

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

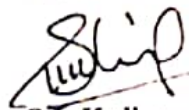
2. Harnessing Wind Energy

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

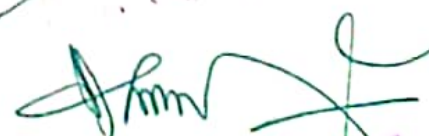
A sum of Rs. 100/- will be collected from each student as registration fees to manage related expenses. The course class timings will be adjusted so as not to disturb students regular schedule. I request your kind self to accord permission for the same.

Thanks,

Yours Faithfully,


21/12/20
S.L.Kulkarni
HOD, Physics


Attested



Vice-Principal
IQAC, Coor
Karnat k Arts, Science & Commerce College
Bidar



ಕರ್ನಾಟಕ ಕಲಾ, ವಿಜ್ಞಾನ ಮತ್ತು ವಾಣಿಜ್ಯ ಕಾಲೇಜು, ಬಿದರ
KARNATAK ARTS, SCIENCE & COMMERCE COLLEGE, BIDAR



(Affiliated to Gulbarga University, Karnataka)

College with Potential for Excellence Status Awarded by UGC New Delhi
(023-0001 - 2015)



Golden Jubilee Celebration - 1970-2020

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE - II
HARNESSING WIND ENERGY
BOARD OF STUDIES



- 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

HOD
Physics
HOD,

Dept. of Physics
Karnatak Arts & Com. College Bidar

Principal
PRINCIPAL
Karnatak Arts Sci. & Com. College
Bidar - 585401

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

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

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



Save Environment Save Earth





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



Estd 1970

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ISO 9001 : 2015

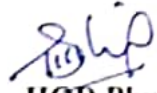




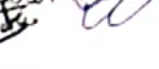

Golden Jubilee Celebration - 1970-2020

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE – II
HARNESSING WIND ENERGY



Duration	:	1 Semester
Batch-I	:	Jan 2021 to March 2021
No. of Hours	:	30hrs
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. Ekraath Halge 
- 2) Dr. Rajendra Binadati 
- 3) Shweta Patel 
- 4) Devikamani 


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

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KARNATAK ARTS, SCIENCE & COMMERCE COLLEGE BIDAR
DEPARTMENT OF PHYSICS



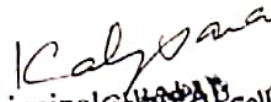
Date: 10/10/2019

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.

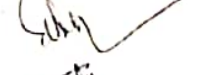


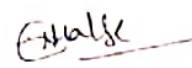

HOD Physics proposed to start two certificate courses as add on courses & the draft syllabus for them.

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,
Physics
Karnatak Arts, Science & Commerce College Bidar


Principal
Karnatak Arts, Science & Commerce College
Bidar A 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 
Gurumanak 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.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 1 st 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


Principal

PRINCIPAL
Karnatak Arts Sci. & Com. Collr.
BIDAR-585 101



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Golden Jubilee Celebration - 1970-2020
DEPARTMENT OF PHYSICS

**CERTIFICATE COURSE – II
HARNESSING WIND ENERGY**

**SYLLABUS
THEORY**



- Unit 1 : Renewable Energy:** Need for Renewable Energy, Different Types of Renewable Energy. Potential of wind electricity generation in India & its current growth rate
4hrs
- Unit 2 : Wind Energy:** Basic principles of wind energy conversion, Site selection consideration, Basic components of wind energy conversion system.
4hrs
- Unit 3 : Classification of Wind Turbine:** Types of wind machines, Performance of wind Machines, Applications of wind energy.
6hrs
- Unit 4 : Wind Electricity Generation:** Coefficient of power, Betz limit, wind energy generators, power curve.
4hrs

PRACTICALS

12hrs

WIND ENERGY

1. Determination of start up speed and cut in speed of wind turbine.
2. Determination of the tip speed ratio (TSR) at different wind speeds.
3. To study the characteristics curve of turbine power v/s wind speed.
4. Determination of co-efficient of performance of wind Turbine.
5. Evaluation of efficient of change controller.
6. To study the characteristics curve of TSR v/s co- efficient of power.

