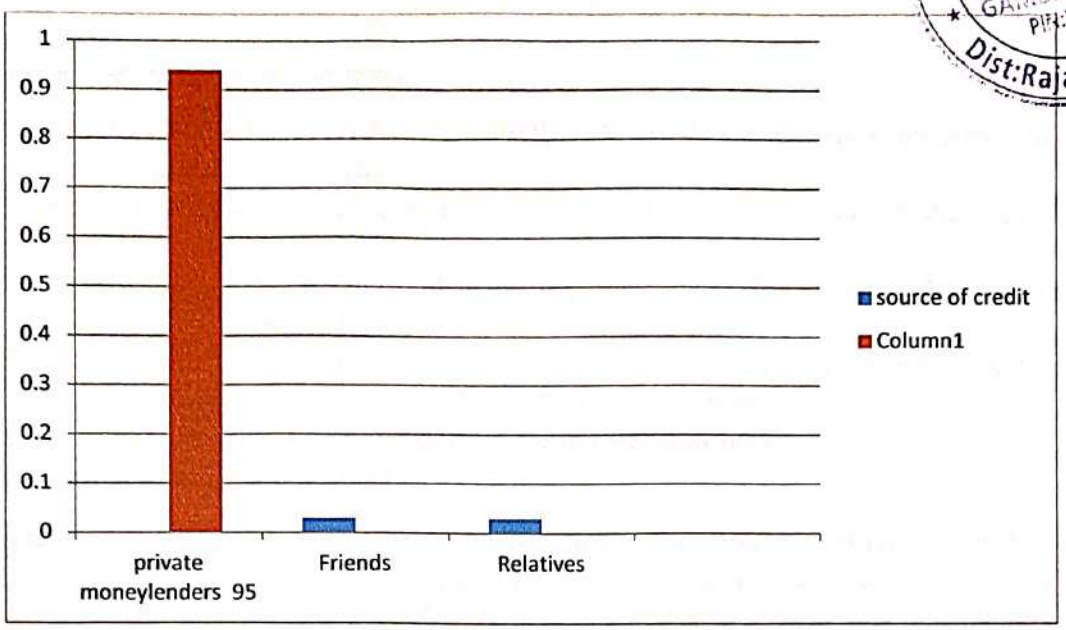

Source of credit

It is noticed that 94% of vendors are depending on private money lenders for their credit and 6% of vendors are taking credit from friends and relatives. 85% of vendors expressed unawareness of Mudra Loans. Sometimes they are taking credit to meet their daily needs for one week when the business is low. In this regard public credit is nil.

Students making survey at fish vegetable and fruit street vendors with Questionnaire

Problems Identified:

- Problem of site allocation
- Lack of accessibility of public toilets
- Lack of access to credit
- Lack of business skills
- Problem with shops owners
- Competition from Reliance and Spencers malls
- Harassments from local government (MCK) and traffic police
- Long working hours sitting and standing in dust and air pollution
- No livelihood security and lot of pressure and stress
- Quarrel among the fruit vendors for space

Recommendations and suggestions:

1. GRAMA PANCHAYATHI of GAMBHIRAOPET should identify open public places and should allocate to vendors
2. It is necessary to conduct a detailed survey to identify main issues of the street fruit vendors
3. Coordination with the town planning department and Public works Department is important to include vending spaces
4. It is required the involvement of Voluntary organizations, traffic police and local representatives to deal with day to day problems of fruit vendors.
5. It is important to encourage vendors unions to solve their problems
6. Easy access to credit facility is important

Conclusion: The fruits vending is based on the Energy, Environment and Hygiene and health cycle. The British Economist Schumacher in his book '' Small is Beautiful ''Economics as if people mattered, the street fruits vending economy is certainly a place where people matter. People are not just tools of development. People are the reason for development. The street fruit vendors are not threatening the environment. They are not destroying assets and not encroaching Government lands. They are trying to do living with dignity. They are struggling to make their share of service by feeding the rural poor.

