

# SAR Criteria-6

POINT 1.% of Teachers with Ph.D

जोधपुर राष्ट्रीय विश्वाविद्यालय, जोधपुर  
Jodhpur National University, Jodhpur



The Chairman and Members  
of  
The Board of Management confer on

BIHARI LAL

the degree of

DOCTOR OF PHILOSOPHY

IN

FACULTY OF ARTS  
(ECONOMICS)

in the year 2017.

Topic: "EXTENT, DETERMINANTS AND IMPACT OF ADOPTION OF FARM  
TECHNOLOGY: A STUDY OF HIMACHAL PRADESH"

*Balraj*  
President, Board of Management



Date: 13 DECEMBER 2017

*Pratik*  
Secretary

Roll No. 1965

# Punjab University

Doctor of Philosophy

(In the faculty of Design & Fine Arts)



Certified that  
son of Shri

*Balbir Chand*

, Regd. No. 2003-mus-02

*Kewal Ram*

, and of

*Himachal Pradesh*

, has obtained the degree of Doctor of Philosophy

of this University on the result of the examination held in 2011

Given under the seal of the University

*A. K. Bhandari*

Controller of Examinations

Vice Chancellor

Chancellor



*A. K. Bhandari*

Registrar

Chandigarh, February, 11, 2011



## हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

(केंद्रीय विश्वविद्यालय अधिनियम 2009 के अर्धीन स्थापित)

द्वारा

शैक्षणिक परिषद की संस्तुति पर

प्रतीक देसवाल सुपुत्र श्रीमती उर्मिल देसवाल एवं श्री सतवीर सिंह देसवाल

को मानविकी एवं भाषा स्कूल के अंतर्गत

विश्वविद्यालय अनुदान आयोग (एम फिल/पी एच डी उपाधि के लिए न्यूनतम मानक एवं प्रक्रिया)

विनियम, 2009 के अनुसार

शोध प्रबंध : "Counter-Narratives in the Select Fiction of J. M. Coetzee"

पर शोध

कार्य सफलतापूर्वक पूर्ण करने पर

विद्यावाचस्पति

की उपाधि प्रदान की जाती है।

## CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Established under Central Universities Act 2008)

on the recommendation of the Academic Council

confers on

**Prateek Deswal S/o Smt. Urmil Deswal and Sh. Satvir Singh Deswal**

the degree of

**Doctor of Philosophy (Ph.D.)**

on successful completion of the research work

Thesis "Counter-Narratives in the Select Fiction of J. M. Coetzee"

in accordance with the

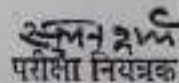
UGC (Minimum Standards and Procedure for the award of M.Phil./Ph.D. degrees) Regulations, 2009

in the School of Humanities & Languages



कुलसचिव

Registrar



परीक्षा नियंत्रक

Controller of Examination



कुलपति

Vice-Chancellor



Serial No.: 15Ph.D.23  
क्रम संख्या :

Registration No.: 269-Ph.D.-Chem-188  
पंजीकरण संख्या :

# National Institute of Technology, Hamirpur (Himachal Pradesh)

*Upon the recommendation of the Senate hereby confers the degree of*

*Doctor of Philosophy*

*in*

*Chemistry*

*on*

**NITESH KUMAR**

**THESIS TITLE: SYNTHESIS, CHARACTERIZATION, CYTOTOXIC AND DNA BINDING STUDIES OF TITANIUM COMPLEXES**

*Given at Hamirpur (H.P.) on this day under the seal of the Institute in the Republic of India.*

## राष्ट्रीय प्रौद्योगिकी संस्थान, हमीरपुर (हिमाचल प्रदेश)

अभिषेक की अनुमति पर

विद्या वाचस्पति की सभाधि


रसायन एतद्वारा

**नितेश कुमार**


को प्रदान करता है।

शोधप्रबन्ध शीर्षक: मिन्थरिस, करेक्टसाइजेशन, साइटोडॉक्सिक एन्ड डीएनए बाइंडिंग स्टडीज ऑफ टाइटेनियम कॉम्प्लेक्स

भारतीय गणतन्त्र के अन्तर्गत हमीरपुर (हि.प्र.) में इस दिनांक को संस्थान की मुद्रा अंकित यह सभाधि दी गई।

  
Chairman, Board of Governors  
अध्यक्ष, अभिरासक परिषद

  
Director & Chairman, Senate  
निदेशक एवं अध्यक्ष, अभिषेक

  
Registrar  
सूचनाधिक



**NOTIFICATION**

In pursuance of the powers vested in him by the Executive Council of Himachal Pradesh University vide Resolution No. 103 of its meeting held on 28<sup>th</sup> December, 1982, the Vice-Chancellor is pleased to accept the Thesis of following candidates for the award of the degree of 'DOCTOR OF PHILOSOPHY' in the faculty/subject shown against their name and has declared them eligible for the award of 'DOCTOR OF PHILOSOPHY' of this University -

Sr. No.	Name of the Candidate (Registration No.)	Faculty (Subject)	Title of the Thesis	Date of approval by the V.C.
1	Ms. Kamlesh Kumari D/o Sh. Jagdish Chand (06-HM-1080)	Life Sciences (Zoology)	"KARYOTYPIC STUDIES ON SOME SPECIES OF ROSE APHIDS (HOMOPTERA: APHIDIDAE) FROM HIMACHAL PRADESH."	08.11.2021
2	Ms. Pallavi Sood D/o Sh. Suresh Sood (15-SP-45)	Commerce and Management Studies (Management Studies)	"FINANCIAL FRAUDS IN INDIAN BANKING SECTOR: A STUDY OF MANAGEMENT AND CUSTOMERS PERCEPTIONS."	09.11.2021
3	Ms. Tamann D/o Sh. Madan Lal (07-DC-177)	Physical Sciences (Physics)	"STRUCTURAL, ELECTRONIC AND OPTICAL PROPERTIES OF CHALCOGENIDE CLUSTERS: A FIRST PRINCIPLE STUDY."	20.11.2021
4	Ms. Monika Parmar D/o Sh. Man Chand Parmar (09-SP-317)	Social Sciences (Economics)	"REGIONAL DISPARITIES OF COMMERCIAL BANKING IN INDIA."	20.11.2021

NB: The effective date in each case mentioned above will be the date of approval by the Vice-Chancellor.

Deputy Registrar (Exams.)  
H.P. University, Shimla-5

Controller of Examinations  
H.P. University, Shimla-5

Dated: 25.11.2021

Encls: No. Even.

Copy to:-

1. Student concerned
2. The SPS to Vice-Chancellor/Deat of Studies/Registrar, H.P. University, Shimla-171005.
3. The Chairman/Chairperson Zoology, Management Studies, Physics & Economics H.P.U., Shimla-5.
4. Prof. D.C. Gauran, Dr. Poojit Dhanraj, Prof. Raman Sharma & Prof. K.C. Sharma Supervisor of the candidates.
5. The Librarian, H. P. University, Shimla-171005.
6. The Deputy Registrar (Secrecy) w.r.t. their letter No PH-1781/HPU/Secy-639, PH-3845/HPU/Secy-637 dated 16.11.2021, PH-3838/HPU/Secy-651 & Ph-3785/HPU/Secy dated 22.11.2021.
7. The Incharge Computer Centre B.Tech, Section III, H.P. University, Shimla-5 with the request to upload the above Notification on the University Website.
8. Guard file.

Deputy Registrar (Exams.)





# POINT 2. Teachers as Research Guides

DEPARTMENT OF GEOGRAPHY  
HIMACHAL PRADESH UNIVERSITY  
SUMMER HILL, SHIMLA-171005

Dated: Shimla-5, the 19<sup>th</sup> August, 2021

To

Mr. Sanjay Kumar S/o Sh. Hari Ram,  
Village Kundi, P.O. Sidhat,  
Tehsil Churuk, Distt. Chamba 176521 (H.P.)

Subject: Regarding approval of topic.

Dear Student,


I am to inform you that Research Degree Committee in the Faculty of Physical Sciences in the subject of Geography in its meeting held on 19.08.2021 has consider the research Plan submitted by you for Ph.D. in the topic entitled:

**"SOCIO-ECONOMIC DEVELOPMENT IN BHARMOUR BLOCK OF HIMACHAL PRADESH: A SPATIO-TEMPORAL ANALYSIS"**

under the guidance of Dr. Sanjay Kumar approved the same.

Besides, you have not so far attended to the discrepancy (ies) pointed out in your side this office letter dated: \_\_\_\_\_. Therefore, you are again advised to do the needful at the earliest filing which has already informed, your Ph.D. thesis will not be accepted.

Yours faithfully

  
Chairman  
Dept. of Geography  
H.P. University, Shimla-5

Encl. No. Even

Dated

Copy to:

1. ✓ Dr. Sanjay Kumar, Supervisor, Department of Geography NSCBM G.C. Hamirpur (H.P.)
2. Librarian, Association of Indian Universities, All India House, 16 Kofia Marg, New Delhi
3. The A.R. (Academic), H.P.U., Shimla-5
4. Personal file of the candidate.

Chairman

No.13-32, 122/HPU(Geog.)2019  
DEPARTMENT OF GEOGRAPHY  
HIMACHAL PRADESH UNIVERSITY  
SUMMER HILL, SHIMLA-171005

Dated: Shimla-5, the 19<sup>th</sup> August, 2021

To

Mr. Deepak Kumar Singh S/o Sh. Inder Singh,  
Village Upper Nokali, P.O. Nokali,  
Tehsil Joginder Nagar, Distt. Mandi (H.P.)  
Pin-175015

Subject: Regarding approval of topic.

Dear Student,


I am to inform you that Research Degree Committee in the Faculty of Physical Sciences in the subject of Geography in its meeting held on 19.08.2021 has consider the research Plan submitted by you for Ph.D. in the topic entitled:

**"A SPATIO-TEMPORAL ANALYSIS OF DEMOGRAPHIC CHANGES IN MANDI TOWN, HIMACHAL PRADESH (1971-2021)"**

under the guidance of **Dr. Sanjay Kumar** approved the same.

Besides, you have not so far attended to the discrepancy(ies) pointed out to you vide this office letter dated \_\_\_\_\_. Therefore, you are again advised to do the needful at the earliest failing which has already informed, your Ph.D. thesis will not be accepted.

Yours faithfully,

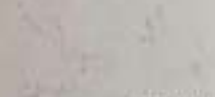
  
Chairman  
Dept. of Geography  
H.P. University, Shimla-5.

Enclt. No. Evcp.

Date:

Copy to:

1. Dr. Sanjay Kumar, Supervisor, Department of Geography, NSCBM, G.C. Hamirpur;
2. Librarian Association of Indian Universities, AIU House, 16 Kofla Marg, New Delhi;
3. The A.R. (Academic), H.P.U. Shimla-5;
4. Personal file of the candidate.

  
Chairman



# POINT 3 OP,FDP,WORKSHOP Attended by Teachers.



Guru Angad Dev  
Teaching Learning Centre  
A Centre of Ministry of Education  
under PMMMNMTT



सत्यमेव जयते  
Government of India  
Ministry of Education



Pillai College of Arts,  
Commerce & Science  
(Autonomous), New Panvel

## Certificate

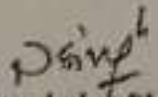
17<sup>th</sup> August to 30<sup>th</sup> August 2021

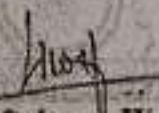
TWO WEEK ONLINE INTER-DISCIPLINARY REFRESHER COURSE/FACULTY DEVELOPMENT PROGRAM  
**DIGITAL TOOLS IN HIGHER EDUCATION**

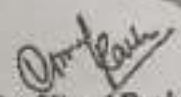
This is to certify that

**RANJU of GOVT. COLLEGE, JHANDUTTA (HPU SHIMLA)**

has **successfully completed** Two Week Online Inter-Disciplinary Refresher Course/Faculty Development Program jointly organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi and Pillai College of Arts, Commerce & Science, Teaching - Learning Centre under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of Ministry of Education. This was conducted in online mode with two weeks involvement in a flexible mode. This online Refresher Course is equivalent to face to face Refresher Course. The two weeks involvement included attendance during live/recorded sessions, hands on activities, submission of Quizzes, Assignments and Project. The participant has obtained GRADE "A" as required for promotion under CAS of UGC and AICTE.

  
Prof. Jaswinder Singh  
Principal  
S.C.T.B. Khalsa College  
University of Delhi

  
Dr. Gajanan Wader  
Principal  
Pillai College of Arts, Commerce  
& Science

  
Dr. Vimal Rathi  
Project Head & Joint Director  
GAD-TLC of Ministry of Education



**UNIVERSITY GRANTS COMMISSION**  
**HUMAN RESOURCE DEVELOPMENT CENTRE**  
**UNIVERSITY OF RAJASTHAN, JAIPUR**

University with 'A' Grade & UPE Status  
HRDC RANKED 2<sup>nd</sup> BY NAAC, 2012



ज्ञान - विज्ञानं विमुक्तये

**UGC-SPONSORED REFRESHER COURSE**

**Certificate of Participation**



*This is to certify that*

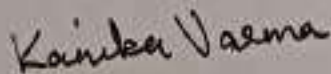
*Dr./Ms./Mrs. Ranju , Assistant Professor , Performing Art (Music-Vocal)*  
*(Name of Participant, Designation & Subject)*


*Govt. College Jhandutta, Bilaspur (Himachal Pradesh)*  
*(College/University), (Place)*

*Participated in Refresher Course in Gender, Media and Social Transformation (Interdisciplinary)*  
*organised from 17<sup>th</sup> September, 2021 to 30<sup>th</sup> September, 2021 and obtained Grade 'A'*

  
Prof. Alpana Kateja  
Director

Human Resource Development Centre

  
Dr. Kanika Varma  
Course Coordinator &  
Department of Home Science

  
Prof. Rajeev Jain  
Vice-Chancellor  
University of Rajasthan



# GOVERNMENT MEERA GIRLS COLLEGE UDAIPUR (RAJ.)



## One Week Workshop

on

**"Training and Performance of various singing styles of Indian Music"**

13<sup>th</sup> to 18<sup>th</sup> December, 2021

Organized by Sangeet Parishad, Department of Music

### CERTIFICATE OF PARTICIPATION

This is to certify that DR./MS./MR BALBIR CHAND, ASSISTANT PROFESSOR, GOVT. COLLEGE SIHUNTA DISTRICT CHAMBA HIMACHAL PRADESH has Participated in the Online Workshop on "Training and Performance of Various Singing Styles of Indian Music" From 13<sup>th</sup> - 18<sup>th</sup> December, 2021.

Dr. Shashi Sanchiher  
Principal

Dr. Seema Rathore  
Convener and Organising Secretary



Teaching Learning Centre, Ramanujan College  
University of Delhi

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Archna Sharma**

of

Department of Hindi, Govt College Jhandutta, Distt. Bilaspur, Himachal Pradesh

successfully completed a 4-Week induction/Orientation Programme for

**"Faculty in Universities/Colleges/Institutes of Higher Education"**

from 21 March – 19 April, 2022 and obtained

Grade A+.



Blockchain Hash: [0a1c3d74f72654815be1e114e53110e39f0d2bb10b66a14100a77c04d08871702](https://www.blockchain.com/eth/address/0a1c3d74f72654815be1e114e53110e39f0d2bb10b66a14100a77c04d08871702)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Ashish Kumar Shukla  
(Convener)  
Ramanujan College





TEACHING LEARNING CENTRE  
RAMANUJAN COLLEGE

In Collaboration with  
KIRORI MAL COLLEGE  
(Accredited Grade 'A' by NAAC)  
UNIVERSITY OF DELHI  
under the aegis of  
MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING

This is to certify that

**Mr. Rajender Kumar**

of

Department of Geography, SV Govt. College Ghumarwin, District Bilaspur ( HP)  
has successfully attended and completed Two week Refresher Course on  
"Recent Trends in Geography"  
from 26 June – 10 July, 2022 and obtained  
Grade A.



Blockchain Hash: [0x8b4e4354951660c713b5c0231b2487c1a3708533e018e776b86661705f6183f1](https://www.blockchain.com/eth/address/0x8b4e4354951660c713b5c0231b2487c1a3708533e018e776b86661705f6183f1)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Prof. H. B. Rathod  
(Principal)  
Gramin (ACS) Mahavidyalaya



Teaching Learning Centre, Ramanujan College  
University of Delhi

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Dr. Nitesh Kumar**

of

Department of Chemistry, Govt College Jukhala, District Bilaspur, Himachal Pradesh,  
successfully completed a 4-Week Induction/Orientation Programme for

**"Faculty in Universities/Colleges/Institutes of Higher Education"**

from 21 March – 19 April, 2022 and obtained

Grade A+.



Blockchain Hash: [0x183abcc79c9340b25381c56c150e605511809df4ee6c495cc21795d8c86a2](https://www.blockchain.com/transaction/0x183abcc79c9340b25381c56c150e605511809df4ee6c495cc21795d8c86a2)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Ashish Kr. Shukla  
(Convener)  
Ramanujan College



# E-WORKSHOP ON HOW TO WRITE A RESEARCH PAPER

(05.12.2022 to 12.12.2022)

Jointly organised by

Swami Vivekanand Government Degree College, Nihri, Mandi

&

Pratibha Spandan Society, Shimla



## Certificate of Participation

This is certified that MS. RANJU, ASSISTANT PROFESSOR, DEPARTMENT OF MUSIC, GOVT. COLLEGE JHANDUTTA, BILASPUR, HIMACHAL PRADESH has successfully attended the 3 days *E-Workshop on How to Write a Research Paper* from 05.12.2022 to 12.12.2022 organised by Swami Vivekanand Govt. Degree College Nihri, Mandi in association with Pratibha Spandan Society, Shimla. The workshop covered the basic topics on How to Write a Research Paper and included online lecture sessions followed by group discussion, individual assignment specifically on writing a research paper to be undertaken in online mode.

His/Her performance was found to be Excellent.

Dr. Varun Saini  
Principal  
Swami Vivekanand Govt. Degree College Nihri, Mandi

Dr. Mritunjay Sharma  
President  
Pratibha Spandan, Shimla

Sh. Shashi Kumar  
Coordinator





Teaching Learning Centre, Ramanujan College  
University of Delhi

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Asst. Prof. Ranju**

of

Govt. College, Jhandutta

successfully completed a 4-Week Induction/Orientation Programme for

**"Faculty in Universities/Colleges/Institutes of Higher Education"**

from 21 March – 19 April, 2022 and obtained

Grade **A+**.



Blockchain Hash: [0x88e31a38614c166071a602b0b9e09738bc6a52d38301752513e8916d8e19a10](https://www.blockchain.com/eth/address/0x88e31a38614c166071a602b0b9e09738bc6a52d38301752513e8916d8e19a10)

*S. P. Aggarwal*

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

*Ashish Kumar Shukla*

Dr. Ashish Kumar Shukla  
(Convener)  
Ramanujan College





Teaching Learning Centre, Ramanujan College

University of Delhi

in collaboration with

Gargi College, University of Delhi

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Dr. Kamlesh Kumari**

of

Department of Zoology, Government College Jhandutta District Bilaspur HP

has successfully completed online Two – Week Refresher Course in

“ZOOLOGY”

from 25 April - 09 May, 2022 and obtained

Grade *A*.



Blockchain Hash: [0xf6d71cdb222b01c4c61c651fd69ecd569ef78076655f25473d1352d6803f4547](https://www.blockchain.com/eth/address/0xf6d71cdb222b01c4c61c651fd69ecd569ef78076655f25473d1352d6803f4547)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Prof. Promila Kumar  
(Principal)  
Gargi College



Teaching Learning Centre, Ramanujan College

University of Delhi

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Dr. Kamlesh Kumari**

of

Department of Zoology, Government College Jhandutta, District Bilaspur (H.P.)

successfully completed a 4-Week Induction/Orientation Programme for

**"Faculty in Universities/Colleges/Institutes of Higher Education"**

from 21 March – 19 April, 2022 and obtained

Grade A+.



Blockchain Hash: [0x2d404ba16d6874d35c3e7a088339548c356852d778763e4ed8e7bc292146692563](https://www.blockchain.com/eth/address/0x2d404ba16d6874d35c3e7a088339548c356852d778763e4ed8e7bc292146692563)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Ashish Kumar Shukla  
(Convener)  
Ramanujan College



Teaching Learning Centre  
Ramanujan College, University of Delhi  
(Accredited Grade 'A++' by NAAC)  
In collaboration with  
Dhote Bandhu Science College  
(Accredited Grade 'A+' by NAAC)  
Gondia, Maharashtra  
under the aegis of  
MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Ms. Sapna Sharma , Assistant Professor (Chemistry)**

of

**Government College Jhandutta, Bilaspur, Himachal Pradesh**  
successfully completed a 4-Week Faculty Induction/Orientation Programme for  
"Faculty in Universities/Colleges/Institutes of Higher Education"  
from 21 August – 19 September, 2023 and obtained  
Grade A.



