

To
The Principal,
Karnatak Arts, Science & Comm. College
Bidar

21 Dec. 2020

Sir,

Sub: Permission to run two short term Certificate Courses.

The establishment of Renewable Energy lab has facilitated running of short term certificate courses at the department of Physics. Last year i.e. in 2019-2020, the department has conducted one certificate course of 30hrs duration successfully. Now the department wish to run two certificate courses, namely,

1. Basics of Solar Cell & Panels

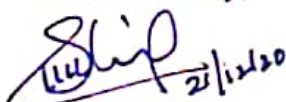
2. Harnessing Wind Energy

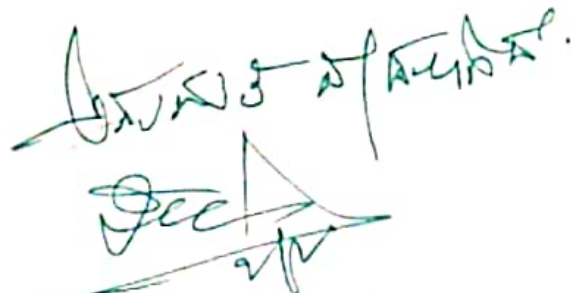
Both these courses will be 30hrs duration & intake is restricted to 40.

A sum of Rs. 100/- will be collected from each student as registration fees to manage related expenses. The course class timings will be adjusted so as not to disturb students regular schedule. I request your kind self to accord permission for the same.

Thanks,

Yours Faithfully,


S.L.Kulkarni
HOD, Physics



PRINCIPAL
Karnatak Arts, Sci. & Com. Coll. of
Bidar A R-583-111



ಕರ್ನಾಟಕ ಕಲಾ, ವಿಜ್ಞಾನ ಹಾಗೂ ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ
KARNATAK ARTS, SCIENCE & COMMERCE COLLEGE, BIDAR



Estd 1970

(Affiliated to Gulbarga University, Kalaburagi)

College with Potential for Excellence Status Awarded by UGC New Delhi

ISO 9001 : 2015



Golden Jubilee Celebration - 1970-2020

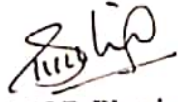
DEPARTMENT OF PHYSICS

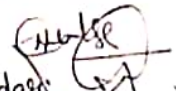
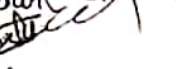


CERTIFICATE COURSE - I


BASICS OF SOLAR CELL AND PANELS



Duration	:	1 Semester
Batch-I	:	Jan 2021 to March 2021
No. of Hours	:	30
Theory	:	18hrs
Skill Component	:	12hrs
Maximum Intake	:	40 Students
Eligibility	:	UG Students (Regular) with Physics as Elective (Karnatak College Bidar)
Registration Fees	:	Rs. 100/-


HOD, Physics

- 1) Dr. Eknath. Halse 
2) Dr. Rajendra Binodani 
3) Shweta Patel 
4) Devikavoni. 


Principal
PRINCIPAL
Karnatak Arts Sci. & Com. College
BIDAR-585 401

E-mail : princpalkascc@gmail.com
Fax : 08482-226503

Hyderabad Road, Karnataka State - 585401.
Fax : 08482-226503

Cell : 9343834635
Visit us @ www.kascc.in.net



ಕರ್ನಾಟಕ ಕಲಾ, ವಿಜ್ಞಾನ ಹಾಗೂ ವಾಣಿಜ್ಯ ಮಹಾವಿದ್ಯಾಲಯ, ಬೀದರ
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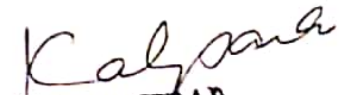
DEPARTMENT OF PHYSICS
CERTIFICATE COURSE - I
BASICS SOLAR CELL & PANELS
BOARD OF STUDIES



- Chairman : Dr.Kalpna.V. Deshpande
Principal
Karnatak College Bidar
- Co-Ordinator : S.P Janwadkar
Associate Professor (Dept.of Physics)
- Subject Tutor : 1. Shweta Patil
2. DevikaRani
- External Members : 1. Dr.Eknath Halse
Gurunanak 1st Grade College,Bidar
2. Dr.Rajendra.Biradar
HOD Dept. of Electronics
Karnatak College Bidar


HOD
Physics

Dept. of Physics
Karnatak Arts Sci. & Com. College Bidar


Principal
Karnatak Arts Sci. & Com. College
Bidar

E-mail : principalkascc@gmail.com
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KARNATAK ARTS, SCIENCE & COMMERCE COLLEGE BIDAR
DEPARTMENT OF PHYSICS




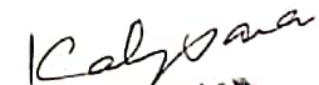
Date: 10/11/2019

A local BOS meeting is called in the department of physics to discuss about the start of two certificate courses 1. Basics of solar cell & panels & 2. Harnessing wind energy today at 5pm.

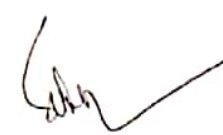


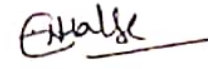

HOD Physics proposed to start two certificate courses as add on courses & the draft syllabus for them.

