



ESTD 1982

SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



1

# DEPARTMENT OF PHYSICS

## CERTIFICATE COURSE

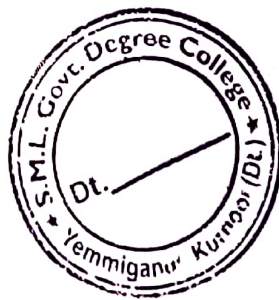
ON

# Physics for Novel Diagnostics

Academic Year: 2020-21

FROM 21-11-2020 TO 06-01-2021

*[Signature]*  
Lecturer in Charge  
Department of Physics  
S.M.L. Govt. Degree College  
YEMMIGANUR 518 360  
Kurnool Dt. A.P.



PRINCIPAL  
*[Signature]*  
PRINCIPAL  
S.M.L. Govt. Degree College  
YEMMIGANUR, Kurnool (Dt.)



ESTD 1982

SML Government Degree College  
Yemmiganur, Kurnool dist., Andhra Pradesh  
Affiliated to Rayalaseema University, Kurnool-518360, A.P



2

## INDEX

S.No	Name of the Activity	Page No.
1	Dept. Minutes	03
2	Permission letter	04
3	Certificate course circular	05
4	Students willingness	6-7
5	Summary of the Certificate course	08
7	Syllabus	09
8	Students Attendance	11
9	Model Question Paper	13
10	Students Marks Award sheet	15
11	Photos	17
12	Feed back	18-19.
13	Participation certificates	20 21



## DEPARTMENT OF PHYSICS

DEPARTMENTAL MINUTES  
(ACADEMIC YEAR 2020-21)



The faculty members of the Physics Department met in the Principal's chamber to discuss to conduct a Certificate Course in Physics, titled "Physics for Novel Diagnostics" under the chairmanship of the principal and the faculty of the department on 13-11-2020.

### AGENDA:

Starting of certificate course for II BSC Students.

### RESOLUTIONS:

- 1) It is resolved to start the certificate course titled "Physics for Novel Diagnostics" from 21-11-2020 to 06-01-2021 for the academic year 2020-21
- 2) It is also resolved to frame the syllabus, regulations for the successful completion of the Certificate course titled "Physics for Novel Diagnostics".
- 3) Resolved to Enrol 25 Students to this course.
- 4) Resolved to conduct classes on all working days from 9am to 10 am
- 5) Resolved to conduct exam after completion of the course and issue certificates to qualified candidates.
- 6) Qualifying Marks is 40%.

Members Present:

*Hemant*  
Lecturer in Charge  
Dept. of Physics  
S.M.L Govt. Degree College  
YEMMIGANUR 518 380  
Kurnool Dt. A.P.

1. Sri J. Hemant

2. Sri B. masood Vall *B.M.V.*

*J.C. Sivalalade Babu*  
Signature of the Principal  
**PRINCIPAL**  
SML Govt. Degree College  
YEMMIGANUR, Kurnool



ESTD 1982

# SML Government Degree College

Yemmiganur, Kurnool dlt., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



## Permission Letter

Date: 16-11-2020

*Handwritten:* 16.11.2020

The Principal,

SML Govt Degree College,

Yemmiganur.

Respected Sir,

Sub: Department of Physics-to start a certificate course on "Physics for Novel Diagnostics Permission-request-regarding.

I am very glad to inform you that, Department of Physics has drafted a certificate course in "Physics for Novel Diagnostics" for II B.Sc MPCs and MPC students of our college in the academic year 2020-21. The faculty members of the department are interested to conduct the course in this semester of 2020-21 academic year out of college working hours.

In this connection, I request you to kindly accord us permission to start the certificate course for the benefit of the students.

Yours faith fully,

**Lecturer in Charge  
Dept. of Physics  
S.M.L Govt. Degree College  
YEMMIGANUR 518 360  
Kurnool Dt. A.P.**

*Handwritten signature*

Lecturer in charge

Department of Physics

SML Govt Degree College.



**SML Government Degree College**

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



**DEPARTMENT OF PHYSICS**  
**CERTIFICATE COURSE, 2020-2021**

**CIRCULAR**

**Date:17-11-2020**

All II year B.Sc MPCs & MPC students are here by informed that the Department of Physics will start a certificate course on **Physics for Novel Diagnostics** From 21-11-2020. Those who are interested to join the course, they have to enroll their names in the Department of Physics and certificate will be given after the completion of the course.