Blockchain Hash: [0xf245aa05c000bafce77cb1e5cb459d68ac80b41601a13c618881d59568363d](https://www.blockchain.com/transaction/0xf245aa05c000bafce77cb1e5cb459d68ac80b41601a13c618881d59568363d)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Anjan Naidu  
(Principal & Convener)  
Dhote Bandhu Science College

Dr. Nikhil Kumar Rajput  
(Deputy Director)  
TLC, Ramanujan College



Serial No. STC-DoCHY-65

# NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)

(An Institute of National Importance)



## CERTIFICATE

This is to certify that Dr. **Nitesh Kumar** from Govt College Jhandutta, Bilaspur (H.P.) has attended e-Short Term Course on “**Recent Trends in Applied Spectroscopy and Microscopy in Materials Research (ASM2R-2023)**” during 01<sup>st</sup>-05<sup>th</sup> December, 2023 organized by Department of Chemistry, NIT Hamirpur (H.P.).

A handwritten signature in black ink, appearing to be "FJP".

**Coordinator**

A handwritten signature in black ink, appearing to be "Shobh".

**Head of the Department**

A handwritten signature in black ink, appearing to be "Amr".

**Dean (FW)**





# National Workshop on Disaster Management

SR NO:66

December 4-9, 2023

Organized by:

Department of Geography

Thakur Jagdev Chand Memorial Government Degree College, Sujanpur  
Tihra "Utkrisht Mahavidyala", Himachal Pradesh, India

## Certificate

This is to certify that DR SANJAY KUMAR ASSOCIATE PROFESSOR IN GEOGRAPHY, GOVT COLLEGE BARSAR has participated (ONLINE/OFFLINE MODE) in National Workshop on Disaster Management organized by Department of Geography, Thakur Jagdev Chand Memorial Government Degree College, Sujanpur Tihra, "Utkrisht Mahavidyala", Himachal Pradesh, India w.e.f December 4-9, 2023.

Dr. Ajaib Singh

Principal Cum Patron

Prof. Rajeev Kumar

Convener

Prof. Vandna Kumari

Co-Convener

Dr. Ashwani Kumar

Co-Convener



## Teaching Learning Centre, Ramanujan College

University of Delhi  
(Accredited Grade 'A++' by NAAC)  
In collaboration with

M.V.S. Government Arts & Science College (Autonomous)  
Mahabubnagar, Telangana  
under the aegis of  
MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Dr. Nitesh Kumar, Assistant Professor**

of

Department of Chemistry, Govt. College Jhandutta District Bilaspur Himachal Pradesh  
has Successfully Completed online two - week Interdisciplinary Refresher Course in

**"ADVANCED RESEARCH METHODOLOGY"**

from 22 May - 05 June, 2023 and obtained

Grade **A+**.



Blockchain Hash: [0x7a80a7d58f10773ca4d2729c31277f6d11de4e5afd5e1d21c0d16303ef99588](https://www.blockchain.com/tx/0x7a80a7d58f10773ca4d2729c31277f6d11de4e5afd5e1d21c0d16303ef99588)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. K. Padmavathi  
(Principal)  
M.V.S. Govt. Arts & Science College (A)

Dr. Nikhil Kr. Rajput  
(Deputy Director)  
TLC, Ramanujan College



## Teaching Learning Centre

Ramanujan College, University of Delhi

(Accredited Grade 'A++' by NAAC)

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

### Mrs. Archana Sharma

of

Department of Hindi, Government College Jhandutta, Bilaspur (HP)

has successfully completed online two-week Faculty Development Programme/Refresher

Course in

**"HINDI"**

from 06 – 20 May, 2023 and obtained

Grade A+.



Blockchain Hash: <https://www.blockchain.com/eth/tx/0x35c126075101101921dfef60473a2bc35479e02458f6c2bac05dce2052bd03>

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Alok Ranjan Pandey  
(Convener)  
Ramanujan College





**Teaching Learning Centre**  
**Ramanujan College, University of Delhi**

under the aegis of  
MINISTRY OF EDUCATION  
PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING  
in collaboration with  
Sri SARADA COLLEGE FOR WOMEN (AUTONOMOUS)  
Affiliated to Periyar University



This is to certify that

**Rekha Devi**

of

**Government College Jhandutta, District Bilaspur Himachal Pradesh**

has successfully completed two weeks

**"REFRESHER COURSE IN MATHEMATICAL SCIENCES"**

organized during 31 October - 14 November, 2023 and obtained

Grade **B+**.



Blockchain Hash: [0x9c9ee73cc12ae1e7b644445238fd8cab9a75726fe713e0666af778c4ef928235](https://www.blockchain.com/eth/address/0x9c9ee73cc12ae1e7b644445238fd8cab9a75726fe713e0666af778c4ef928235)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. M. Sudha  
(Programme Coordinator)  
SS College for Women

Dr. R. Uma Rani  
(Principal)  
SS College for Women

Dr. Ashish Kumar Shukla  
(Convenor)  
Ramanujan College



Teaching Learning Centre, Ramanujan College

University of Delhi

(Accredited Grade 'A++' by NAAC)

In collaboration with

Hindu College, Moradabad

Affiliated to M. J. P. Rohilkhand University, Bareilly,  
and

Gokul Das Hindu Girls College, Moradabad

Affiliated to M. J. P. Rohilkhand University, Bareilly,

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



सत्यमेव जयते

Ministry of Education  
Government of India

This is to certify that

**Mrs. Ranju**

of

Department of Music, Government College Jhandutta

has Successfully Completed online two - week Interdisciplinary Refresher Course In

"ADVANCED RESEARCH METHODOLOGY"

from 22 August - 05 September, 2023 and obtained

Grade **A**.



Blockchain Hash: [0x79bdc1586727d5c4b7449e5e55d306a2f3664f711ab9e121ce550f5691586ec2](https://www.blockchain.com/eth/tx/0x79bdc1586727d5c4b7449e5e55d306a2f3664f711ab9e121ce550f5691586ec2)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Prof. Charu Mehrotra  
Principal  
Gokul Das Hindu Girls College

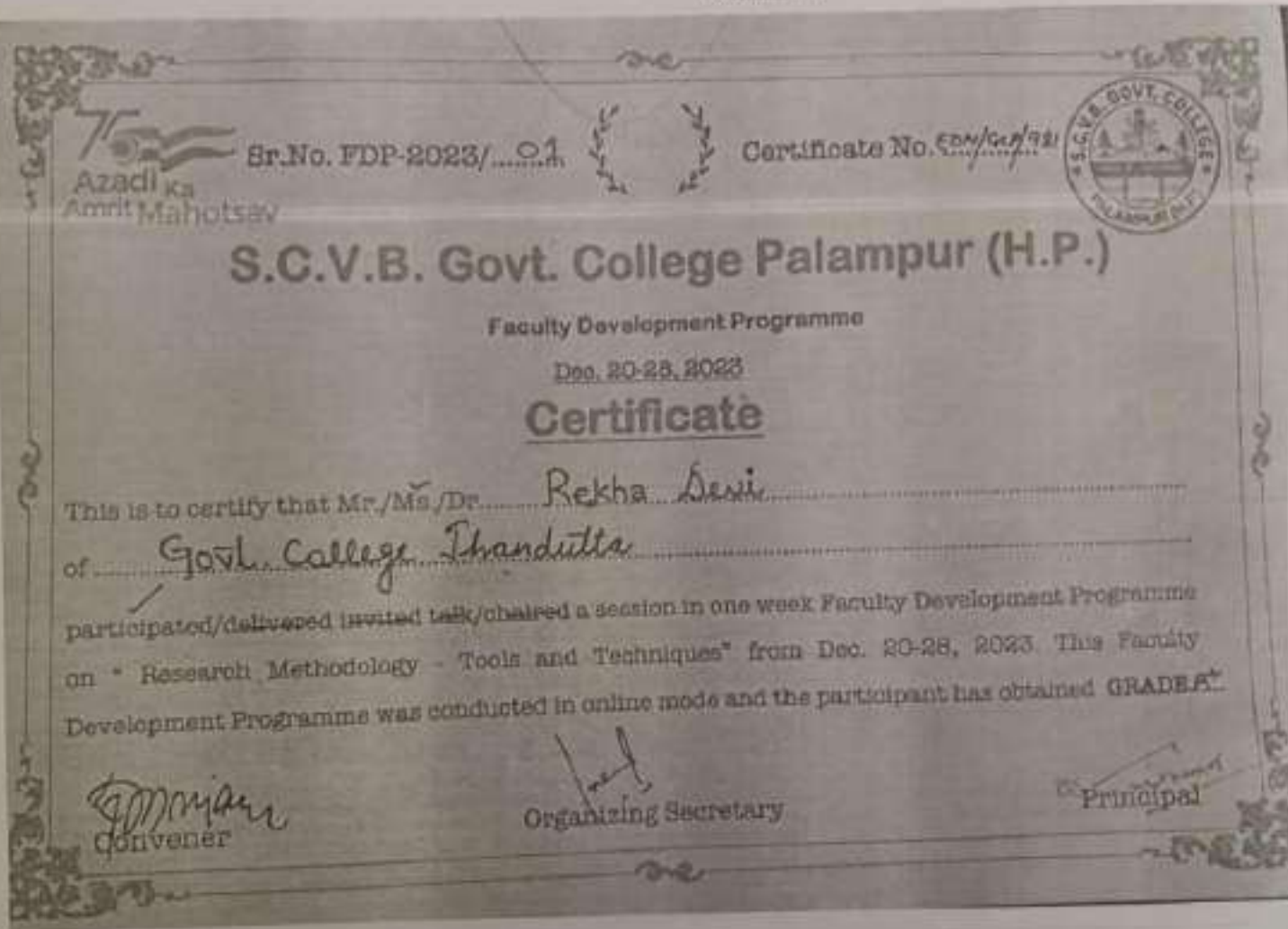
Prof. S.S. Rawat  
(Principal)  
Hindu College

21/09/2024, 16:05

(1) WhatsApp



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UNIVERSITY GRANTS COMMISSION  
MALAVIYA MISSION TEACHER TRAINING CENTRE (MMTTC)  
(Formerly named HRDC)



UNIVERSITY OF RAJASTHAN, JAIPUR

University with 'A' Grade & UPE Status  
HRDC RANKED 2nd BY NAAC, 2012

UGC - SPONSORED REFRESHER COURSE  
Certificate of Participation



*This is to certify that*

*Dr. Amit Kumar, Assistant Professor, Commerce*

*(Name of Participant, Designation & Subject)*

*Govt. College, Jhandutta (Shimla)*

*(College/University), (Place)*

*Participated in Refresher Course in Economics*

*organised from 04<sup>th</sup> December, 2023 to 16<sup>th</sup> December, 2023 and obtained Grade 'A'.*

Prof. Rashmi Jain  
Director

Malaviya Mission Teacher Training Centre  
University of Rajasthan, Jaipur

Dr. Anshu Bhardwaj  
Course Coordinator &  
Associate Professor (Economics)  
University of Rajasthan, Jaipur

Prof. Alpana Kateja  
Vice-Chancellor  
University of Rajasthan  
Jaipur



Teaching Learning Centre  
Ramanujan College, University of Delhi  
(Accredited Grade 'A++' by NAAC)

In collaboration with  
GB PANT MEMORIAL GOVT. DEGREE COLLEGE  
Affiliated to Himachal Pradesh University, Rampur Bushahr, Shimla  
under the aegis of  
MINISTRY OF EDUCATION  
PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Dr. Kamlesh Kumari**

of

Government College Jhandutta, Bilaspur HP

has successfully completed Online one week Faculty Development Programme on  
"National Education Policy-2020 Challenges & Opportunities"  
from 25 June-01 July, 2023 and obtained  
Grade A.



Blockchain Hash: [013188b630cb6419a4492e0746345201842fa875c233181140d2b74d4070091ee06](https://www.blockchain.com/transaction/013188b630cb6419a4492e0746345201842fa875c233181140d2b74d4070091ee06)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Pushpa Negi  
(Principal)  
G.B.P. M. Govt. Degree College



GDCB/TWRM/23


# One Week International Workshop on Research Methodology & IPRs

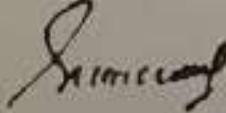
Organised by

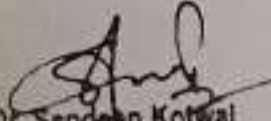
Govt. Degree (P.G.) College, Bhaderwah (J&K)  
(Department of Higher Education, JK Govt.)


## Certificate of Participation

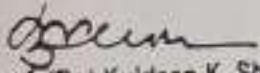
This is to certify that Prof./Dr./Mr./Ms. Sanjay Kumar Associate Prof  
of GOVT COLLEGE BARSAR DISTRICT HAMIRPUR HP has participated in  
One week International Workshop on "Research Methodology & IPRs"  
held on 20th to 26th June, 2023 through Blended mode.

  
Prof. Mohd. Azeem Sinal  
Organizing Secretary  
GDC, Bhaderwah

  
Dr. Irshad Ahmed Wani  
Convener RDC  
Assistant Professor

  
Dr. Sandeep Kotwal  
Convener IIC  
Assistant Professor

  
Prof. Surinder S. Parihar  
Convener IQAC  
HOD Economics

  
Prof. (Dr.) Kuldeep K. Sharma  
Principal  
GDC, Bhaderwah





**Teaching Learning Centre, Ramanujan College**

University of Delhi  
(Accredited Grade 'A++' by NAAC)

In collaboration with

**M.V.S. Government Arts & Science College (Autonomous)**

Mahabubnagar, Telangana  
under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Mr. Pankaj Sharma , Assistant Professor**

of

Department of History, Government College Jhandutta, District -Bilaspur,H.P.  
has Successfully Completed online two - week Interdisciplinary Refresher Course in

**"ADVANCED RESEARCH METHODOLOGY"**

from 22 May – 05 June, 2023 and obtained

Grade A+.



Blockchain Hash: <https://www.blockchain.com/eth/address/0x54966827647328c8805c8067c628e54ba08a0917a66473186a93886a52a1efb>

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. K. Padmavathi  
(Principal)  
M.V.S. Govt. Arts & Science College (A)

Dr. Nikhil Kr. Rajput  
(Deputy Director)  
Ramanujan College



Teaching Learning Centre, Ramanujan College  
University of Delhi

under the aegis of  
MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING

This is to certify that

**Ms Rekha Devi**

of

Department of Mathematics, Government College Jhandutta, District Bilaspur, Himachal Pradesh

has successfully completed Online one week Faculty Development Programme on

**"ACADEMIC RESEARCH WRITING"**

from 02 -08 January, 2023 and obtained

Grade A.



Blockchain Hash: <https://www.bhaskar.com/article/7048740x08024ed5672fba17a2a3c7802454447fa530f6e0796080>


Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Ashish Kumar Shukla  
(Convener)  
Ramanujan College

HPU/MMTTC/2024/0291



सत्यमेव जयते  
Government of India

 MALAVIYA MISSION  
TEACHER  
TRAINING PROGRAMME

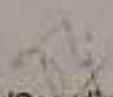


विद्या ऽ मृतमश्नुते  
University Grants Commission

## CERTIFICATE OF PARTICIPATION

### NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that ***Rekha Devi, Assistant Professor*** ..... from  
***Govt. College Jhandutta, Himachal Pradesh*** .....  
has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya  
Mission Teacher Training Programme (MM-TTP) of University Grants Commission  
(UGC) Organized by ***Malaviya Mission Teacher Training Centre,***  
***Himachal Pradesh University, Shimla*** ..... from ***12.02.2024*** to ***20.02.2024*** .....

  
Director/Coordinator (MM-TTC)





Sr. No. INWO-69/2024



Certificate No. 2024/GCP-2025



## International Hybrid Workshop

organized by

**S. C. V. B. G. C. Palampur (H. P.), India in Collaboration with Mindanao State University-Sulu, Jolo, Philippines**

March (19-25), 2024

This is to certify that Dr./Mr./Ms. **Sapna Sharma** Assoc.Prof./Asst.Prof. from University/College/Institution **Government College Jhandutta, Bilaspur** has participated in a seven day International hybrid workshop on the topic **"Role of Communication Skills in Career Development"**.

Chancellor II  
(Mindanao State Univ.)


Convener  
(Mindanao State Univ.)

Convener  
(S.C.V.B.G.C. Palampur)

Principal  
(S.C.V.B.G.C. Palampur)

HPU/MMTTC/2024/0117




 MALAVIYA MISSION  
TEACHER  
TRAINING PROGRAMME



## CERTIFICATE OF PARTICIPATION

### NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that *Sapna Sharma, Assistant Professor* from  
*Government College Jhandutta, Bilaspur, Himachal Pradesh*  
has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya  
Mission Teacher Training Programme (MM-TTP) of University Grants Commission  
(UGC) Organized by *Malaviya Mission Teacher Training Centre,*  
*Himachal Pradesh University, Shimla* from *23.01.2024* to *02.02.2024*.

  
Director/Coordinator (MM-TTC)



**MALAVIYA MISSION  
TEACHER  
TRAINING PROGRAMME**



## CERTIFICATE OF PARTICIPATION

### NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that ..... Prateek Deswal ..... from  
 Government College Jhandutta, Himachal Pradesh University  
 .....  
 has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya  
 Mission Teacher Training Programme (MM-TTP) of University Grants Commission  
 (UGC) Organized by ..... Central University of Jammu  
 .....  
 from ..... 20<sup>th</sup> Feb. 2024 ..... to ..... 29<sup>th</sup> Feb. 2024

*Neelika*

Director/Coordinator (MM-TTC)





Teaching Learning Centre  
Ramanujan College, University of Delhi  
(Accredited Grade 'A++' by NAAC)  
under the aegis of  
MINISTRY OF EDUCATION  
Malaviya Mission Teacher Training Programme



This is to certify that

**Dr. Kamlesh Kumari**

of

Zoology Department, Government College Jhnadutta, Bilaspur HP  
has successfully completed online Inter-Disciplinary two-week Refresher Course in  
"Managing Online Classes & Co-creating MOOCS"  
from 08 – 22 March, 2024 and obtained  
Grade A.



Blockchain Hash: [0x03cca1053f0e9062e2e772996636b2d5758d759ce3f11564e9969fcccabffa2d6](https://www.blockchain.com/eth/tx/0x03cca1053f0e9062e2e772996636b2d5758d759ce3f11564e9969fcccabffa2d6)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Ashish Kumar Shukla  
(Convener)  
Ramanujan College

Dr. Nikhil Kr. Rajput  
(Deputy Director)  
Ramanujan College



**MALAVIYA MISSION TEACHER TRAINING CENTRE**

**UNIVERSITY OF JAMMU**



NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

**CERTIFICATE OF PARTICIPATION**

This is to certify that Ms. Kamlesh Kumari from HPU Shimla, has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme of University Grants Commission (UGC) organized by University of Jammu, Jammu, UT of J&K, India from 29/02/2024 to 07/03/2024

Dr. S.K. Panda  
Programme Coordinator

Prof. Sundeep Kumar Pandita  
Director





Sr. No. INWO-35/2024



Certificate No. 2024/GCP-1991



## International Hybrid Workshop

organized by

**S. C. V. B. G. C. Palampur (H. P.), India in Collaboration with Mindanao State University-Sulu, Jolo, Philippines**

March (19-25), 2024

This is to certify that Dr./Mr./Ms. Ranju Assoc.Prof./Asst.Prof. from University/College/Institution Government College Jhandutta has participated in a seven day International hybrid workshop on the topic "Role of Communication Skills in Career Development".

Chancellor II  
(Mindanao State Univ.)

Convener  
(Mindanao State Univ.)

Convener  
(S.C.V.B.G.C. Palampur)

Principal  
(S.C.V.B.G.C. Palampur)





# CSSR & SRRM Degree & PG College

Kamalapuram, YSR, A.P., India  
(Affiliated to Yogivemana University, Kadapa)  
Re-accrredited with 'A' Grade by NAAC

CSSR 094

## **Certification of Participation**

This is to certify that Ms Rekha Devi, Assistant Professor, Department of Mathematics, Government College Jhandtta, District Bilaspur, Himachal Pradesh, has participated in *5 Day International Faculty Development Programme*, on "*Recent Advances In Mathematical Modelling & Optimization*" organised by Department of Mathematics, from 08-01-2024 to 12-01-2024.