After the discussion the draft syllabus was approved with minor corrections the entire structure of the course and the examination pattern was finalized in the meeting.


HOD,
Dept. of Physics
Karnatak Arts, Science & Commerce College Bidar


Principal
KARNATAK ARTS, SCIENCE & COMMERCE COLLEGE
BIDAR R-585 401

Members Present

1. Course Co-Ordinator : S.P. Janwadkar 
2. Subject Tutors : 1. Shweta Patil 
2. Devikarani 
3. External Members : 1. Dr. Eknath Halse 
Gurunanak First Grade College Bidar
2. Dr. Rajendra Biradar
HOD Electronics
Karnatak College Bidar 

KARNATAK ARTS, SCIENCE & COMMERCE COLLEGE
DEPARTMENT OF PHYSICS
CERTIFICATE COURSE I & II
PREAMBLE



Energy plays a vital role in the human life. We cannot even imagine our life without energy. But the sources of conventional energies are limited ones, and are going to get exhausted shortly. Hence there is an immense need to shift towards non-conventional evergreen energy resources. In order to introduce our students about harnessing such energies, need was felt to start a certificate course.

The available non - conventional energy resources at our local area were recognized as solar energy and wind energy.

Hence it is decided to continue the two certificate courses as add-on courses

- (1) Basics Solar cell & Panels**
- (2) Harnessing Wind Energy**

A local BOS is constituted to monitor the running of these courses at the institutional level comprising of following members

- Chairman : **Dr. Kalpana.V. Deshpande**
Principal
Karnatak College Bidar
- Co-Ordinator : **S.P Janwadkar**
Associate Professor (Dept.of Physics)
- Subject Tutor : 1. Shweta Patil
2. DevikaRani
- External Members : 1. **Dr. Eknath Halse**
Gurunanak 1st Grade College, Bidar
2. **Dr. Rajendra. Biradar**
HOD Dept. of Electronics
Karnatak College Bidar

The course content is decided to be completed during a span of two months and after its completion the students are expected to acquire knowledge about harnessing these non-conventional energies. Also should acquire the practical knowledge of assembling solar panels / erecting wind turbine to generate the electrical energy.

HOD
Physics

2023

Dept. of Physics

Karnatak Arts, Science & Commerce College Bidar

Principal
PRINCIPAL

Karnatak Arts Sci. & Com. Collr.
B I D A R - 585 401



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DEPARTMENT OF PHYSICS

CERTIFICATE COURSE – I
BASICS OF SOLAR CELLS AND PANELS
SYLLABUS
THEORY



Unit 1 : Renewable Energy: Need for Renewable Energy, Generation & Consumption a World Scenario, India's Energy Consumption Brief Survey, Different Types of Renewable Energy. Merits & Demerits of Solar Energy. 4hrs

Unit 2 : Solar Cell Fundamentals: PN Junction Device, IV Characteristic, PV Characteristics, Open Circuit Voltage, Short Circuit Current, Fill Factor, Efficiency. 3hrs

Unit 3: Classification of Solar Cell: Thickness of Active Material, Multi crystalline Silicon Solar Cell, Ga-As Solar Cell, Polymer Solar Cell, Recent Advancements. 5hrs

Unit 4 : Solar Photo Voltaic Module: PV Module Series & Parallel Connections, Number of Cells in Module, Module Power, Role of blocking Diode, Bypass Diode, Shading Effect, Tilting Effect. 6hrs

PRACTICALS

12hrs

1. To study the I-V characteristics of PV module with varying radiation.
2. To study the P-V characteristics of PV module with varying radiation.
3. To study the I-V characteristics of series combination of PV modules.
4. To study the P-V characteristics of parallel combination of PV modules.
5. Study of effect of variation in tilt angle of PV module.
6. Study of effect of shading on module output power.

HOD
Dept. of Physics
Coordinator

1) Dr. Eknath N. Holle

2) Dr. Rajendra. Binodan

Principal &
Chairman BOS

Shweta Patil

Devikanani

E-mail : principalkascc@gmail.com
Fax : 08482-226503

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KRE SOCIETY'S
Karnatak Arts Science and Commerce College, Bidar
Department of Physics
Certificate course – Basics of Solar Cell and Panels

Outcomes

By the completion of this course students will:

1. Understand the basics of Renewable energy sources
2. Understand the need for Renewable energy sources
3. Understand the principles of extraction of energy from Solar PV System.
4. Understand the properties of solar energy resource, PV system operation and Component s pecifications.


HOD, Physics
Dept. of Physics
Karnatak Arts & Com. College Bidar

Department Of Physics

NOTICE

Date: 23/12/20


All the degree students with physics as elective subject are here by informed that, the department of Physics is introducing two short term certificate courses. The details are as follows:

Title	No. of Hrs	Registration fees
1. Basics of Solar Cell & Panels	30hrs	Rs.100/-
2. Harnessing Wind Energy	30hrs	Rs.100/-

Students, who are willing to enroll, need to contact

1. Ms. Shweta Patil
2. Miss. Shruti Swami
3. Miss. Devikarani

Note: The intake is limited to 40 Students


HOD Physics
H. O.

