Shri Shivaji Education Society Amravati's

# Science College, Nagpur

# Department Of Physics

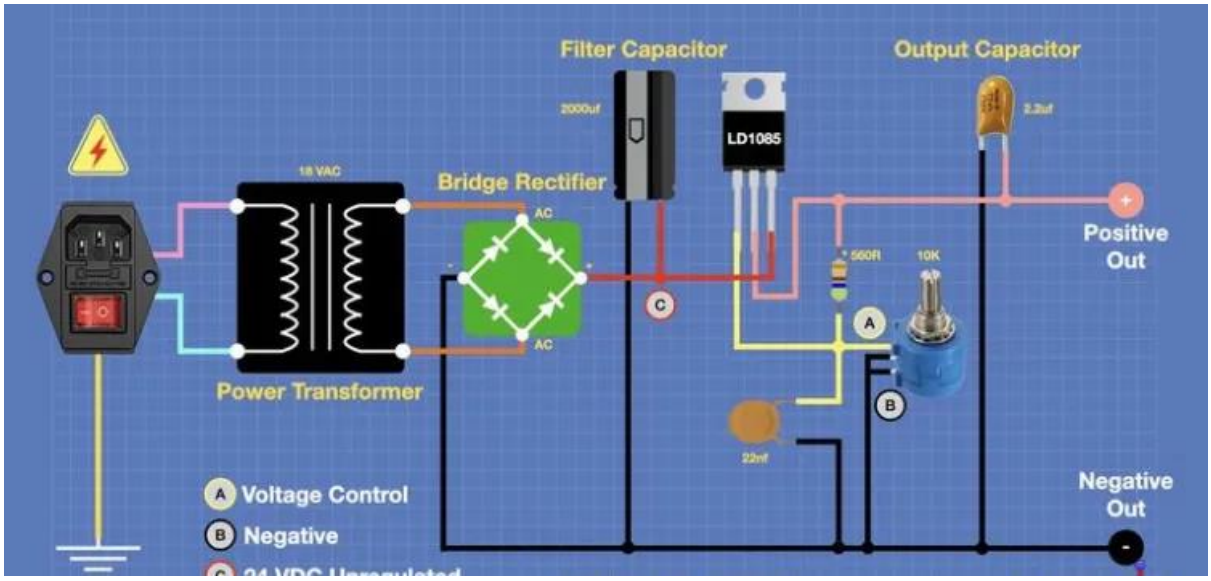
**Session 2023-24**

**Free Certificate Course for College Students**

**Certificate Course - Fundamentals of Electronic D.C. Power Supply**

**Duration – 30 Hours (10 Weeks)**

***Course starts from 01 Aug 2023 to 07 Oct. 2023***




**Course Coordinator – Mr. Bhupendra T. Kumbhare**

**Shri Shivaji Education Society Amaravati's**

**Science College Congress Nagar, Nagpur**

# Department of Physics

## Course Report on Add-on Course

## "Fundamentals of Electronic D.C. Power Supply"

**Undergraduate Course for Physics Students**

**Duration: 01/08/2023 to 07/10/2023**

**Total Students: 82**

This 10-week add-on course provided B.Sc. Physics students with a comprehensive understanding of the fundamentals of electronic DC power supplies. The course was conducted by Mr. B.T. Kumbhare, Assistant Professor, Department of Physics SSES Amt's Science College Congress Nagar Nagpur. Total 82 Students of B.Sc. I, II and III, year Physics were enrolled for the course.

The course covered theoretical principles, design techniques, and practical applications, emphasizing hands-on experience and real-world applications. The students were evaluated through MCQ based final exam of 80 marks and practical lab sessions of 20 marks. All 82 students successfully completed the course, with a majority achieving high grades. Several students demonstrated exceptional skills in practical applications and innovative project designs. Students worked on individual and group projects that involved designing and building functional DC power supplies. Practical sessions included hands-on experience with circuit design and testing with oscilloscopes and multimeters.

The 10-week Fundamentals of Electronic DC Power Supply course was a valuable addition to the undergraduate physics curriculum, equipping students with essential knowledge and skills in electronics. The course successfully combined theoretical foundations with practical applications, preparing the students for further studies and careers in electronics and related fields.

**Action Taken:** To understand the fundamentals of D.C. power supply physics department conducted the add-on course. Total 82 students registered for this course. Students participated actively in this course and made D.C. power supply.

Mr. B. T. Kumbhare

Course Coordinator

**Shri Shivaji Education Society Amaravati's**

**Science College Congress Nagar, Nagpur**

# Department of Physics

## Course Report on Add-on Course

## "Fundamentals of Electronic D.C. Power Supply"

**Undergraduate Course for Physics Students**

**Duration: 01/08/2023 to 07/10/2023**

**Name of Course Coordinator: Mr. B. T. Kumbhare**

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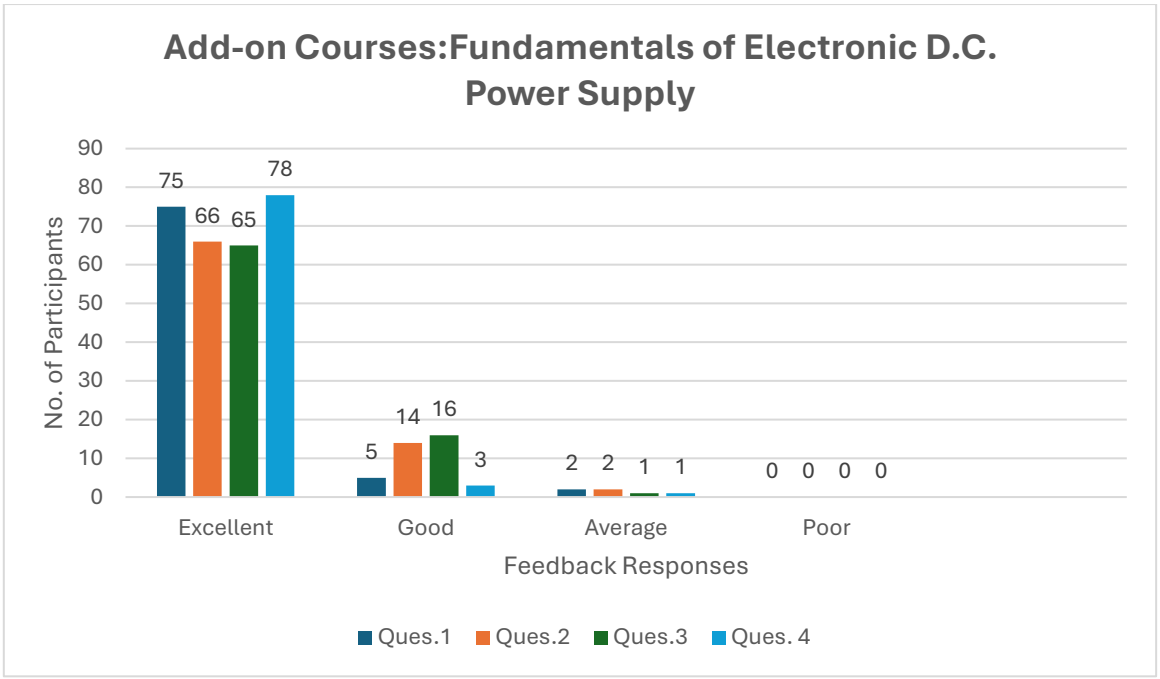
## Course Feedback Form