[Signature]
Coordinator, BOS

- Dr. Eknath N. Halke
Dr. Rajendra Bixadani
Shweta Patil

Devikarmoni - *[Signature]*

[Signature]
Principal &
Chairman, BOS
Karnatak Arts Sci. & Com. College
B I D A R - 585 401

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KRE SOCIETY'S
Karnatak Arts Science and Commerce College, Bidar
Department of Physics
Certificate course – Harnessing Wind Energy

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 wind resource, principles of conversion and technologies
4. Understand the operation and constraints of wind turbine generators
5. Analyze the performance of WECS



HOD, Physics

H. O. S.

D pt. of Physics

Karnatak Arts Sci & Com. College Bidar

Department Of Physics

NOTICE

Date: 23/12/20

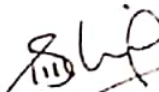
All the degree students with physics as elective subject are here by informed that, the department of Physics is introducing two short term certificate courses. The details are as follows:

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


Principal

PRINCIPAL

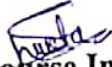
SARVODAYA VIDYALAYA
11/11/2020

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. College
B I D A R - 585 401

KRE SOCIETY

Karnatak Arts, Science and Commerce College, Bidar

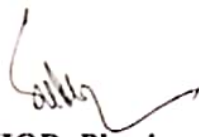
Department Of Physics

Time Table

Certificate Course 2020-21

Harnessing Wind Energy


Day/Time	11am to 1pm	Class
Wednesday	Group I:14- PMCs	B.Sc III Sem
Thursday	Group II:17-PMCs	B.Sc III Sem


HOD, Physics

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D pt. of Physics
Karnatak Arts Sci. & Com. College Bidar


Principal

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


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: HARNESSING WIND ENERGY
ENROLMENT FORM- 2020-21



SL.NO.	TITLE	
01	Name	Sangameshwari
02	Father Name	Bashwanaj
03	Date Of Birth (DD/MM/YYYY)	16/3/2001
04	Class with Combination	Bsc III rd (PMCs)
05	Class Roll no. & Reg. No.	19C11 52062919
06	Contact Number & e-Mail ID	9972053671 sangameshwari@bidarcollege169@gmail.com

I abide with the rules and regulations of the course.

Signature of Applicant

HOD
D pt. of Physics

Karnatak Arts & Com. College Bidar

PRINCIPAL

Karnatak Arts & Com. College
BIDAR-585 401

KRE SOCIETY'S
KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE: HARNESSING WIND ENERGY
ENROLMENT FORM- 2020-21



SL.NO.	TITLE	
01	Name	Mobusheera Fatima
02	Father Name	Md. Fayaz Hussain
03	Date Of Birth (DD/MM/YYYY)	27/04/2002
04	Class with Combination	BSc. III rd (PMCs)
05	Class Roll no. & Reg. No.	19C10 52063084
06	Contact Number & e-Mail ID	8618864726 mobusheerafatima@gmail.com

I abide with the rules and regulations of the course.

Signature of Applicant

HOD
D pt. of Physics

Karnatak Arts & Com. College Bidar

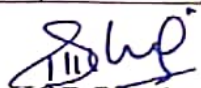
PRINCIPAL

Karnatak Arts & Com. College
BIDAR-585 401

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE -II
 2020-21
HARNESSING WIND ENERGY