Dr. G. Vinod Kumar  
Convenor

C V Rajagopala Reddy  
Chief Patron



DPRFDP02202467

**Dr. Sarvepalli Radhakrishnan  
Govt. Degree College Dharampur Mandi (H.P.)**



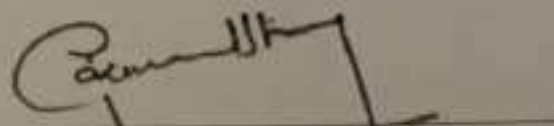
**FACULTY DEVELOPMENT PROGRAM (FDP)**  
On  
**NEP 2020 : A Paradigm Shift in Higher Education**

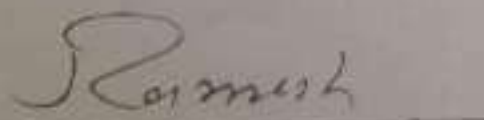
Organised by  
Internal Quality assurance Cell (IQAC)

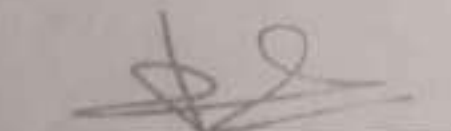
***CERTIFICATE OF PARTICIPATION***

This is to certified that

Mr./Miss/Dr. Rekha Devi Department of Mathematics , Government College  
Jhandutta has completed One Week Faculty Development Program (FDP) on  
NEP-2020 w.e.f. February 19-24,2024.

  
VIVEKA Nand Sharma  
Organising Secretary

  
Ramesh Sharma  
Convener

  
Dr. Ramesh Dhalaria  
Patron(Principal)



**CSSR & SRRM Degree & PG College**  
(Autonomous)

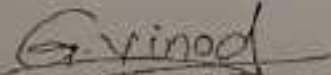
(Affiliated to Yogi Vemana University, Kadapa)  
Kamalapuram, YSR, A.P., India

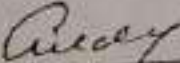


CSSR 527

**Certificate of Participation**

This is to certify that Rekha Devi, Government College Jhandutta , District Bilaspur (H.P.) has participated in One Week National Workshop (Virtual) on "SCILAB" organised by Department of Mathematics, from 29-04-2024 to 04-05-2024.

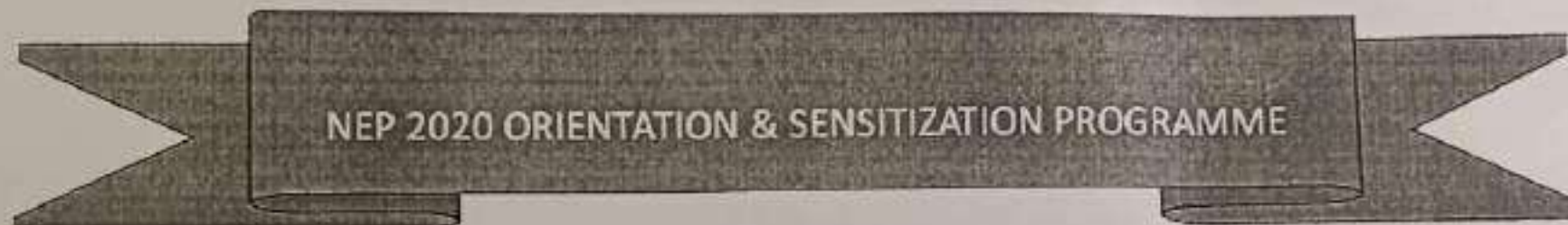
  
**Dr. G. Vinod Kumar**  
Convenor

  
**C V Rajagopala Reddy**  
Principal





**MALAVIYA MISSION TEACHER TRAINING CENTRE**  
**UNIVERSITY OF JAMMU**



**CERTIFICATE OF PARTICIPATION**

This is to certify that Mr. Rajender Kumar from GDC Jhandutta Distt Bilaspur Himachal Pradesh, has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme of University Grants Commission (UGC) organized by University of Jammu, Jammu, UT of J&K India from 29/02/2024 to 07/03/2024

Dr. S.K. Panda  
Programme Coordinator

Prof. Sundeep Kumar Pandit  
Director

HPU/MMTTC/2024/0368



## CERTIFICATE OF PARTICIPATION

NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that **Bihari Lal, Associate Professor** from  
**Govt.College Jhandutta, Himachal Pradesh**

has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya  
Mission Teacher Training Programme (MM-TTP) of University Grants Commission  
(UGC) Organized by **Malaviya Mission Teacher Training Centre,**  
**Himachal Pradesh University, Shimla** from **26.02.2024** to **05.03.2024**

Director/Coordinator (MM-TTC)

Serial No. STC-DoCHY-19

# NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)

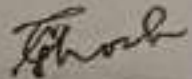
(An Institute of National Importance)

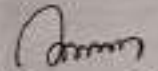


## CERTIFICATE

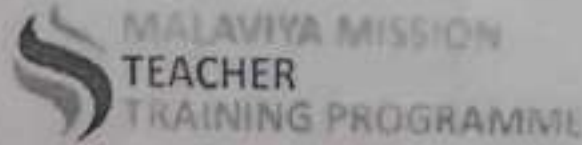
This is to certify that Dr. **Nitesh Kumar** from Government College Jhandutta (H.P.) has attended e-Short Term Course on “**Instrumental Techniques for Molecular Analysis (ITMA-2024)**” during 21<sup>st</sup>-25<sup>th</sup> May, 2024 organized by Department of Chemistry, NIT Hamirpur (H.P.).

  
Convener

  
Head of the Department

  
Dean (FW)





### CERTIFICATE OF PARTICIPATION

## NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that *Deepak Kumar, Assistant Professor* from  
*Government Degree College Jhandutta, Himachal Pradesh*  
has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya  
Mission Teacher Training Programme (MM-TTP) of University Grants Commission  
(UGC) Organized by *Malaviya Mission Teacher Training Centre,*  
*Himachal Pradesh University, Shimla* from *23.01.2024* to *02.02.2024*.

Director/Coordinator (MM-TTC)



TEACHER  
TRAINING PROGRAMME



E-certificate No. \_\_\_\_\_  
Malaviya Mission Teacher Training Centre (MM-TTC)  
(Esrwhile UGC-Human Resource Development Centre)  
Aligarh Muslim University, Aligarh

## CERTIFICATE OF PARTICIPATION

This is to certify that

Mr./Ms./Mrs./Dr. **Amit Kumar**, Assistant Professor, Government College, Jhandutta H.P. University, has completed the NEP - 2020 **Orientation Programme** on the theme: **Orientation and Sensitization** under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organized by the UGC Malaviya Mission Teacher Training Centre, Aligarh Muslim University, Aligarh from **14 March to 23 March 2024**.

*Faiza A. Khan*

Director/Coordinator (MM-TTC)



Sr. No. INWO-83/2024



Certificate No. 2024/GCP-2039



## International Hybrid Workshop

organized by

**S. C. V. B. G. C. Palampur (H. P.), India in Collaboration with Mindanao State University-Sulu, Jolo, Philippines**

March (19-25), 2024

This is to certify that Dr./Mr./Ms. **Ramlesh Kumari** Assoc.Prof./Asst.Prof. from University/College/Institution **Government College Jhandutta, Bilaspur** has participated in a seven day International hybrid workshop on the topic **"Role of Communication Skills in Career Development"**.

Chancellor II  
(Mindanao State Univ.)

Convener  
(Mindanao State Univ.)

Convener  
(S.C.V.B.G.C. Palampur)

Principal  
(S.C.V.B.G.C. Palampur)





Teaching Learning Centre  
Ramanujan College, University of Delhi  
(Accredited Grade 'A++' by NAAC)

under the aegis of  
MINISTRY OF EDUCATION  
PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



This is to certify that

**Mr. Rajender Kumar**

of

Assistant Professor Geography, Govt Degree College Jhandutta Distt. Bilaspur Himachal Pradesh

has successfully completed online Two - Week Inter-disciplinary Refresher Course in  
"ENVIRONMENTAL SCIENCE"

from 28 December, 2022 – 11 January, 2023 and obtained  
Grade A+.



Blockchain Hash: [0x7a925bfc7d3c38136aa061a62c771e30786ed15375c9ae52c53d9ac3924eaa16](https://www.blockchain.com/eth/address/0x7a925bfc7d3c38136aa061a62c771e30786ed15375c9ae52c53d9ac3924eaa16)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Tenzin Thakur  
(Programme Coordinator)  
Ramanujan College

Dr. Nikhil Kr Rajput  
(Deputy Director)  
TLC, Ramanujan College



Teaching Learning Centre, Ramanujan College

University of Delhi

in collaboration with

Department of Chemistry, Miranda House

University of Delhi

under the aegis of

MINISTRY OF EDUCATION

PANDIT MADAN MOHAN MALAVIYA NATIONAL MISSION ON TEACHERS AND TEACHING



सत्यमेव जयते  
Ministry of Education  
Government of India

This is to certify that

**Dr. Kamlesh Kumari**

of

Department of Zoology, Government College Jhandutta, Bilaspur HP

has successfully completed online Two – Week Refresher Course in

“LIFE SCIENCES”

from 17 March – 01 April, 2023 and obtained

Grade A.



Blockchain Hash: [0xc9e1040fbfe03357eeac0270ba1772e2a9f293c4f71e2b880095d72ba26ac16c](https://www.blockchain.com/eth/tx/0xc9e1040fbfe03357eeac0270ba1772e2a9f293c4f71e2b880095d72ba26ac16c)

Prof. S. P. Aggarwal  
(Principal & Director)  
TLC, Ramanujan College

Dr. Mallika Pathak  
(Convener)  
Miranda House

Dr. Nikhil Kr. Rajput  
(Deputy Director)  
Ramanujan College



**MALAVIYA MISSION  
TEACHER  
TRAINING PROGRAMME**



## CERTIFICATE OF PARTICIPATION

### NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that **Dr. Nitesh Kumar** ..... from  
 Government College Jhandutta, Himachal Pradesh University

has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya  
 Mission Teacher Training Programme (MM-TTP) of University Grants Commission  
 (UGC) Organized by ..... Central University of Jammu

from ..... 20<sup>th</sup> Feb. 2024 ..... to ..... 29<sup>th</sup> Feb. 2024


*Neelika*

Director/Coordinator (MM-TTC)



HPU/MMTTC/2024/0396



 MALAVIYA MISSION  
TEACHER  
TRAINING PROGRAMME

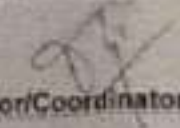


CERTIFICATE OF PARTICIPATION

NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that *Archna Sharma, Assistant Professor* ..... from  
*Government College Jhandutta, Himachal Pradesh*

.....has completed the NEP 2020 Orientation & Sensitization Programme on  
*Research and Development* ..... under Malaviya Mission Teacher  
Training Programme (MM-TTP) of University Grants Commission (UGC) Organized  
by Malaviya Mission Teacher Training Centre, Himachal Pradesh University, Shimla  
from *18.03.2024*... to *27.03.2024*

  
Director/Coordinator (MM-TTC)

HPU/MMTTC/2024/0113



सत्यमेव जयते  
Government of India



MALAVIYA MISSION  
TEACHER  
TRAINING PROGRAMME



विद्या ऽ ऽ ऽ ऽ ऽ ऽ ऽ  
University Grants Commission

## CERTIFICATE OF PARTICIPATION

### NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME

This is to certify that **Ranju, Assistant Professor** from  
**Govt. College Jhandutta, Himachal Pradesh**

has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) Organized by **Malaviya Mission Teacher Training Centre,**  
**Himachal Pradesh University, Shimla** from **23.01.2024** to **02.02.2024**

Director/Coordinator (MM-TTC)

**POINT 4 (v) Associateships**



Inter University Centre for Humanities and Social Sciences

INDIAN INSTITUTE OF ADVANCED STUDY  
SHIMLA -171005

*This is to certify that.....Dr. Sanjay Kumar.....  
was here at the Inter University Centre to avail first/second/third spell of  
Associateship from.....01-04-2014..... to 30-04-2014*

Shimla :- 98

Dated 30 APR 2014

*Arun K.*  
Director

Director  
Indian Institute of Advanced Study  
Rashtrapati Nivas, Shimla-171 005  
Himachal Pradesh





भारतीय उच्च अध्ययन संस्थान  
राष्ट्रपति निवास, शिमला 171005



मानवीकी तथा सामाजिक विज्ञान का अन्तर विश्वविद्यालय केन्द्र

प्रमाणित किया जाता है कि ..... डा. संजय कुमार .....

ने दिनांक 01-04-2015 ..... से 30-04-2015 तक इस अन्तर विश्वविद्यालय केन्द्र में अपनी

एसोसिएटशिप का पहला / दूसरा / तीसरा सत्र पूरा किया है।

शिमला :- 95.

दिनांक: 30 APR 2015

महेश्वर सिंह

निदेशक  
Director  
भारतीय उच्च अध्ययन संस्थान  
Indian Institute of Advanced Study  
राष्ट्रपति निवास, शिमला 171005

**POINT 5. Paper presented by Teachers in International and National Seminars/Conferences.**



# National Seminar



On

**THE NEW NATIONAL EDUCATION POLICY OF INDIA : CHALLENGES AND FUTURE PROSPECTS**

**AZADI KA AMRIT MAHOTSAV**

**29-30 DECEMBER, 2021**

*Sponsored by*

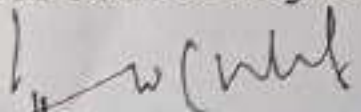
**INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH (ICSSR), NEW DELHI**

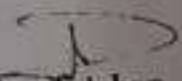
*Organised by*

**Department of Public Administration, S. V. Government College Ghumarwin and Govt. College Bilaspur**

## Certificate

Certified that **Rajender Kumar**, Assistant Professor of Geography, SVGC Ghumarwin, Distt. Bilaspur, Himachal Pradesh has participated in the National Seminar as Paper Author and presented a paper entitled: **“Major Challenges in The Implementation of National Education Policy (NEP) 2020: A Case Study State of Himachal Pradesh.”**

  
**Dr. Nittam Chandel**  
Associate Professor of  
Public Administration  
Convener/Organizing Secretary

  
**Prof. Ramkrishan**  
Principal  
Patron of Seminar  
SV Govt. College Ghumarwin

# DEPARTMENT OF MUSIC



## Dayanand Girls P.G. College, Kanpur

*It is certified that*

Dr. Balbir Chand

Govt College Simunta District Chamba  
Himachal Pradesh


has participated in the "INTERNATIONAL WEBINAR"

### Expressions Through Music


On 21st & 22nd Dec. 2021

  
Chief Patron

**Smt. Kamkum Swarup**  
Secretary  
Vaidya Swarni Education Foundation

  
Patron

**Er. Gauravendra Swarup**  
Secretary  
Dayanand Girls P.G. College, Kanpur

  
Principal

**Dr. Sunanda Dubey**  
D.G.P.G. College, Kanpur

  
Co-ordinator

**Dr. Sangeeta Srivastava**  
Head of Department of Music, D.G.P.G. College, Kanpur





# 2nd SSHP International Conference

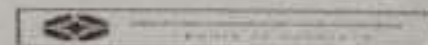
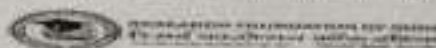
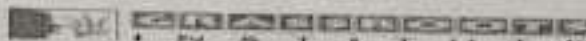


on  
**Transforming Asia: Development, Tourism and Environment in Mountains**

**Manali Tourism Meet-2021**

18-20 November, 2021

IN PARTNERSHIP WITH:



Conference ID: SSHP/2021/P/028



## CERTIFICATE

This is to certify that Prof./Dr./Mr./Ms. **Kamlesh Kumari**

Designation

**Assistant Professor**

Institution **Govt College Jhandutta Bilaspur**

has Participated/Presented Paper/Chaired/Co-chaired a Session/Speaker in Symposium/entitled,

**"Morphological and Karyotypic Studies on Two Species of Aphids Infesting Rose Plants from Kullu Valley of Himachal Pradesh"**

in 2<sup>nd</sup> SSHP International Conference organised by Sociological Society, Himachal Pradesh and JLN Govt College Haripur (Manali) H.P.

Principal cum Patron  
JNL Govt. College, Haripur, H.P.

President  
SSHP

Convenor  
Scientific Steering Committee

General Secretary  
SSHP

Organising Secretary  
JNL Govt. College Haripur, H.P.



समाजशास्त्र एवं सामाजिक नृविज्ञान विभाग  
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय  
सप्तसिंधु परिसर, देहरा, जिला- कांगड़ा



दो दिवसीय राष्ट्रीय संगोष्ठी  
“भारत का सामाजिक एवं सांस्कृतिक दर्शन: डा. केशवराव बलिराम हेडगेवार का योगदान”  
धौलाधार परिसर-1, धर्मशाला (कांगड़ा) हिमाचल प्रदेश  
24-25 जून 2022

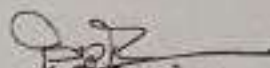
प्रमाणित किया जाता है कि डॉ./ प्रो./ श्री/ श्रीमती/ सुश्री Ranju


संस्थान का नाम Govt. College Jhandutta, Distt. Bilaspur H.P.

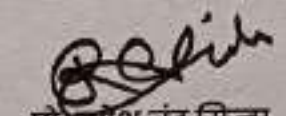
ने आयोजित संगोष्ठी में मुख्य अतिथि/ मुख्य विषय वक्ता/ सम्मानित अतिथि/ पदेन अतिथि/ संयोजक/ सह-संयोजक/ प्रतिवेदन लेखक/ सत्र अध्यक्ष/

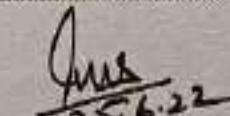
शोधार्थी/ आयोजन समिति सदस्य/ मीडियाकर्मी/ संस्थागत प्रतिनिधि/ व्यक्तिगत प्रतिनिधि/ शोध पत्र प्रस्तुतकर्ता के रूप में भाग लिया है।


शोध पत्र का शीर्षक Ethics and Culture

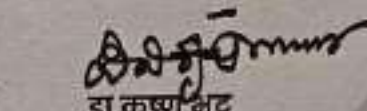
  
डा. गिरिश गौरव  
संयोजक

  
प्रो. प्रदीप कुमार  
अधिष्ठाता, अकादमिक  
हि. प्र. के. विवि

  
प्रो. रमेश चंद्र मिन्हा  
अध्यक्ष, भारतीय दर्शन  
अनुसंधान परिषद

  
25.6.22  
प्रो. रामनरेश सिंह  
स्वतंत्र निदेशक  
आई.ओ.डी.एल

  
डा. विक्रम सिंह  
निदेशक,  
नेत्री शोध संस्थान

  
डा. कृष्णभट्ट  
संरक्षक, राष्ट्रीय समाज  
विज्ञान परिषद





समाजशास्त्र एवं सामाजिक नृविज्ञान विभाग  
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय  
सप्तसिंधु परिसर, देहरा, जिला- कांगड़ा



दो दिवसीय राष्ट्रीय संगोष्ठी  
“भारत का सामाजिक एवं सांस्कृतिक दर्शन: डा. केशवराव बलिराम हेडगेवार का योगदान”  
धौलाधार परिसर-1, धर्मशाला (कांगड़ा) हिमाचल प्रदेश  
24-25 जून 2022


प्रमाणित किया जाता है कि डॉ./ प्रो./ श्री/ श्रीमती/ सुश्री **अर्चना शर्मा**  
संस्थान का नाम **राजकीय महाविद्यालय झण्डूता**

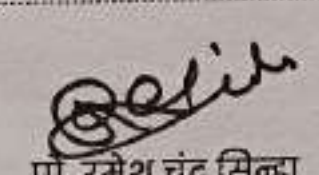
ने आयोजित संगोष्ठी में मुख्य अतिथि/ मुख्य विषय वक्ता/ सम्मानित अतिथि/ पदेन अतिथि/ संयोजक/ सह-संयोजक/ प्रतिवेदन लेखक/ सत्र अध्यक्ष/

शोधार्थी/ आयोजन समिति सदस्य/ मीडियाकर्मी/ संस्थागत प्रतिनिधि/ व्यक्तिगत प्रतिनिधि/ शोध पत्र प्रस्तुतकर्ता के रूप में भाग लिया है।

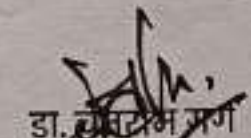
शोध पत्र का शीर्षक **“डा. हेडगेवार के चिन्तन का साहित्यिक अध्ययन”**

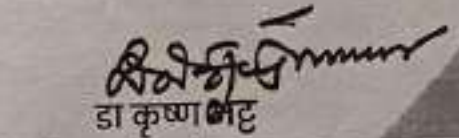
  
डा. गिरिश गौरव  
संयोजक

  
प्रो. प्रदीप कुमार  
अधिष्ठाता, अकादमिक  
हि. प्र. के. विवि

  
प्रो. रमेश चंद्र सिन्हा  
अध्यक्ष, भारतीय दर्शन  
अनुसंधान परिषद

  
प्रो. रामनरेश सिंह  
स्वतंत्र निदेशक  
आई.ओ.सी.एल

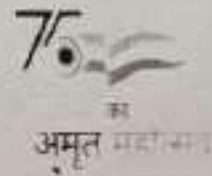
  
डा. केशवराम सर्ग  
निदेशक,  
नेरी शोध संस्थान

  
डा. कृष्णभट्ट  
संरक्षक, राष्ट्रीय समाज  
विज्ञान परिषद





समाजशास्त्र एवं सामाजिक नृविज्ञान विभाग  
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय  
सप्तसिंधु परिसर, देहरा, जिला- कांगड़ा




दो दिवसीय राष्ट्रीय संगोष्ठी  
"भारत का सामाजिक एवं सांस्कृतिक दर्शन: डा. केशवराव बलिराम हेडगेवार का योगदान"  
धौलाधार परिसर-1, धर्मशाला (कांगड़ा) हिमाचल प्रदेश  
24-25 जून 2022


सम्मानित किया जाता है कि डॉ./ प्रो./ श्री/ श्रीमती/ सुश्री पंकज शर्मा  
संस्थान का नाम राजकीय महाविद्यालय झण्डुता, विलासपुर हि. प्र.