Name : _____

1) How would you rate the overall quality of the course content?
   ☐ Excellent
   ☐Good
   ☐Average
   ☐Poor
2) How relevant was the course content to your professional or academic goals?
   ☐Excellent
   ☐Good
   ☐Average
   ☐Poor
3) How would you rate the hands-on lab sessions and practical exercises?
   ☐Excellent
   ☐Good
   ☐Average
   ☐Poor
4) How would you rate the availability and quality of resources (e.g., textbooks, online materials)?
   ☐Excellent
   ☐Good
   ☐Average
   ☐Poor


Add-on Courses:Fundamentals of Electronic D.C. Power Supply
No. of Participants
90
80
70
60
50
40
30
20
10
0
75
66
65
78
5
14
16
3
2
2
1
1
0
0
0
0
Excellent
Good
Average
Poor
Feedback Responses
Ques.1
Ques.2
Ques.3
Ques. 4

To,
The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: For permission to conduct the add on courses in Physics during the session 2023-2024

Respected Sir,

This is to request you that, the teachers of Physics department have prepared the syllabus and modules of the 30 hours certificate courses for the session 2023-2024.

The details of the course module, syllabus and time table is submitted here with.

Hence please permit to run the add on courses and oblige me.

Thanking you

Yours sincerely

Dr. S. W. Anwane
Professor and Head
Department of Physics
Shri Shivaji Education Society Amravati's
SCIENCE COLLEGE
Congress Nagar, Nagpur.

Permitted

Shri Shivaji Education Society Amravati 's

# Science College

Congress Nagar,Nagpur

# Department Of Physics

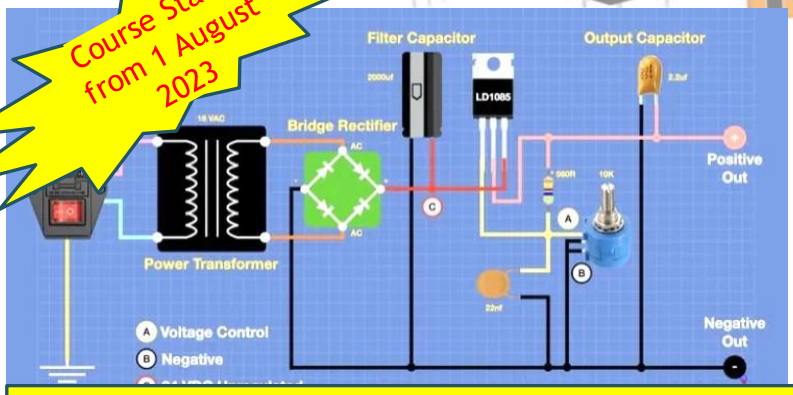
## Certificate Course Fundamentals of Electronic D.C. Power Supply

**Free Certificate Course**
for UG Students
**Course Duration : 30 hours**
(spread over 10 weeks, 3 hours per week)

**Course Objectives**

- To provide a comprehensive understanding of D.C. power supply design and operation
- To develop practical skills in building and testing D.C. power supplies
- To introduce students to various types of D.C. power supplies and their applications
- To enable students to troubleshoot and maintain D.C. power supplies
- To prepare students for advanced studies or careers in electronics and power supply engineering


Course Starts from 1 August 2023




Process of Registration: Early birds Will be admitted

Last Date of Registration:25/07/2023
For Registration Contact: Mr. B. T. Kumbhare (Coordinator)

Shri Shivaji Education Society Amravati's

# Science College

Congress Nagar, Nagpur

## Department of Physics

**Add-on Certificate Course (2023-2024)**

**Certificate Course: Fundamentals of Electronic D.C. Power Supply**

# Notice

**Date : 15/07/2023**

The Department of Physics is conducting Add-on **Certificate Course on Fundamentals of Electronic D.C. Power Supply** for the session 2023-24. Interesting students of B.Sc. Part I, Part II & Part III should register themself in early and contact to the Course Coordinator Mr. B. T. Kumbhare immediately.

| Course | Admission Fees |
|---|---|
| Fundamentals of Electronic D.C. Power Supply | Free |

Mr. B. T. Kumbhare

Course Coordinator

**Shri Shivaji Education Society Amravati's**

# Science College

**Congress Nagar, Nagpur**

## Department of Physics

### Course Module and Syllabus

**Certificate Course:** Fundamentals of Electronic D.C. Power Supply

**Course Coordinator**: Mr. Bhupendra T. Kumbhare

**Course description:**

This certificate course provides a comprehensive introduction to the principles and concepts of electronic DC power supply systems. Students will gain a deep understanding of the fundamental principles, components, and circuit analysis techniques used in DC power supply design and development.

**Course Objectives:**

- To provide a comprehensive understanding of D.C. power supply design and operation.
- To develop practical skills in building and testing D.C. power supplies.
- To introduce students to various types of D.C. power supplies and their applications.
- To enable students to troubleshoot and maintain D.C. power supplies.
- To prepare students for advanced studies or careers in electronics and power supply engineering.

**Instructional Strategies:** Theory class, Practical, Video clips, Models etc.

**Evaluation Strategies:** Oral discussions and Final MCQ examination.

**Course Outline:**

- Introduction to DC Power Supply Systems
- Components and Circuit Analysis
- Design and Development of DC Power Supply Systems
- Safety Considerations and Troubleshooting Techniques

**Course Outcomes:**

By the end of the course, students will be able to:

- Understand the basic principles and components of D.C. power supplies.

- ❖ Design and construct different types of D.C. power supplies.
- ❖ Perform testing and troubleshooting on D.C. power supplies.
- ❖ Apply knowledge of D.C. power supplies in practical and industrial applications.

Present and document their design and testing process effectively.

**Duration of course: Ten Weeks (30 hours)**

**The Structure of Syllabus and system of evaluation -**

| Course | Theory Papers and Practical | Total Marks | |
|---|---|---|---|
| | | **Theory** | **Practical** |
| Certificate Course in Fundamentals of Electronic D.C. Power Supply | Theory paper- Fundamentals of Electronic D.C. Power Supply<br>* Theory examination will be of MCQ pattern having 60 or 80 questions each with equal marks. | 80 | 20 |
| | * Practical examination will be based on performance evaluation in the laboratory | 100 | |

Course Coordinator
(B.T. Kumbhare)

Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur.

Principal
S. S. E. S. Amravati's
Science College, Nagpur.