D pt. of Physics
Karnatak A. & Com. College Bidar




Principal

Karnatak A. & Com. College
BIDAR-585 401


KRE SOCIETY'S
KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR
DEPARTMENT OF PHYSICS
CERTIFICATE COURSE 2020-21

NOTICE

Date 01-01-2020


All the Students who have enrolled for **"Basics of Solar cell and Panel's and Harnessing Wind Energy"** are here by informed to attend the regular classes as per the time table mentioned


Course In charge


Principal
PRINCIPAL
Karnatak Arts Sci. & Com. Coll.
B I D A R - 585 401

KRE SOCIETY
Karnatak Arts, Science and Commerce College, Bidar
Department Of Physics
Time Table
Certificate Course 2020-21
Basics of Solar Cell and Panels

Day/Time	3 to 5pm	Class
Wednesday	Group-I: 21 - PMCs	B.Sc V Sem
Thursday	Group-II: 24- PMCs	B.Sc V Sem


HOD, Physics
Dep. of Physics


Principal

Karnatak Arts Sci. & Com. College
R I D A R-585 401

KRE SOCIETY'S
KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR
 DEPARTMENT OF PHYSICS
 CERTIFICATE COURSE: BASICS OF SOLAR CELL & PANELS
 ENROLMENT FORM- 2020-21



SL.NO.	TITLE	
01	Name	KARUNALATHA
02	Father Name	JOHN
03	Date Of Birth (DD/MM/YYYY)	17/08/2001
04	Class with Combination	B.Sc 5 th sem PMCS
05	Class Roll no. & Reg. No.	18C20, 91947227
06	Contact Number & e-Mail ID	8095573187, karunalatha.john@gmail.com

I abide with the rules and regulations of the course.

Karunalatha
 Signature of Applicant

[Signature]

HOD
 H. M.

D. pt. of Physics

Karnatak Arts Sci. & Com. College Bidar

[Signature]

PRINCIPAL

Karnatak Arts Sci. & Com. College
 BIDAR-585 401

KRE SOCIETY'S
KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR
 DEPARTMENT OF PHYSICS
 CERTIFICATE COURSE: BASICS OF SOLAR CELL & PANELS
 ENROLMENT FORM- 2020-21



SL.NO.	TITLE	
01	Name	Pavithra
02	Father Name	Umapanth
03	Date Of Birth (DD/MM/YYYY)	21/03/1999
04	Class with Combination	BSc 5 th sem PMCS
05	Class Roll no. & Reg. No.	18C07, 91947263
06	Contact Number & e-Mail ID	6361476527, Pavithrabichkande21@gmail.com

I abide with the rules and regulations of the course.

Pavithra
 Signature of Applicant

[Signature]

HOD

D. pt. of Physics

Karnatak Arts Sci. & Com. College Bidar

[Signature]

PRINCIPAL

Karnatak Arts Sci. & Com. College
 BIDAR-585 401

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE – I
Basics of Solar Cell & Panels
2020-21
LIST OF STUDENTS

Sl. No	Reg.No	Name of Student	Phone No.	E-Mail Id	Amount
01	91947254	Nikita.Parameshwar	9880973004	nikitahallankar@gmail.com	100/-
02	91947347	Shraddha.Vishwanth	9880379581	Sharaddhasharadha2712@gmail.com	100/-
03	91947333	Mahesh.Vishwanath	9986280037	maheshanand@gmail.com	100/-
04	91947173	Sarika.Ashok	9108975122	Sarikag9108@gmail.com	100/-
05	91947143	Bhavani.Basavaraj	9731511019	Bbhavani274@gmail.com	100/-
06	91947264	RaziyaFatima .MdFayazHussin	9481923516	Raziya1246@gmail.com	100/-
07	91947263	Pavithra.Umakanth	6361476527	Pavithrabichkunde121@gmail.com	100/-
08	91947152	Prajwal.Nagshetty	7411512829	Goudruprajwal1007@gmail.com	100/-
09	91947293	Pradeep.Rajkumar	9632509127	Patilpradeep1352000@gmail.com	100/-
10	91947105	Basavakiran.Ganapati	9901431168	basavabiradarkiran@gmail.com	100/-
11	91947317	Vishal.Sanjukumar	8217870609	Vishalmetre2021@gmail.com	100/-
12	91947184	Varun.Gumasti	9380309601	varungumasti@gmail.com	100/-
13	91947246	Vishal.Machendra	9964388014	Vishalpanchal3104@gmail.com	100/-
14	91947117	Nikhil.St.Ashok	6362988200	Nikhilbelkeri425@gmail.com	100/-
15	91947203	Sandeep.Umakanth	8884494620	markalesandeep@gmail.com	100/-
16	91947218	Nagraj.Basavaraj	9108223863	Nagrajgummed123@gmail.com	100/-
17	91947213	Vishal.Ramesh	9663201325	Vishalkarknalli254@gmail.com	100/-
18	91947227	Karunalatha John	8095573187	Karunlatha@gmail.com	100/-
19	91947244	Nikita.Umesh	944564980	Nikitalakshetty754@gmail.com	100/-
20	91947325	Bhagyavathi.Ramesh	6302044136	bhagvavatihugar@gmail.com	100/-
21	91947257	Mahadev.B	8970257761	Mahadevbiradar741@gmail.com	100/-
22	91947338	Reena J Pujari	9008443651	reenajpujari@gmail.com	100/-
23	91947318	Priya	9482425935	Priyawaldoddi99@gmail.com	100/-