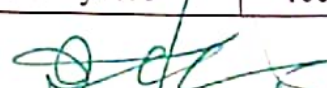
List of Students

SL. NO	Roll no.	Name of Student	Phone no.	e-Mail.ID @gmail.com	Amount
01	19C01	Eshwari Sangappa	9963629928	eshwarieshwari287	100/-
02	19C02	Saikumar Biradar	6362587380	saibiradar207	100/-
03	19C03	Vishal Kashinath	8088322882	vishalmahagon	100/-
04	19C04	Nataraja Umesh	9686813050	natarajmatte9	100/-
05	19C05	Kalpana Ravindra	9448828073	kalpanabiradar2002	100/-
06	19C06	Christina Navomi	6364259568	christinanavomi24	100/-
07	19C08	Sana Fatima	9343773803	sanafatima9343	100/-
08	19C09	Ashwini Rajshekhar	9980710159	ashwinideshmukh404	100/-
09	19C10	Mobusheera Fatima	9481923516	mobusheerafatima	100/-
10	19C11	Sangameshwari	9972053671	Sangameshwariulagad del69	100/-
11	19C12	Shivani	8618729101	shivanishiva248	100/-
12	19C13	Devika	6366339678	devikaphulekar11	100/-
13	19C14	Keerti Vijayreddy	9591108416	keertipalati	100/-
14	19C15	Soumya Mohan	8088338432	soumyamohan875	100/-
15	19C16	Nikita Patil	8088375916	nikitapatil7414	100/-
16	19C17	Sujata Basya Swamy	6360302399	basayyaswamy72	100/-
17	19C18	Anjali Chandrakant	8861514224	panchalanjali590	100/-
18	19C19	Sujata Baswaraj	9901717431	sujatapatil431	100/-
19	19C20	Sajana Rajshekhar Patil	7483860007	patilsanjana301	100/-
20	19C21	Vaishnavi Rajkumar	9008040677	hokranavaishnavi	100/-
21	19C22	Syeda Afshan	7022708645	afshanbegum382	100/-
22	19C23	Shweta Sharnappa	8618034151	biradarshweta23	100/-
23	19C24	Shruti Sanjukumar	8088502419	kinnishruti	100/-
24	19C25	Chandana Tarnalle	7483301144	chandanatarnalle	100/-
25	19C26	Aloka Kademanikar	8088927782	skaloka808	100/-
26	19C27	Durgadevi	6360848509	joshidurga209	100/-
27	19C28	Hassa Anjum	7760022320	anjumhassa	100/-
28	19C29	Khizra Khatoon	8762368709	khizrakhatoon69	100/-
29	19C30	Poonam Natikar	9019359693	poonamnatikar2001	100/-
30	19C31	Sapna Swamy	8217060557	sapnaswamy1055	100/-


HOD Physics
HOD

Dept. of Physics

Karnatak **Is Sci & Com. College Bidar**

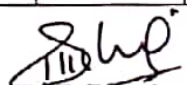

Principal
PRINCIPAL

Karnatak Arts & Com. Coll.
 Bidar, Karnataka
 Ph: 0831-2582401

DEPARTMENT OF PHYSICS
CERTIFICATE COURSE -II
2020-21
HARNESSING WIND ENERGY

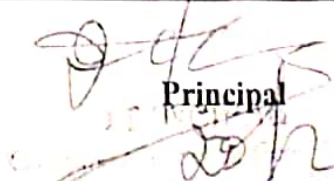
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29	19C30	Poonam Natikar	9019359693	poonamnaticar2001	100/-
30	19C31	Sapna Swamy	8217060557	sapnaswamy1055	100/-


HOD Physics
HOD

D-pt. of Physics

Sanatana IS Sci & Com. College Bidar


Principal

"Harnessing Wind Energy" Theory
 B.Sc III sem
 Wed - r

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

Society's Practical
 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		Eshwari P/o sangappa		1	2	3	4	5	6	7	7	8	9	10	11	11	12
C02		Saitumar Bidar		1	2	3	4	5	6	7	8	9	10	10	11	11	11
C03		Vishal P/o rashinath		1	2	3	4	4	5	6	6	7	8	9	10	10	11
C04		Natraj P/o umesh		1	2	3	4	5	6	7	8	9	10	10	11	12	13
C05		Kalpna P/o Ravindra		1	2	3	4	5	6	7	8	9	10	11	12	12	13
C06		Christina Navomi		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C07		Vaishnavi P/o Basawaraj		0	0	0	0	0	0	0	0	0	0	0	0	0	0
C08		Sana Fatima P/o Md ahmedudin		1	2	3	4	5	6	7	8	9	10	11	11	12	13
C09		Ashwini P/o Rajshakar		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C10		Mobushera Fatima		1	2	3	4	4	5	6	7	8	9	10	11	12	13
C11		Sangameshwari B		1	2	3	4	5	6	7	7	8	8	9	10	11	12
C12		Shivani P/o Ashok		0	0	1	2	3	4	5	6	7	7	8	9	10	11
C13		Devika P/o Hari Datteshwar		1	2	3	4	5	6	7	7	8	8	9	10	11	12
C14		Keerti P/o Vijayreddy		1	2	2	3	4	5	6	7	8	8	9	10	11	12

Date																												
No.	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
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23	1	2	3	4	5	6																						
24	1	2	3	4	5	6																						
25	0	0	1	2	3	4																						
26	1	2	3	4	5	6																						
27	1	2	3	4	5	6																						
28																												

Signature of Lecturer with Date
 Signature of H.O.D.

