
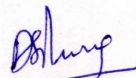



Rayat Shiksha Santha's
Rajarshi Chhatrapati Shahu College Kolhapur
Department of Physics
Short Term Course Report 2023-24

The Department of Physics runs a short term course entitled “**Understanding Basics Electronics Devices**” for B. Sc. II and III students. The purpose of this course is to provide basic knowledge to students related to electronic devices and their applications, soldering methods, component study, assembling of circuits and testing, etc. The duration of this short-term course is 30 hours. Dr. A. R. Patil, head of the department of physics, is working as the course coordinator.

The students of B.Sc. II and III Physics are admitted to this course so that, after completing their B.Sc. degree, they can use this knowledge for self-business or in a job in the electronics industry. 10 students have taken admission to this course. The course fee is Rs. 500 per student. The lectures for this course were taken in the months of January and February from 9:00 a.m. to 10:00 a.m. A total of thirty lectures were conducted for this course. After curriculum completion, a multiple-choice test of 50 marks is conducted. The course completion certificates were given to students.


Coordinator
(Dr. A. R. Patil)


Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.


Principal,
Rajarshi Chh. Shahu College,
Kolhapur.



रयत शिक्षण संस्थेचे
राजर्षी छत्रपती शाहू कॉलेज, कोल्हापूर
पदार्थविज्ञान विभाग
२०२३-२४

दि. १४/७/२०२३

ठराव

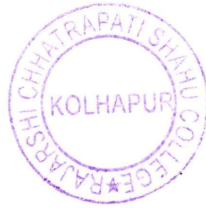
सर्व विज्ञान विभाग प्रमुखांची बैठक मा. प्राचार्यच्या मार्गदर्शनाखाली दिनांक १४/७/२०२३ रोजी घेण्यात आली. सदर बैठकीमध्ये संख्याशास्त्र विभागामार्फत "Understanding of Basic Electronic Devices" हा शॉर्ट टर्म कोर्स घेण्याचे ठरले.


सदर कोर्सकरिता खालील ठराव सर्वानुमते करण्यात आला.

१. या कोर्स साठी रु. ५०० याप्रमाणे फी घेणेचे सर्वानुमते ठराविण्यात आले. तसेच जमा होणाऱ्या फी मधून कोर्स खर्च वजा जाता उर्वरित रकमेच्या ४०% रक्कम विभागातील काम करणाऱ्या तासिका तत्वावरील शिक्षकांना सदर कोर्सचे मानधन म्हणून देण्यात यावी असे सर्वानुमते ठरले.
२. या कोर्स करिता जास्तीत जास्त विद्यार्थी प्रवेश घेतील यासाठी विभागातील सर्व शिक्षकांनी प्रयत्न करावेत व सदर कोर्स चांगल्या पध्दतीने पार पाडण्यासाठीची जबाबदारी विभागप्रमुखावर सोपविण्यात आली.

वरील प्रमाणे ठराव सर्वानुमते मंजूर करण्यात आले.

- १) संख्याशास्त्र- श्री. पी. एस. चौगुले
- २) रसायनशास्त्र- प्रो. पी. बी. पिस्टे
- ३) भौतिकशास्त्र- डॉ. ए. आर. पाटील
- ४) गणितशास्त्र- श्री. एस. डी. शेडगे
- ५) वनस्पतीशास्त्र- डॉ. एस. डी. शेख
- ६) प्राणीशास्त्र- श्रीमती डी. ए. मालवेकर
- ७) शॉर्ट टर्म कोर्स प्रमुख- डॉ. एम. के. कत्राडे
- ८) IQAC coordinator - डॉ. एस. डी. शेख
- ९) अकौंट विभाग- श्री. आर. के. यादव




Principal,
Rajarshi Chh. Shahu College
Kolhapur.

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"


Academic Year 2023-24

Notice

Date: 02/01/2024

All the students of B.Sc.I, II and III (Physics) are hereby informed that the Department of Physics is going to run a certificate course entitled "Understanding of Basic Electronics Devices" for academic year 2023-24. All the students should make their registration for this course by paying Rs. 500/-as registration fee.




Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

‘Rayat Shiksha Santha’s
Rajarshi Chhatrapati Shahu College Kolhapur
Department of Physics

Name of the Course: Understanding of Basic Electronics Devices

Department: Physics

Course Implementation Year: 2019-2020

Coordinator Name & Contact No.: Dr. A. R. Patil, 9403825243

Duration: 30 hours

Course fee: 500/-

Eligibility: 12th Pass

Intake Capacity: 10

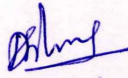
Objectives:

- To provide basic knowledge of electronic components so that students will understand the working of electronic components.
- To develop practical skill related with electronics and electronic circuits.
- To provide job opportunity or self-employment to the students.

Learning Outcomes:

- Students can recognize electronic components.
- Students can recognize working of electronic components.
- Students can build electronic circuits.




Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics
Academic Year 2023-24

**Short term course on
"Understanding of Basic Electronics Devices"**


Syllabus

- Unit-I: Introduction of electronic Ideas 6 Hrs.
Household electricity, Safety and precaution of instruments, current, voltage, amplitude and frequency.
- Unit-II: Introduction power supplies 4 Hrs.
Type of power supplies i.c. a.c. and d.c., regulated power supply, use of multimeter and testing of components
- Unit-III: Study of passive and active electronic Devices 10 Hrs.
Resistance, capacitance, inductance, transformer, Relays, Switches, Introduction to basic semiconductor concept, diode and its types and working, transistors and its type and working. IC's
- Unit-IV: Practical work (Building simple circuits on breadboards) 10 Hrs.
Introduction to PCB, Tag board, Vero board and Breadboard, soldering and desoldering technique, Tracing of electronic circuit, building of electronic circuit.
1. Construction of Dark sensor using transistor, phototransistor and photodiode.
 2. Construction of 5V Regulated power supply.
 3. Construction of a melody generator using UM66.

References:

1. Electronic instruments Hand Book- Clyde F. Combs
2. Electronic engineers Reference Book, L. W. Tuner
3. Starting Electronics, Keith Brindley




Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur

Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Year 2023-24

List of admitted students and fees received

Sr. No.	Roll No.	Name of the student	Mobile No.	Fee received	Sign.
1	SIII-62	Yedage Mayuri Milind	8208874470	500/-	M.M.Yedage
2	SIII-63	Kamble Arati Kiran	9172922003	500/-	Arati
3	SIII-64	Ganage Pradnya Manik	9579816159	500/-	Pradnya
4	SIII-65	Jadhav Atul Sanjay	9156909437	500/-	Atul
5	SII-63	Kulkarni Samarth Bhimrao	8010575252	500/-	Sarth
6	SII-65	Ravi Vikas Malleshappa	9665649022	500/-	Vikas
7	SII-15	Mali Abhishek Santosh	8010447576	500/-	Abhishek
8	SII-16	Mali Avinash Manik	7058622018	500/-	Avinash
9	SII-13	Devtales Rahul Rajaram	8485855010	500/-	Rahul
10	SII-17	Naik Pavan Pandurang	7353331220	500/-	Pavan
Total				5000/-	

Receipt No. 5204 to 5213 dated on 27/03/24




Abhishek
Head


Department of Physics

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department Of Physics
Short term course on
“Understanding of Basic Electronics Devices”
Academic Year 2023-24
Time Table

Date	Time	No. of periods	Date	Time	No. of periods
09/01/2024	9.00am to 10.00am	1	05/02/2024	9.00am to 10.00am	1
10/01/2024	9.00am to 10.00am	1	06/02/2024	9.00am to 10.00am	1
11/01/2024	9.00am to 10.00am	1	07/02/2024	9.00am to 10.00am	1
12/01/2024	9.00am to 10.00am	1	09/02/2024	9.00am to 10.00am	1
13/01/2024	9.00am to 10.00am	1	10/02/2024	9.00am to 10.00am	1
16/01/2024	9.00am to 10.00am	1	12/02/2024	9.00am to 10.00am	1
17/01/2024	9.00am to 10.00am	1	13/02/2024	9.00am to 10.00am	1
23/01/2024	9.00am to 10.00am	1	14/02/2024	9.00am to 10.00am	1
24/01/2024	9.00am to 10.00am	1	15/02/2024	9.00am to 10.00am	1
29/01/2024	9.00am to 10.00am	1	16/02/2024	9.00am to 10.00am	1
30/01/2024	9.00am to 10.00am	1	17/02/2024	9.00am to 10.00am	1
31/01/2024	9.00am to 10.00am	1	20/02/2024	9.00am to 10.00am	1
01/02/2024	9.00am to 10.00am	1	21/02/2024	9.00am to 10.00am	1
02/02/2024	9.00am to 10.00am	1	22/02/2024	9.00am to 10.00am	1
03/02/2024	9.00am to 10.00am	1	24/02/2024	9.00am to 10.00am	1