HOD,
Dept. of Physics

(Signature)

Vice-Principal &
IQAC. Coordinator
Marnatak Arts, Science &
Commerce College, Bidar

24	91947291	Dakshini	9743929784	shedakshini@gmail.com	100/-
25	91947150	Chaitanya	9741861407	chaitanyaskre@gmail.com	100/-
26	91947348	Sneha	8217573716	Snehapanchal765@gmail.com	100/-
27	91947343	Ankita	7619306615	Ankita6582@gmail.com	100/-
28	91947174	Stella	9380258244	Stellamercy10@gmail.com	100/-
29	91947239	Archana	9611562294	Archanakeshapnour@gmail.com	100/-
30	91947129	Sravya	9632029335	Shravysmavs991999@gmail.com	100/-
31	91947339	Srujana	9535539952	Srujanaaryan2000@gmail.com	100/-
32	91947342	Kavita Giri	8660881800	Kavitagiri447@gmail.com	100/-
33	91947344	Ambikadevi	9880910581	Ambikamarple1480@gmail.com	100/-
34	91947242	Pallavi	8431710158	Pallaviuppin56@gmail.com	100/-
35	91947266	Vaishnavi	8147026176	vaishnavialivabad@gmail.com	100/-
36	91947237	Basavashree	8296138205	basavashreejotepp@gmail.com	100/-
37	91947188	Pavankumar	9353910872	pavankumarrov@gmail.com	100/-
38	91947247	Akshata	6360213239	akashatamalle877@gmail.com	100/-
39	91947104	Roopa.G.Reddy	7022782949	roopapathreddy@gmail.com	100/-
40	91947349	Nahomi	7795452702	nahomiiykk@gmail.com	100/-
41	91947302	Bheemrao.MAchendra	7795045589	bheemraobheemraom402@gmail.com	100/-
42	91947153	Sanjukumar.Rajappa	9606420779	sanjukumar@gmail.com	100/-
43	91947520	Sachin.Hallikhed	8722549418	Sachinh2000@gmail.com	100/-
44	91947599	Omeshwari.Rajkumar	9880912610	omeshwaritenge@gmail.com	100/-
45	91947103	Shruti.Rajkumar	9148511956	Shrutichindre123@gmail.com	100/-

HOD

Physics

Dept. of Physics

Karnatak Arts & Com. College BIDA



Principal

Karnatak Arts Sci. & Com. Coll:
B I D A R-585 401

"Basics of solar cell & Panels"

Theory

B.Sc. 3rd sem
word

K.R.E.
Karnatak Arts, Science And
Students Attendance Register

Society's
Commerce College Bidar
For the Month of Jan-Feb 2021

Admission No.	Roll Number	Names	Date														
			No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C01	Nikita P/o Rameshwar		1	1	2	3	4	5	5	6	7	8	9	10	11	12
	C02	Shradha P/o Vishwanath		1	1	1	2	3	4	5	6	7	8	9	10	11	12
	C03	Mahesh S/o Vishwanath		1	2	3	4	4	4	5	6	7	8	9	10	11	12
	C04	Sarika P/o Ashok		1	2	2	3	4	5	5	6	7	8	9	10	11	12
	C05	Bhavani P/o Basavaraj		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C06	Rozya Fatma		1	2	3	3	3	4	5	6	7	8	9	10	11	12
	C07	Pavithra P/o Umakanth		1	2	3	4	5	6	7	8	8	9	10	11	12	13
X	C08	Avinach S/o Mallshetty		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C09	Pratwal S/o Nagshetty		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C10	Pradeep S/o Raykumar		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C11	Basavakiran S/o Ganapatt		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C12	Vishal Metre		1	1	2	3	3	3	4	4	5	6	7	8	9	10
	C13	Vareun Gumasti		1	1	2	2	3	3	4	4	5	6	7	8	9	10
	C14	Vishal S/o Machendra Pando		1	2	3	4	5	6	7	8	9	10	11	12	13	14
	C15	Nikhil S/o Ashok		1	2	2	2	3	3	4	5	6	7	8	9	10	10
	C16	Sandeep Halbarge		1	2	2	2	3	3	4	5	6	7	8	8	9	10
X	C17	Ashwini Naganath		0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C18	Nagraj. B		1	1	1	2	2	4	5	6	7	8	9	10	10	12
	C19	Vishal S/o Ramesh		1	1	1	2	3	3	4	4	5	6	7	8	9	10
	C20	Karunathatha P/o John		1	2	3	3	4	5	6	7	8	9	10	11	12	13
	C21	Nikita P/o Umesh		1	1	2	3	4	5	6	7	8	9	9	10	11	12
	C22	Bhagyavatt P/o Ramesh		1	2	3	4	4	5	6	7	7	8	9	9	10	11
	C23	mahadev. B S/o Bharaji		1	2	3	4	5	6	7	8	9	10	11	12	13	14

		3/2/21	11/2/21	10/2/21	11/2/21	17/2/21	18/2/21	24/2/21	25/2/21	3/3/21											
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Signature of Lecturer with Date

Signature of H.O.D.