ने आयोजित संगोष्ठी में मुख्य अतिथि/ मुख्य विषय वक्ता/ सम्मानित अतिथि/ पदेन अतिथि/ संगोजक/ सह-संगोजक/ प्रतिवेदन लेखक सन अथवा

शांघाथी/ आयोजन समिति सदस्य/ मीडियाकर्मी/ संस्थागत प्रतिनिधि/ व्यक्तिगत प्रतिनिधि/ शोध पत्र प्रस्तुतकर्ता के रूप में मान लिया है।

शोध पत्र का शीर्षक "डॉ. हेडगेवार के सामाजिक चिन्तन का ऐतिहासिक अवलोकन"

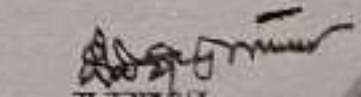
  
डॉ. गिरिश गौरव  
संगोजक

  
प्रो. प्रदीप कुमार  
अधिष्ठाता, अकादमिक  
हि. प्र. के. विवि

  
प्रो. रमेश चंद्र सिन्हा  
अध्यक्ष, भारतीय दर्शन  
अनुसंधान परिषद

  
प्रो. रामनरेश सिंह  
स्वतंत्र निदेशक  
आई.ओ.सी.एस.

  
डा. केशव राम  
निदेशक,  
नेरी शोध संस्थान

  
डा. कृष्णभट्ट  
संरक्षक, राष्ट्रीय समाज  
विज्ञान परिषद



75  
Azadi Ka  
Amrit Mahotsav

## National Seminar

on

# "Building a Resilient Future: Integrating Environment, Economy and Technology"

March 24 - 25, 2023

Organised by

Department of Geography

St. Bede's College, Shimla

(Re-Accredited A+ by NAAC)

## Certificate

This is to certify that Prof/Dr./Mr./Ms. Sanjay Kumar, Associate Professor  
of Department of Geography, Govt. College, Barsak  
has participated/presented a paper entitled: Risk and Vulnerability Assessment of  
Agriculture to Climate Change in HP.  
in Multidisciplinary National Seminar on "Building a Resilient Future: Integrating Environment,  
Economy and Technology" held at St. Bede's College, Shimla on March 24 - 25, 2023.

Patron

Prof. Sr. Molly Abraham  
Principal  
St. Bede's College, Shimla

Convener

Dr. Pankaj Aashish  
Head, Department of Geography  
St. Bede's College, Shimla

Organising Secretary  
Dr. Sr. P. Mary Santhi  
Department of Geography  
St. Bede's College, Shimla





RNTGCS-IC-2023-153



# Two-Day International Conference

On

## Environmental Concerns, Climate Change and Resource Management in the Western Himalayas

on the occasion of

### World Environment Day, 5<sup>th</sup>-6<sup>th</sup> June, 2023

Organised by

*Internal Quality Assurance Cell (IQAC)*

### Rabindranath Tagore Govt. Degree College Sarkaghat, Distt. Mandi (H.P.)



This is to certify that *Dr./Mr./Ms. SANJAY KUMAR*..... *Professor/Associate*

*Professor/ Assistant Professor/Research Scholar/UG/PG Student of Geography*..... from

*G.C. Barsar, Distt. Hamirpur (H.P.)*..... participated in the

*International Conference held on 5th-6th June 2023.*

*He/She has presented a research paper/article entitled Plastic Waste Management.*

*Turning Challenges into Opportunities.*

*[Signature]*  
Organising Secretary

*[Signature]*  
Convener

*[Signature]*  
Patron (Principal)





International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development



September 29-30, 2023

Organized By

Department of Botany and Zoology

Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA

In collaboration with

The Indian Science Congress Association (ISCA), Shimla Chapter

**Certificate**

This is to certify that Prof./Dr./Mr./Ms. Sanjay Kumar Designation Assoc. Prof.  
Dept. of Geography, Govt. College Barsar, Hamirpur has participated as a Keynote Speaker/Resource  
Person/Invited Speaker/ Presented Paper/Poster entitled Impact of Climate Change on the  
Monsoon Pattern of Himachal Pradesh in the international conference on  
Recent Trends in Science and Technology for Environment Conservation and Sustainable Development organized by Deptt.  
of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.

He/She has been awarded with Best Oral Presentation/Poster Presentation.

Sunita  
Dr. Sunita Saklani

B.P.S.  
Prof. Bhagwati P Sharma

Dr. Anil Kumar Gautam

# 2<sup>nd</sup> International Conference on Mathematics in Space and Applied Sciences

(ICMSAS-2023)

March 03-04, 2023

Organised By

Department of Mathematics

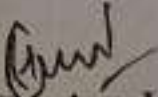
NSCBM Govt. College, Hamirpur, Himachal Pradesh, INDIA

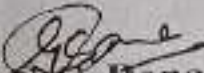
Sponsored By

Defence Research and Development Organisation (DRDO), New Delhi

## Certificate

This is to certify that Prof./Dr./ Mr./Ms. Sanjay Kumar of Government College, Barsar (Hamirpur) has actively participated in the 2<sup>nd</sup> International Conference on Mathematics in Space and Applied Sciences (ICMSAS-2023) organised by the Department of Mathematics, Netaji Subhash Chander Bose Memorial Govt. College, Hamirpur- 177005, Himachal Pradesh, INDIA on March 03-04, 2023 and presented a paper entitled: Remote Sensing & GIS an Indigenous Technology for Defence Applications in India.

  
Dr. Sanjay Kango  
Convener  
(ICMSAS-2023)

  
Dr. G.C. Rana  
Chairman  
(ICMSAS-2023)

  
Principal-cum-Patron  
(ICMSAS-2023)





Certificate No.: EDN/GCB(TRK)/2022-23/NSEIPH/47



**NATIONAL SEMINAR ON ENVIRONMENTAL ISSUES AND PUBLIC HEALTH**

organized by

**Departments of Botany & Zoology**

**Government College Bhoranj (Tarkwari)**

**District Hamirpur, Himachal Pradesh, India**

**(February 27-28, 2023)**



**CERTIFICATE**

**DR. SANJAY KUMAR, Associate Professor**

This certificate is awarded to .....

of G. C. Barsar, Hamirpur H.P.

for presenting paper on the topic Socio Economic Vulnerability of Himachal Pradesh to Climate Change

in the "National Seminar on Environmental Issues and Public Health" organized by the Departments of Botany and Zoology, Government College Bhoranj (Tarkwari), District Hamirpur, Himachal Pradesh (India) on 27<sup>th</sup> and 28<sup>th</sup> February 2023.

Dr. Devender Singh

Sh. Prince Thakur

Sh. Rakesh Kumar  
Principal and Patron





# NATIONAL SEMINAR

ON



## Revisiting the Role of Netaji Subhash Chandra Bose to the Freedom Struggle of India

Kali. 5124, Vikarmi Samvat 2079, Shrawan Shukal 11-12 (8-9 August, 2022)

Organized by

Department of History, NSCBM Govt. College Hamirpur (H.P.)

&

Thakur Ramsingh Itihas Shodh Sansthan Neri, Hamirpur (H.P.)

Sponsored by

Maulana Abul Kalam Azad Institute of Asian Studies Kolkata (W.B.)

### Certificate

This is to certify that Prof/ Dr./ Mr./Ms. SANJAY THAKUR (Associate Professor)

of Govt. College Barsar, Distt. Hamirpur (H.P.)

has ~~Received~~ Presented

paper स्वतंत्रता संग्राम के सुभाष चन्द्र बोस की स्मृति

in the two days National Seminar

organized by Department of History, NSCBM Govt. College Hamirpur (H.P.) & Thakur Ramsingh Itihas Shodh Sansthan Neri, Hamirpur (H.P.)

He/She has Chaired/Co-chaired the session.

Sr. No. : 40

Organizing Secretary

Convener

*Arjun Singh*  
Principal

Date : 09/08/2022





NATIONAL SEMINAR

on

Emerging Challenges of Socio-Economic Changes in the Society- A Rationale

Sponsored by

Indian Council of Social Science Research  
North-Western Regional Centre: PU Chandigarh



Indian Council of  
Social Science Research

organised by

Sidharth Govt. College, Nadaun  
Dist. Hamirpur (HP)-177033

Certificate

Certified that Prof./Dr./Mr./Ms. Sanjay Kumar Associate Professor

Institution Govt. College Bassar participated as a Participant/Resource Person/Key Note

Speaker /Panellist/Delegate/ Presented a paper entitled A Situation Analysis of COVID-19 Impacts on the Education Sector in India

in the National Seminar held at Sidharth Govt. College, Nadaun, Dist. Hamirpur (HP) during 25-26 March, 2022.

✓  
She/ He has also chaired a technical session.

Organising Secretary  
Sidharth Govt. College,  
Nadaun, Dist. Hamirpur (HP)

Convener  
Sidharth Govt. College,  
Nadaun, Dist. Hamirpur (HP)

Principal-cum-patron  
Sidharth Govt. College,  
Nadaun, Dist. Hamirpur (HP)



Estd. 1965

## National Seminar

on

## Science, Environment, Education and Society

(19<sup>th</sup> March. 2022)

Organized by:


Department of Zoology


NSCBM Govt. College, Hamirpur (Himachal Pradesh)

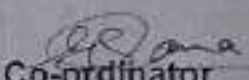
### Certificate

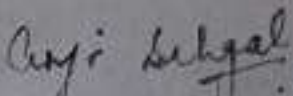
This is to certify that Dr / Mr / Ms ..... Sanjay Kumar ..... Professor/ Associate Professor  
/Assistant Professor /Research Scholar of ..... Geography ..... from Govt. College Barsar, District  
Hamirpur, H.P.  
participated in this seminar held on March 19, 2022.

He /she has presented a paper/ research paper entitled Food Security in Rural India : Issues  
and Challenges

  
Org. Secretary

  
Convener

  
Co-ordinator

  
Patron (Principal)





# CERTIFICATE OF PRESENTATION

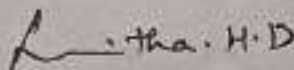


## 2<sup>ND</sup> INTERNATIONAL CONFERENCE ON RESEARCH TRENDS IN ENGINEERING & MANAGEMENT

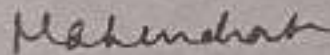
25<sup>th</sup> & 26<sup>th</sup> August 2022 | Virtual Conference

Certificate No. IFERP20222526-208708126

This is to certify that Mr/Mrs/Ms. Rekha Devi of  
Government College Jhandutta presented his/her research  
paper titled THE CONCEPT OF THE BOUNDARY LAYER IN THE STUDY OF FLUID FLOW  
in the  
"2<sup>nd</sup> International Conference on Research Trends in Engineering & Management (ICRTEM-2022)" Organized by R R Institute of  
Technology, Bengaluru, India held on 25<sup>th</sup> & 26<sup>th</sup> August 2022.

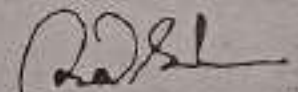


**Dr. Sunitha HD**  
Professor & Head (ECE)  
RRIT, Bengaluru



**Dr. Mahendra KV**  
Principal  
RRIT, Bengaluru





**Mr. Rudra B. Satpathy**  
CEO & Founder  
IFERP

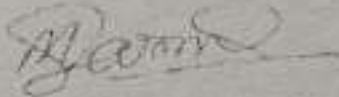


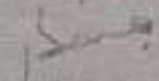
NATIONAL CONFERENCE  
on  
CULTURE, SCIENCE, SPIRITUALITY & EDUCATION

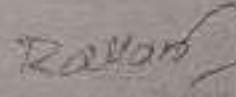
Organised by  
Government College Bassa (Gohar), Mandi, H.P.  
In association with  
Pratibha Spandan Society, Shimla  
(23 December 2022)

Certificate of Participation

This is to certify that Dr. Bihari Lal, Associate Professor/Economics,  
Govt. PG College Bilaspur has presented a  
paper on Role of Non-Government organizations in Protection of  
Human Right during the National Conference on Culture, Science,  
Spirituality & Education organized by the Government College Bassa (Gohar), Mandi, Himachal Pradesh  
in association with Pratibha Spandan Society, Shimla on 23<sup>rd</sup> December, 2022.

  
Dr. Anurag Sharma  
President  
Pratibha Spandan, Shimla

  
Dr. Suresh Sharma  
Principal  
Govt. College Bassa (Gohar), Mandi

  
Dr. Anurag Sharma  
Convener

  
Organising Secretary



# 2<sup>nd</sup> International Conference on Mathematics in Space and Applied Sciences



(ICMSAS-2023)

March 03-04, 2023

Organised By

Department of Mathematics

NSCBM Govt. College, Hamirpur, Himachal Pradesh, INDIA

Sponsored By

Defence Research and Development Organisation (DRDO), New Delhi



## Certificate

This is to certify that Prof./Dr./ Mr./Ms. **Balbir Chand** of Govt. College Jhandutta, Bilaspur (HP) has actively participated in the **2<sup>nd</sup> International Conference on Mathematics in Space and Applied Sciences (ICMSAS-2023)** organised by the Department of Mathematics, Netaji Subhash Chander Bose Memorial Govt. College, Hamirpur- 177005, Himachal Pradesh INDIA on March 03-04, 2023 and presented a paper entitled: **Relationship between Music and Science.**

**Dr. Sanjay Kango**  
Convener  
(ICMSAS-2023)

**Dr. G.C. Kana**  
Chairman  
(ICMSAS-2023)

**Principal-cum-Patron**  
(ICMSAS-2023)





# National Seminar on Impact of Science and Technology on Society



Organized by

Department of Zoology, NSCBM Govt. College Hamirpur (H. P.)

In collaboration with

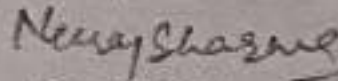
Indian Science Congress Association, Shimla Chapter


(25<sup>th</sup> -26<sup>th</sup> March, 2023)


This is to certify that Dr. / Mr. / Ms. Bihari Lal ..... Professor / Associate Professor /  
Assistant Professor of Economics ..... from  
Govt. College Bilaspur (H. P.) ..... participated in this seminar held on  
25-26 March, 2023.

He / she has presented a paper / research paper entitled Food Security in India and  
its challenges .....

  
Convenor

  
Convenor  
(ISCA, Shimla Chapter)

  
Chairman

  
Patron  
(Principal)



RNTGCS-IC-2023-074



# Two-Day International Conference

On

**Environmental Concerns, Climate Change and Resource Management in the Western Himalayas**

on the occasion of

**World Environment Day, 5<sup>th</sup>-6<sup>th</sup> June, 2023**

Organised by

*Internal Quality Assurance Cell (IQAC)*

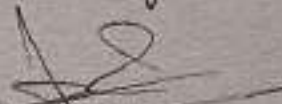
Rabindranath Tagore Govt. Degree College Sarkaghat, Distt. Mandi (H.P.)

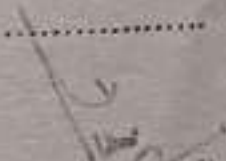


This is to certify that Dr./Mr./Ms. Bihari Lal ..... Professor/Associate  
Professor/ Assistant Professor/Research Scholar/UG/PG Student of Economics ..... from  
Govt. College Jhandutta, Bilaspur (H.P.) ..... participated in the  
International Conference held on 5th-6th June 2023.

He/She has presented a research paper/article entitled .....  
Environmental Management System .....

  
Organising Secretary

  
Convener

  
Patron (Principal)






GOVT. COLLEGE JUKHALA  
District-Bilaspur (H.P.) 174033, India

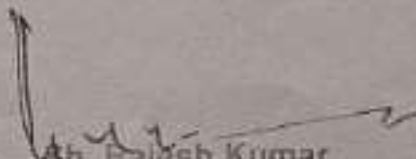
7  
गुरुः  
अमृतं महोत्सवः


NATIONAL CONFERENCE  
ON  
ENVIRONMENTAL CONCERNS IN THE HIMALAYAN REGION

**Certificate**

This is to certify that Mr. Bihari Lal, Associate Professor, Government College Jhandutta, Distt. Bilaspur, H.P. has participated in National Conference on 'Environmental Concerns in the Himalayan Region' organised by IQAC, Govt. College Jukhala on 20/05/2023. He has presented a paper entitled "Environmental Sustainability and Economic Growth."

  
Dr. Jaswant S. Saini  
Associate Professor  
Organising Secretary

  
Sh. Rajesh Kumar  
Associate Professor  
Convener

  
Sh. Sudama Ram  
Principal-cum-Patron  
Govt. College Jukhala, H.P.

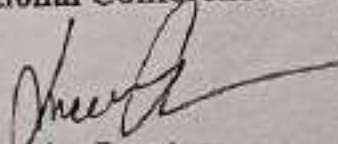



**National Conference**  
**On**  
**Transformations for Sustainable Development in India**  
**April 10-11, 2023**  
**Organized by**  
**Research and Development Committee**  
**SCVB Govt. College Palampur (HP)**




*Certificate*

This is to certify that Dr./Mr./Ms. Prateek Dewal from Govt. College Jhandutta  
participated/presented his/her paper entitled Role of literature in Ecological Sustenance in the  
“National Conference on Transformations for Sustainable Development in India” at SCVB Govt. College Palampur (HP)

  
Organizing Secretary  
Dr. Neena Sharma  
Associate Professor of Zoology

  
Co-ordinator  
Dr. Suresh Sharma  
Associate Professor of Mathematics

  
Chief Patron  
Dr. Prajya Mishra  
Principal



Certificate No.: EDN/GCB(TRK)/2022-23/NSEIPH/63(1)



आज़ादी का  
अमृत महोत्सव

# NATIONAL SEMINAR ON ENVIRONMENTAL ISSUES AND PUBLIC HEALTH

organized by

Departments of Botany & Zoology

**Government College Bhoranj (Tarkwari)**

District Hamirpur, Himachal Pradesh, India

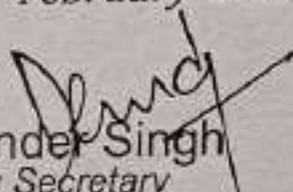
(February 27-28, 2023)

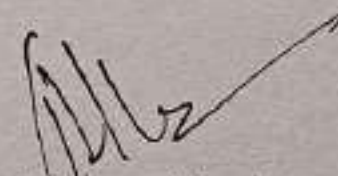



## CERTIFICATE

This certificate is awarded to **PRATEEK DESWAL, Assistant Professor**  
of **Government College Jhanduta, District Bilaspur (H.P.)**  
for presenting paper on the topic **Role of Eco-literature in Spreading Environmental Consciousness**

in the "National Seminar on Environmental Issues and Public Health" organized by the Departments of Botany and Zoology, Government College Bhoranj (Tarkwari), District Hamirpur, Himachal Pradesh (India) on 27<sup>th</sup> and 28<sup>th</sup> February 2023.