B.Sc III sem Thu

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

Practical
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
C15		Soumya O/o Mohan		1	2	3	4	5	6	6	7	8	8	9	10	11	12
C16		Nikita O/o Chandrabant		1	2	3	4	5	5	6	6	7	8	9	10	11	
C17		Sujata O/o Basayya Swamy		1	2	3	4	5	6	7	8	8	9	10	10	11	12
C18		Arjuna O/o Chandrabant		1	2	3	4	5	6	7	8	9	10	10	11	12	13
C19		Sujata O/o Basavaprajya - my		1	2	3	4	5	6	7	8	9	10	11	11	12	12
C20		Sanjana O/o Rajshreekharpati		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C21		Vaishnavi O/o Rajkumar		1	2	3	4	5	6	6	7	7	8	9	10	11	12
C22		Syeda Afshan		1	2	3	3	4	5	6	7	8	9	10	11	12	
C23		Shweta O/o Sharanappa		1	2	3	4	4	5	6	7	8	8	9	10	11	
C24		Shruti O/o Sanjivkumar		1	2	3	3	4	5	6	7	8	8	9	10	10	
C25		Chandana O/o Hanumanth		1	2	3	4	5	6	7	8	9	9	10	11	12	13
C26		Aloka O/o Sanjukumar		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C27		Durgadevi Joshi		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C28		Hansa Anjum		1	2	3	3	4	4	5	6	7	8	9	10	11	12
C29		Khizra Khatun		1	2	3	3	4	5	6	7	7	8	9	10	11	12
C30		Deenam O/o Subhash Naliker		1	2	3	4	5	6	6	6	7	7	8	8	9	10
C31		Gayna O/o Panchayya Swamy		1	0	2	3	4	4	5	6	7	8	8	9	10	11

Date																											
No.	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
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	1	2	3	4	5	6																					

Signature of Lecturer with Date

Signature of H.O.D.

KRE SOCIETY'S

KARNATAK ARTS, SCIENCE AND COMMERCE COLLEGE, BIDAR.

DEPARTMENT OF PHYSICS


Certificate Course 2020-21

NOTICE

DATE: 22/02/21

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

HOD,
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 - II
2020 - 2021
HARNESSING WIND ENERGY
Students Exam Attendance

SL. NO	Roll no.	Reg. no.	Name of Student	Sign
01	19C01	S2062924	Eshwari Sangappa	Eshwari
02	19C02	S2063087	Saikumar Biradar	Saikumar
03	19C03	S2062911	Vishal Kashinath	Vishal
04	19C04	S2062951	Nataraja Umesh	Nataraj
05	19C05	S2062945	Kalpana Ravindra	Kalpana
06	19C06	S2063120	Christina Navomi	Christina
07	19C08	S2063021	Sana Fatima	Sana
08	19C09	S2063077	Ashwini Rajshekhar	Ashwini
09	19C10	S2063084	Mobusheera Fatima	Mobusheera
10	19C11	S2062919	Sangameshwari	Sangameshwari
11	19C12	S2062999	Shivani Ashok	Shivani
12	19C13	S2063082	Devika	Devika
13	19C14	S2063013	Keerti Vijayreddy	Keerti
14	19C15	S2063012	Soumya Mohan	Soumya
15	19C16	S2063043	Nikita Chandrakanth Patil	Nikita
16	19C17	S2063002	Sujata Basyya Swamy	Sujata
17	19C18	S2063127	Anjali Chandrakant	Anjali
18	19C19	S2062996	Sujata Baswaraj	Sujata
19	19C20	S2063026	Sanjana Rajshekhar Patil	Sanjana
20	19C21	S2062950	Vaishnavi Rajkumar	Vaishnavi
21	19C22	S2063030	Syeda Afshan	Syeda Afshan
22	19C23	S2062896	Shweta Sharnappa	Shweta
23	19C24	S2063114	Shruti Sanjukumar	Shruti
24	19C25	S2062957	Chandana Tarnalle	Chandana
25	19C26	S2062974	Aloka Kademanikar	Aloka
26	19C27	S2062906	Durgadevi Digambar	Durgadevi
27	19C28	S2063000	Hassa Anjum	Hassa
28	19C29	S2062890	Khizra Khaton	Khizra
29	19C30	S2063032	Poonam Natikar	Poonam
30	19C31	S2063010	Sapna Swamy	Sapna