Name of the Course: **Physics for Novel Diagnostics**

Duration of the course: 32 Hours

Commencement of the Course: 21-11-2020

Time schedule of the classes: 9 AM to 10 AM

*[Handwritten Signature]*  
In charge of the Department  
Dept. of Physics  
S.M.L. Govt. Degree College  
YEMMIGANUR 518 360  
Kurnool Dt. A.P.

*[Handwritten Signature]*  
Signature of the Principal  
**PRINCIPAL**  
**SML. Govt. Degree College**  
**YEMMIGANUR, Kurnool.**



ESTD 1982

# SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



## SML Government Degree College, Yemmiganur

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE: 2020-2021

### Students Willingness and Enrolment list

S.No	Regd - No	Name of the student	Class	Signature
1.	19360049001	A Suneetha	II MPCs	<del>Suneetha</del>
2.	19360049003	B Ramachandra	II MPCs	Ramachandra
3.	19360049005	C Ramesh	II MPCs	Ramesh
4.	19360049006	C Ningappa	II MPCs	C. Ningappa
5.	19360049007	C Mahadevi	II MPCs	C. Mahadevi
6.	19360049008	D Naga Sravani	II MPCs	D. Naga Sravani
7.	19360049010	D Mabasha	II MPCs	mabasha
8.	19360049011	E Anusha	II MPCs	Anusha
9.	19360049012	G Sandhyarani	II MPCs	Sandhyarani
10.	19360049013	K Sana	II MPCs	K Sana
11.	19360049014	M Rajeswari	II MPCs	Rajeswari
12.	19360049015	M Vijay	II MPCs	m. vijay
13.	19360049016	M Narasappa	II MPCs	narasappa
14.	19360049018	M Sreenivasulu	II MPCs	M. Sreenivasulu
15.	19360049019	P Narasimha	II MPCs	P. Narasimha

16.	19360049021	S Sreeramulu	II MPCs	S. Sreeramulu
17.	19360049022	S Sowmya	II MPCs	S. Sowmya
18.	19360049023	U Lakshminarayana	II MPCs	U Lakshminarayana
19.	19360049024	V Jagadeesh	II MPCs	V. Jagadeesh
20.	19362049001	A Mansoor	II MPC	A Mansoor
21.	19362049002	C Veerendra	II MPC	C Veerendra
22.	19362049004	K G Veeresh	II MPC	K.G. Veeresh
23.	19362049005	M Vamshi	II MPC	M. Vamshi
24.	19362049006	M Shiva	II MPC	M. Shiva
25.	19362049007	M Veeresh	II MPC	M. Veeresh

*[Signature]*  
 Lecturer in Charge  
 Dept. of Physics  
 SML Govt. Degree College  
 YEMMIGANUR 518 360  
 Kurnool Dt. A.P.

*[Signature]*  
 PRINCIPAL  
 PRINCIPAL  
 SML Govt. Degree College  
 YEMMIGANUR, Kurnool



SML Government Degree College  
Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P

ESTD 1982



8

## DEPARTMENT OF PHYSICS

Name of the certificate course: "Physics for Novel Diagnostics"  
Academic Year: 2020-2021

### SUMMARY OF THE CERTIFICATE COURSE

The Department of Physics was started Certificate Course on 21-11-2020 with the duration of 32 days for 32 hours from 21-11-2020. Dr.K.Mahaboob Basha, Principal of the SML Govt.Degree College inaugurating the course and explain the importance of **Diagnostics for human beings**. The class was conducted from 9 AM to 10 AM in working days. The valedictory function was held on 06-01-2021. The Principal distributed course completion certificate and appreciated the faculty for successful completion of course. This course very useful for B.Sc.students to know the Formulas and principles of physics involved in Novel Diagnostics and to know how to work Equipment for diagnostics and its applications .25 students completed the course and received the certificate course certificates in **Physics for Novel Diagnostics** in the academic year 2020-21.