  
Dr. Devender Singh  
Organizing Secretary

  
Sh. Prince Thakur  
Convener

  
Sh. Rakesh Kumar  
Principal and Patron





GOVT. COLLEGE JUKHALA  
District-Bilaspur (H.P.) 174033, India

75  
आजादी का  
अमृत महोत्सव

NATIONAL CONFERENCE  
ON  
ENVIRONMENTAL CONCERNS IN THE HIMALAYAN REGION

Certificate

This is to certify that Dr. Kamlesh Kumari, Assistant Professor, Government College Jhandutta, Bilaspur, H. P. has participated in National Conference on 'Environmental Concerns in the Himalayan Region' organised by IQAC, Govt. College Jukhala on 20/05/2023. She has presented a paper entitled "Karyotypic Studies on Aphid Diversity Infesting Rose Plants from Bilaspur District of Himachal Pradesh."

Dr. Jaswant S. Saini  
Associate Professor  
Organising Secretary

Sh. Rajesh Kumar  
Associate Professor  
Convener

Sh. Sudama Ram  
Principal-cum-Patron  
Govt. College Jukhala, H.P.

20/05/2023



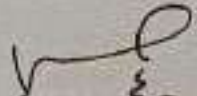


GOVT. COLLEGE JUKHALA  
District-Bilaspur (H.P.) 174033, India

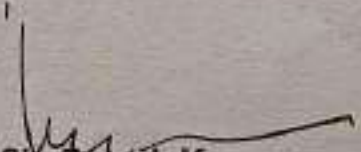
75  
आज़ादी का  
अमृत महोत्सव

NATIONAL CONFERENCE  
ON  
ENVIRONMENTAL CONCERNS IN THE HIMALAYAN REGION  
**Certificate**


This is to certify that **Ms. Ranju**, Assistant Professor, Government College Jhandutta, Bilaspur, H.P. has participated in National Conference on 'Environmental Concerns in the Himalayan Region' organised by IQAC, Govt. College Jukhala on 20/05/2023. She has presented a paper entitled "Water Conservation: Issues, Strategies and Solution."



Dr. Jaswant S. Saini  
Associate Professor  
Organising Secretary



Sh. Rajesh Kumar  
Associate Professor  
Convener



Sh. Sudama Ram  
Principal-cum-Patron  
Govt. College Jukhala, H.P.

Certificate ID: ECHR-097

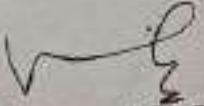


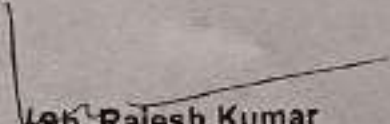
GOVT. COLLEGE JUKHALA  
District-Bilaspur (H.P.) 174033, India


75  
आजादी का  
अमृत महोत्सव

NATIONAL CONFERENCE  
ON  
ENVIRONMENTAL CONCERNS IN THE HIMALAYAN REGION  
**Certificate**

This is to certify that Mrs. Shalini Kumari, Assistant Professor, Govt. College Jhandutta, Distt. Bilaspur, H.P has participated in National Conference on 'Environmental Concerns in the Himalayan Region' organised by IQAC, Govt. College Jukhala on 20/05/2023. She has presented a paper entitled 'Environmental Issues.'

  
Dr. Jaswant S. Saini  
Associate Professor  
Organising Secretary

  
Sh. Rajesh Kumar  
Associate Professor  
Coordinator  
Certificate ID: ECHR-207

  
Sh. Sudama Ram  
Principal-cum-Patron  
Govt. College Jukhala, H.P.





RNTGCS-IC-2023- .....



# Two-Day International Conference

On

**Environmental Concerns, Climate Change and Resource Management in the Western Himalayas**  
on the occasion of

**World Environment Day, 5<sup>th</sup>-6<sup>th</sup> June, 2023**

Organised by

*Internal Quality Assurance Cell (IQAC)*

**Rabindranath Tagore Govt. Degree College Sarkaghat, Distt. Mandi (H.P.)**

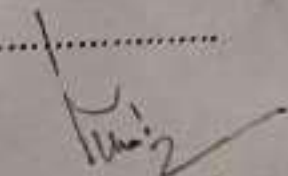


This is to certify that Dr./Mr./Ms. SHALINI KUMARI..... Professor/Associate  
Professor/ Assistant Professor/Research Scholar/UG/PG Student of (Pol. Sc.)..... from  
Govt. College Jhandutta, Distt. Bilaspur, H.P...... participated in the  
International Conference held on 5th-6th June 2023.

He/She has presented a research paper/article entitled GLOBAL WARMING AND  
CLIMATE CHANGE.....

  
Organising Secretary

  
Convener

  
Patron (Principal)





॥ नामूलं लिख्यते किञ्चित् ॥



अखिल भारतीय इतिहास संकलन योजना, नई दिल्ली

एवं

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय, शर्मशाला

के संयुक्त तत्त्वावधान में आयोजित

सप्तम् वार्षिक युवा इतिहासकार राष्ट्रीय संगोष्ठी

‘भारतीय इतिहास लेखन की प्रवृत्तियाँ एवं नवीन आयाम’

*‘Trends in Indian History Writing and Recent Dimensions’*

श्री महादेवी तीर्थ ( वैष्णो माता मन्दिर ), कुल्लू, हिमाचल प्रदेश  
आषाढ कृष्ण पक्ष, सप्तमी-अष्टमी, कलियुगाब्द 5125, विक्रमी संवत् 2080,

तदनुसार शनिवार-रविवार, 10-11 जून, 2023

प्रमाण पत्र

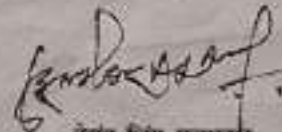
प्रमाणित किया जाता है कि प्रो./डॉ./श्री/श्रीमती/कुमारी

**बलबीर चन्द**

ने ‘भारतीय इतिहास लेखन की प्रवृत्तियाँ एवं नवीन आयाम’ विषय पर आयोजित राष्ट्रीय संगोष्ठी में **भारतीय कला परंपरा का इतिहास**

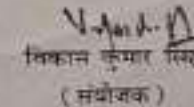
शीर्षक पर अपना शोध पत्र प्रस्तुत किया/सहभागिता की।

हम आपके यशस्वी जीवन की कामना करते हुए इतिहास के आलोक में निरन्तर राष्ट्रीय अथवा अंतराष्ट्रीय अर्थों में आपकी अपेक्षा करते हैं।



हेमंत शिवाजी मजूमदार  
( महासचिव )

अखिल भारतीय इतिहास संकलन योजना,  
नई दिल्ली



युवा इतिहासकार परिषद्  
अखिल भारतीय इतिहास संकलन यो



# Two-Day International Conference

RNTGCS-IC-2023- 159



On

Environmental Concerns, Climate Change and Resource Management in the Western Himalayas

on the occasion of

**World Environment Day, 5<sup>th</sup>-6<sup>th</sup> June, 2023**

Organised by

*Internal Quality Assurance Cell (IQAC)*

**Rabindranath Tagore Govt. Degree College Sarkaghat, Distt. Mandi (H.P.)**



This is to certify that Dr./Mr./Ms. .... **बलवीर चन्द** ..... Professor/Associate

Professor/ Assistant Professor/Research Scholar/UG/PG Student of ... **संगीत (वाद्य विभाग)** from

**राजकीय माहाविद्यालय इन्दूता, बिलासपुर** ..... participated in the

International Conference held on 5th-6th June 2023.

He/She has presented a research paper/article entitled ... **भारतीय संगीत, संस्कृति और**

**पर्यावरण संरक्षण** .....

Organising Secretary

Convener

Patron (Principal)



Sr. No. ....28.....



National Seminar

on

Life and Contributions of Dr. BR Ambedkar

and

Contemporary Issues in Environment, Culture & Indian Society

Organized by

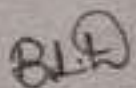
Department of Zoology, NSCBM Govt. College Hamirpur (H. P.)


(6th December, 2023)



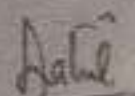
This is to certify that Dr. / Mr. / Ms. .... Bihari Lal ..... Professor / Associate Professor /  
Assistant Professor / Research Scholar of ..... Economics ..... from  
..... Govt. College Jhandutta, District Bilaspur, H.P. ..... participated  
in this seminar held on 6th December, 2023.

He / she has presented a paper / research paper entitled .... Dr. Ambedkar's Contribution as an .....  
..... Economist .....

  
Org. Secretary  
Ms. Bahita Suman

  
Co-Convenor  
Dr. Sandeep Kumar

  
Convenor  
Dr. Krishal Lal

  
Patron-cum-Principal  
Dr. Pramod Patial





# National Conference

On



BIODIVERSITY LOSS AND CLIMATE CHANGE:  
TWO FACES OF THE SAME COIN

**3<sup>rd</sup> December, 2023**


Organized by

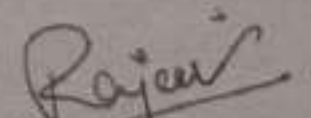
**Department of Bio-Sciences**


**Rabindranath Tagore Govt. Degree College Sarkaghat, Distt. Mandi (H.P.)**

## Certificate of Participation

This is to certify that Dr./Mr./Ms. *Bihari Lal* Professor/Associate Professor/Assistant Professor/ Research Scholar/ U-Student Department of Economics, Govt. College Jhandutta, Distt. Bilaspur Himachal Pradesh. Participated in the National Conference held on 3<sup>rd</sup> December, 2023. He/She has presented a research paper/article entitled Global Warming and Climate Change.

  
Organising Secretary

  
Convener

  
Patron (Principal)



**International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development  
September 29-30, 2023**



Organized By  
**Department of Botany and Zoology  
Sidharth Govt. Utkrishit College Nadaun, Himachal Pradesh, INDIA**  
In collaboration with  
**The Indian Science Congress Association (ISCA), Shimla Chapter**

**Certificate**

This is to certify that Prof./Dr./Mr./Ms ..... *Bihari Lal* ..... Designation. *Assoc. Prof.* .....  
..... *Dept. of Economics, Govt. College Jhandutta, Bilaspur* has participated as a *Keynote Speaker/Resource*  
*Person/Invited Speaker/ Presented Paper/Poster* entitled ..... *Global Warming and its impact on* .....  
..... *Climate Change* ..... in the international conference on  
*Recent Trends in Science and Technology for Environment Conservation and Sustainable Development* organized by Dept.  
*of Botany & Zoology, Sidharth Govt. Utkrishit College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.*

He/She has been awarded with *Best Oral Presentation/Poster Presentation*

*Sunita*  
**Dr. Sunita Saklani**  
Organizing Secretary

*Bhagwati P*  
**Prof. Bhagwati P Sharma**  
Convener

*A.*  
**Dr. Anil Kumar Gaudin**  
Principal-Cum-Patron

Sr. No. 55

Date 22<sup>nd</sup> Sept. 2023



National Conference  
on  
Global Perspective on Science and Technology for Sustainable Future

Organized by  
Netaji Subhash Chandra Bose Memorial Govt. College Hamirpur (H. P.)

In collaboration with  
The Indian Science Congress Association (ISCA) Shimla Chapter  
(21<sup>st</sup> -22<sup>nd</sup> September, 2023)

This is to certify that Dr. / Mr. / Ms. Bihari Lal..... Professor/ Associate Professor  
Assistant Professor of Economics..... from  
Govt. College, Jhandutta, Distt. Bilaspur, H.P...... participate  
in this conference held on 21-22 September, 2023.

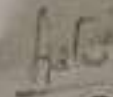
He / she has presented a paper/ research paper entitled Environmental Sustainability and Economic

Growth

  
Convenor

  
Convenor  
(ISCA, Shimla Chapter)

  
Chairman

  
Patron  
(Principal)





Est. 1922  
Govt. P. G. College Bilaspur  
Himachal Pradesh

# Govt. P. G. College Bilaspur

Himachal Pradesh, India

*National Seminar*

on

*Ethics in Society: Issues and Challenges*

(16<sup>th</sup> September, 2023)

Organised by

Department of Hindi

*Certificate*

This is to certify that <sup>✓</sup>Dr./Mr./Ms. Bihari Lal ..... Professor/  
<sup>✓</sup>Associate Professor/Assistant Professor/Research Scholar of Economics ..... from  
Govt. College Jhandutta Distt. Bilaspur (H.P.) ..... participated in National Seminar  
on *Ethics in Society: Issues and Challenges*. He/she acted as the Key Note Speaker/Resource Person/Chair  
Person. He/she delivered a talk/presented a paper/research paper entitled .....  
Ethics in Educational Research.

  
Convenor

Dr. Shyam Lal



Organising Secretary  
Dr. Surinder Singh



Patron (Principal)  
Neena Vasudeva



# Govt. P. G. College Bilaspur

Himachal Pradesh, India

National Seminar

on

Ethics in Society: Issues and Challenges


(18<sup>th</sup> September 2024)


Organized by

Department of Home

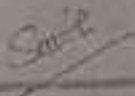
**Certificate**

This is to certify that Dr./Mr./Ms. Satish Kumar Professor/  
Associate Professor/Assistant Professor/Research Scholar of Physics from  
Govt. College Jhandutta participated in National Seminar  
on Ethics in Society: Issues and Challenges. He/she acted as the Key Note Speaker/Resource Person/Chief  
Person. He/she delivered a talk/presented a paper/research paper entitled  
Ethics in Education

  
Organizing Secretary  
Dr. Srijam Lal

  
Organizing Secretary  
Dr. Surinder Singh

  
Patron (Principal)  
Neena Vasudeva









# Govt. P. G. College Bilaspur

Himachal Pradesh, India

*National Seminar*

ON

*Ethics in Society: Issues and Challenges*


(16<sup>th</sup> September, 2023)

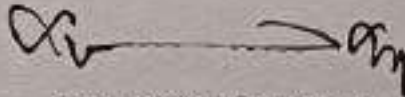
Organised by


Department of Hindi

*Certificate*

This is to certify that Dr./Mr./Ms. Rajendra Kumar Professor/  
Associate Professor/Assistant Professor/Research Scholar of ..... from  
Govt. Degree College Jhandutta participated in National Seminar  
on Ethics in Society: Issues and Challenges. He/she acted as the Key Note Speaker/Resource Person/Chair  
Person. He/she delivered a talk/presented a paper/research paper entitled .....  
An Overview of Environmental Ethics

  
Convenor  
Dr. Shyam Lal

  
Organising Secretary  
Dr. Surinder Singh

  
Patron (Principal)  
Neena Vasudeva



International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development

September 29-30, 2023

Organized By

Department of Botany and Zoology

Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA

In collaboration with

The Indian Science Congress Association (ISCA), Shimla Chapter



**Certificate**

This is to certify that Prof./Dr./Mr./Ms. Rajender Kumar ..... Designation Assistant  
Professor (Geography) Govt. College, Jhandutta (Bilaspur) has participated as a Keynote Speaker/Resol.  
Person/Invited Speaker/ Presented Paper/Poster entitled Water Resource Conservation and Sustainable  
Development: A Case Study ..... in the international conference  
Recent Trends in Science and Technology for Environment Conservation and Sustainable Development organized by Dept  
of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.

He/She has been awarded with Best Oral Presentation/Poster Presentation.

*Sunita*

Dr. Sunita Saklani  
Organizing Secretary

*B.P.S.*

Prof. Bhagwati P Sharma  
Convener

*A.K.G.*

Dr. Anil Kumar Gautam  
Principal-Cum-Patron





International Conference  
on

Tribal Identity in India: Issues, Challenges and the Road Ahead

1st - 2nd and 4th October 2023

Certificate ID: GCP/IC23/0169

Certificate

This is to certify that Rajender Kumar has presented a paper entitled, “Geographical Study of T Women's Literacy and Gender Gap in Himachal Pradesh” at the International Conference organized by College Pangi in collaboration with Himalayan Council for Scientific Research (HCSR).

Ms. Ritika Jindal  
Chief Patron  
RC Pangi

Sh. Raman Gharsanghi  
Patron  
SDM Pangi

Dr. Promila Devi  
Convener  
Officiating Principal  
GC Pangi

Dr. Bipan C Rathore  
Patron of HCSR  
Former Principal  
GC Pangi

Mr. Biyaso Ram  
Conference Secretary  
AP Economics, GC P.



Sr. No. ....84.....

Date ..22<sup>nd</sup> Sept., 2023



**National Conference  
on  
Global Perspective on Science and Technology for Sustainable Future**





Organized by  
**Netaji Subhash Chandra Bose Memorial Govt. College Hamirpur (H. P.)**

In collaboration with  
**The Indian Science Congress Association (ISCA) Shimla Chapter**  
(21<sup>st</sup> -22<sup>nd</sup> September, 2023)

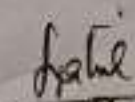
This is to certify that Dr. / Mr. / Ms. ....Balbir Chand..... Professor/ Associate Professor /  
Assistant Professor of .....Music (Instrumental)..... from  
.....Govt. College Jhandutta, Distt. Bilaspur, H.P...... participated  
in this conference held on 21-22 September, 2023.

He / she has presented a paper/ research paper entitled.....Global Warming and its Impact.....  
.....on India.....

  
**Convenor**

  
**Convenor**  
(ISCA, Shimla Chapter)

  
**Chairman**

  
**Patron**  
(Principal)



International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development

September 29-30, 2023

Organized By

Department of Botany and Zoology

Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA

In collaboration with

The Indian Science Congress Association (ISCA), Shimla Chapter



# Certificate

This is to certify that Prof./Dr./Mr./Ms. BALBIR CHAND Designation ASST. PROF.  
(MUSIC) (I) GOVT. COLLEGE JHANDUTTA, BILASPUR, H.P. has participated as a Keynote Speaker/Resource  
Person/Invited Speaker/ Presented Paper/Poster entitled CLIMATE CHANGES GLOBAL WARMING IN INDIA...  
PROBLEMS AND PERSPECTIVES. in the international conference on  
*Recent Trends in Science and Technology for Environment Conservation and Sustainable Development* organized by Deptt.  
*of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.*  
He/She has been awarded with Best Oral Presentation/Poster Presentation.

*Sunita*  
Dr. Sunita Saklani  
Organizing Secretary

*B.P.S.*  
Prof. Bhagwati P Sharma  
Convener

*A*  
Dr. Anil Kumar Gautam  
Principal-Cum-Patron





# HIMACHAL PRADESH UNIVERSITY

Cont. ID/RC/23/vix/p/101

(NAAC ACCREDITED 'A' GRADE UNIVERSITY)

UNIVERSITY REGIONAL CENTRE DHARAMSHALA (H.P.)

## International Hybrid Conference

on

History and Culture of Himalayan Tribes: Status and Continuity

October 27-28, 2023

In collaboration with



### Certificate

This is to certify that Prof./ Dr./ Mr./Ms. Balsir chand Designation Assistant Professor  
 University/College/Institution Govt. college Jhandutta, Bilaspur, Himachal Pradesh has  
 Participated/Presented  Paper/Chaired/Co-chaired a session/speaker — entitled हिमाचल प्रदेश  
की गद्दी जनजाति एवं अन्य जातियों - जनजातियों के जीवन में लोक नृत्य की  
भूमिका Name of the session Technical session-4

in International Hybrid Conference organised by Department of History, HPU Regional Centre, Dharamshala, District Kangra, Himachal Pradesh, India.

Organising Secretary  
Rajender Kumar  
HPU RC Dharamshala

Convenor  
Dr. Mohinder Slariya  
Scientific Steering Committee

Conference Convenor  
Dr. Raj Kumar  
HPU RC Dharamshala

Director cum Patron  
Prof. D. P. Verma  
HPU RC Dharamshala





# International Conference

Multidisciplinary (Arts, Commerce & Science)

on

COMMUNICATING HEALTH, HAPPINESS & LONGEVITY  
for SUSTAINABLE GROWTH

2<sup>nd</sup> - 4<sup>th</sup> December, 2023

Organized by:

GC Ani, Kullu H.P. India, ICFRE-Himalayan Forest Research Institute Shimla H.P. India  
& SMSHP, HNE Health Care, Hry. iTachyos, Dubai, GGC Hamirpur, Skill Labs, Chd., Wisdom of Mind Hry. Serve Himalayan Society, Shimla H.P.



## Certificate

This certificate is awarded to Prof./Dr./Mr./Ms. Balbir Chand

Designation A.P. Music (I) University/College/Institution G.C. Jhandutta, Bilaspur

for delivering a Keynote Address/Invited Lecture /Chair/Co-Chair/Paper Presentation/Participation

Session/Titled Impact of music therapy on mental health.

He/She got \_\_\_\_\_ award during this international conference.