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- Consumption of street foods by the urban population and their Microbiological safety NIN, HYD- Bharathi.S
- Street vendors in Asia- Bhowmick.S.K.
- Data from GRAMAPANCHAYATHI GAMBHIRAOPET.

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SURVEY QUESTIONAIRE

1.Name of the fruit vendor:

2. Age: a) below 30 ( ) b) 30- 40 ( ) c) 40- 50 ( ) d) above 50 ( )

3. Community: a) ST ( ) b) SC ( ) c) BC ( ) d) Minority ( ) e) OC ( )

4.Education : a) Primary ( ) b) Upper Primary ( ) c) Secondary ( ) d) Intermediate ( ) e) Degree ( )

f) ITI ( ) g) P.G ( ) h) Professional ( ) i) Illiterate ( )

5.Maritial status : a) Married ( ) b) Unmarried ( ) c) Widow/er ( ) d) Divorce ( )

6. No. Children: a) 1 ( ) b) 2 ( ) c) 3( ) d) 4 ( ) e) 5 ( ) f) None ( )

7. How many years are you engaged in Business: a)below 5 ( )

b) 5- 10 ( ) c) 10 – 15 ( ) d) 15- 20 ( ) 7. ( )

8.Type of family: a) Joint family ( ) b) Nuclear family (

09.Monthly Income: a) below 3000 ( ) b) 3001 – 5000 ( ) c) 5001 – 7000 ( ) d) 7001 - 9000 ( )

e) 9001 – 10000 ( ) f) 10001 – 12000 ( )

10. Whether having Owned/ Rented House: a) Owned (

b) Rented ( )

11. Nature of the House: a) Thatched ( ) b) Tiled ( ) c) Pucca ( ) d) RCC ( )

12.No.of Rooms: a) One ( ) b) Two ( ) c) Three ( ) d) Four ( )

13.Whether Taken any loan:

a) Yes ( ) b) No ( ) 14. If Yes: a) Private ( ) b) Public ( )

14. Category of Assets owned: a) Bicycle ( ) b) Motor Cycle ( ) c) T.V ( ) d) Computer ( ) e) Refrigerator ( ) f) Air cooler ( ) g) Agriculture Land ( )

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15.Diseases from Suffering: a) Damage of lungs ( ) b) Back Pain ( ) c) Joint Pain ( ) d) Heart Problem ( ) e) Knee Pain ( )

16.Pattern of Expenditure (per month): a) Food ( ) b) Clothing( ) c) Medicine ( ) e) Rent ( ) f) Loan ( ) g) Entertainment ( ) h)Electricity ( ) i) Drinking water (

j) Transport ( ) k) Festivals ( )

17.Annual Savings: a)below 6000 ( ) b) 6000 – 8000 (c) 8000 – 10000 ( ) d) 10000 – 15000 ( ) e) 15000 – 20000 ( ) f) Nil ( )

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DEPARTMENT OF HISTORY

STUDENT STUDY PROJECT WORK ON

SRI RAJARAJESHWARA SWAMY TEMPLE VEMULAWADA

SUBMITTED BY

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3. M .RAMYA
4. K. NAGARANI
5. K. NAGALAXMI
6. A. RANI
7. E. BHOOMIKA
8. M. RAVAL
9. S. RAMYA
10. SK .MASRATH

SUPERVISOR

DUSA VIJAY

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DECLARATION

We, the students of Government Degree College for Gambhiraopet, Rajanna Sircilla District declare that the work presented in this study project is original and carried throughout by us.

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Acknowledgements

We ,the researchers of study project ,express our gratitude to Sri A. Narsaiah Principal, Government Degree College Gambhiraopet, Rajanna Sircilla District for providing the facilities required in this project work, and for giving valuable suggestions and encouragement throughout the project work.

We are thankful to Dusa Vijay lecturer in History, Government Degree College Gambhiraopet, Rajanna Sircilla District for motivating and inspiring out this work.