Coordinator
(Dr. A. R. Patil)




Head
Department of Physics
Rajarshi Chh. Shahu College, Kolhapur

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Year 2023-24

Student attendance sheet

Roll No.	Name of the student	09/11/24	10/11/24	11/11/24	12/11/24	13/11/24	16/11/24	17/11/24	23/11/24	24/11/24	29/11/24
SIII-62	Yedage Mayuri Milind	M.M.Yedage 9 to 10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am
SIII-63	Kamble Arati Kiran	Arati	Arati	Arati	Arati	Arati	Arati	Arati	Arati	Arati	Arati
SIII-64	Ganage Pradnya Manik	Pradnya	Pradnya	Pradnya	Pradnya	Pradnya	Pradnya	Pradnya	Pradnya	Pradnya	Pradnya
SIII-65	Jadhav Atul Sanjay	Atul	Atul	Atul	-	Atul	Atul	Atul	Atul	Atul	Atul
SII-63	Kulkarni Samarth Bhimrao	Sarth	Sarth	Sarth	Sarth	Sarth	Sarth	Sarth	Sarth	Sarth	Sarth
SII-65	Ravi Vikas Malleshappa	Vikas	Vikas	Vikas	Vikas	Vikas	Vikas	Vikas	Vikas	Vikas	Vikas
SII-15	Mali Abhishek Santosh	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek
SII-16	Mali Avinash Manik	Manik	Manik	Manik	Manik	Manik	Manik	Manik	Manik	Manik	Manik
SII-13	Devtale Rahul Rajaram	Rahul	Rahul	Rahul	-	Rahul	Rahul	Rahul	-	Rahul	Rahul
SII-17	Naik Pavan Pandurang	Pavan	Pavan	Pavan	Pavan	Pavan	Pavan	Pavan	Pavan	Pavan	Pavan



(Signature)
Head

Department of Physics
 Rajarshi Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Year 2023--24

Student attendance sheet

Roll No.	Name of the student	30/11/24	31/11/24	1/12/24	2/12/24	3/12/24	5/12/24	7/12/24	9/12/24	10/12/24
SIII-62	Yedage Mayuri Milind	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am	M.M.Yedage 9-10 am
SIII-63	Kamble Arati Kiran	Arati Arati	Arati Arati	Arati Arati	Arati Arati	Arati Arati	Arati Arati	Arati Arati	Arati Arati	Arati Arati
SIII-64	Ganage Pradnya Manik	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya	Pradnya Pradnya
SIII-65	Jadhav Atul Sanjay	Atul Atul	Atul Atul	Atul Atul	Atul Atul	Atul Atul	Atul Atul	Atul Atul	Atul Atul	Atul Atul
SII-63	Kulkarni Samarth Bhimrao	Sarth Sarth	Sarth Sarth	Sarth Sarth	Sarth Sarth	Sarth Sarth	Sarth Sarth	Sarth Sarth	Sarth Sarth	Sarth Sarth
SII-65	Ravi Vikas Malleshappa	Vikas Vikas	Vikas Vikas	Vikas Vikas	Vikas Vikas	Vikas Vikas	Vikas Vikas	Vikas Vikas	Vikas Vikas	Vikas Vikas
SII-15	Mali Abhishek Santosh	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek	Abhishek Abhishek
SII-16	Mali Avinash Manik	Avinash Avinash	Avinash Avinash	Avinash Avinash	Avinash Avinash	Avinash Avinash	Avinash Avinash	Avinash Avinash	Avinash Avinash	Avinash Avinash
SII-13	Devtale Rahul Rajaram	Rahul Rahul	Rahul Rahul	Rahul Rahul	Rahul Rahul	Rahul Rahul	Rahul Rahul	Rahul Rahul	Rahul Rahul	Rahul Rahul
SII-17	Naik Pavan Pandurang	Pavan Pavan	Pavan Pavan	Pavan Pavan	Pavan Pavan	Pavan Pavan	Pavan Pavan	Pavan Pavan	Pavan Pavan	Pavan Pavan