HOD Physics

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

Principal

PRINCIPAL
Karnatak Arts Sci. & Com. College
Bidar

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

**Certificate course-II
Harnessing Wind Energy
Question Paper 2020-21**

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

Date :
Time : 1 hour
Max. Marks : 30

Q.I Choose the correct answer for the following Questions

15x1= 15

1. The amount of energy available in the wind at any instant is proportional to ___ of the wind speed.

- (A) Square root power of two
- (B) Square root power of three
- (C) Square power
- (D) Cube power

2. Wind energy is harnessed as _____ energy with the help of windmill or turbine.

- (A) Mechanical
- (B) Solar
- (C) Electrical
- (D) Heat

3. Winds having following speed are suitable to operate wind turbines.

- (A) 5 – 25m/s
- (B) 10 – 35m/s
- (C) 20 – 45m/s
- (D) 30 – 55m/s

4. The following is (are) the classification of winds

- (A) Global wind
- (B) Local wind
- (C) Both (A) and (B)
- (D) None of the above

5. Global Cold wind move from

- (A) Polar to equatorial region
- (B) Equatorial to polar region
- (C) Equatorial to oceanic region
- (D) Oceanic to Equatorial region

Page No: 1/3

6. Global Cold wind generated from Oceans moves to

- (A) Mountains
- (B) Equator
- (C) Plain areas
- (D) Poles

7. Name the windmill which has four blades mounted on a central post.

- (A) Post mill
- (B) Smock mill
- (C) Tower mill
- (D) Fan mill

8. Global winds towards westernly direction are known as

- (A) Trade winds
- (B) Western winds
- (C) Eastern winds
- (D) None of the above

9. Uneven heating occurs on land surface and water bodies are due to _____

- (A) Air Currents
- (B) Solar radiation
- (C) Lunar eclipse
- (D) None of the above

10-The following factor(s) affects the distribution of wind energy

- (A) Mountain chains
- (B) The hills, trees and buildings
- (C) Frictional effect of the surface
- (D) All of the above

11-The wind intensity can be described by

- (A) Reynolds number
- (B) Mach number
- (C) Beaufort number
- (D) Froude number

12. Which type of the following consists of single blade?

- (A) Horizontal axis with two aerodynamic blades
- (B) Horizontal axis propeller type wind mill
- (C) Horizontal axis multi bladed type wind mill
- (D) Sail type wind mill

13. Which type of windmill has better performance?

- (A) Vertical type wind mills
- (B) Darrieus type machines
- (C) Magnus effect rotor

2/3

Page No: 2

(D) Horizontal type windmills

14. How is the action of yaw controlled in small turbines?

- (A) Tail vane
- (B) Blades
- (C) Shaft
- (D) Yaw motor

15. What does WECS stands for?

- (A) Wind energy conversion system
- (B) Wind engine control system
- (C) Wind energy combined system
- (D) Wind engine comparison system

Q II. Answer the Flowing Questions

3x5= 15

1. a. What are the different causes of Local Winds?
b. What are the factors determine the output from a wind energy converter
2. Why utilization of wind is considered as part of solar technology?
3. Give some important factor consider for side selection of WECS.

K. S. D.
Course Co-ordinator.

[Signature]
HOD

Dept. of Physics
Tamil Nadu State College, Karaikal

[Signature]
Vice-Principal &
IQAC, Coordinator
Tamil Nadu State College, Karaikal

3/3

Page No: 3

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

Certificate course-II
Harnessing Wind Energy
Question Paper 2020-21

22
30

Class : B.Sc III sem
Name of Student : Shivani D/o Ashok
Reg. No. : S2062999

Date :
Time : 1 hour
Max. Marks : 30

Q.1 Choose the correct answer for the following Questions

15x1= 15

1. The amount of energy available in the wind at any instant is proportional to ___ of the wind speed.

- (A) Square root power of two
 (B) Square root power of three
 (C) Square power
 (D) Cube power

2. Wind energy is harnessed as _____ energy with the help of windmill or turbine.

- (A) Mechanical
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 (C) Electrical
 (D) Heat

3. Winds having following speed are suitable to operate wind turbines.

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7. Name the windmill which has four blades mounted on a central post.

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- (D) Fan mill

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- (B) Western winds
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- (A) Air Currents
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- (A) Vertical type wind mills
- (B) Darrieus type machines
- (C) Magnus effect rotor
- (D) Horizontal type windmills

14. How is the action of yaw controlled in small turbines?

- (A) Yaw
- (B) Blades
- (C) Shaft
- (D) Yaw motor

15. What does WECS stands for?

- (A) Wind energy conversion system
- (B) Wind engine control system
- (C) Wind energy combined system
- (D) Wind engine comparison system

Q II. Answer the Following Questions

3x5= 15

1. a) What are the different causes of Local Winds?
b) What are the factors determine the output from a wind energy converter
2. Why utilization of wind is considered as part of solar technology?
3. Give some important factor consider for site selection of WECS.