**SYLLABUS**

**Certificate course (10 weeks,** 3 hours per week**)**

**(Certificate Course: Fundamentals of Electronic D.C. Power Supply)**

**Theory –**

**Unit-I**: Introduction to D.C. Power Supplies and Basic Components and Operation

- Overview of power supplies
- Types of power supplies (linear vs. switching)
- Applications of D.C. power supplies
- Transformers, rectifiers, filters
- Voltage regulation
- Load and line regulation

**Unit-II:** Linear Power Supplies and Switching Power Supplies

- Series and shunt regulators
- Design and operation of linear regulators
- Advantages and disadvantages
- Basic principles of switching regulators
- Buck, boost, and buck-boost converters
- Design and operation of switching regulators

**Unit-III**: Advanced Topics in Power Supply Design, and Maintenance and Applications of D.C. Power Supplies

- Thermal management
- EMI/EMC considerations
- Efficiency improvements
- D.C. power supplies in consumer electronics
- Industrial applications
- Renewable energy systems

**Practical –**

Power Supply Design and Simulation

- Design considerations
- Simulation tools and techniques

- Hands-on simulation exercises

Practical Construction and Testing

- Building a basic D.C. power supply
- Testing procedures and equipment
- Safety considerations

Troubleshooting and Maintenance

- Common issues and diagnostics
- Troubleshooting techniques
- Preventive maintenance

**Distribution of marks:-**

| | |
|---|---|
| Simulation tools and techniques | (05 Marks) |
| Building a basic D.C. power supply | (05 Marks) |
| Common issues and diagnostics | (05 Marks) |
| Preventive maintenance | (05 Marks) |

**Week-wise teaching plan:**

| WEEK | HRS. | SYLLABUS |
|---|---|---|
| Week 1 | | **Introduction to D.C. Power Supplies** |
| | 1 | Overview of power supplies |
| | 1 | Types of power supplies (linear vs. switching) |
| | 1 | Applications of D.C. power supplies |
| Week 2 | | **Basic Components and Operation** |
| | 1 | Transformers, rectifiers, filters |
| | 1 | Voltage regulation |
| | 1 | Load and line regulation |
| Week 3 | | **Linear Power Supplies** |
| | 1 | Series and shunt regulators |
| | 1 | Design and operation of linear regulators |
| | 1 | Advantages and disadvantages |
| Week 4 | | **Switching Power Supplies** |
| | 1 | Basic principles of switching regulators |
| | 1 | Buck, boost, and buck-boost converters |
| | 1 | Design and operation of switching regulators |
| Week 5 | | **Power Supply Design and Simulation** |
| | 1 | Design considerations |
| | 1 | Simulation tools and techniques |
| | 1 | Hands-on simulation exercises |
| Week 6 | | **Practical Construction and Testing** |
| | 1 | Building a basic D.C. power supply |
| | 1 | Testing procedures and equipment |
| | 1 | Safety considerations |
| Week 7 | | **Advanced Topics in Power Supply Design** |
| | 1 | Thermal management |
| | 1 | EMI/EMC considerations |
| | 1 | Efficiency improvements |
| Week 8 | | **Troubleshooting and Maintenance** |
| | 1 | Common issues and diagnostics |
| | 1 | Troubleshooting techniques |
| | 1 | Preventive maintenance |
| Week 9 | | **Applications of D.C. Power Supplies** |
| | 1 | D.C. power supplies in consumer electronics |
| | 1 | Industrial applications |
| | 1 | Renewable energy systems |
| Week 10 | | **Designing and building a D.C. power supply** |
| | 1 | Individual or group projects on designing and building a D.C. power supply |
| | 1 | Testing and validation of projects |
| | 1 | Presentation of project work |

Shri Shivaji Education Society Amravati's

# Science College

Congress Nagar, Nagpur

## Department of Physics

**Add-on Certificate Course (2023-2024)**

**Certificate Course: Fundamentals of Electronic D.C. Power Supply**

**TIME TABLE**

| Days | Time | |
|---|---|---|
| | **Theory Classes** | **Practical Classes** |
| Friday | **BTK (C6) 4.00 PM – 5.00 PM** | |
| Saturday | **BTK (C6) 4.00 PM – 5.00 PM** | **BTK (C6) 4.00 PM – 5.00 PM** |

Mr. B. T. Kumbhare

Course Coordinator

Shri Shivaji Education Society Amravati's

**Science College, Congress Nagar Nagpur**

**Department of Physics**

**Skill Based Certificate course**

**Title: "Certificate Course: Fundamentals of Electronic D.C. Power Supply"**

**Registration List of Students**

**2023-2024**

| Sr. No. | Name of Students |
|---|---|
| 1 | ARVIWALA HUZEFA KHUZEMA |
| 2 | BAGHEL SONAM SANTOSHKUMAR |
| 3 | BAIG TASMIYA HAMID |
| 4 | BARSAGADE KALASH SUDHAKAR |
| 5 | BAWANKULE LAXMI DEVIDAS |
| 6 | BHASMOTE ARADHANA RAJENDRA |
| 7 | CHANNE TANISHKA PRAVEEN |
| 8 | DATIR PRANJALI ANKALESH |
| 9 | DESHMUKH JANHAVI VIRENDRA |
| 10 | DHOK SOKSHAM NISHANT |
| 11 | FULKUWAR PRIYA SANTOSH |
| 12 | GAJBHIYE SWEJAL PRASHANT |
| 13 | GONNADE MADHURIMA SHAILESH |
| 14 | IRGURALA VIDYA CHANDRAIAH |
| 15 | JIBHEKAR SAMRUDDHI KISHOR |
| 16 | KALE AVANI PREMDAS |
| 17 | KHADSE CHETANA MORESHWAR |
| 18 | KUBADE TEJASWI MOTIRAM |
| 19 | LOKHANDE KASHISH SUHAS |
| 20 | LUTE SUHANI RAMESHWAR |
| 21 | MENDWADE AISHWARYA PRAKASH |
| 22 | NAMDEO ARYAN UMASHANKAR |
| 23 | PAIGAMI MANISH RAJENDRA |

| | |
|---|---|
| 24 | PAL VAISHNAVI VINOD |
| 25 | SAHU APURVA TAPAN |
| 26 | SAPATE PORNIMA PRABHU |
| 27 | SONTAKKE RAJVEE SAROJ |
| 28 | THAKARE SUHANI SUKHADEO |
| 29 | THAKUR KRITI AINKATRAO |
| 30 | TOMAR TANU LXANDERKUMAR |
| 31 | TONGE SUHANI ANAND |
| 32 | VYAS HIMANSHU MUKESH |
| 33 | WAHANE PREMANSHU ANIL |
| 34 | WAHANE TEJASVI PRAVIN |
| 35 | WASNIK RUTIKA VINAYAK |
| 36 | BORKAR OM GAJANAN |
| 37 | CHANIANA KIRANPREET KAUR SARVJEET SINGH |
| 38 | DUBEY ISHA ROSHAN |
| 39 | FULZELE KASHISH GAJENDRA |
| 40 | GOWARDIPE KAJAL PURUSHOTTAM |
| 41 | HEDAOO DHIRAJ RAJENDRA |
| 42 | KAMBLE NAYAN ASHOK |
| 43 | KANGALE ACHAL RUSHI |
| 44 | KHOTELE MAYANK HEMANTKUMAR |
| 45 | MISHRA SHASHWAT RAMAKANT |
| 46 | MONDHE VISHAL VISHWANATH |
| 47 | NAGPURKAR GAGAN MAROTI |
| 48 | SINGH KASHISH NAGENDRA |
| 49 | ADHAU PURVA PRAMOD |
| 50 | CHAUDHARI DURGESHWARI RAMPRASAD |
| 51 | DHORE SADICHCHHA DILIP |
| 52 | GUPTA KSHITIJ ADITYASHEKHAR |
| 53 | HAJARE POOJA RAJU |
| 54 | INGLE NISHCHAL SHILPA |