Signature of Lecturer with Date

B.Sc V sem Thu.

Theory
**Karnatak Arts, Science And
 Students Attendance Register**

K.R.E.

Admission No.	Roll Number	Names	Date														
			No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
24		Deena P/o Jagannath		1	2	3	4	5	6	7	8	9	10	11	12	13	14
25		Priya P/o Rajkumar		1	1	2	4	5	6	7	8	9	10	11	12	13	14
26		Dakshini P/o samruel		1	2	3	3	3	3	4	5	5	6	7	8	9	10
27		Chaitanya P/o Ashok		1	2	3	4	5	6	7	8	9	10	11	12	13	14
28		Sneha P/o Rajappa		1	2	3	3	3	3	4	4	5	5	6	7	8	9
29		Ankita P/o Venkat Rao		1	2	3	4	4	5	5	6	6	7	7	8	8	9
30		Stell P/o Babu		1	2	3	4	5	5	5	6	7	8	8	9	10	11
31		Archana P/o Ashok		1	2	3	4	4	5	6	7	8	9	10	11	12	13
32		Sruvya P/o Rajshethkar		1	2	3	3	3	3	4	4	5	6	7	7	8	9
33		Srujana Biradar		1	2	2	2	3	4	4	5	5	6	6	7	8	9
34		Kavita P/o Ashok Giri		1	2	3	4	5	6	7	8	9	10	11	12	13	14
35		Ambikadevi P/o vichwanath		1	2	3	4	5	6	7	8	8	9	9	10	11	12
36		Pallavi P/o Baswarajuppi		1	1	2	3	4	4	4	4	5	5	6	7	8	9
37		Varshani P/o Mallikarjun		1	2	3	4	5	6	7	7	7	8	9	10	11	12
38		Baswashree.C		1	2	3	4	5	5	6	6	7	8	9	10	11	12
39		Pawankumar.D		1	2	3	3	3	4	4	5	6	7	7	8	8	9
40		Akshata P/o Ganpathy		1	2	3	4	5	6	7	8	9	10	11	12	12	14
41		Roopa P/o Gundappa		1	2	3	4	4	5	5	6	7	8	9	10	11	12
42		Nahomi P/o Yeshwarth		1	2	3	3	4	5	6	7	8	9	10	11	12	13
X 43		Varshnavi P/o Ashok		0	0	0	0	0	0	0	0	0	0	0	0	0	0
44		Bhemsrao P/o machendra		1	2	3	4	5	6	7	8	9	10	11	12	13	14
45		Sanjukumar P/o Rajappa		0	1	2	2	2	2	3	3	4	5	6	7	8	9
46		Sachin Hallikher		1	2	3	3	4	5	6	7	8	9	10	11	12	13
47		Omashwari P/o Rajkumar		1	1	2	2	3	3	4	5	6	7	8	9	10	11
48		Shruti P/o Rajkumar		0	1	2	2	2	3	3	3	4	4	5	5	6	7

Signature of Lecturer with Date

[Handwritten signatures and dates for each row]

Signature of H.O.D. *[Signature]*
 P. Ph. VCS
 B.Sc. & Com. College Bidar

Practical
**Society's
 Commerce College Bidar
 For the Month of Jan-Feb 2021**

		Date														
		No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
15			1	1	2	3	4	5								
16			1	2	3	4	5	6								
17			1	1	1	2	3	4								
18			1	2	3	4	5	6								
19			1	2	3	4	5	6								
20			1	2	3	4	5	6								
21			0	1	2	3	4	5								
22			0	1	2	3	4	5								
23			0	1	2	3	4	5								
24			1	2	3	4	5	6								
25			1	2	3	4	5	6								
			1	1	2	2	3	3								
			1	2	3	4	5	6								
			1	2	3	4	5	6								
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			1	1	2	2	3	4								
			1	2	3	4	5	6								
			1	1	2	2	3	4								

[Handwritten signatures and dates for each row]

KRE SOCIETY'S

KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR.

DEPARTMENT OF PHYSICS


Certificate Course 2020-21

NOTICE

DATE: 30/02/21

All the enrolled students of certificate courses titled "Basics of Solar Cell and Panels" and " Harnessing Wind Energy ", are here by informed that, an exam on these courses will be conducted on 28/02/21 at B.Voc. Renewable Energy Lab. Note the following timings and attend the same without fail.

1. B.Sc III sem- 11am to 12pm
2. B.Sc V sem- 3pm to 4pm



HOD, Physics

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Dept. of Physics
Karnatak Arts Sci. & Com. College Bidar



Certificate
Course in charge



Vice-Principal &
IQAC. Coordinator
Karnatak Arts, Science &
Commerce College, Bidar

KRE SOCIETY'S
KARNATAK ARTS SCIENCE AND COMMERCE COLLEGE BIDAR
DEPARTMENT OF PHYSICS
CERTIFICATE COURSE - I
2020 - 2021
Basics of Solar Cell & Panels
Students Exam Attendance