*Pawan Kumar*

**Dr. Pawan Kumar**

Scientist-F, ICFRE-HFRI SHIMLA

*Anita Sharma*

**Dr. Anita Sharma**

Principal GC Ani



**International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development**



September 29-30, 2023

Organized By

Department of Botany and Zoology

**Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA**

In collaboration with

**The Indian Science Congress Association (ISCA), Shimla Chapter**

**Certificate**

This is to certify that Prof./Dr./Mr./Ms SHALINI KUMARI.....Designation ASST. PROF.  
(POL. SC.) GOVT. COLLEGE JANDUTIA, DIST. BILASPUR, H.P...... has participated as a **Keynote Speaker/Resource**  
**Person/Invited Speaker/ Presented Paper/Poster** entitled BIODIVERSITY AND HUMAN HEALTH.  
.....in the international conference on  
**Recent Trends in Science and Technology for Environment Conservation and Sustainable Development** organized by Deptt.  
**of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.**  
**He/She has been awarded with Best Oral Presentation/Poster Presentation.**

*Sunita*  
**Dr. Sunita Saklani**  
Organizing Secretary

*B.P. Sharma*  
**Prof. Bhagwati P Sharma**  
Convener

*Anil Kumar Gautam*  
**Dr. Anil Kumar Gautam**  
Principal-Cum-Patron





# Govt. P. G. College Bilaspur

Himachal Pradesh, India

*National Seminar*

on

*Ethics in Society: Issues and Challenges*

(16<sup>th</sup> September, 2023)

Organised by

Department of Hindi

## *Certificate*

This is to certify that Dr./Mr./Ms. Pankaj Sharma Professor/  
Associate Professor/Assistant Professor/Research Scholar of ..... from  
Govt. Degree College Jhandutta participated in National Seminar  
on *Ethics in Society: Issues and Challenges*. He/she acted as the Key Note Speaker/Resource Person/Chair  
Person. He/she delivered a talk/presented a paper/research paper entitled .....  
Inculcating ethical education through innovative pedagogical practices

Convenor

Dr. Shyam Lal

Organising Secretary

Dr. Surinder Singh

Patron (Principal)

Neena Vasudeva



**International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development  
September 29-30, 2023**



Organized By

Department of Botany and Zoology

**Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA**

In collaboration with

**The Indian Science Congress Association (ISCA), Shimla Chapter**

**Certificate**

This is to certify that Prof./Dr./Mr./Ms.....*Pankaj Sharma*..... Designation. *Asst. Prof.*.....  
*Dept. of History, Govt. Degree College Jhandutta, Bilaspur* has participated as a Keynote Speaker/Resource  
 Person/Invited Speaker/ Presented Paper/Poster entitled.....*Bakra Nam Project and its Environmental*  
*Impact*.....in the international conference on  
*Recent Trends in Science and Technology for Environment Conservation and Sustainable Development* organized by Deptt.  
*of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.*  
 He/She has been awarded with Best Oral Presentation/Poster Presentation.

*Sunita*

Dr. Sunita Saklani  
Organizing Secretary

*By P*

Prof. Bhagwati P Sharma

*Dr. Anil Kumar Gautam*

Dr. Anil Kumar Gautam





ESTD 1972  
Govt. P. G. College Bilaspur  
Himachal Pradesh

# Govt. P. G. College Bilaspur

Himachal Pradesh, India

*National Seminar*

*on*

*Ethics in Society: Issues and Challenges*

*(16<sup>th</sup> September, 2023)*

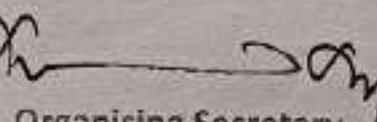
*Organised by*


*Department of Hindi*

## *Certificate*

*This is to certify that Dr./Mr./Ms. Archana Sharma..... Professor/  
Associate Professor/Assistant Professor/Research Scholar of Hindi..... from  
Govt. Degree College Jhandutta..... participated in National Seminar  
on *Ethics in Society: Issues and Challenges*. He/she acted as the Key Note Speaker/Resource Person/Chair  
Person. He/she delivered a talk/presented a paper/research paper entitled .....  
Inculcating ethical education through innovative pedagogical practices.....*

  
Convenor  
Dr. Shyam Lal

  
Organising Secretary  
Dr. Surinder Singh

  
Patron (Principal)  
Neena Vasudeva



International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development  
September 29-30, 2023



Organized By

Department of Botany and Zoology

Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA

In collaboration with

The Indian Science Congress Association (ISCA), Shimla Chapter

## Certificate

This is to certify that Prof./Dr./Mr./Ms. Archana Sharma Designation Assistant  
Professor (Hindi) GDC Jhandutta has participated as a Keynote Speaker/Resource  
Person/Invited Speaker/ Presented Paper/Poster entitled Bhekhra Dam Project and its  
Environmental Impact. in the international conference on  
Recent Trends in Science and Technology for Environment Conservation and Sustainable Development organized by Deptt.  
of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.

He/She has been awarded with Best Oral Presentation/Poster Presentation.

*Sunita*

Dr. Sunita Saklani  
Organizing Secretary

*B.P. Sharma*

Prof. Bhagwati P Sharma  
Convener

Dr. Anil Kumar Gautam  
Principal-Cum-Patron





Parle Tilak Vidyalaya Association's

**M.L.DAHANUKAR COLLEGE OF COMMERCE**

(Affiliated to University of Mumbai & Accredited with 'B+' Grade by NAAC)

Vile Parle (E), Mumbai - 400 057



**G20 & Multilateralism**

**A One Day International Online Conference**

organised by IQAC of M. L. Dahanukar College of Commerce in collaboration with Department of Civics & Politics, University of Mumbai [ICSSR & ICWA proposed] held on 15th December, 2023

This certificate is presented to

**Ms. Ranju Thakur**

**of Government College Jhandutta**

for participating & presenting a Research Paper titled

**Environment Music and Climate change**

**Mr Suraj T. Raut**  
Convenor  
Assistant Professor

**Prof. Dr. Liyaqat Khan**  
Co-Director  
University of Mumbai

**Asso. Prof. Chandana Chakraborti**  
Director  
(Vice Principal)

**Prof. Dr. Kanchan Fulmali**  
Chairperson  
(I/C Principal)





National Conference

pp-156

on

**Global Perspective on Science & Technology  
for Sustainable Development**

in association with

Indian Science Congress Association - Rohtak Chapter

Rao Pahlad Singh Degree College, Balana, Mahendergarh-Haryana

A NAAC Accredited College | www.rpsdegreecollege.edu.in



**CERTIFICATE**

This is to certify that Prof./Dr./Mr./Ms. Sapna Sherma of Himachal

Pradesh University, Shimla has participated / delivered invited talk / chaired session / presented paper (oral/poster)

entitled Synthesis of Zca - - - - - antimicrobial properties

in two days National Conference on "Global Perspective on Science & Technology for Sustainable Development" organized by

Department of Chemistry, RPS Degree College, Balana, Mahendergarh on 03-04 November, 2023.

[Signature]  
Organizing Secretary

[Signature]  
Convener

[Signature]  
Principal



Two-Days National Seminar

"Achieving Sustainable Development Goals in North-Western Region"

Organized by

SCHOOL OF GOVERNANCE AND MANAGEMENT STUDIES  
CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Accredited by NAAC with A+ Grade with CGPA of 3.42)

(22 & 23 September, 2023) (Onroad Study)

ISSN: 0011-5192 (2023) 156

*Certificate of Participation*

This is to certify that Amit Kumar Designation Assistant Professor

Department of Commerce College/University/Institute Govt. College, Jhanautla, Bilaspur

Participated in  Oral + Research Paper through online/offline mode titled MSME's Role in Sustainable

development in the light of 'Make in India': opportunities and challenges.

Head of Institute

Signature

Signature  
Seminar Director

Signature  
Team (SCMS)



ICSSR SPONSORED  
Two-Days National Seminar



011

"Achieving Sustainable Development Goals in North-Western Region"

Organized By

School of Commerce and Management Studies

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(Accredited by NAAC with A+ Grade with CGPA of 3.42)

(22 & 23 September, 2023) (Hybrid Mode)

ICSSR/CUHP/SCMS/2023/126

*Certificate of Participation*

This is to certify that Armit Kumar ..... Designation Assistant Professor

Department of Commerce ..... College/University/Institute Govt. College, Jhandutta, Bilaspur


Participated /Presented a Research Paper through online/offline mode, entitled MSME's Role in Sustainable

development in the light of 'Make in India': opportunities and Challenges.

  
Organizing Secretary

  
Convener

  
Seminar Director

  
Dean (SCMS)





International Conference on  
Recent Trends in Science & Technology  
For Environment Conservation & Sustainable Development  
September 29-30, 2023



Organized By

Department of Botany and Zoology

Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, INDIA

In collaboration with

The Indian Science Congress Association (ISCA), Shimla Chapter

**Certificate**

This is to certify that Prof./Dr./Mr./Ms ..... Prateek Deswal ..... Designation. Asst. Prof. ....  
Dept. of English, Govt. College Jhandutta, Bilaspur ..... has participated as a Keynote Speaker/Resource  
Person/Invited Speaker/ Presented Paper/Poster entitled ..... Transforming Cultural Discourse Through  
Literature for Eco-Sustainability ..... in the international conference on  
Recent Trends in Science and Technology for Environment Conservation and Sustainable Development organized by Deptt.  
of Botany & Zoology, Sidharth Govt. Utkrisht College Nadaun, Himachal Pradesh, India on Sep 29-30, 2023.

He/She has been awarded with Best Oral Presentation/Poster Presentation.

*Sunita*

Dr. Sunita Saklani  
Organizing Secretary

*B.P.S.*

Prof. Bhagwati P Sharma  
Convener

*A.K.G.*

Dr. Anil Kumar Gautam  
Principal-Cum-Patron



Govt. College Bilaspur

Himachal Pradesh, India

National Conference

on


Changing Lifestyle, Culture and Society


(2<sup>nd</sup> March, 2024)


Organised by  
Department of Hindi


Certificate

This is to certify that *Dr./Mr./Ms.* Bibari Lal *Professor/Associate*  
*Professor/Assistant Professor/Research Scholar of* Economics *from*  
Govt. College Jhandutta *participated in*  
*National Conference on Changing Lifestyle, Culture and Society. He/she acted as the Key*  
*Note Speaker/Resource Person/Chair Person. He/she delivered a talk/presented a*  
*paper/research paper entitled* Lifestyle and Food Habits

  
Dr. Shyam Lal  
Convener

  
Dr. Surinder Singh  
Organising Secretary

  
Dr. B. S. Kuldwal  
Chairman

  
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**Shaping Narratives, Breaking Barriers: A Comprehensive Study of Women's Contribution in the Literary Development of India**

at National Seminar on

**Women Contribution in Economic, Social and Cultural Development of India:**

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on


Changing Lifestyle, Culture and Society


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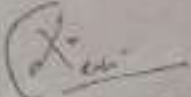
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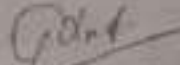
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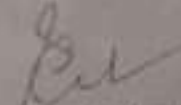
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National Seminar on Nature and Society

(NSNS-2024)

2 September, 2024



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ಮುಖ್ಯ ಅತಿಥಿಗಳ ಪಟ್ಟಿ

ಪ್ರಾಚಾರ್ಯರುಗಳು: ಪದ್ಮನಾಭ ಶರ್ಮ, ಅಧ್ಯಕ್ಷರು: ಶ್ರೀಮತಿ. ದೀಪತಿ ಕುಮಾರ್  
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 ಸ್ಥಳ: ಅಂತರಾಷ್ಟ್ರೀಯ ಸಂಸ್ಕೃತ ಸಮ್ಮೇಳನ ಕೇಂದ್ರ, ಕರ್ನಾಟಕ ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಬೆಂಗಳೂರು.

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ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ  
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International Conference 2024

On

“Recent Trends And Innovations For A Greener Future”

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In Collaboration With

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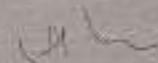



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in the International Conference held on 9th-  
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He/She has been awarded with Best Poster Presentation.

  
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Govt. College Bilaspur  
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National Conference  
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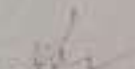
Changing Lifestyle, Culture and Society


(2<sup>nd</sup> March, 2024)


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paper/research paper entitled .... Role of Climate Change on Animal.....  
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VALLABH GOVT. COLLEGE MANDI, H.P.  
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ON

“EMERGING ISSUES OF BIODIVERSITY AND ENVIRONMENT FOR SUSTAINABLE  
DEVELOPMENT”

Organized by: Department of Zoology and Environment Science

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He /She has presented a Paper/Poster entitled “ANALYZING THE INTRICATE RELATIONSHIP BETWEEN ECO-LITERATURE AND SUSTAINABLE DEVELOPMENT”

Dr. Monika Panchani  
Convenor

Ms. Surina Sharma  
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VGC Mandi









National Seminar  
ON  
**Life and Contributions of Dr. B.R. Ambedkar**  
1944  
Contemporary Issues in Education, Culture & Public Services  
Organized by  
Department of Science, U.P.A. Govt. College, Lucknow (U.P.)  
12th December, 2023

Organized by: **Dr. M. M. Saha**, **Dr. Sushil Kumar**  
Department of Science, U.P.A. Govt. College, Lucknow (U.P.)  
12th December, 2023

The following papers were presented on the occasion:  
**Contemporary Issues in the Governance of Lucknow**

**Dr. Sushil Kumar** (Organizer)  
**Dr. M. M. Saha** (Organizer)  
**Dr. Sushil Kumar** (Organizer)  
**Dr. M. M. Saha** (Organizer)

National Conference  
ON  
**UNIVERSITY, LAW AND CLIMATE CHANGE  
TWO SIDES OF THE SAME COIN**  
30th December, 2023  
Organized by  
Department of Environmental Studies  
**Govt. Degree College, Narayana, Distt. Mau (U.P.)**  
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**Climate Change and the Role of Law: A Study of the Indian Scenario**  
**Climate Change and the Role of Law: A Study of the Indian Scenario**  
**Climate Change and the Role of Law: A Study of the Indian Scenario**

**Dr. Sushil Kumar** (Organizer)  
**Dr. M. M. Saha** (Organizer)  
**Dr. Sushil Kumar** (Organizer)  
**Dr. M. M. Saha** (Organizer)

National Conference  
ON  
**Global Perspective on Science and Technology for Sustainable Future**  
Organized by  
Natal Subhash Chandra Bose Memorial College, Varanasi (U.P.)  
In collaboration with  
The Indian Science Congress Association (ISCA) Shri. Chandra  
12th, 13th, 14th September, 2023

Organized by: **Dr. M. M. Saha**, **Dr. Sushil Kumar**  
Department of Science, U.P.A. Govt. College, Lucknow (U.P.)  
12th December, 2023

The following papers were presented on the occasion:  
**Science and Technology in Higher Education: A Transformative Through Story**

**Dr. Sushil Kumar** (Organizer)  
**Dr. M. M. Saha** (Organizer)  
**Dr. Sushil Kumar** (Organizer)  
**Dr. M. M. Saha** (Organizer)





# POINT 7. Paper Published in UGC CARE List Journals

Journal of Cytology and Genetics 2021 VOL. 22 (NS): 21-24 © 2021 Society of Cytologists and Geneticists, India

RESEARCH ARTICLE

## KARYOTYPIC STUDIES ON *TOXOPTERA AURANTII* AND *MYZUS PERSICAE* INFESTING ROSE PLANTS FROM HIMACHAL PRADESH, INDIA

KAMLESH KUMARI, MITENA KUMARI\* AND D. C. GAUTAM  
Department of Biosciences, Himachal Pradesh University, Shimla 171 005, India  
\*For correspondence. Email: meenakchaudhary@gmail.com  
(Received 6 August 2021, accepted 16 August 2021)

**SUMMARY** Karyotypic studies on two species of aphids, *Toxoptera aurantii* (Boyer de Fonscolombe) and *Myzus persicae* (Sulzer) infesting rose plants from Himachal Pradesh were carried out. Both these species infesting rose plants from Himachal Pradesh are observed for the first time. The diploid chromosome numbers in these species were found to be  $2n = 8$  and  $2n = 12$  respectively. The chromosomes were holocentric. Total complement length as well as relative lengths of chromosomes were calculated. Idiograms of both the species showed a gradual decrease in the size of chromosome pairs.

**Keywords:** Karyotypes, *Toxoptera*, *Myzus*, holocentric chromosomes, total complement length, idiograms

### INTRODUCTION

At present, chromosome numbers of 1039 species of aphids belonging to 14 families are known, which comprise about 24% of the total number of aphid species (Gavrillov-Zimin et al. 2015). About 250 aphid species are considered serious pests of crops and cause great losses of yield (Remaudière & Remaudière 1997).

Aphids have complex life cycles involving thelytokous parthenogenesis, polyphenism, viviparity, telescoping of generations and host alternation. Interest in aphid cytogenetics is mostly due to the holocentric nature of chromosomes (Wrensch et al. 1994). Chromosomal polymorphism occurs in aphids as a result of fusion or fission of chromosomes which leads to evolution of new biotypes (Blackman 1980, Gautam et al. 1993).

Rose is one of the most beautiful ornamental flowers. It is attacked by numerous pests; amongst them, aphids are considered as a major pest. It is infested by 55 aphid species (Blackman & Eastop 2000), of which 39 are previously recognized from India (Raychaudhuri 1983, Chakrabarti & Sarkar 2001). Since rose aphids are of particular importance because of the damage caused and not much work has been done on chromosomes of rose aphids from Himachal Pradesh. Hence, the present investigation was undertaken to study the chromosomes of two species of aphids from this region.

Genus *Toxoptera* belongs to tribe Aphidini of family Aphididae and includes 4 or 5 species resembling *Aphis*. Genus *Myzus* belongs to tribe Macrosiphini of family Aphididae and includes about 55 species. The primary hosts of this heteroecious species are *Prunus* spp., but the secondary hosts belonged to many different families. The present paper deals with the karyotypes of *T. aurantii* (Boyer de Fonscolombe) and *M. persicae* (Sulzer).

## Displacement and sovereignty: Raja of Bilaspur and the Bhakra dam (1908–1947)

Pankaj Sharma<sup>1</sup>  · Balrajeshwar Shrivastava<sup>2</sup>

Received: 18 December 2023 / Accepted: 19 April 2024  
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### Abstract

Dams and ensuing development is a contentious topic that has occupied scholars' forges, and the present article endeavors to show how the process of construction of Bhakra dam could influence the history and future of a princely state and its subjects that had been ruled by "Rajas" of Kelbloor (Bilaspur) for more than 1250 years. This paper focuses on the project's history during Colonial India from 1908 to 1947. It was the period when the seed of the idea was first sowed, and the machinations behind it would eventually decide the fate of Bilaspur's small independent state. It involved the possibility of losing its identity and land and, notably, the loss of sovereign rights of its people. The independent principality ceased to exist in post-colonial India as it became a district in Himachal Pradesh. The relocation heaped on the masses remained silent in the annals of history, and those rendered homeless remained without a voice. The Dam's construction depended on the consent of the Raja of Bilaspur and, finally, the government of India, which is the major player in the politics surrounding the Dam.

**Keywords** Bhakra dam · Displacement · Sovereignty · Sutlej River · Punjab Government


### 1 Introduction

Dams and development have been a debatable topic since the twentieth century. The construction of the Bhakra dam project in Bilaspur had a telling effect on the state of Himachal and how it came to be perceived in the larger context of Indian history. This study is primarily based on archival records that include correspondence between the Government of India, the Punjab Government, and the Raja of Bilaspur, as well as several written records penned by personalities close to the project and seekers who delved deep and found invaluable information that was buried in the records. Some secondary articles and books that have dealt with the large dam stories in India have also been consulted.

Shripad Dharmadhikary's *Unravelling Bhakra: Assessing the Temple of Resurgent India* (Dharmadhikary, 2005) provides valuable information about the submerged areas under the Bhakra Nangal Project (BNP). Interestingly, it provides

agricultural production statistics before and after the construction of the Dam. The author clarifies that the decision to build Bhakra was motivated more by the desire to strengthen the negotiating position between India and Pakistan than by addressing the water needs of the dry areas empty of water. The author argues, "Bhakra has been given credit for things it never did, and it is just an ordinary project with many drawbacks".