| | |
|---|---|
| 55 | JANGLE VAISHANAVI ROSHAN |
| 56 | KUNDARPAWAR ARYA VIKAS |
| 57 | MASKHARE MAYUR PRASHANT |
| 58 | MESHRAM MASUM SUDHAKAR |
| 59 | PALANDURKAR ANUSHKA AMAR |
| 60 | PATIL ROHIT SACHIN |
| 61 | PAWAR SUMAN SHEMEKHIL |
| 62 | SHEIKH MANTESHA TABASSUM ALTAF |
| 63 | TUPAT MAYURI RAJESH |
| 64 | WUIKEY ARYA ARUN |
| 65 | AIDBAN ANUSHKA MANISH |
| 66 | BANAIT PRACHI BABURAO |
| 67 | CHAMALWAR PREET RAVINDRA |
| 68 | CHAUHAN KASHISH RAMVEER |
| 69 | DESHBHRATAR MANASVI MANOJ |
| 70 | DIGHORE KARTIK GANESH |
| 71 | GAVHADE DRUTI WAMAN |
| 72 | GAIDHANE MEGHANA KISHOR |
| 73 | KARANDE DHARINI SHYAM |
| 74 | KATARE ANJESH MUKESH |
| 75 | KHADSE PRANAY RAMESH |
| 76 | KHAIRKAR ANIMESH PAWAN |
| 77 | KHARAT KRUNALI SURESH |
| 78 | KUHIKE DARSHANA HIRALAL |
| 79 | MANKAR PRAJWAL VINOD |
| 80 | MASKE HIMANI DHARMENDRA |
| 81 | KHANDARE MANSI NIKESH |
| 82 | PANDEY ANCHAL KEDARNATH |

**Course Coordinator**
Mr. B. T. Kumbhare

Shri Shivaji EducationSociety Amaravati's

# Science College,Congress Nagar, Nagpur

## Certificate Course: Fundamentals of Electronic D.C. Power Supply (10 Week)

### Theory Class Attendance Sheet

**2023-24**

PR

| Sr. No | Students Full Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4/8 | 5/8 | 11/8 | 12/8 | 16/8 | 19/8 | 24/8 | 26/8 | 1/9 | 2/9 | 8/9 | 9/9 | 15/9 | 16/9 | 22/9 | 23/9 | 23/9 | 30/9 | 6/10 | 7/10 | 5/8 | 12/8 | 13/9 | 26/9 | 27/9 | 3/9 | 11/9 | 23/9 | 30/9 | 7/10 | |
| 1 | Arviwala Huzefa Khuzema | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 28 |
| 2 | Baghel Sonam Santoshkumar | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 3 | Baig Tasmiya Hamid | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 4 | Barsagade Kalash Sudhakar | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 5 | Bawankule Laxmi Devidas | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 6 | Bhasmote Aradhana Rajendra | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 7 | Channe Tanishka Praveen | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 8 | Datir Pranjali Ankalesh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 9 | Deshmukh Janhavi Virendra | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 10 | Dhok Soksham Nishant | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 11 | Fulkuwar Priya Santosh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 12 | Gajbhiye Swejal Prashant | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 13 | Gonnade Madhurima Shailesh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | A | 28 |
| 14 | Irgurala Vidya Chandraiah | P | P | P | P | P | P | P | P | P | P | A | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 29 |
| 15 | Jibhekar Samruddhi Kishor | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 27 |
| 16 | Kale Avani Premdas | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 17 | Khadse Chetana Moreshwar | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 18 | Kubade Tejaswi Motiram | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 29 |
| 19 | Lokhande Kashish Suhas | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 20 | Lute Suhani Rameshwar | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 28 |
| 21 | Mendwade Aishwarya Prakash | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 22 | Namdeo Aryan Umashankar | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 28 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | Paigami Manish Rajendra | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 24 | Pal Vaishnavi Vinod | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 25 | Sahu Apurva Tapan | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 26 | Sapate Pornima Prabhu | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 27 | Sontakke Rajvee Saroj | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | A | P | P | 29 |
| 28 | Thakare Suhani Sukhadeo | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 29 | Thakur Kriti Ainkatrao | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 30 | Tomar Tanu Lxanderkumar | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 31 | Tonge Suhani Anand | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 32 | Vyas Himanshu Mukesh | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 33 | Wahane Premanshu Anil | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 34 | Wahane Tejasvi Pravin | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 35 | Wasnik Rutika Vinayak | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 28 |
| 36 | Borkar Om Gajanan | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 37 | Chaniana Kiranpreet Kaur Sarvjeet Singh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 28 |
| 38 | Dubey Isha Roshan | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 39 | Fulzele Kashish Gajendra | P | A | P | P | P | P | P | A | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 40 | Gowardipe Kajal Purushottam | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 27 |
| 41 | Hedaoo Dhiraj Rajendra | P | P | P | P | P | P | A | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 42 | Kamble Nayan Ashok | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 28 |
| 43 | Kangale Achal Rushi | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 44 | Khotele Mayank Hemantkumar | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 29 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | Mishra Shashwat Ramakant | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 46 | Mondhe Vishal Vishwanath | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 28 |
| 47 | Nagpurkar Gagan Maroti | A | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 27 |
| 48 | Singh Kashish Nagendra | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 28 |
| 49 | Adhau Purva Pramod | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 50 | Chaudhari Durgeshwari Ramprasad | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 28 |
| 51 | Dhore Sadichchha Dilip | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 52 | Gupta Kshitij Adityashekhar | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 53 | Hajare Pooja Raju | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 54 | Ingle Nishchal Shilpa | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 55 | Jangle Vaishanavi Roshan | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 56 | Kundarpawar Arya Vikas | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 28 |
| 57 | Maskhare Mayur Prashant | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 30 |
| 58 | Meshram Masum Sudhakar | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 59 | Palandurkar Anushka Amar | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 60 | Patil Rohit Sachin | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 61 | Pawar Suman Shemekhil | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 62 | Sheikh Mantesha Tabassum A. | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 28 |
| 63 | Tupat Mayuri Rajesh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 64 | Wuikey Arya Arun | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 65 | Aidban Anushka Manish | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 66 | Banait Prachi Baburao | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 67 | Chamalwar Preet Ravindra | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 68 | Chauhan Kashish Ramveer | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 69 | Deshbhratar Manasvi Manoj | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | 28 |
| 70 | Dighore Kartik Ganesh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 71 | Gavhade Druti Waman | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | A | 27 |
| 72 | Gaidhane Meghana Kishor | P | P | P | P | P | A | P | P | P | A | P | P | P | A | P | P | A | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | 25 |
| 73 | Karande Dharini Shyam | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74 | Katare Anjesh Mukesh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 75 | Khadse Pranay Ramesh | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 76 | Khairkar Animesh Pawan | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 77 | Kharat Krunali Suresh | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 29 |
| 78 | Kuhike Darshana Hiralal | P | P | P | P | P | P | P | P | A | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 28 |
| 79 | Mankar Prajwal Vinod | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 |
| 80 | Maske Himani Dharmendra | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | 29 |
| 81 | Khandare Mansi Nikesh | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | A | P | P | A | P | 26 |
| 82 | Pandey Anchal Kedarnath | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P | 28 |

Mr. B. T. Kumbhare
Course Coordinator
Department of Physics

Shri Shivaji Education Society Amravati's

# Science College

Congress Nagar, Nagpur

## Department of Physics

### Add-on Certificate Course Examination (2023-2024)

### Certificate Course: Fundamentals of Electronic D.C. Power Supply

**NOTICE**

**Date: 10/10/2023**

All the registered students of add-on Course on **Fundamentals of Electronic D.C. Power Supply** under Department of Physics for the session 2023-24 are hereby informed that the theory examination is to be scheduled on 16/10/2023 (Wednesday) at 10:30 am to 11:30 am in Physics Laboratory at our college centre. All Students should be present in the laboratory before 10 mins. of scheduled time of examination.