### Objectives

- To know the principles and Techniques X-Ray.
- To know the principles and Techniques CT Scan.
- To know the principles and Technique MRI
- To know the different applications of Equipment used for Diagnostics.

### Outcomes:

- Identify various methods and techniques of Diagnostics.
- Acquire a critical knowledge on Equipment used for Diagnostics

**COURSE DURATION:** 36 Hours

**LEVEL:** UG

**COURSE TYPE:** Scheduled

**CERTIFICATION:** After the completion of course an assessment test is conducted to evaluate the performance of the participants.



ESTD 1982

# SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



DEPARTMENT OF PHYSICS

CERTIFICATE COURSE: 2020-2021

Physics for Novel Diagnostics

## Syllabus

### Chapter 1. X-Ray Scan

- 1.1. Discovery of X-Rays
- 1.2. Introduction about X-Rays
- 1.3. Working of X-ray machine
- 1.4. Diagnosis with X-Rays
- 1.5. The Process of X-Ray scan
- 1.6. X-Ray Results
- 1.7. X-Ray Risks

### Chapter 2. CT (Computed Tomography) Scan

- 2.1. Introduction about CT scan
- 2.2. Working of CT scan
- 2.3. Process of CT Scanning
- 2.4. Uses of CT scan
- 2.5. CT Scan with Contrast
- 2.6. Risks & Side Effects of CT scan

Chapter 3. Magnetic resonance imaging (MRI) scans

- 3.1. Introduction about MRI (magnetic resonance imaging)?
- 3.2. Working of MRI
- 3.3. Process of MRI scan
- 3.4. Image information of MRI scan
- 3.5. preparation before taking an MRI scan
- 3.6. The possible side-effects of an MRI scan
- 3.7. MRI scan Vs CT scan

Chapter 4. Endoscopy

- 4. 1. Endoscopy introduction
- 4.2. Parts of an Endoscope
- 4.3. Working of the Endoscope
- 4.4. Types of endoscopies
- 4.5. Preparation before taking an endoscopy
- 4.6 Side effects after the procedure
- 4.7. Advances in endoscopy

*H. H. H.*  
Lecturer in Charge  
Dept. of Physics  
S.M.L Govt. Degree College  
YEMMIGANUR 518 360  
Kurnool Dt. A.R

# REGISTER OF ATTENDANCE & FEES

Name of the Institute SML Govt Degree College  
Certificate Course or 1000 21/11/2020 to

S.NO.	Admission No. Reg. No.	NAMES	1	2	3	4	5	6	7	8	9	10	11	12
			21/11/20	22/11/20	23/11/20	24/11/20	25/11/20	26/11/20	27/11/20	28/11/20	29/11/20	30/11/20	1/12/20	2/12/20
1	1936009901	A. Sumitha	/	/	/	/	a	/	/	/	/	/	/	/
2	1936009903	B. Ramachandra	/	/	/	/	/	a	/	/	/	a	a	a
3	1936009905	C. Ramesh	/	/	/	/	/	a	/	/	/	a	a	a
4	1936009906	C. Mengappa	/	a	/	/	/	/	/	a	a	/	/	/
5	1936009907	C. Mahadevi	/	/	/	/	/	a	/	/	/	/	/	/
6	1936009908	p. Nagasavani	/	/	/	/	/	/	/	/	/	/	a	a
7	1936009910	D. Mabasha	/	a	a	/	/	/	/	/	/	/	/	/
8	1936009911	E. Anusha	/	/	/	/	/	/	/	/	/	/	/	/
9	1936009912	G- Sandhyarani	a	/	/	a	a	/	a	/	a	/	/	/
10	1936009903	K. Sana	a	/	a	/	/	/	/	a	/	/	/	/
11	1936009914	M. Rajeswari	/	/	/	/	/	/	/	a	/	/	/	/
12	1936009915	m. vijay	/	/	/	/	/	/	/	/	/	/	/	/
13	1936009906	m. Narasappa	/	a	/	/	/	/	/	/	/	/	/	/
14	1936009918	m. Sreenivasulu	/	/	/	/	/	/	/	/	/	/	/	/
15	1936009919	p. Narasimha	/	/	/	/	/	/	/	a	/	/	/	/
16	1936009901	M. Sreeramulu	/	a	/	a	/	/	/	a	/	/	/	/
17	1936009902	m. Sowmya	/	a	a	/	/	a	/	/	/	/	/	/
18	1936009903	U. Lakshminarayana	/	/	/	/	/	a	/	/	/	/	a	/
19	1936009904	V. Jagadeesh	/	/	/	/	/	/	/	/	/	/	/	/
20	1936209901	A. Mansoor	/	/	/	/	/	/	/	/	/	/	/	/
21	1936209902	C. Veerendra	/	/	a	/	a	/	/	a	/	/	/	/
22	1936209904	K.G. Veeresh	/	a	/	/	/	a	/	/	a	/	a	/
23	1936209905	m. Vamshi	/	a	/	/	/	a	/	/	a	/	a	/
24	1936209906	M. Sheva	/	/	/	/	/	/	/	/	/	/	/	/
25	1936209907	M. Veeresh	/	/	/	/	/	/	/	/	/	/	/	/