Rohan D'Souza's work *Was the Large Dam a "Modern Temple"? Taking Stock of India's Tryst with the Bhakra-Nangal* (D'Souza, 2022) has covered the debate over large dams from the 20th to the twenty-first century. The World Commission on Dams (WCD) was seen as an instrument to end the long-standing war between the pro-dam lobby and the anti-dam campaigners. As there was no consensus on the report, the debate over dams was focused on good dams in contrast to bad dams. D'Souza, in his work, has taken up two contrasting studies over the Bhakra Nangal Project (BNP) that was published in India almost at the same time: Dharmadhikary (published in 2005) and Rangachari (published in 2006). These studies attempted to compare the post-construction outcome of the BNP on the basis of a good versus bad dam framework, i.e., the model of WCD. They were instrumental in removing the debate from anti-varna pro viewpoints. D'Souza's work also covers the study

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# Review of the Fundamentals of Nano Fluids: Creation, Processing, Thermophysical Characteristics, Applications, and Models

**Rekha Devi**

*Assistant Prof., Mathematics, Govt. College Jhandutta, Distt. Bilaspur(H.P.)*

## Abstract:

Due to its improved thermophysical properties, such as thermal conductivity, thermal diffusivity, viscosity, and heat transfer coefficient, nanofluids, which are made up of base fluids with nanometer-sized components suspended in them, have received much research. Heat transfer can be lowered or increased when using nanofluid as a smart fluid. The essential articles on the synthesis, stability, and thermophysical properties of nanofluids and their applications will be briefly discussed in this review study. The utilization of nanofluids in diverse applications is supported by a number of variables that are identified.

**Keywords-** Base Fluids, Heat Transfer, Nanofluids, Nanofluids Model, Thermophysical properties

## 1. INTRODUCTION

Nanofluids are basic fluids in which nanometer-sized particles are suspended. The term "nanofluid" was initially used in 1995 by Choi and Eastman to describe a novel method of improving the thermal conductivity of heat transfer fluid [1]. The effort to increase the thermal conductivity of fluid has been done by dispersing the solid particles in millimeter or micrometer-sizes into base fluids. Devi Reddy conducted an experiment on automobile radiator using water based  $TiO_2$  ethylene glycol nanofluid as the coolant at different concentration levels of nanoparticles [2]. The results showed that there is enhancement in heat transfer coefficient compared to the base fluid. Das et al., studied the viscous behavior of alumina-water nano fluid and concluded that viscosity increases with increase in particle concentration. Experiment conducted using  $Al_2O_3$ -water nano fluid and  $CuO$  water nano fluid when it has been observed that nano fluid containing smaller  $CuO$  particles showed enhancement in thermal conductivity with temperature [3]. An experiment performed on automobile radiator using ethylene glycol and water based  $TiO_2$  nanofluid as the coolant at different concentration levels of nano particles Devi Reddy et al. [2]. The results showed that there is enhancement in heat transfer coefficient compared to the base fluid. Ju investigated the thermal conductivity of aqueous alumina nano and observed that there is an anomalous enhancement in thermal conductivity [4]. Investigation performed using  $Ni$  Diamond nano particles in different proportions of ethylene glycol water mixture and water alone and concluded that the thermal conductivity was maximum for nanoparticles dispersed in water and ethylene glycol mixture Shyam/Sundhri et al. [5]. Abdul Hamid et al. conducted an experiment using ethylene glycol- $TiO_2$  and  $TiO_2$  - ethylene glycol [6]. M Tajak Hamid-Abadi et al. measured the thermal conductivity of  $Cu$ -water and  $Al_2O_3$ -water

## HEAT TRANSMISSION OF A WILLIAMSON NANOFUID THROUGH A POROUS MEDIUM PAST AN EXPONENTIALLY STRETCHING SHEET IN MAGNETOHYDRODYNAMIC BOUNDARY LAYER FLOW UNDER THE INFLUENCE OF RADIATION

Rekha Devi

Research Scholar,

Career Point University, Hamirpur

Himachal Pradesh

### Abstract

This research purposes to analysis the impact of porous media and nonlinear thermal radiation on the magnetohydrodynamic (MHD) boundary layer flow of Williamson nanofluid across an exponentially stretched sheet using Darcy Forchheimer Model. The conservative equations for mass, momentum, and energy are transformed into ordinary differential equations using an appropriate similarity transformation. The *bvp4c* function then employed to solve the equations numerically. The major results show that the velocity distribution improves with uprising the buoyancy parameter. Increased buoyancy and thermal radiation are other factors contributing to elevated fluid temperature. Additionally, the fluid velocity decreases with increasing magnetic parameters. By using the appropriate similarity transformation, the conservative equations for energy, mass, and momentum can be converted into ODEs (Ordinary Differential Equations). Thermophoresis as well as Brownian motion effects on heat transmission of nanoparticles are also studied. We concentrate on the heat transfer and flow of a Williamson nanofluid boundary layer over an exponentially stretched sheet under the influence of radiation in current study.

**Index Terms** : Williamson nanofluid; Magnetohydrodynamic; Heat transmission; Radiation; Darcy-Forchheimer law.

### 1. Introduction

Magnetohydrodynamic (MHD) flow phenomena and viscous fluid energy equations have attracted a lot of attention from researchers in recent years. Particularly in situations involving fluid flow over moving stretched surfaces, these phenomena find significant use in



## The Concept of the Boundary Layer in the Study of Fluid Flow

<sup>1</sup>Rekha Devi

<sup>1</sup>Assistant Prof., Mathematics, Govt. College Haryana, Karnal, Haryana, Ghazipur, Ghazipur, India.

### Abstract:

This paper presents review of concept of boundary layer, boundary layer theory, Prandtl's Concept of boundary layer and applications of boundary layer theory. The effect of boundary layer theory on aerodynamics, hydrodynamics, transportation, heat exchangers. Over the boundary layer, a range of velocities from maximum to zero exists as long as the fluid is in contact with the surface. Boundary layer is the term used to describe the fluid layer close to the surface where there is a general slowing down. The main foundation of fluid dynamics is boundary layer theory. The basis of the boundary-layer theory was Ludwig Prandtl's paper On the motion of a fluid with very irregular viscosity, which was presented at the Third International Congress of Mathematicians in Heidelberg in August 1904 and published in the Congress's Proceedings the following year. The boundary layer also in fluid dynamics is distinctive unit in origin date back more than a century.

### Index Terms:

Boundary layer, Fluid, Fluid dynamics, viscosity.

### INTRODUCTION

A boundary layer in the field of fluid mechanics is a thin film of a flowing gas or liquid in contact with a surface, such as the interior of a pipe or the wing of an airplane. The fluid in the boundary layer experiences shear forces. There is a range of velocities over the boundary layer from maximum to zero as long as the fluid is in touch with the surface. Because of the fluid's viscosity, as fluids flow over surfaces, the molecules close to the surface come to rest. However, the slowdown in the area layers is getting smaller and smaller. Only a thin layer close to the surface is discovered to be slowing down. The fluid that lies above this layer is unaffected by the surface's existence [1].

### BOUNDARY LAYER THEORY

The condition of no slip arises when a real fluid flows past a solid body or a solid wall because the fluid's particles cling to the boundary. This implies that the fluid's velocity near the barrier will be equal to that of the boundary. The velocity increases if the boundary is stationary. The condition of no slip arises when a real fluid flows past a solid body or a solid wall because the fluid's particles cling to the boundary. This implies that the fluid's velocity near the barrier will be equal to that of the boundary. Boundary layer theory is the branch of mathematics that deals with boundary layer flows [2]. Modern science owes its importance due to its progressive contribution in different branch of science and technology.

### PRANDTL'S CONCEPT OF BOUNDARY LAYER

The boundary-layer theory was established on Ludwig Prandtl's paper "On the motion of a fluid with very irregular viscosity", which was presented at the Third International Congress of Mathematicians in Heidelberg in August 1904 and published in the Congress's Proceedings the following year. The boundary layer can alternatively be described as a layer in which the fluid particles are moving relative to one another. A potential flow can also be used to describe the outer flow. The Navier-Stokes equations were simplified by Prandtl's work and are now referred to as boundary layer equations.

The boundary layer begins at the leading edge of the plate. As more and more of the fluid is slowed down, the thickness of the layer increases [3]. The flow in the first part of the boundary layer (close to the leading edge of the plate) is entirely laminar. With increasing thickness, however, the laminar layer becomes unstable, and the motion within it becomes disturbed. The irregularities of the flow develop into turbulence, and the thickness of the layer increases more rapidly. The changes from laminar to turbulent flow take place over a short length known as the transition region. Now, with the progressive development of the flow down the flat surface, the boundary layer thickens. With the reducing of thickness of boundary layer and large proportion of higher speed fluid in it, the consequence is inevitable. At low Reynolds number, viscous force dominates the whole boundary layer and flow becomes laminar, but the inertia force governs the boundary layer regions at high Reynolds number and forms turbulent flow. The one thing that he overlooked is the viscous effect i.e. the resistance against the flow. Sakiadis [4] studied the boundary layer flow on continuous solid surfaces. He observed that the flow of this type represents a new class of boundary layer problems, with solutions substantially different from those for boundary layer flow on surfaces of finite length. Tuohetie [5] developed a theory for finite amplitude, steady cellular convection.

### APPLICATIONS OF BOUNDARY LAYER THEORY

In a boundary layer, the viscosity of a fluid under no-slip conditions might be crucial. Aerodynamics, hydrodynamics, transportation, wind, and ocean engineering are all impacted by boundary layer theory.

#### (a) Transportation (Automobiles, Trucks, Cycles)

Laminar layer or boundary layers are other names for all of these slow-moving air zones. Because air is viscous, the

### The Concept of the Boundary Layer in the Study of Fluid Flow

air molecules nearest to the surface of the car become "glued" to it. On top of these particles, the following layer of air particles moves slowly. The following layer goes a little more quickly, and so on. Undoubtedly, a car with more streamlined texture is more effective than one with less streamlined texture. An additional streamlined texture suggests that the border layer will not separate from the texture due to air movement, resulting in decreased drag [6]. Low-drag causes to reduce resistance

ambient air. The heated refrigerant from the compressor in a refrigerator is cooled normally into the atmosphere by flowing through finned tubes. The latent heat of condensation in a steam condenser is eliminated by moving water through the tubes. The usage of heat exchangers is also common in chemical processing, waste heat recovery, and space heating and cooling [9]. Boundary layer premises effectively manage such complexity as a result.

**RESEARCH ARTICLE****An Overview of Nanofluids in Different Heat Transfer Mechanisms****Rokha Devi**

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**ABSTRACT:**

The enhanced thermophysical properties of nanofluids and their capacity to be incorporated into a variety of thermal applications, including improving the efficiency of heat exchangers used in industries and solar energy harvesting for renewable energy production, are the main reasons for the growing interest in these materials. Nanofluids have various thermo-physical properties such as thermal conductivity, thermal diffusivity, viscosity etc. Finally, a conclusion on the merits and demerits of nanofluids is presented along with nanofluids models. The conclusion on the benefits and drawbacks of nanofluids is offered together with nanofluids models in the end. Nanofluids have numerous applications in aerospace and technology. Commonly, Tiwari and Das nanofluid model and Buongiorno nanofluid model are utilized to examine the convective heat transmission in nanofluids.

**KEYWORDS:** Nanofluids, heat transfer mechanism**INTRODUCTION:**

The suspension of nanoparticles in fundamental fluids is known as nanofluids. The base fluids thermal characteristics are improved by the inclusion of nanoparticles. In 1995, Choi and Eastman [1] developed the concept of dispersing nanoparticles in carrier fluids and coined the name "nanofluids." The base fluids include water, glycol, oils, and lubricants, whereas the nanomaterials utilized to make nanofluids include nano-titania, single- or multi-wall carbon nanotubes, and oxidized ceramics. Adding millimeter- or micrometer-sized solid particles to base fluids has been used to try to boost the thermal conductivity of the fluid. The viscosity of an alumina-water nanofluid increases with an increase in particle concentration, according to research by Das et al. When it was noticed that nanofluid containing smaller CuO particles showed enhancement in thermal conductivity with temperature [2], an experiment was conducted utilizing Al<sub>2</sub>O<sub>3</sub>-water nanofluid and CuO-water nanofluid. Devi Rolly experimented on a car radiator employing nano-based TiO<sub>2</sub> ethylene glycol nanofluid as the coolant at various nanoparticle concentration levels. The results showed that there is enhancement in heat transfer coefficient compared to the base fluid. An experiment performed on automobile radiator using ethylene glycol and water based TiO<sub>2</sub> nanofluid as the Coolant at different concentration levels of nanoparticles Devi Rolly et al [3]. The outcomes demonstrated an improvement in heat transfer coefficient as compared to the base fluid. In, examined the thermal conductivity of aqueous alumina base and found that it exhibits an abnormal enhancement [4]. The results of an investigation employing Ni-Diamond nanoparticles dispersed in water and ethylene glycol combination in various ratios and water show come to the conclusion that the thermal conductivity was greater for the nanoparticles [5]. Mhyam Soudan et al. Ethylene glycol and TiO<sub>2</sub> were used in an experiment by Abdul Hameed et al. [6]. The thermal conductivity of Cu-water and Al-water nano-fluids was experimentally evaluated by a thermal property analyzer by M. Toghiani, Jamal Abadi et al. [7]. According to the aforementioned finding, particle concentration is a crucial characteristic because as it rises, thermal conductivity of nanofluids also rises. CuO-NP's thermal stability and weight loss were investigated, and experimental results showed that viscosity reduces as temperature rises [8]. Zinc-oxide-water nanofluid was prepared

to flow through horizontal tubes at various flow rates by Wesley Williams et al, and it was discovered that there was an abnormal increase in heat transfer rate [9]. Heat transfer performance of a vehicle radiator was studied by S.M. Bhaskar et al. The model was shown to be useful to predict the thermal conductivity of the nanofluids [10] when they employed silicon dioxide-water nanofluid and compared the experimental results with Hamilton and Crosser model. By dispersing silver nanoparticles coated with polyvinyl pyrrolidone in distilled water, S. Isahak et al. created nanofluid. Thermal analyzer was used to measure the nanofluids thermal conductivity [11]. These investigations by several researchers have led to the conclusion that the augmentation of thermal conductivity is dependent on concentration, temperature, base fluids, nanoparticle size and shape, and nanoparticle volume fraction.

**Types of Nanofluids****1. Pure Metals, Metal Oxides and Carbide Based Nanofluids:**

In 1995, Choi proposed using nanoparticles to enhance the thermophysical characteristics of thermo-fluid [12]. Since then there has been considerable research into developing nanofluids with unique thermo-physical properties such as thermal conductivity, thermal diffusivity and viscosity [13]. Researchers have created the thermo-physical properties of several fluids can be improved by the addition of small concentrations of nanoparticles. Pure metals (Au, Ag, Cu, Al, and Fe), metal oxides (SiO<sub>2</sub>, CuO, Fe<sub>3</sub>O<sub>4</sub>, SnO<sub>2</sub>, TiO<sub>2</sub>), and ZnO, Carbides (SiC, TiC) and a variety of carbon materials (diamond, graphite, single-walled wall carbon nanotubes) are different types of nanoparticles investigated. Eastman et al. have used combinations of Cu nanoparticles and ethylene glycol to produce nanofluids.

**2. Carbon Nanomaterial Based Nanofluids:**

Due to their black colour, carbon nanoparticles are perfect for solar absorption applications. Additionally, they are the perfect additives for nanofluids due to their extremely high thermal conductivity [20-22]. TiO<sub>2</sub> nanoparticles-containing water-based nanofluids exhibit increasing thermal conductivity as the particle volume fraction rises, as demonstrated by Marbati et al [14]. In order to achieve the most desirable improvements in thermal conductivity, this study also emphasizes the significance of employing the right fluid for a particular solid phase.





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## Numerical Investigation of Three-Dimensional Magnetohydrodynamic Flow of Ag – H<sub>2</sub>O Nanofluid Over an Oscillating Surface in a Rotating Porous Medium

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### Abstract

**Objective:** To investigate the three-dimensional flow of a nanofluid (Ag-water) over a stretchable vertical oscillatory sheet. This study involves considering fluctuating temperatures on the sheet and comparing them to the free stream temperature. The formulation of the unsteady boundary layer equations leading to the flow of nanofluid also takes into consideration the occurrence of the heterogeneous-homogeneous chemical reaction and thermal radiation.

**Method:** The governing equations and the boundary conditions have been derived in a dimensionless form by using the appropriate transformations, and they are then solved using an FDSS (Explicit Finite Difference Scheme) in Matlab software. The von-Neumann stability analysis is used to determine the method's stability requirements for constant sizes of the grid. **Findings:** The physical factors impact on the concentration fields, temperature distribution, and velocity distribution were obtained and are studied by graphs and described in extensive detail. Convergence and stability requirements are attained in order to achieve accurate solutions. **Novelty:** In this study fluctuations in the temperature and stretching velocity of sheet on three-dimensional magnetohydrodynamic flow of Ag - H<sub>2</sub>O nanofluid over an oscillating surface through rotating porous are taken into account. Impacts of porous media permeability, velocity slip, magnetic fields, nanoparticle volume fraction, heat radiation, rotation, and homogeneous and heterogeneous chemical reaction parameters had all been attempted to be determined.

**Keywords:** Oscillatory Surface; Heat transmission; Nonlinear PDE; Explicit Finite Difference Scheme; Nanoparticle

### 1 Introduction

The investigation of convective heat and mass transfer processes in the MHD boundary layer region, where flow is induced by the surface's stretching as well as its periodic

# Investigation of Mixed Convective Stagnated Flow of Casson Nanofluid Past an Exponentially Stretching Sheet, using the Darcy - Forchheimer Model

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**Abstract:** This research uses the Darcy-Forchheimer model to analyze steady magneto hydrodynamics (MHD) boundary layer flow with mass and heat transport of Casson nanofluid over an exponentially stretched sheet in a porous medium with mixed convection. Additionally, consideration is given to how the transfer of the heat and the concentration of nanoparticles have been impacted by Brownian motion and thermophoresis. A method known as similarity transformation may be used to translate controlling partial differential equations into ordinary differential equations. The mathematical system of equations is solved by utilizing an inbuilt solver of MATLAB. Investigations have been done into how dimensionless parameters affect flow, heat transmission, and nanoparticle concentration. To investigate many dimensionless parameters impacts on concentration, velocity, and temperature, graphs were plotted and explained.

**Keywords:** Brownian motion, casson nanofluid, magneto hydrodynamics; hyperic solver

## 1. Introduction

Sadeghy et al. <sup>[1]</sup> have quantitatively reported the stagnation point flow of an upper convected Maxwell fluid. Ishak et al. <sup>[4]</sup> investigated an incompressible viscous fluid flow to the vertical porous stretched sheet at the mixed convection stagnation point.

There are numerous industrial operations where magnetic fields are used, including pumping, heating, levitating, and stirring liquid metals <sup>[5]</sup>. MHD is the research of the movement of fluid which is electrically conducted under the magnetic field effect.

The electrically conducting liquid movement, which produces some mechanical forces and alters the fluid flow, is what produces electric current <sup>[6]</sup>. An investigation into the effect that magnetic fields have on the flow of blood was carried out by Sud et al. <sup>[7]</sup>, who found that the moving magnetic field caused an increase in the speed at which blood moved. Uddin et al. <sup>[8]</sup> conducted an experiment to study the natural convective heat-transferring process in a square jar that was filled with the nanofluid and had a wavy upper surface.

The process of transferring heat known as 'mixed convection' combines the processes of 'forced convection' with 'natural convection.' Mixed convection flow can essentially be divided into helpful flow and opposing flow, and this categorization is largely predicated on the direction in that the external & buoyancy-induced flow are moving. The heat transmission is supposed to be improved by assisting flow and decreased by opposing flow. Numerous applications, including air nuclear collectors, boundary layer flows, exchangers of heat, solar collectors, and others, use the stagnation-point fluid flow resulting from mixed convection <sup>[9,10,11]</sup>.

Ibrahim and Makinde <sup>[12]</sup> used the power-law nanofluid to examine the effects of convective heating, velocity slip, "thermophoresis, and Brownian motion on the MHD stagnation point flow. Khan et al. <sup>[13]</sup> explored oblique hydromagnetic flow having temperature-variable viscosity towards the stagnation point employing MHD Newtonian nanofluid including thermal radiation effects.

The consequences of slip and convective boundary conditions on the MHD stagnation point flow" including the transferring of the heat for the Casson nanofluid were presented by Makinde and Ibrahim <sup>[14]</sup> and Makinde et al. <sup>[15]</sup> in their studies. The nanofluid flow containing the phenomena of buoyant force, thermophoresis, "convective heating, Brownian motion, and MHD towards the stagnation point having the impacts of heat has been investigated by Makinde et al. <sup>[16]</sup>.