Mr. B. T. Kumbhare
Course Coordinator
Department of Physics

Shri Shivaji Education Society Amravati's

**Science College, Congress Nagar Nagpur**

**Department of Physics**

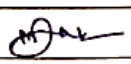
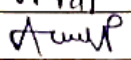
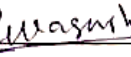
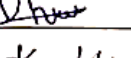
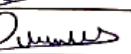
**Skill Based Certificate course**

**Title: "Certificate Course: Fundamentals of Electronic D.C. Power Supply"**

**Theory Exam Attendance Sheet-2023-2024**

**Course Coordinator**: Mr. Bhupendra T. Kumbhare

| Sr. No. | Name of Students | Sign |
|---|---|---|
| 1 | ARVIWALA HUZEFA KHUZEMA | |
| 2 | BAGHEL SONAM SANTOSHKUMAR | |
| 3 | BAIG TASMIYA HAMID | |
| 4 | BARSAGADE KALASH SUDHAKAR | |
| 5 | BAWANKULE LAXMI DEVIDAS | |
| 6 | BHASMOTE ARADHANA RAJENDRA | |
| 7 | CHANNE TANISHKA PRAVEEN | |
| 8 | DATIR PRANJALI ANKALESH | |
| 9 | DESHMUKH JANHAVI VIRENDRA | |
| 10 | DHOK SOKSHAM NISHANT | |
| 11 | FULKUWAR PRIYA SANTOSH | |
| 12 | GAJBHIYE SWEJAL PRASHANT | |
| 13 | GONNADE MADHURIMA SHAILESH | |
| 14 | IRGURALA VIDYA CHANDRAIAH | |
| 15 | JIBHEKAR SAMRUDDHI KISHOR | |
| 16 | KALE AVANI PREMDAS | |
| 17 | KHADSE CHETANA MORESHWAR | |
| 18 | KUBADE TEJASWI MOTIRAM | |
| 19 | LOKHANDE KASHISH SUHAS | |
| 20 | LUTE SUHANI RAMESHWAR | |
| 21 | MENDWADE AISHWARYA PRAKASH | |
| 22 | NAMDEO ARYAN UMASHANKAR | |

| | | |
|---|---|---|
| 23 | PAIGAMI MANISH RAJENDRA |  |
| 24 | PAL VAISHNAVI VINOD | V.V. Pal |
| 25 | SAHU APURVA TAPAN |  |
| 26 | SAPATE PORNIMA PRABHU | Pornima Sapate |
| 27 | SONTAKKE RAJVEE SAROJ | Rajvee Sontakke |
| 28 | THAKARE SUHANI SUKHADEO | Sthal |
| 29 | THAKUR KRITI AINKATRAO | Kirti Thakur |
| 30 | TOMAR TANU LXANDERKUMAR | Tanu. |
| 31 | TONGE SUHANI ANAND | Suhani. |
| 32 | VYAS HIMANSHU MUKESH | HVyas |
| 33 | WAHANE PREMANSHU ANIL | W. |
| 34 | WAHANE TEJASVI PRAVIN | T. P. Wahane |
| 35 | WASNIK RUTIKA VINAYAK |  |
| 36 | BORKAR OM GAJANAN | Om. |
| 37 | CHANIANA KIRANPREET KAUR SARVJEET SINGH |  |
| 38 | DUBEY ISHA ROSHAN | IBrai. |
| 39 | FULZELE KASHISH GAJENDRA | Kashish |
| 40 | GOWARDIPE KAJAL PURUSHOTTAM | Kajal Gowardipe |
| 41 | HEDAOO DHIRAJ RAJENDRA |  |
| 42 | KAMBLE NAYAN ASHOK | N.A.Kamble |
| 43 | KANGALE ACHAL RUSHI | Achal Kangale |
| 44 | KHOTELE MAYANK HEMANTKUMAR | mayank |
| 45 | MISHRA SHASHWAT RAMAKANT | S.R. Mishra |
| 46 | MONDHE VISHAL VISHWANATH | VMandhe |
| 47 | NAGPURKAR GAGAN MAROTI | Gagan |
| 48 | SINGH KASHISH NAGENDRA | KSingh |
| 49 | ADHAU PURVA PRAMOD | Purva. |
| 50 | CHAUDHARI DURGESHWARI RAMPRASAD |  |
| 51 | DHORE SADICHCHHA DILIP | SDhore |
| 52 | GUPTA KSHITIJ ADITYASHEKHAR | Kshitij |
| 53 | HAJARE POOJA RAJU | Pooja |

| | | |
|---|---|---|
| 54 | INGLE NISHCHAL SHILPA | |
| 55 | JANGLE VAISHANAVI ROSHAN | |
| 56 | KUNDARPAWAR ARYA VIKAS | |
| 57 | MASKHARE MAYUR PRASHANT | |
| 58 | MESHRAM MASUM SUDHAKAR | |
| 59 | PALANDURKAR ANUSHKA AMAR | |
| 60 | PATIL ROHIT SACHIN | |
| 61 | PAWAR SUMAN SHEMEKHIL | |
| 62 | SHEIKH MANTESHA TABASSUM ALTAF | |
| 63 | TUPAT MAYURI RAJESH | |
| 64 | WUIKEY ARYA ARUN | |
| 65 | AIDBAN ANUSHKA MANISH | |
| 66 | BANAIT PRACHI BABURAO | |
| 67 | CHAMALWAR PREET RAVINDRA | |
| 68 | CHAUHAN KASHISH RAMVEER | |
| 69 | DESHBHRATAR MANASVI MANOJ | |
| 70 | DIGHORE KARTIK GANESH | |
| 71 | GAVHADE DRUTI WAMAN | |
| 72 | GAIDHANE MEGHANA KISHOR | |
| 73 | KARANDE DHARINI SHYAM | |
| 74 | KATARE ANJESH MUKESH | |
| 75 | KHADSE PRANAY RAMESH | |
| 76 | KHAIRKAR ANIMESH PAWAN | |
| 77 | KHARAT KRUNALI SURESH | |
| 78 | KUHIKE DARSHANA HIRALAL | |
| 79 | MANKAR PRAJWAL VINOD | |
| 80 | MASKE HIMANI DHARMENDRA | |
| 81 | KHANDARE MANSI NIKESH | |
| 82 | PANDEY ANCHAL KEDARNATH | |

**Sign of Invigilator**

**Shri Shivaji Education Society Amaravati's**

# Science College Congress Nagar, Nagpur

**Department of Physics**

**Add-on Certificate Corse on Fundamentals of Electronic D.C. Power Supply**

**THEORY EXAM**

**Date: 16/10/2023** **Max. Time: 1 Hour**

**Max. Marks: 80** **Marks Obtained:**

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**Student Name: ----------**