Number present M





ESTD 1982

SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



13

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE: 2020-2021

Physics for Novel Diagnostics

Model Question Paper

Time: 1-hour

Total Marks:50

PART-A

Answer **Any Four** of the following.

4 X 10 = 40M

1. Explain the process of X-Ray scanning?
2. What Is a CT scan with Contrast?
3. How is a PET scan different from a CT or MRI scan?
4. What Types of Procedures Are Used with an Ultrasound?
5. How should I prepare for an endoscopy?

PART-B

Answer **ALL** the following MCQ

10 X 1 = 10 M

1. Fluoroscopy cannot be done without a dye.
  - a) True
  - b) False
2. Drinking radioactive Barium solution helps look at the \_\_\_\_\_.
  - a) Respiratory Tract
  - b) Gastrointestinal Tract
  - c) Neural Tract
  - d) Thorax
3. Which another method can be used to look in the compete for GI tract?
  - a) Endoscopy
  - b) Capsule Endoscopy
  - c) Colonoscopy
  - d) Laryngoscopy

- 4. What does the 'P' in PET stand for?
  - a) Positron
  - b) Photon
  - c) Proton
  - d) P – orbital
  
- 5. In a normal X-Ray machine, X – Rays are produced by \_\_\_\_\_
  - a) bombardment of cathode rays on a radioactive material
  - b) nuclear fission
  - c) nuclear fusion
  - d) super heating of an element
  
- 6. CT scan stand for \_\_\_\_\_ ?
  - a. Computed Tomography Scan
  - b. Computer Topography Scan
  - c. Computed Topography Scan
  - d. Computer Tomography Scan
  
- 7. The commonly used MRI's have a magnetic strength of \_\_\_\_\_
  - a) 1.5 – 3 Tesla
  - b) 3 – 6 Tesla
  - c) 6 – 12 Tesla
  - d) 12 – 24 Tesla
  
- 8. Capsule endoscope has a \_\_\_\_\_ for taking images.
  - a) CCD camera
  - b) LED camera
  - c) X-Ray camera
  - d) US camera
  
- 9. None of the endoscopic procedures require any cuts.
  - a) True
  - b) False
  
- 10. A growing application of MRI is "MRA", which stands for:
  - a) Magnetic Resonance Amplication
  - b) Magnetic Resonance Angiography
  - c) Minimal Radiology Applications
  - d) Medical Research Assistance

*[Handwritten Signature]*  
**Lecturer in Charge**  
**Dept. of Physics**  
**S.M.L. Govt. Degree College**  
**YEMMIGANUR 518 304**  
**Kurnool Dt. A.P.**



# SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P

ESTD 1982



## SML Government Degree College, Yemmiganur


### DEPARTMENT OF PHYSICS

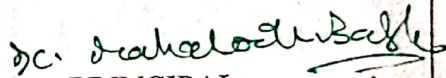
CERTIFICATE COURSE: 2020-2021

STUDENTS MARKS AWARD LIST

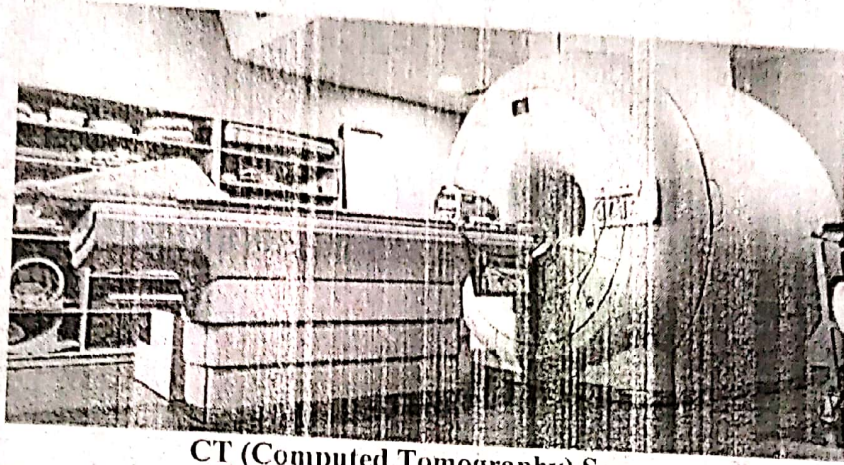
S.No	Regd - No	Name of the student	Class	Max. Marks: 50	Grade
26.	19360049001	A Suneetha	II MPCs	42	A
27.	19360049003	B Ramachandra	II MPCs	29	B
28.	19360049005	C Ramesh	II MPCs	32	B
29.	19360049006	C Ningappa	II MPCs	38	A
30.	19360049007	C Mahadevi	II MPCs	44	A
31.	19360049008	D Naga Sravani	II MPCs	38	A
32.	19360049010	D Mabasha	II MPCs	39	A
33.	19360049011	E Anusha	II MPCs	43	A
34.	19360049012	G Sandhyarani	II MPCs	44	A
35.	19360049013	K Sana	II MPCs	41	A
36.	19360049014	M Rajeswari	II MPCs	43	A
37. 12	19360049015	M Vijay	II MPCs	32	B
38. 13	19360049016	M Narasappa	II MPCs	31	B
39. 14	19360049018	M Sreenivasulu	II MPCs	38	A
40. 15	19360049019	P Narasimha	II MPCs	39	A

16	19360049021	S Sreeramulu	II MPCs	41	A
17	19360049022	S Sowmya	II MPCs	43	A
18	19360049023	U Lakshminarayana	II MPCs	31	B
19	19360049024	V Jagadeesh	II MPCs	39	A
20	19362049001	A Mansoor	II MPC	38	A
21	19362049002	C Veerendra	II MPC	42	A
22	19362049004	K G Veeresh	II MPC	31	B
23	19362049005	M Vamshi	II MPC	29	B
24	19362049006	M Shiva	II MPC	39	A
25	19362049007	M Veeresh	II MPC	40	A