Sl.No	Reg.no.	Name of Student	Sign
01	91947254	Nikita Parameshwar	Nikita
02	91947343	Shradha Vishwanath	Sadha
03	91947333	Mahesh Vishwanath	Mh
04	91947173	Sarika Ashok	Sarika
05	91947143	Bhavani Basavaraj	Bhavani
06	91947264	Raziya Fatima MD Fayaz	Raziya
07	91947263	Pavithra Umakanth	Pavithra
08	91947152	Prajwal Nagshetty	Prajwal
09	91947293	Pradeep Rajkumar	Pradeep
10	91947105	Basavakiran Ganapati	Basavakiran
11	91947317	Vishal Sanjukumar	Vishal
12	91947184	Varun Gumasti	Varun
13	91947246	Vishal Machendar	Vishal
14	91947117	Nikhil Ashok	Nikhil
15	91947203	Sandeep Umakanth	Sandeep
16	91947218	Nagraj Basavaraj	Nagraj
17	91947213	Vishal Ramesh	Vishal
18	91947227	Karunalatha John	Karuna
19	91947325	Bhagyavati Ramesh	Bhagyavati
20	91947257	Mahadev .B	Mahadev B
21	91947338	Reena .J.Pujari	Reena
22	91947318	Priya Rajkumar	Priya
23	91947291	Dakshini	Dakshini
24	91947150	Chaitanya	Chaitanya
25	91947348	Sneha	Sneha
26	91947343	Ankita	Ankita
27	91947174	Stella	Stella
28	91947239	Archana	Archana
29	91947129	Sravya	Sravya
30	91947339	Srujana Mallikarjun Biradar	Srujana
31	91947342	Kavita Ashok Giri	Kavita
32	91947344	Ambikadevi. V. M	Ambika
33	91947242	Pallaavi Baswaraj Uppin	Pallaavi
34	91947266	Vaisnavi	Vaisnavi
35	91947237	Basavashree	Basavashree
36	91947188	Pavankumar	Pavan

37	91947247	Akshata	Akshata
38	91947104	Roopa. G. Reddy	Roopa
39	91947349	Nahomi	Nahomi
40	91947302	Bheemrao S/O Machendra	Bheemrao
41	91947153	Sanjukumar S/O Rajappa	Sanju
42	91947520	Sachin Hallikhed	Sachin H
43	91947599	Omeshwari D/O Rajkumar	omeshwari
44	91947103	Shruti D/O Rajkumar	Shruti



HOD Physics

H.M.
 Dept. of Physics
 Sr. Sec. & Com. College Bida



Principal

Principal
 Sr. Sec. & Com. College
 Bida

Kre Society's
Karnatak Arts, Science and Commerce College, Bidar
Department of Physics

Certificate Course-I
Basics of Solar Cell & Panels
Question Paper 2020-21

Class : B.Sc V sem
Name of Student :
Reg. No. :

Time : 1 hour
Max. Marks : 30

Q.I Choose the correct answer for the following Questions

15x1= 15

1. Which is the ultimate source of energy?

- (a) Water
- (b) Sun
- (c) Uranium
- (d) Fossil fuels

2. Which one of the following forms of energy leads to least environmental pollution in the process of its harnessing and utilization?


- (a) Nuclear energy
- (b) Thermal energy
- (c) Solar energy
- (d) Geothermal energy

3. A solar cell works on the principle of _____

- (a) Photo electricity
- (b) Photographic camera
- (c) Photovoltaic conversions
- (d) Photosynthesis

4. The efficiency of the solar cell is about _____

- (a) 25 %
- (b) 15 %
- (c) 40 %
- (d) 60 %


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**Vice-Principal &
IQAC. Coordinator
Karnatak Arts, Science &
Commerce College, Bidar**

5. A module in a solar panel refers to _____.

- (a) Series arrangement of solar cells.
- (b) Parallel arrangement of solar cells.
- (c) Series and parallel arrangement of solar cells.
- (d) None of the above

6. The solar or photo voltaic cell converts _____

- (a) Chemical energy to electrical energy
- (b) Solar radiation into electrical energy
- (c) Solar radiation into thermal energy
- (d) Thermal energy into electrical energy

7. The most commonly used semiconducting material used to prepare a solar cell is _____

- (a) Gallium arsenide
- (b) Indium arsenide
- (c) Cadmium arsenide
- (d) Silicon

8. LEDES used for giving infrared radiations are prepared from _____

- (a) Silicon dioxide
- (b) Gallium arsenide [Ga As]
- (c) Gallium phosphide [Ga P]
- (d) Gallium arsenide phosphide [Ga As P]

9. Sun tracking system is required in the case of _____

- (a) Cylindrical and parabolic and parabolic
- (b) Flat plate collector
- (c) Both (a) and (b)
- (d) None of the above

10. The Zenith Angle complement is _____

- (a) Surface Azimuth Angle
- (b) Slope
- (c) Solar Altitude Angle
- (d) Solar Azimuth Angle


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Karnatak Arts, Science & Com. College Bidar



Vice-Principal &
IQAC, Coor.