**Note:** i) All questions are compulsory and carry equal marks

ii) Tick the correct option

**Sign. of Invigilator**

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1. What is the primary function of a DC power supply?

a) To convert AC to AC

b) To convert DC to DC

c) To convert AC to DC

d) To regulate voltage

2. Which type of power supply is commonly used in electronic devices?

a) AC power supply

b) DC power supply

c) Both AC and DC

d) None of the above

3. What is the output of a DC power supply?

a) Alternating Current (AC)

b) Direct Current (DC)

c) Both AC and DC

d) None of the above

4. Which component is used to rectify AC voltage in a DC power supply?

a) Transformer

b) Rectifier

c) Filter

d) Regulator

5. What is the purpose of a filter in a DC power supply?

a) To regulate voltage

b) To limit current

c) To remove ripples and noise

d) To convert AC to DC

6. Which type of DC power supply uses a transformer to step down the voltage?

a) Linear power supply

b) Switching power supply

c) SMPS

d) Step-down power supply

7. What is the advantage of a switching power supply over a linear power supply?

a) Higher efficiency

b) Lower cost

c) Smaller size

d) All of the above

8. Which safety feature is essential in a DC power supply?

a) Grounding

b) Insulation

c) Shielding

d) All of the above

9. What is the purpose of a voltage regulator in a DC power supply?

a) To regulate current

b) To regulate voltage

c) To filter noise

d) To store energy

10. Which type of DC power supply is commonly used in computers?

a) Linear power supply

b) Switching power supply

c) SMPS

d) DC-DC converter

11. What is the input of a DC power supply?

a) AC voltage

b) DC voltage

c) Both AC and DC

d) None of the above

12. Which component is used to store energy in a DC power supply?

a) Capacitor

b) Inductor

c) Resistor

d) Transformer

13. What is the purpose of a surge protector in a DC power supply?

a) To regulate voltage

b) To limit current

c) To protect against surges

d) To filter noise

14. Which type of DC power supply uses a high-frequency transformer?

a) Linear power supply

b) Switching power supply

c) SMPS

d) DC-DC converter

15. What is the advantage of a DC power supply over an AC power supply?

a) Higher efficiency

b) Lower cost

c) Smaller size

d) Constant voltage output

16. Which component is used to regulate voltage in a DC power supply?

a) Transformer

b) Rectifier

c) Filter

d) Regulator

17. What is the purpose of a short-circuit protector in a DC power supply?

a) To regulate voltage

b) To limit current

c) To protect against short circuits

d) To filter noise

18. Which type of DC power supply is commonly used in electronic devices?

a) Linear power supply

b) Switching power supply

c) SMPS

d) DC-DC converter

19. What is the output voltage of a DC power supply?

a) AC voltage

b) DC voltage

c) Both AC and DC

d) None of the above

20. Which safety feature is used to prevent electrical shock in a DC power supply?

a) Grounding

b) Insulation

c) Shielding

d) All of the above

21. What is the primary function of a rectifier in a DC power supply?

a) To regulate voltage

b) To limit current

c) To convert AC to DC

d) To filter noise

22. Which type of rectifier is commonly used in DC power supplies?

a) Half-wave rectifier

b) Full-wave rectifier

c) Bridge rectifier

d) Center-tapped rectifier

23. What is the purpose of a transformer in a DC power supply?

a) To regulate voltage

b) To limit current

c) To step up or step-down voltage

d) To filter noise

24. Which component is used to filter out ripples and noise in a DC power supply?

a) Capacitor

b) Inductor

c) Resistor

d) Diode

25. What is the purpose of a voltage regulator in a DC power supply?

a) To regulate current

b) To regulate voltage

c) To filter noise

d) To store energy

26. Which type of voltage regulator is commonly used in DC power supplies?

a) Linear voltage regulator

b) Switching voltage regulator

c) SCR voltage regulator

d) Triac voltage regulator

27. What is the purpose of a capacitor in a DC power supply?

a) To regulate voltage

b) To limit current

c) To filter noise

d) To store energy

28. Which component is used to limit current in a DC power supply?

a) Resistor

b) Capacitor

c) Inductor

d) Fuse

29. What is the purpose of a diode in a DC power supply?

a) To regulate voltage

b) To limit current

c) To rectify AC voltage

d) To filter noise

30. Which type of diode is commonly used in DC power supplies?

a) Zener diode

b) Schottky diode

c) LED diode

d) Rectifier diode

31. What is the purpose of a resistor in a DC power supply?

a) To regulate voltage

b) To limit current

c) To filter noise

d) To divide voltage

32. Which component is used to store energy in a DC power supply?

a) Capacitor

b) Inductor

c) Resistor

d) Transformer

33. What is the purpose of an inductor in a DC power supply?

a) To regulate voltage

b) To limit current

c) To filter noise

d) To store energy

34. Which type of inductor is commonly used in DC power supplies?

a) Choke inductor

b) Toroidal inductor

c) Ferrite inductor

d) Air-core inductor

35. What is the purpose of a fuse in a DC power supply?

a) To regulate voltage

b) To limit current

c) To protect against overvoltage

d) To protect against overcurrent

36. Which component is used to protect against electrical shock in a DC power supply?

a) Grounding

b) Insulation

c) Shielding

d) All of the above

37. What is the purpose of a heat sink in a DC power supply?

a) To regulate voltage

b) To limit current

c) To dissipate heat

d) To filter noise

38. Which type of heat sink is commonly used in DC power supplies?

a) Active heat sink

b) Passive heat sink

c) Liquid heat sink

d) Air heat sink

39. What is the purpose of a transformer in a DC power supply?

a) To step up or step-down voltage

b) To regulate voltage

c) To limit current

d) To isolate input and output

40. Which type of DC power supply is commonly used in electronic devices?

a) Series regulator

b) Shunt regulator

c) Switching regulator

d) Linear regulator

Answer: d) Linear regulator

# Answer Key

1. Answer: c) To convert AC to DC
2. Answer: b) DC power supply
3. Answer: b) Direct Current (DC)
4. Answer: b) Rectifier
5. Answer: c) To remove ripples and noise
6. Answer: a) Linear power supply
7. Answer: d) All of the above
8. Answer: d) All of the above
9. Answer: b) To regulate voltage
10. Answer: c) SMPS
11. Answer: a) AC voltage
12. Answer: a) Capacitor
13. Answer: c) To protect against surges
14. Answer: c) SMPS
15. Answer: d) Constant voltage output
16. Answer: d) Regulator
17. Answer: c) To protect against short circuits
18. Answer: b) Switching power supply
19. Answer: b) DC voltage
20. Answer: d) All of the above
21. Answer: c) To convert AC to DC
22. Answer: c) Bridge rectifier
23. Answer: c) To step up or step down voltage
24. Answer: a) Capacitor
25. Answer: b) To regulate voltage
26. Answer: a) Linear voltage regulator
27. Answer: d) To store energy
28. Answer: d) Fuse
29. Answer: c) To rectify AC voltage
30. Answer: d) Rectifier diode
31. Answer: d) To divide voltage
32. Answer: a) Capacitor
33. Answer: c) To filter noise
34. Answer: a) Choke inductor
35. Answer: d) To protect against overcurrent
36. Answer: d) All of the above
37. Answer: c) To dissipate heat
38. Answer: b) Passive heat sink
39. Answer: a) To step up or step-down voltage
40. Answer: d) Linear regulator