Pradyumn
Head
 Department of Physics
 Rajarshi Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Year 2023--24

Student attendance sheet

Roll No.	Name of the student	12/2/24	13/2/24	14/2/24	15/2/24	16/2/24	17/2/24	20/2/24	21/2/24	22/2/24	24/2/24
SIII-62	Yedage Mayuri Milind	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage	g-10 am M.M.Yedage
SIII-63	Kamble Arati Kiran	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh	Nonill Sangh
SIII-64	Ganage Pradnya Manik	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh	Atul Sangh
SIII-65	Jadhav Atul Sanjay	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh
SIII-63	Kulkarni Samarth Bhimrao	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh	Sees Sangh
SIII-65	Ravi Vikas Malleshappa	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh
SIII-15	Mali Abhishek Santosh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh
SIII-16	Mali Avinash Manik	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh
SIII-13	Devitale Rahul Rajaram	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh	Asmall Sangh
SIII-17	Naik Pavan Pandurang	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh	P-Nait Sangh



(Signature)
Head

Department of Physics
 Rajarshi Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Short Term Course in Physics

Understanding of Basic Electronics Devices

Date: 28/02/2024

Maximum Marks: 50

Time: 60 Min.

Class: B.Sc.II/ III	Roll No.	Name of the student:
---------------------	----------	----------------------

- Note: 1. All questions are compulsory
2. All questions carry equal marks
3. Each question is for 2 Marks
4 Write correct answer alphabet in rectangle

Q.1 LDR stands for -----

- a) Light Dependent Resistor b) Light Doped Resistor
c) Light Dependent Rectifier

Q.2. To avoid shock hazards do not touch -----

- a) neutral wire b) Line wire c) earth wire

Q.3 The law of series resistor says that the overall resistance of a number of resistors in series is the sum of the individual resistance.

- a) True b) false?

Q.4 For soldering of electronic components on PC ----- is used.

- a) Soldering Iron b) Electrical Geyser c) Electric heater

Q.5 IC 555 is used as -----

- a) Astable multivibrator b) monostable multivibrator c) both (a) & (b)

Q.6. In bridge rectifier the numbers of diodes used are -----

- a) 4 b) 2 c) 3

Q.7. Oscillator circuits are used to produce --- voltage

- a) a.c. b) d.c. c) both a.c. and d.c.

Q.8. IN0001 is ----- diode

- a) rectifier b) zener c) photo

Q.9. ----- emits light when forward biased.

- a) LED b) Rectifier diode c) photo diode

Q.10. An inductor or coil electrical energy is stored in the form of -----

- a) Electric field b) magnetic field c) electro-magnetic field



Head
Head

Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

- Q.11. Transistor is used in ----- circuits
- a) Amplifier b) rectifier c) both (a) and (b)
- Q.12. If NPN transistor has current gain of 100 and base current of 1mA then its collector current is ---
- a) 1mA b) 10mA c) 100mA
- Q.13. In step up transformer secondary voltage is ---- --primary voltage.
- a) greater than b) less than c) equal to
- Q.14. Zener diode is used as ----- regulator
- a) Current b) voltage c) charge
- Q.15. The 230v house hold a.c. voltage has frequency ----- Hz
- a) 100 b) 50 c) 25
- Q.16. To build an electronic circuit ----- used
- a) Breadboard b) PCB c) both (a) & (b)
- Q.17. Five 10 k Ω resistors are in series. One 50 k Ω resistor is placed in parallel across them all. The overall resistance is -----
- a) 50 k Ω b) 52 k Ω c) 25 k Ω
- Q. 18 The capacitor stores electrical energy in the form of -----
- a) Electric field b) magnetic field c) electro-magnetic field
- Q.19. IC 741 is known as -----
- a) Operational amplifier b) integrated circuit c) timer IC
- Q.20. One nano is equal to -----
- a) 1×10^{-6} A b) 1×10^{-8} A c) $1,000 \times 10^{-12}$ A
- Q.21. In circuit symbol of NPN transistor the arrow -----
- a) Points out of the emitter b) points into the emitter c) points out of the collector
- Q.22. If A current of 1 A flows through a resistor of 10 Ω . Then voltage produced across resistor is --
- a) 10V b) 1V c) 100V
- Q.23. Zener diode is always operated in ---- condition
- a) forward biased b) reverse biased c) unbiased
- Q.24 100 Coulombs of electricity flow past a point in an electrical circuit, in 20 sec. The current flowing in circuit is -----
- a) 10A b) 2A c) 5A
- Q.24 In photodiode its current increases with -----
- a) increase in intensity of light falling on it b) current in the circuit
c) resistance in the circuit