Ans 1) (a) Local wind blow in smaller areas and the main cause of this is unequal heating and cooling of landmass. Difference in the temperature of the land and water cause the local wind to blow.

(b) The three factors that influence power output are:
① wind speed
② Air density
③ blade radius


Ans 3) Some of the main site selection considerations are given below:


- ① High annual average wind speed
- ② Availability of anemometry data
- ③ Availability of wind $V(t)$ curve at the proposed site.
- ④ Wind structure at the proposed site.
- ⑤ Altitude of the proposed site

- ⑥ Terrain and its aerodynamic
- ⑦ Local Ecology
- ⑧ Distance to road (or) railways
- ⑨ Nearness of site to local Centre/users.
- ⑩ Nature of ground.
- ⑪ Favourable land cost.

**DEPARTMENT OF PHYSICS
CERTIFICATE COURSE -II
2020-21
HARNESSING WIND ENERGY
Marks List**

SL. NO	Roll no.	Reg. no.	Name of Student	Max. Marks	Obtained Marks
01	19C01	S2062924	Eshwari Sangappa	30	23
02	19C02	S2063087	Saikumar Biradar	30	21
03	19C03	S2062911	Vishal Kashinath	30	22
04	19C04	S2062951	Nataraja Umesh	30	22
05	19C05	S2062945	Kalpana Ravindra	30	24
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09	19C10	S2063084	Mobusheera Fatima	30	25
10	19C11	S2062919	Sangameshwari	30	24
11	19C12	S2062999	Shivani	30	22
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13	19C14	S2063013	Keerti Vijayreddy	30	24
14	19C15	S2063012	Soumya Mohan	30	23
15	19C16	S2063043	Nikita Chandrakant Patil	30	25
16	19C17	S2063002	Sujata Basyya Swamy	30	25
17	19C18	S2063127	Anjali Chandrakant	30	22
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20	19C21	S2062950	Vaishnavi Rajkumar	30	21
21	19C22	S2063030	Syeda Afshan	30	20
22	19C23	S2062896	Shweta Sharnappa	30	28
23	19C24	S2063114	Shruti Sanjukumar	30	26
24	19C25	S2062957	Chandana Tarnalle	30	30
25	19C26	S2062974	Aloka Kademanikar	30	28
26	19C27	S2062906	Durgadevi Digambar	30	25
27	19C28	S2063000	Hassa Anjum	30	29
28	19C29	S2062890	Khizra Khaton	30	24
29	19C30	S2063032	Poonam Natikar	30	21
30	19C31	S2063010	Sapna Swamy	30	21


HOD Physics
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Dept. of Physics
Karnatak Univ. Sci. & Com. College Bld.


Principal
PRINCIPAL
Karnatak Univ. Sci. & Com. C
BTD-X-2025831201

2020-21
Certificate Course - II
Harnessing Wind Energy
Group Photo



KRE SOCIETY'S
Karnatak Arts Science and Commerce College, Bidar
Department of Physics
Conclusion Feedback Form for Certificate Course
Harnessing Wind Energy
2020-2021



71 Out of 150 students felt that this Certificate Course is
Extremely Good

48 Out of 150 students felt that this Certificate Course is
Good

26 Out of 150 students felt that this Certificate Course is
Quiet Good

05 Out of 150 students felt that this Certificate Course is
Poor

From the above observation we conclude that the conduct of
certificate course for **Harnessing Wind Energy** is successful.

A handwritten signature in blue ink.

Course Coordinator

A handwritten signature in blue ink.

HOD, Physics

HOD,
Dept. of Physics
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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Karnatak Arts, Sci. & Comm. College, Bidar


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EWABLE
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 Maishavi D. Rajkumar of

class Bachelors of Science III Semester bearing Register

No 52062950 has successfully completed the short term course titled

"HARNESSING WIND ENERGY" during the year 2020-21.

Sri-S. L. Kulkarni
Head, Dept. of Physics

Dr. Jagannath Hebbale
Principal

Dr. Baswaraj Patil, Ashtoor
President, KRES

"Energy Is The Currency Of Change In The World"