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## *Add-on Course*

**Course Exam Name: Certificate Course in Fundamentals of electronics**
**D. C. Power Supply**

**Name of Student:** .....

**Roll No.:** | | | | **Session: 2023-24**

**Test Date: 16/10/2023** | **Max. Marks: 80**

**Invigilator Signature** | **Obtained Marks:** | |

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6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS ⊗ ◉ ⊘ ✓ CORRECT METHOD ○ ○ ○ ●

| | A | B | C | D | | A | B | C | D | | A | B | C | D | | A | B | C | D | | A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ○ | ○ | ○ | ○ | 11 | ○ | ○ | ○ | ○ | 21 | ○ | ○ | ○ | ○ | 31 | ○ | ○ | ○ | ○ | 41 | ○ | ○ | ○ | ○ |
| 2 | ○ | ○ | ○ | ○ | 12 | ○ | ○ | ○ | ○ | 22 | ○ | ○ | ○ | ○ | 32 | ○ | ○ | ○ | ○ | 42 | ○ | ○ | ○ | ○ |
| 3 | ○ | ○ | ○ | ○ | 13 | ○ | ○ | ○ | ○ | 23 | ○ | ○ | ○ | ○ | 33 | ○ | ○ | ○ | ○ | 43 | ○ | ○ | ○ | ○ |
| 4 | ○ | ○ | ○ | ○ | 14 | ○ | ○ | ○ | ○ | 24 | ○ | ○ | ○ | ○ | 34 | ○ | ○ | ○ | ○ | 44 | ○ | ○ | ○ | ○ |
| 5 | ○ | ○ | ○ | ○ | 15 | ○ | ○ | ○ | ○ | 25 | ○ | ○ | ○ | ○ | 35 | ○ | ○ | ○ | ○ | 45 | ○ | ○ | ○ | ○ |
| 6 | ○ | ○ | ○ | ○ | 16 | ○ | ○ | ○ | ○ | 26 | ○ | ○ | ○ | ○ | 36 | ○ | ○ | ○ | ○ | 46 | ○ | ○ | ○ | ○ |
| 7 | ○ | ○ | ○ | ○ | 17 | ○ | ○ | ○ | ○ | 27 | ○ | ○ | ○ | ○ | 37 | ○ | ○ | ○ | ○ | 47 | ○ | ○ | ○ | ○ |
| 8 | ○ | ○ | ○ | ○ | 18 | ○ | ○ | ○ | ○ | 28 | ○ | ○ | ○ | ○ | 38 | ○ | ○ | ○ | ○ | 48 | ○ | ○ | ○ | ○ |
| 9 | ○ | ○ | ○ | ○ | 19 | ○ | ○ | ○ | ○ | 29 | ○ | ○ | ○ | ○ | 39 | ○ | ○ | ○ | ○ | 49 | ○ | ○ | ○ | ○ |
| 10 | ○ | ○ | ○ | ○ | 20 | ○ | ○ | ○ | ○ | 30 | ○ | ○ | ○ | ○ | 40 | ○ | ○ | ○ | ○ | 50 | ○ | ○ | ○ | ○ |

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# Science College, Congress Nagar Nagpur

## Department of Physics

## 2023-2024

# Add-on course Examination

**Title: "Certificate Course: Fundamentals of Electronic D.C. Power Supply"**

**Course Coordinator**: Mr. Bhupendra T. Kumbhare

**DATE: 18/10/23** **Total Marks: 100**

## STATEMENT OF MARKS

| Sr. No. | Name of Students | Theory Marks (80M) | Practical Marks (20M) | Total (100M) | Grade |
|---|---|---|---|---|---|
| 1 | Arviwala Huzefa Khuzema | 60 | 20 | 80 | A |
| 2 | Baghel Sonam Santoshkumar | 64 | 20 | 84 | A |
| 3 | Baig Tasmiya Hamid | 70 | 20 | 90 | A+ |
| 4 | Barsagade Kalash Sudhakar | 64 | 18 | 82 | A |
| 5 | Bawankule Laxmi Devidas | 66 | 20 | 86 | A+ |
| 6 | Bhasmote Aradhana Rajendra | 74 | 20 | 94 | A+ |
| 7 | Channe Tanishka Praveen | 58 | 20 | 78 | A |
| 8 | Datir Pranjali Ankalesh | 62 | 18 | 80 | A |
| 9 | Deshmukh Janhavi Virendra | 64 | 20 | 84 | A |
| 10 | Dhok Soksham Nishant | 74 | 20 | 94 | A+ |
| 11 | Fulkuwar Priya Santosh | 72 | 20 | 92 | A+ |
| 12 | Gajbhiye Swejal Prashant | 76 | 18 | 94 | A+ |
| 13 | Gonnade Madhurima Shailesh | 78 | 16 | 94 | A+ |
| 14 | Irgurala Vidya Chandraiah | 66 | 18 | 84 | A |
| 15 | Jibhekar Samruddhi Kishor | 64 | 20 | 84 | A |

| | | | | | |
|---|---|---|---|---|---|
| 16 | Kale Avani Premdas | 58 | 20 | 78 | A |
| 17 | Khadse Chetana Moreshwar | 54 | 20 | 74 | B+ |
| 18 | Kubade Tejaswi Motiram | 74 | 18 | 92 | A+ |
| 19 | Lokhande Kashish Suhas | 64 | 16 | 80 | A |
| 20 | Lute Suhani Rameshwar | 72 | 18 | 90 | A+ |
| 21 | Mendwade Aishwarya Prakash | 78 | 16 | 94 | A+ |
| 22 | Namdeo Aryan Umashankar | 62 | 20 | 82 | A |
| 23 | Paigami Manish Rajendra | 58 | 20 | 78 | A |
| 24 | Pal Vaishnavi Vinod | 60 | 18 | 78 | A |
| 25 | Sahu Apurva Tapan | 70 | 16 | 86 | A+ |
| 26 | Sapate Pornima Prabhu | 74 | 20 | 94 | A+ |
| 27 | Sontakke Rajvee Saroj | 72 | 18 | 90 | A+ |
| 28 | Thakare Suhani Sukhadeo | 64 | 16 | 80 | A |
| 29 | Thakur Kriti Ainkatrao | 58 | 20 | 78 | A |
| 30 | Tomar Tanu Lxanderkumar | 60 | 20 | 80 | A |
| 31 | Tonge Suhani Anand | 70 | 20 | 90 | A+ |
| 32 | Vyas Himanshu Mukesh | 76 | 20 | 96 | A+ |
| 33 | Wahane Premanshu Anil | 78 | 20 | 98 | A+ |
| 34 | Wahane Tejasvi Pravin | 66 | 16 | 82 | A |
| 35 | Wasnik Rutika Vinayak | 54 | 18 | 72 | B+ |
| 36 | Borkar Om Gajanan | 66 | 20 | 86 | A+ |
| 37 | Chaniana Kiranpreet Kaur Sarvjeet Singh | 68 | 16 | 84 | A |
| 38 | Dubey Isha Roshan | 74 | 18 | 92 | A+ |
| 39 | Fulzele Kashish Gajendra | 70 | 16 | 86 | A+ |
| 40 | Gowardipe Kajal Purushottam | 60 | 18 | 78 | A |
| 41 | Hedaoo Dhiraj Rajendra | 62 | 20 | 82 | A |
| 42 | Kamble Nayan Ashok | 72 | 20 | 92 | A+ |
| 43 | Kangale Achal Rushi | 74 | 20 | 94 | A+ |
| 44 | Khotele Mayank Hemantkumar | 60 | 20 | 80 | A |
| 45 | Mishra Shashwat Ramakant | 68 | 20 | 88 | A+ |
| 46 | Mondhe Vishal Vishwanath | 70 | 20 | 90 | A+ |
| 47 | Nagpurkar Gagan Maroti | 74 | 20 | 94 | A+ |