Ohmy
Head

Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.

Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College, Kolhapur

Department of Physics

Short term course on "Understanding of Basic Electronics Devices"

Academic Year 2023-24

Result sheet

Sr. No.	Roll No.	Name of the student	Marks obtained out of 50
1	SIII-62	Yedage Mayuri Milind	50
2	SIII-63	Kamble Arati Kiran	50
3	SIII-64	Ganage Pradnya Manik	50
4	SIII-65	Jadhav Atul Sanjay	48
5	SII-63	Kulkarni Samarth Bhimrao	44
6	SII-65	Ravi Vikas Malleshappa	46
7	SII-15	Mali Abhishek Santosh	48
8	SII-16	Mali Avinash Manik	42
9	SII-13	Devtale Rahul Rajaram	46
10	SII-17	Naik Pavan Pandurang	48



D. Shingde
Head

Department of Physics
Rajarshi Chh. Shahu College, Kolhapur.



Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College, Kolhapur

Reaccredited by NAAC (IV cycle) at 'A++' grade with CGPA =3.78



DEPARTMENT OF PHYSICS

CERTIFICATE OF PARTICIPATION

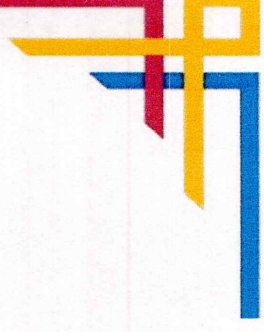
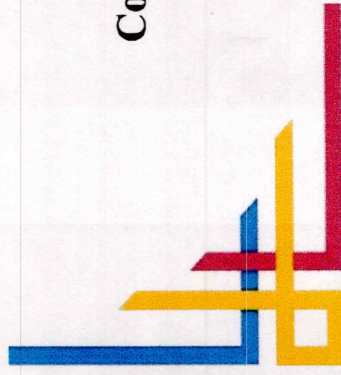
This is to certify that,.....

*has successfully completed a short term course on Understanding of Basic Electronics Devices conducted by
Department of Physics, Rajarshi Chhatrapati Shahu College, Kolhapur during academic year 2023-2024.*

Coordinator

Head
Department of Physics

Principal

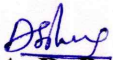


"Education through self-help is our motto"- KARMAVEER
Rayat Shikshan Sanstha's
Rajarshi Chhatrapati Shahu College, Kolhapur
Department of Physics
Academic Year (2023-2024)
Organized

Short term Course on "Understanding of Basic Electronics Devices"
(Self - Funded)

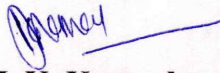
Income and Expenditure Statement

Income		Expenditure	
Particulars	Amount (in Rs.)	Particulars	Amount (in Rs.)
1) Total Participants = 10 (10*500)	5000/-	1) GST 18 %	900/-
		2) Soldering Gun, soldering material	614/-
		2) Remuneration for Recourse Person Lumsum (40% of Total amount 3486 is 1394.40/- equally distributed into 2 persons)	
		i) Dr. R. T. Patil	697/-
		ii) Shri. N. V. Sankpal	697/-
		3) Balance to College	2092/-
Total	5000=00	Total	5000=00



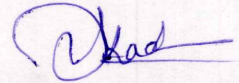
Dr. A. R. Patil

Co-coordinator & Head,
Department of Physics,
R. C. Shahu College, Kolhapur



Dr. M. K. Kannade

Incharge, Short Term Courses,
R. C. Shahu College, Kolhapur



Dr. L.D. Kadam

Principal,
R. C. Shahu College, Kolhapur