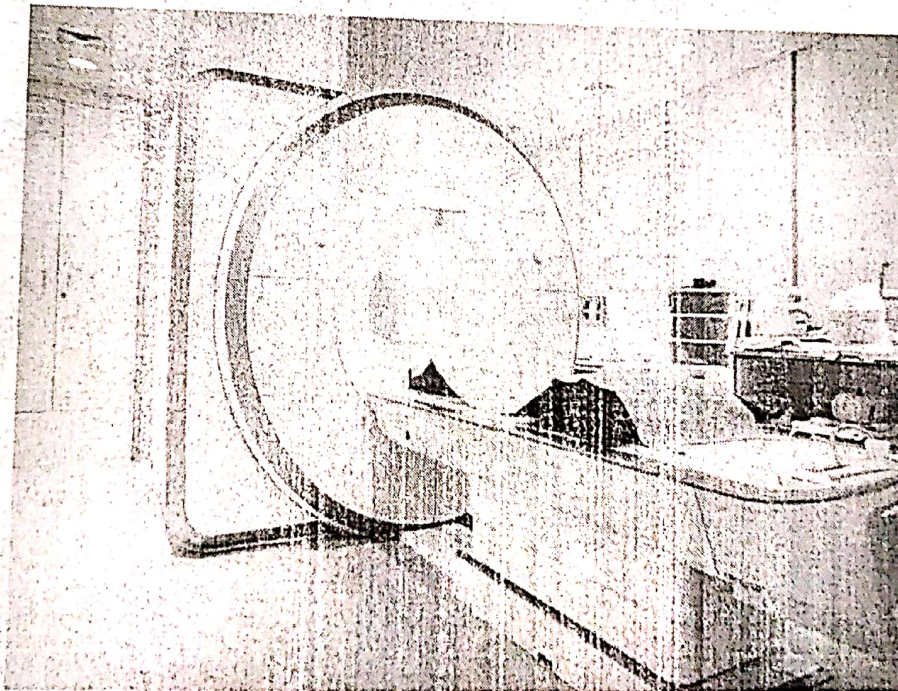
  
 Lecturer in Charge  
 Department of Physics  
 S.M.L. Govt. Degree College  
 YEMMIGANUR 518 360  
 Kurnool Dt. A.P.

  
 PRINCIPAL  
 S.M.L. Govt. Degree College  
 YEMMIGANUR, Kurnool (Dt.)





**CT (Computed Tomography) Scan**



**Magnetic resonance imaging (MRI) scan**



ESTD 1982

# SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P



## SML Government Degree College, Yemmiganur

DEPARTMENT OF PHYSICS

CERTIFICATE COURSE: 2020-2021

### Feed back of the Student

S.No	Regd - No	Name of the student	Class	Feed Back
1	19360049001	A Sunectha	II MPCs	Satisfactory
2	19360049003	B Ramachandra	II MPCs	Very good
3	19360049005	C Ramesh	II MPCs	Excellent
4	19360049006	C Ningappa	II MPCs	Good
5	19360049007	C Mahadevi	II MPCs	Excellent
6	19360049008	D Naga Sravani	II MPCs	Very very good
7	19360049010	D Mabasha	II MPCs	Good
8	19360049011	E Anusha	II MPCs	Very useful good
9	19360049012	G Sandhyarani	II MPCs	Excellent
10	19360049013	K Sana	II MPCs	Very useful, Good
11	19360049014	M Rajeswari	II MPCs	satisfaction.
12	19360049015	M Vijay	II MPCs	Good
13	19360049016	M Narasappa	II MPCs	Good
14	19360049018	M Sreenivasulu	II MPCs	excellent
15	19360049019	P Narasimha	II MPCs	Good
16	19360049021	S Sreeramulu	II MPCs	Very Good
17	19360049022	S Sowmya	II MPCs	Excellent

18	19360049023	U Lakshminarayana	II MPCs	
19	19360049024	V Jagadeesh	II MPCs	very very Good
20	19362049001	A Mansoor	II MPC	Excellent
21	19362049002	C Veerendra	II MPC	Sati Satisfaction Good
22	19362049004	K G Veeresh	II MPC	Excellent
23	19362049005	M Vamshi	II MPC	Very Good
24	19362049006	M Shiva	II MPC	Good
25	19362049007	M Veeresh	II MPC	Excellent



ESTD 1982

# SML Government Degree College

Yemmiganur, Kurnool dist., Andhra Pradesh

Affiliated to Rayalaseema University, Kurnool-518360, A.P

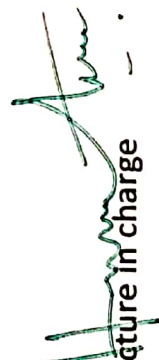


## DEPARTMENT OF PHYSICS

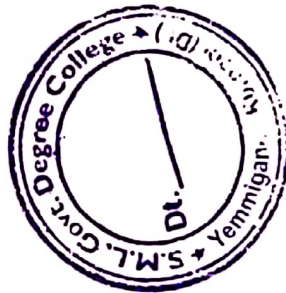
### CERTIFICATE OF COMPLETION


Academic year 2020-21

THIS IS CERTIFY THAT MR / MISS A. SUNITHA.....STUDYING II MPCS.....HAS SUCCESSFULLY COMPLETED A CERTIFICATE COURSE IN PHYSICS FOR NOVEL DIAGNOSTICS ORGANISED BY THE DEPARTMENT OF PHYSICS, SML GOVERNMENT DEGREE COLLEGE YEMMIGANUR KURNOOL DISTRICT HELD FROM 21-11-2020 TO 06-01-2021.

  
Lecturer in charge

Department of Physics



  
PRINCIPAL