Karnatak Arts, Science &
Commerce College Bidar

11. A Solar cell is a p - n Junction operating in _____

- (a) Reverse bias condition
- (b) Unbiased condition
- (c) Forward bias condition
- (d) In both forward and reverse bias condition

12. Which of the following area is preferred for solar power plants _____

- (a) Coastal areas
- (b) Hot arid zones
- (c) Mountain tops
- (d) High rainfall zones

13. The energy radiated by the sun in bright sunny day is about _____

- (a) 2.5 kW/m²
- (b) 1.0 kW/m²
- (c) 500 W/m²
- (d) 200 W/m²

14. Which meter is used to measure the solar radiation flux _____

- (a) Pyranometer
- (b) Sunshine Recorder
- (c) Anemometer
- (d) All of the above

15. The following is (are) laws of black body radiation.

- (a) Plank's law
- (b) Stefan-Boltzmann law
- (c) Both (A) and (B)
- (d) None of the above

Q II. Answer the Flowing Questions

3x5= 15

1. Why is there a need to harness non-conventional sources of energy? Give two main reasons.
2. What steps would you suggest to minimize environmental pollution caused by burning of fossil fuels
3. How do solar photovoltaic (PV) panels work?

Swetha
Course Co-ordinator

[Signature]
Vice-Principal &
IQAC. Coordinator

[Signature]
HOD

Karnatak Arts, Science & Commerce College, *[Signature]* Dept. of Physics
Karnatak Arts Sci. & Com. College Bidar

Kre Society's
Karnatak Arts, Science and Commerce College, Bidar
Department of Physics

Certificate Course-I
Basics of Solar Cell & Panels
Question Paper 2020-21

CS
21
30

Class : B.Sc V sem
Name of Student : Nikhil . A
Reg. No : 91947117

Date :
Time : 1 hour
Max. Marks : 30

Q.1 Choose the correct answer for the following Questions

15x1= 15

1. Which is the ultimate source of energy?

- (a) Water
(b) Sun
(c) Uranium
(d) Fossil fuels

2. Which one of the following forms of energy leads to least environmental pollution in the process of its harnessing and utilization?

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(c) Solar energy
(d) Geothermal energy

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(b) Photographic camera
(c) Photovoltaic conversions
(d) Photosynthesis

4. The efficiency of the solar cell is about _____

- (a) 25%
(b) 35%
(c) 40%
(d) 60%

5. A module in a solar panel refers to _____.

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- (b) Parallel arrangement of solar cells.
- (c) ~~Series and parallel arrangement of solar cells.~~
- (d) None of the above

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- (b) ~~Solar radiation into electrical energy~~
- (c) Solar radiation into thermal energy
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- (a) Gallium arsenide
- (b) Indium arsenide
- (c) Cadmium arsenide
- (d) ~~Silicon~~

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- (a) Silicon dioxide
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- (c) Gallium phosphide [Ga P]
- (d) Gallium arsenide phosphide [Ga As P]

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- (c) Both (a) and (b)
- (d) None of the above

10. The Zenith Angle complement is _____

- (a) Surface Azimuth Angle
- (b) Slope
- (c) ~~Solar Altitude Angle~~
- (d) Solar Azimuth Angle

11. A Solar cell is a p - n Junction operating in _____

- (a) ~~Reverse bias condition~~
- (b) ~~Unbiased condition~~
- (c) ~~Forward bias condition~~
- (d) In both forward and reverse bias condition

12. Which of the following area is preferred for solar power plants _____

- (a) ~~Coastal areas~~
- (b) ~~Desert and arid zones~~
- (c) ~~Mountain tops~~
- (d) High rainfall zones

13. The energy radiated by the sun in bright sunny day is about _____

- (a) ~~2.5 kW/m²~~
- (b) ~~10 kW/m²~~
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- (a) ~~Pycnometer~~
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- (c) ~~Anemometer~~
- (d) ~~All of the above~~

15. The following is (are) laws of black body radiation.

- (a) ~~Planck's law~~
- (b) ~~Stefan-Boltzmann law~~
- (c) Both (A) and (B)
- (d) ~~None of the above~~

Q II. Answer the Following Questions

3x5= 15

1. Why is there a need to harness non-conventional sources of energy? Give two main reasons.
2. What steps would you suggest to minimize environmental pollution caused by burning of fossil fuels?
3. How do solar photovoltaic (PV) panels work?

Q1.
 1] Our energy requirements are increasing as our standard of living increases. So, we need to exploit new sources of energy.

2] The conventional sources of energy like Fossil Fuels will get depleted very soon, and we need alternatives.

3] Conventional sources are going to be exhausted in near future.

4] Burning of fossil fuels causes environmental pollution.

2] Increases the use of solar, wind and hydro power. Smokless appliances can be used as alternate solution which can reduce pollution due to fossil fuels. Afforestation should be promoted which helps in controlling the particulate pollution caused due to burning of fossil fuels.

1] Reduce the no. of trips, you take in your car.

2] Reduce or eliminate fireplace and wood stove use.

3] Avoid turning leaves, trash, and other materials.

4] Avoid using gas powered and garden equipment.

3] Solar power is harnessed using solar photovoltaic technology that converts sunlight into electricity by using semiconductors. When the sun hits the semiconductor, within the PV cell electrons are freed and bus bars collect the running electrons which results in electric current.

When the sun shines onto a solar panel, energy from the sunlight is absorbed by the PV cells in the panel.

This energy creates electrical charges that move in response to an internal electrical field in the cell, causing electricity to flow.