| | | | | | |
|---|---|---|---|---|---|
| 48 | Singh Kashish Nagendra | 70 | 20 | 90 | A+ |
| 49 | Adhau Purva Pramod | 62 | 20 | 82 | A |
| 50 | Chaudhari Durgeshwari Ramprasad | 60 | 20 | 80 | A |
| 51 | Dhore Sadichchha Dilip | 72 | 18 | 90 | A+ |
| 52 | Gupta Kshitij Adityashekhar | 70 | 18 | 88 | A+ |
| 53 | Hajare Pooja Raju | 64 | 18 | 82 | A |
| 54 | Ingle Nishchal Shilpa | 78 | 18 | 96 | A+ |
| 55 | Jangle Vaishanavi Roshan | 66 | 18 | 84 | A |
| 56 | Kundarpawar Arya Vikas | 64 | 17 | 81 | A |
| 57 | Maskhare Mayur Prashant | 60 | 17 | 77 | A |
| 58 | Meshram Masum Sudhakar | 78 | 20 | 98 | A+ |
| 59 | Palandurkar Anushka Amar | 70 | 20 | 90 | A+ |
| 60 | Patil Rohit Sachin | 62 | 17 | 79 | A |
| 61 | Pawar Suman Shemekhil | 74 | 19 | 93 | A+ |
| 62 | Sheikh Mantesha Tabassum Altaf | 66 | 20 | 86 | A+ |
| 63 | Tupat Mayuri Rajesh | 74 | 20 | 94 | A+ |
| 64 | Wuikey Arya Arun | 72 | 20 | 92 | A+ |
| 65 | Aidban Anushka  Manish | 64 | 20 | 84 | A |
| 66 | Banait Prachi Baburao | 66 | 20 | 86 | A+ |
| 67 | Chamalwar Preet Ravindra | 62 | 20 | 82 | A |
| 68 | Chauhan Kashish Ramveer | 72 | 20 | 92 | A+ |
| 69 | Deshbhratar Manasvi Manoj | 74 | 20 | 94 | A+ |
| 70 | Dighore Kartik Ganesh | 66 | 18 | 84 | A |
| 71 | Gavhade Druti Waman | 68 | 19 | 87 | A+ |
| 72 | Gaidhane Meghana Kishor | 70 | 19 | 89 | A+ |
| 73 | Karande Dharini Shyam | 60 | 20 | 80 | A |
| 74 | Katare Anjesh Mukesh | 62 | 20 | 82 | A |
| 75 | Khadse Pranay Ramesh | 74 | 20 | 94 | A+ |
| 76 | Khairkar Animesh Pawan | 68 | 20 | 88 | A+ |
| 77 | Kharat Krunali Suresh | 58 | 20 | 78 | A |
| 78 | Kuhike Darshana Hiralal | 54 | 20 | 74 | B+ |
| 79 | Mankar Prajwal Vinod | 78 | 20 | 98 | A+ |

| | | | | | |
|---|---|---|---|---|---|
| 80 | Maske Himani Dharmendra | 60 | 18 | 78 | A |
| 81 | Khandare Mansi Nikesh | 58 | 20 | 78 | A |
| 82 | Pandey Anchal Kedarnath | 54 | 20 | 74 | B+ |

Mr. B. T. Kumbhare
Course Coordinator
Department of Physics

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## *Add-on Course*

**Course Exam Name: Certificate Course in Fundamentals of electronics D. C. Power Supply**

**Name of Student:** Aaviwala Huzefa Khuzema

**Roll No.:** 0 0 1 **Session: 2023-24**

**Test Date: 16/10/2023** **Max. Marks: 80**

**Invigilator Signature** **Obtained Marks:** 60

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6. Do not use any stray marks on the sheet.
7. Do not use marker or white fluid to hide the mark.

WRONG METHODS ⊗ ⊙ ✓ CORRECT METHOD ●

| | A | B | C | D |
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| 1 | ○ | ○ | ● | ○ |
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| 50 | ○ | ○ | ○ | ○ |

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## *Add-on Course*

**Course Exam Name: Certificate Course in Fundamentals of electronics D. C. Power Supply**

**Name of Student:** Dhak Lakshem Nishant

**Roll No.:** 0 1 0 **Session: 2023-24**

**Test Date: 16/10/2023** **Max. Marks: 80**

**Invigilator Signature** **Obtained Marks:** 74

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7. Do not use marker or white fluid to hide the mark.

WRONG METHODS CORRECT METHOD

| | A | B | C | D |
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| 4 | ○ | ● | ○ | ○ |
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| 34 | ○ | ● | ○ | ○ |
| 35 | ○ | ○ | ○ | ● |
| 36 | ○ | ○ | ○ | ● |
| 37 | ○ | ○ | ● | ○ |
| 38 | ○ | ● | ○ | ○ |
| 39 | ● | ○ | ○ | ○ |
| 40 | ○ | ○ | ○ | ● |
| 41 | ○ | ○ | ○ | ○ |
| 42 | ○ | ○ | ○ | ○ |
| 43 | ○ | ○ | ○ | ○ |
| 44 | ○ | ○ | ○ | ○ |
| 45 | ○ | ○ | ○ | ○ |
| 46 | ○ | ○ | ○ | ○ |
| 47 | ○ | ○ | ○ | ○ |
| 48 | ○ | ○ | ○ | ○ |
| 49 | ○ | ○ | ○ | ○ |
| 50 | ○ | ○ | ○ | ○ |

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Session 2023-24 under Add-on course conducted for **30 hours from 01/08/2023 to 07/10/2023** by Department of Physics, SSESA's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with '__' Grade.

**Mr. B. T. Kumbhare**
Coordinator, Department of Physics

**Prof. M. P. Dhore**
Principal, Science College, Nag

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# CERTIFICATE

Mr./Ku. Arviwala Huzefa Khuzema is awarded with certificate on successful completion of the course entitled, Certificate course in "Fundamentals of Electronic D. C. Power Supply".

Session 2023-24 under Add-on course conducted for 30 hours from 01/08/2023 to 07/10/2023 by Department of Physics, SSESA's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with 'A' Grade.

**Mr. B. T. Kumbhare**
Coordinator, Department of Physics

**Prof. M. P. Dhore**
Principal, Science Colleg

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# CERTIFICATE

Mr./Ku. Dhok Soksham Nishant is awarded with certificate on successful completion of the course entitled, Certificate course in "Fundamentals of Electronic D. C. Power Supply".

Session 2023-24 under Add-on course conducted for 30 hours from 01/08/2023 to 07/10/2023 by Department of Physics, SSESA's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with 'A+' Grade.

**Mr. B. T. Kumbhare**
Coordinator, Department of Physics

**Prof. M. P. Dhore**
Principal, Science Colleg