In the viscous fluid's boundary layer flow encouraged through an inclined stretching sheet, Haug et al.'s study <sup>[17]</sup> investigated the heat transfer analysis. Qasim et al. <sup>[18]</sup> conducted research to explore the thermal radiation impacts on the effects of mixed convection flow of viscoelastic fluid along a sheet which is inclined. Sravanthi <sup>[19]</sup> looked into the MHD slip flow on an exponentially stretched inclined sheet utilizing the Soret-Dufour phenomena. According to Eldahad and Aziz <sup>[20]</sup>, mixed convection, absorption/heat generation, and suction/blowing all had an impact on the MHD boundary layer flow over an inclined stretched sheet.

Soret, magnetic field, Dufour, Joule heating, slip effects, chemical reaction, and Kumar et al.'s <sup>[21]</sup> investigation of mass and heat transportation on exponentially angled stretching sheets surrounded in porous medium"; The analysis of mass & heat transport in the boundary layers carried out by Keller & Magyari <sup>[22]</sup> across an exponentially stretched continuous sheet; and many studies addressing

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## Numerical Analysis of the Influence of an Inclined Magnetic Field on the Flow of Casson Nanofluid Across an Exponentially Stretching Surface, using the Darcy-Forchheimer model

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### Abstract

**Objective:** The present study analyses the heat transfer properties of a Casson fluid moving under the influence of an inclined magnetic field through an exponentially stretched surface in a porous medium using the Darcy-Forchheimer law. Non-Newtonian fluid behavior is described by using the Casson fluid model. Thermophoresis as well as Brownian motion effects on heat transmission and concentration of nanoparticle are considered. **Method:** With similarity transformations; nonlinear (PDE) partial differential equation has been changed to (ODEs) ordinary differential equations. By using `bvp4c` programme in the Matlab software, the nonlinear PDE are numerically solved. **Findings:** The impacts of dimensionless factors on the flow, concentration of nanoparticle and heat transfer were studied. Graphs were plotted and analyzed in order to explore how different dimensionless factors affected velocity, temperature concentration profiles. **Novelty:** The combination of magnetic fields, nanofluids, and the Darcy-Forchheimer model is an interdisciplinary approach. Future researchers in fields like fluid dynamics, magneto hydrodynamics, materials science, and applied mathematics could benefit from this research work. It bridges multiple disciplines and contributes to the ongoing efforts to make energy-related processes more efficient and sustainable. The findings demonstrate that the porous medium is accountable for both inflation in the thermal boundary layer thickness and a decrease in the thickness of the momentum boundary layer. For increasing the permeability of the medium, conductive heat transfer predominates. The improvement of heat and mass transport is made possible by all these elements.

**Keywords:** Casson fluid; Heat transmission; Nonlinear PDE.; Darcy-Forchheimer law; Porous medium







**Potential and status of bio gas production in rural areas: A case study of ghumarwin development block in district Bilaspur Himachal Pradesh, India**

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**Abstract**

Bio-gas plays an important role in the modern society and can serve as one of the vital parameters of socio-economic development. Despite developments in technology, over three billion people living in rural parts of the low- and middle-income countries continue to cover their energy needs for cooking through traditional ways by burning biomass resources and wood fuel. Central and state level various LPU programmes to curvy households through various schemes in India, but there is a great loss and cry on the price of LPG during last few years. This paper as a case study focuses on to assess the potential of bio gas production in rural areas of Himachal Pradesh. A comprehensive survey regarding use of energy resources, agricultural land and cattle strength was conducted across the study area. Total 528 households among ten selected villages surveyed for this purpose. It is observed that the majority of the livestock farms is not used efficiently and area have good potential and feasibility of bio gas production. The benefit of biogas production would therefore be manifold: (i) local energy source, (ii) mitigation of environmental impacts, (iii) reducing CDB-emissions, (iv) producing organic fertilizer as a side product (v) additional savings savings for farmers, (vi) organic waste management.

**Keywords:** biogas, agriculture, organic waste management strategies.

**Introduction**

In rural areas people are still using traditional and conventional methods for heating and cooking, these methods are either inefficient or costly and are not using other readily available alternative energy resources like solar, biogas, wind and household wastage. In addition to these problems the poverty line in rural area is 20 rupees per day income and in urban area is 28 rupees per day income according to Tendulkar Committee set up by Planning Commission of India in 2009 so having costly technology like an LPG and PNG for daily practices like cooking is beyond the budget of poor people. There are various studies and research is available on this topic, many people have already produced good results, including the development of solar cookers or biogas plants. Devices like solar cookers are costly and have some drawbacks such as food is needed to be cooked for a longer time and weather conditions play an important role in it.

These techniques should be easy to use, cheap and available in everyone. They shouldn't have any adverse effects on ecosystem and support the theory of sustainable development. To improve upon the existing technology and find a mean which contribute in socio, economic and sustainable development of society. According to 2011, census there are 6.3 million villages in India and more than 80% of all population is employed in primary sector like agriculture, animal husbandry, fisheries and horticulture, plantations, pastoral activities. Conventional methods used by people for cooking and heating, like charcoal, LPG, kerosene, gas and wood are going to end in near future and are changing the environment in form of deforestation and water logging. Furthermore they are expensive for people of rural areas. That is why it is needed as fast ways to utilize local energy resources efficiently for cooking and heating.

There is ample potential of setting up biogas plants considering the livestock population of 312.08 million, which includes about 40 million (299.98 million) total population of humans (comprising of cattle, buffalo, mutton and pig). The livestock sector contributes about significantly to India's GDP and will continue to increase. The dissemination of biogas technology is a boon for Indian farmers with its direct and collateral benefits.<sup>11</sup>

**Literature review**

The poor management of livestock-related waste can lead to multiple environmental problems like nutrient accumulation in soil, water contamination, and so pollution. The aim of this work is to conduct a reproducible geographic information systems (GIS)-based methodology for selecting priority sites in which to implement anaerobic digestion units. These units will use multiple parameters that evaluate environmental risks and viability factors for the units themselves. A weighted overlay analysis was used to identify critical regions and based on the results, clusters of individual livestock production units (LPUs) across the state were selected. The results indicate that Jharkhand has the potential to generate 3.5% of its total electricity demand if the majority of its livestock waste is treated and utilized in installed anaerobic digestion units. Additionally, 49.2 and 11.3 Gg of nitrogen and phosphorus respectively could be salvaged, and there would be an estimated total reduction of 3032.6 Gg of carbon dioxide equivalent (CO2eq).<sup>12</sup> This paper as a case study focuses on the Aravalli region of Uttarakhand, possessing a well-developed agricultural production with high livestock numbers and intensive crop production. The majority of the livestock farms is not used efficiently and the energy supply of the farms depends primarily on conventionally produced gas and

electricity. Some areas are not yet connected to the gas grid.<sup>13</sup> An experimental study was held on a smaller biogas production unit which has 0.5 m<sup>3</sup> fermentation tank capacities of a breeding farm in the Uda district of India/Turkey. The farm fed with capacity is 70 cattle and 1000 chickens. Animal wastes (poultry manure and bovine animal manure) were anaerobically fermented in the tank. In this respect, experimentation was performed at summer season and average regional temperature was 30<sup>o</sup> K and no reaction does not require the extra heating for the optimization of process. Biogas production potential from bovine animal and poultry manure was separately studied. Results showed that daily 6.34 m<sup>3</sup> and 0.83 m<sup>3</sup> biogas production were obtained from fermentation of bovine animal manure and poultry animal excreta.<sup>14</sup> Successful implementation of biogas projects in developed countries for agricultural waste-generated biogas has occurred in a range of low and middle income countries, such as China, India, Nepal, Kenya<sup>15</sup>. Most of the household biogas plants installed in China started providing energy for its rural areas (1.8 million/ha), the first household biogas plant in 1977 in Anhui province, China. Since then a number of pilot projects in the biogas production in China and biogas production in a number of regions of the Indian subcontinent. Various biogas production projects in India have been set up and many challenges regarding biogas production have been reported. The main problem is the low

land and cattle strength, types of cattle and perception regarding bio gas was conducted across the study area. In the present study, data analysis is done through various statistical, cartographic and tabular methods. All the responses implemented through simple percentage method.

**Study Area**

Ghumarwin Block (CB) lies in the Bilaspur District of Himachal Pradesh. Total area of Ghumarwin CD block is 228.66 km<sup>2</sup> including 225,556 km<sup>2</sup> rural area and 3,110 km<sup>2</sup> urban area. According to Census 2011, Ghumarwin has population of 302023 per are 2nd inhabited villages and 01 city Ghumarwin block.

Table 1

Population type	Male population	Female population	Total
Male	154711	147312	
Female	147312	154711	
Total	302023	302023	302023

**Results and Discussion**

Table 1 shows total and categorized statistics. Table 11 and Fig 1 show the Fig. 2 shows the map of study area and its geographical situation. The study area is in the north area with 17.7 percent growth and Ghumarwin and 11.7 percent growth there.



## DYNAMICS OF LAND USE AND LAND COVER CHANGE DETECTION BY USING GEOSPATIAL TECHNOLOGIES: A CASE STUDY OF DISTRICT BILASPUR IN HIMACHAL PRADESH

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### Abstract

Understanding land use and land cover changes has become a necessity in managing and monitoring natural resources and development. Remote sensing and geographical information systems (GIS) known as Geo-Spatial technologies are proven tools for assessing land use and land cover changes that help planners to enhance sustainability. This requires the present and past land use/land cover information of the area. LULCC maps also help us to study the changes that are happening in our ecosystem and environment. Here, we aim to study the changes that are happening in the land use and land cover patterns and land cover changes in District Bilaspur in Himachal Pradesh India. Multi-temporal satellite images of 1985, 1995, 2005 and 2015 were pre-processed, geo-referenced and mapped using the supervised maximum likelihood classification to examine land use and land cover changes. The change detection examined classified maps in 1985, 1995, 2005 and 2015 and from 2005-2015 and also for the period from 1985-2015 as a whole. We found that over a period of 30 years (from 1985 to 2015), the Bilaspur district has lost 3.24% of its forests, 8.05% of its pasture and open land. The gain of 5.38% in agricultural and horticulture land, 5.25% gain in built up area observed. The highest gain in built up area is due to rapid construction activities in rural and urban areas at rapid construction of roads in nearby towns. These changes are associated with loss of ecosystem which will negatively impact human and also the ecosystem of the study area. We recommend planners to maintain ecosystem-based adaptation and plans supported by strong policy and funds.

**Key Words:** Land Use and Land Cover Changes, Geo-Spatial Technologies, Geographical Information System (GIS), Multi-Temporal, Sustainable Development, Change Detection.

### Introduction

Land use and land cover change are perhaps the most prominent form of global environmental change as they occur at spatial and temporal scales and therefore the issues is relevant to our daily existence. Technically, land use and land cover change mean quantitative changes in land extent (increase or decrease) of a given type of land use and land cover respectively. The land use and land cover changes are a manifestation of forces both anthropogenic and environmental climate driven factors (Liu et al., 2005). The changes in land use in various spatial and temporal domains are the material expressions, and also indicate environmental and human dynamics and their interactions mediated by land availability (Lambert et al., 2005). The land use and land cover changes, apart from changing the physical dimension of the spatial system of the land use and land cover classes, also influence many of the secondary processes which lead to the eventual degradation of the ecosystems of the earth (Dregger and Chew, 1992). The use of RS and GIS for LULCC detection has been widely studied and applied in various fields. Some examples include

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monitoring deforestation in tropical regions (Mortenson et al., 2005), detecting urbanization and land use changes in China (Liu et al., 2007), and assessing the impacts of land use changes on hydrological processes (Vase et al., 2015). Remote Sensing has been widely used in updating land use/land cover maps and land use/land cover mapping has become one of the most important applications of remote sensing (Li and Chai, 2004; Ibrahim et al., 2005; Lika et al., 2006). Therefore, this chapter includes pattern of land use/land cover changes in land use/land cover in Bilaspur district from 1985 to 2015 with the help of Remote Sensing and Geographic Information System. The satellite Remote Sensing and Geographic Information System techniques are useful tools for assessing the land use/land cover which is one of the important aspects for planning and development of an area (Guan, M.K., 2011).

### Study area

Bilaspur district is located in the south western part of Himachal Pradesh, extending between latitudes 31°12'30" and 31°35'45" N and longitudes 76°25'30" E and 76°55'40" E. The study area is spread over an area of 1167 square kilometres which is 2.01 percent of whole Himachal Pradesh, with a total population of 3,88,596 persons (Census 2011) having 1061 villages (573 inhabited and 488 uninhabited) and 04 Urban centers. It is bounded by the districts of Mandi and Solan in the east, Hamirpur and Una in the west, Mandi and Himachal in the north and Nagarkot area of Solan district & Punjab state in the south. The boundaries



# POINT 8. Teachers with Special Innovative Ideas

Items prepared by the students in the workshop under Best out of waste project. (Session 2022-2023)



BEST OUT OF WASTE  
COMPETITION  
THEME- WASTE  
ALUMINIUM FOIL  
REDUCE REUSE RECYCLE





SESSION 2023-2024 .Paper crafting on Theme (Diwali Decoration)









# Making of Bio Enzymes







# Eco-Bricks

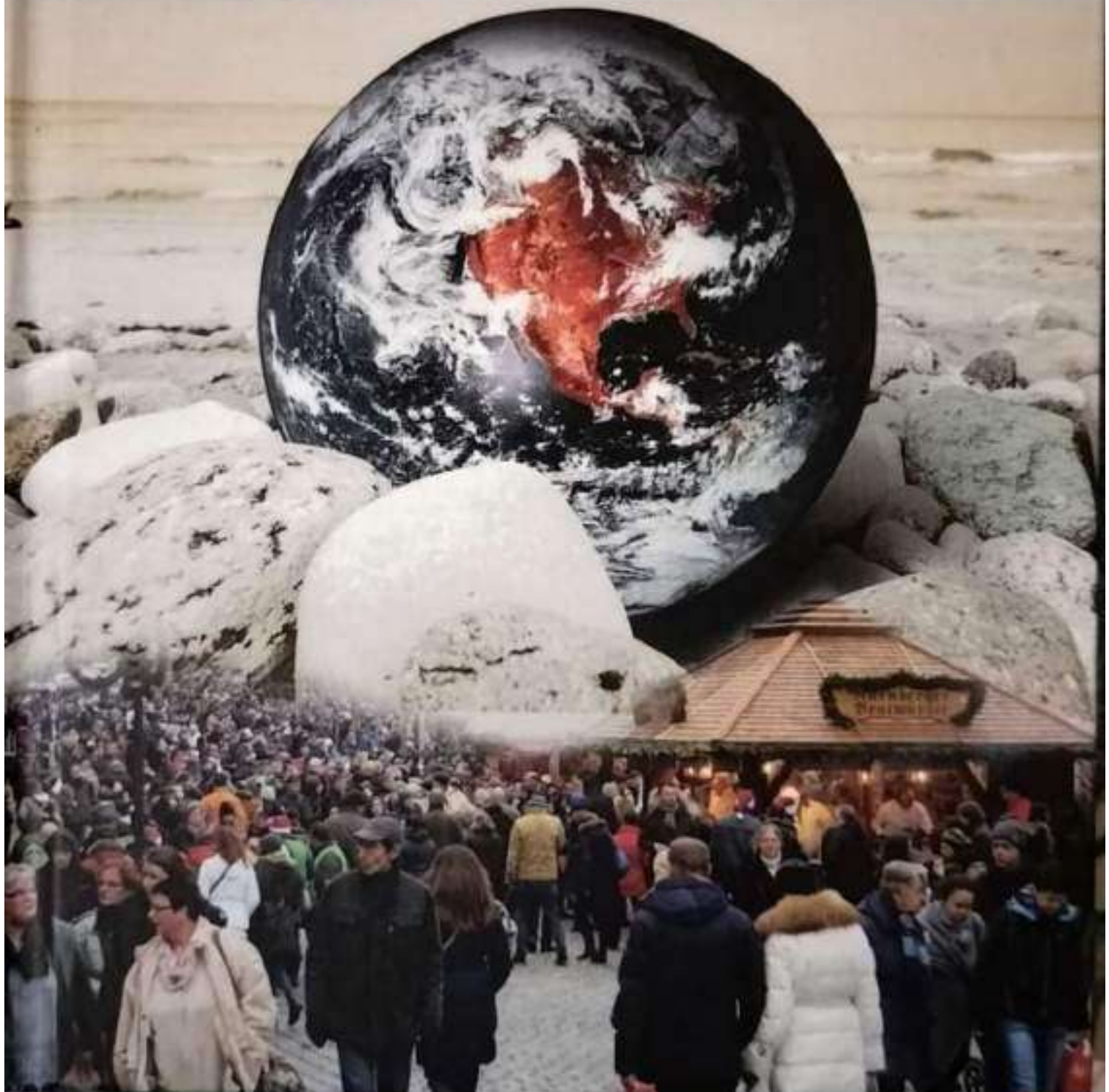




**POINT 9. Books Published.**

# HUMAN GEOGRAPHY

Jagdish Chand, Vijay Thakur and Rajender Kumar





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Dr. Jagdish Chand is an Assistant Professor in the Department of Geography at Government College Sangrah in Himachal Pradesh. He is coordinator of Unnat Bharat Abhiyan (Ministry of Education, GoI) and Master Trainer (UGC) for Community Based Participatory Research (CBPR) under UBA. He is a Gold Medalists in M.A. and M.Phil. He did his Ph.D from Himachal Pradesh University, Shimla in Forest Resources using Geospatial Technologies. He holds UGC NET-JRF and SLET qualifications in Geography. He has over 14 years of college teaching experience. He received Certification in Remote Sensing and GIS from the Indian Institute of Remote Sensing (ISRO) in Dehradun and the AICTE. He obtained a Post Graduate Diploma in Geo-Spatial Technologies Applications in Rural Development from the NIRD&PR Hyderabad and the AICTE. He received Professional Cartography Training from the Environmental Systems Research Institute (ESRI) in the United States. He has over 20 research papers published in various national and international journals. He has presented about 30 research papers at national and international conferences and seminars. In addition to present book he has published six books, two from Germany, one from the United States, and three from India. He completed more than 30 professional trainings and workshops in Remote Sensing & GIS, Climate Change, Disaster Management, and other fields from prestigious institutes around the world, including the Indian Institute of Remote Sensing & Space Applications Centre (ISRO) India, NASA (USA), JAXA (Japan), CSSTEAP, the United Nations, IIT New Delhi, IIPA New Delhi, DoS (GoI), NIDM (MoHA), and the United Nations Office for Outer Space Affairs. He has coordinated more than 70 IIRS-ISRO Outreach Programs and was awarded The Best Coordinator by the Indian Institute of Remote Sensing (ISRO), Dehradun, in 2020.



Dr. Vijay Thakur, Ph.D. is Associate Professor in the Department of Higher Education, Govt. of Himachal Pradesh. He is presently posted at Govt. Degree College, Hamirpur (H.P.) He has served in different degree colleges of Himachal Pradesh. The author's career as a Geographer spans about 25 years. In addition to the present book he has published 7 books, 4 research papers in National journals and presented 21 research paper in National and International conferences/ Seminars.



Rajender Kumar, did his Graduation from SVGC Ghumarwin. M.A. and M Phil in Geography from Himachal Pradesh University, Shimla. He is UGC (NET) and HPSSC (SLET) qualified in Geography. He has done two year diploma in Education (D.Ed) from HPBOSE Dharamshala. Presently he is working as an Assistant Professor, Geography in SVGC Ghumarwin. He has attended many National and International conferences and published and presented more than 12 research papers. He has 13 years experience of teaching Geography.

## About the Book

The book is text cum reference on the subject, all the three authors have brought out this book in compact and easy to understand language. The book will be useful for students, teachers and researchers.

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एन.टी.ए./यू.जी.सी.-नेट/जे.आर.एफ. ( संस्कृत कोड-25 )

( नवीन पाठ्यक्रमानुसार विषयों की सरल व्याख्या  
एवं विषयानुसार वस्तुनिष्ठ प्रश्नों का संकलन )



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# POINT 10. Teachers as Resource Person

Prof. Suresh Sharma

Principal

7/2/24



The Principal

Govt. College Jhandafta

Dist. Ballari

Sub Request to depute Prof. Suresh Sharma as resource person for guest lecture.

Respected Sir/Mam

We are going to organize the guest lectures for the vocational students in GSSS Jhandafta. In this regard you are requested to depute Prof. Suresh Sharma to deliver the lecture to vocational students.

Thanking you,

P. Suresh Sharma

GSSS Jhandafta  
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353 No. 10



## CERTIFICATE

It is certified that Prof. Suresh Sharma delivered the lecture to the Vocational Students in this institution i.e GSSS Jhandutta Distt. Bilaspur (H.P) on dated 09-02-2024.

*[Faint signature and stamp]*

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