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE - I
2020-21
BASICS OF SOLAR CELL & PANELS
Marks List

Sl.No	Reg.no.	Name of Student	Max.Marks	Obtained Marks
01	91947254	Nikita Parameshwar	30	20
02	91947343	Shradha Vishwanath	30	20
03	91947333	Mahesh Vishwanath	30	22
04	91947173	Sarika Ashok	30	15
05	91947143	Bhavani Basavaraj	30	21
06	91947264	Raziya Fatima MD Fayaz	30	16
07	91947263	Pavithra Umakanth	30	20
08	91947152	Prajwal Nagshetty	30	25
09	91947293	Pradeep Rajkumar	30	21
10	91947105	Basavakiran Ganapati	30	22
11	91947317	Vishal Sanjukumar	30	22
12	91947184	Varun Gumasti	30	18
13	91947246	Vishal Machendar	30	21
14	91947117	Nikhil Ashok	30	19
15	91947203	Sandeep Umakanth	30	19
16	91947218	Nagraj Basavaraj	30	21
17	91947213	Vishal Ramesh	30	23
18	91947227	Karunalatha John	30	20
19	91947325	Bhagyavati Ramesh	30	25
20	91947257	Mahadev .B	30	29
21	91947338	Reena .J.Pujari	30	18
22	91947318	Priya Rajkumar	30	20
23	91947291	Dakshini	30	29
24	91947150	Chaitanya	30	19
25	91947348	Sneha	30	17
26	91947343	Ankita	30	15
27	91947174	Stella	30	15
28	91947239	Archana	30	28
29	91947129	Sravya	30	18
30	91947339	Srujana Mallikarjun Biradar	30	15
31	91947342	Kavita Ashok Giri	30	22
32	91947344	Ambikadevi. V. M	30	23
33	91947242	Pallaavi Baswaraj Uppin	30	23
34	91947266	Vaisnavi	30	22
35	91947237	Basavashree	30	25
36	91947188	Pavankumar	30	21
37	91947247	Akshata	30	25
38	91947104	Roopa. G. Reddy	30	26
39	91947349	Nahomi	30	29

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Basavak

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40	91947302	Bheemrao S/O Machendra	30	24
41	91947153	Sanjukumar S/O Rajappa	30	21
42	91947520	Sachin Hallikhed	30	20
43	91947599	Omeshwari D/O Rajkumar	30	30
44	91947103	Shruti D/O Rajkumar	30	18


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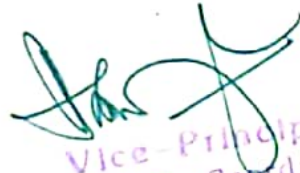
Dept. of Physics

Karnatak Arts, Science & Com. College Bidar



Principal
PRINCIPAL

Karnatak Arts Sci. & Com. College
B I D A R-585 401



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Karnatak Arts, Science &
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Karnatak Arts Science and Commerce College, Bidar
Department of Physics
Conclusion Feedback Form for Certificate Course
Basics Solar Cell and Panels
2020-2021




88 Out of 180 students felt that this Certificate Course is Extremely Good


62 Out of 180 students felt that this Certificate Course is Good

27 Out of 180 students felt that this Certificate Course is Quiet Good

03 Out of 180 students felt that this Certificate Course is Poor

From the above observation we conclude that the conduct of certificate course for **Basics Solar Cell & Panels** is successful.


Course Coordinator


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Karnatak Arts Sci. & Com. College Bidar.

KRE SOCIETY'S
KARNATAK ARTS SCIENCE AND COMMERCE COLLEGE BIDAR
DEPARTMENT OF PHYSICS
Certificate Course
Report
2020-21


The department has continued a self financed short term certificate courses of 30 hrs duration, during the year 2020- 2021, titled "Basics of Solar Cell & Panels". Also introduced a new self financed short term certificate course of 30 hrs duration , titled "Harnessing Wind Energy" during the year 2020-2021.


I. Course title : Basics of Solar Cell & Panels
Duration : 30hrs
Enrolled students : 44

II. Course title : Harnessing Wind Energy
Duration : 30hrs
Enrolled students : 30

Methodology : The introduction of B.Voc course in Renewable Energy & corresponding lab, Installation of **45kW Roof Top Solar Plant** in the college premises made us to start this certificate course. To complete the theory part we utilized the beginning period of the semester when practical classes are about to start. As skill component part of this course 6 experiments are demonstrated batch wise. All the participants are given a booklet containing related theory & experimental details.

Conclusion: Students show good interest in both the certificate courses and express their opinion about these courses by giving feedback.


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RENEWABLE
ENERGY



K.R.E SOCIETY'S
KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR
DEPARTMENT OF PHYSICS
2020-21

CERTIFICATE

This is to certify that Kumar/Kumari .*Raziyah Fatma D/o Md Fayaz* of

class Bachelors of Science V Semester bearing Register

No. *219/3764*..... has successfully completed the short term course titled

"BASICS OF SOLAR CELL AND PANELS" during the year 2020-21.

[Signature]
Srt. S. L. Kulkarni
Head, Dept. of Physics

[Signature]
Dr. Jagannath Hebbale
Principal

[Signature]
Dr. Baswaraj Patil, Ashtoor
President, KRES

"Energy Is The Currency Of Change In The World"