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BRIEF HISTORY:

Sri Raja Rajeshwara Swamy Devasthanam

Abode of Lord Eashwara – at Vemulawada village of Rajaanna Sirisilla District in Telangana State is one of the ancient and famous Shiva temples. The shrine deserves a special mention in terms of its architectural grandeur and spiritual sanctity and is one of the famous Shiva Temples in Telangana State. Existence of this shrine is lost in the mists of antiquity and even Puranas mention the existence of the Deity.

The presiding Deity – Lord Raja Rajeshwara in the form of "Neela Lohitha Siva Lingam is known for his boundless benevolence in fulfilling the wishes of the devotees.

This Shrine is popularly known as 'Dakshina Kasi' [Southern Banaras] and also as "Harihara Kshetram" for their being two Vaisnava Temples in main

Temple complex i.e., Sri Anantha Padmanabha Swamy Temple & Sri Seetharama Chandra Swamy Temple and Sri Anantha Padmanabha Swamy is Kshethra Palaka of this Temple being consecrated with Pujas/ festive rituals [both Shiva & Vaishnava festivals] and " Sree Rama Navami " is the second major festival in this temple.

A Dargah within the precincts of the temple stands as an ample evidence for religious tolerance.

STHALAPURANAM:

Bhavishyothara Purana mentions that the Sun-God [Surya Bhagavan] recovered from disability by praying at the shrine here and so this shrine is termed "Bhaskara Kshethram". And, Indra- the King

of Astadikpalaka by devoutly worshipping Lord Sri Raja Rajeshwara-the presiding deity of the shrine, purified himself from Brahmahatya Dosham.

Further, It is said that during 750 to 973 AD this temple was built by Raja Narendra-the grandson of Parikshit who in turn the grandson of Arjuna, was not only cured of Leprosy by which he was afflicted by virtue of killing Muniputra accidentally, by taking bath in Dharmagundam [Pushkarni] but also seen Lord Sri Raja Rajeshwara and Goddess Sri Raja Rajehwari Devi in a vision and received blessings with directions to build a temple and install ' Siva Lingam' which was laying in the bed of the Pushkarni.

HISTORICAL IMPORTANCE:

Historically this place was the capital of the Vemulawada Chalukyas who ruled from AD 750 to

AD 973. Rock cut inscriptions found in this place, however refer to the village as Lemulavatika.

LITERARY AND TRADITIONAL IMPORTANCE:

Tradition associate with this place with famous Telugu poet "Bheemakavi" but there is more definite proof of the famous Kannada poet "Pampa" living here as the court poet of Arikesari – II and dedicated his "Kannada Bharatha" to his royal patronage.

INSIDE TEMPLE IN THE COMPLEX:

The Temple picturesquely stands on the bank of a large Tank which is called as Gudicheruvu. The Garbha – Griha [Mahamandapam] has "Sri Lakshmi Ganapathi";

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Lord Raja Rajeshwara in the form of Neelalohitha Siva Linga ; Goddess Sri Raja Rajeshwari Devi and Nandeeshwara facing the Lord. The sanctum sanatorium encloses Sri Anantha Padmanabha Swamy Temple; Sri Seetharama Chandra Swamy Temple; Sri Anjaneya Sahitha Kasi Visweswara Swamy

Temple; Sri Dakshina Murthy Temple; Sreeevalli Devasena Sametha Subramanya Swamy Temple; Sri Bala Tripura Sundari Devi Temple; Sri Someshwaralayam; Sri Uma Maheshwaralayam; Sri Mahisasura Mardhani Temple; Kotilingalu; Sri Kala Bhairava Swamy Temple.

In this shrine, Pujas / Rituals are performed according to Smartha Agama and however in Vaisnavate temples located in temple complex, Pujas / rituals are performed according to Pancharathra Agama. The icon of Lord Raja Rajeshwara is consecrated with Chatukala Pujas i.e., Prathakala Puja; Madhyahnika Puja; Pradosakala Puja & Nishikala Puja etc., every day along with Goddess Sri Raja Rajeshwari Devi Sri Lakshmi Ganapathi located in Maha Mandapam.

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