

## DST-NRDMS Sponsored Three Days Training Programme on

## **GEOSPATIAL TECHNOLOGIES**

 $(18^{th} - 20^{th} \text{ February, } 2017)$ 



### TRAINING SUMMARY

The Department of Environmental Science, Central University of Rajasthan, organized 3 days training programme on Geospatial Technologies from 18<sup>th</sup>-20<sup>th</sup> February 2017. The training programme was sponsored by the Natural Resources Data Management System, Department of Science and Technology, Government of India, New Delhi. The objective of this three days training programme was to give exposure to participants about the capability of remote sensing and Geographic Information System (GIS) through basic concepts and practical training using various tools and techniques. Information about the training programme was wide circulated potential participants through email and various academic groups. Information brochure and application is given in *Annexure-I*.

### **Day-wise Activities**

This summary report provides the brief details of all the three days. The training schedule and lecture details are given in *Annexure-II & III*.



**Opening Ceremony** 



Group Photo – Participants and Resource Person

**DAY-1:** 18<sup>th</sup> February 2017

### **Session 1.1: Understanding Geospatial Literacy**

On the first day, the training was honour to have the attendance and inaugural speech of Prof. M.S. Nathawat, Director, School of Sciences, IGNOU, New Delhi. He pointed out and anticipated the important role of remote sensing technology as well as the use of satellite images for information acquisition. In this session, trainees got the exposure about the fundamentals of GIS and its applications.

### **SESSION 1.2-** Geospatial Science and its applications

This session was also addressed by Prof. M.S. Nathawat. In this session, he reckoned the sectors areas of life and living this technology touches including agriculture, environment,

governance, defence and homeland security, infrastructure and utilities and enterprise management He made participants aware of the exponential growth in GIS system. He introduced GIS applicability in various sectors with live examples by exemplifying like studying soil erosion hazard, impacts of highways to the settlements, natural resource management and planning, agriculture production and thereby from the scales of economic development too this has tremendous potential.

### **SESSION 1.3-** Geospatial Applications- Case study

This session was addressed by Dr. L.K. Sharma. Through his lecture, he explained the importance of geospatial technologies in various fields. This interactive session was helpful for participants and they asked various questions related to geospatial technologies related to their respective work environment.

### **SESSION 1.4- Watershed Delineation**

This was the lab cum practice session taken by Dr. Devesh Sharma. The practice sessions were designed and introduced smoothly to the trainees including basic concept of watershed delineation the theory lectures. He gave introduction of software Arc GIS to the participants and its tools and applicability in watershed delineation. He also focused on various concepts of fill, flow direction and accumulation, calculating catchment area, stream order.



Lecture by Dr. L.K. Sharma



Practical Session

**DAY-2:** 19<sup>th</sup> February 2017

### **SESSION 2.1- Introduction to QGIS Software**

On second day, the first lecture was addressed by Dr. Devesh Sharma who elucidated introduction and application of QGIS (Quantum GIS). During his lecture, he introduces participants with QGIS software and also conducted a practical session on digitization and map making.

### **SESSION 2.2-** <u>Digital Image Processing-1</u>

The second session of this day was addressed by Prof. P.K. Joshi. He introduced various visual interpretation keys like location, tone of colour, size, shape, texture, association, etc.

He defined the components of which spatial resolution is of function, different colour composites and radiometric resolution.

### **SESSION 2.3- Digital Image Processing- 2**

This session was also addressed by Prof. P.K. Joshi. In this session, he focused on various errors associated with Digital Image Processing and their subsequent corrections. Various methods are utilised for atmospheric corrections based on the objectives. Corrections for Topography of a complex terrain are accomplished with Cosine method. Geometric correction for 2-D representation of 3-D Earth many correction methodologies are used viz. georeferencing, interpolation, orthorectification, image mosaic.

### **SESSION 2.4- Digital Image Processing- 3**

This session was about Image enhancements and accuracy assessment addressed by Prof. P.K. Joshi. Image enhancement is achieved in two ways a) Spectral- includes stretching histograms in linear or nonlinear manner, Gaussian Stretch b) Spatial- includes application of Spatial Convolution in which low and high pass filters are utilised which enhances low and high frequency zone respectively. He described the data transformation technique as principle components- a statistical tool to minimize number of correlated variables for rapid information attainment. Lastly, he emphasised on accuracy assessment of information obtained from processing for quality check and to get reliable data. This includes ground truthing for supervised classes and Kappa statistical tool.



Lecture by Prof. P.K. Joshi



Lecture by Prof. P.K. Joshi

**DAY-3:** 20<sup>th</sup> February 2017

### SESSION 3.1- Geospatial Modelling and Applications -1

The session was addressed by Dr. I.C. Das. The session was dedicated to geospatial modelling and spatial data analysis. He explained qualitative and quantitative modelling, different aspects of spatial statistical modelling and logistic regression.

### SESSION 3.2- Geospatial Modelling and Applications -2

This session was continued with the lecture of Dr. I.C. Das. The session was focused on spatial interpolation technique which includes Kriging Equation and Inverse Distance Weighting (IDW) Method. He explained geospatial modelling applicability with case study based on solid waste management.

### **Training Topics**

Training program was designed with proper balance of lecture and lab session for all three days. Topic of lecture and practical sessions are given below:

### Day-1

- Understanding Geospatial Literacy
- Geospatial Science and its applications
- Geospatial Applications- Case studies
- Introduction to GIS tool and Watershed Delineation- Lab session

### Day-2

- Introduction to QGIS Software (open source)- Lab session (Digitization and map making)
- Digital Image Processing and its Lab Session

### Day-3

- Geospatial Modelling, interpolation techniques and Applications (with case studies)
- Introduction to SAGA GIS, image interpretation (overview) including histogram and scatter plot, geo-referencing

At the end, feedback is collected from all the participants for future improvement and development (*Annexure-IV*).



**Closing Ceremony** 



Feedback by Participant

### **List of Resource Persons**

Following resource persons are invited to deliver lecture and practical sessions during the training Programme.

- 1. Prof. M.S. Nathawat, Director, School of Sciences, IGNOU, New Delhi
- 2. Prof. P.K. Joshi, Professor, School of Earth Sciences, Jawaharlal Nehru University(JNU), New Delhi
- 3. Dr. I.C. Das, National Remote Sensing Centre (NRSC), Hyderabad
- 4. Prof. M.P. Punia, Birla Institute of Scientific Research (BISR), Jaipur
- 5. Dr. L.K. Sharma, Central University of Rajasthan
- 6. Dr. Devesh Sharma, Central University of Rajasthan

### **Participants Summary**

Total 90 applications are received for the training programme. Based on the qualification, experience and application deadline, 30 participants from 14 different institutes are selected for training programme. Table 1 & *Annexure-V* provides the information of participants with their organization name and location.

Table 1: Information about the Participants Organization, state and numbers

Name of University/Organization	State	No. of Participants
Anna University	Chennai	4
Navsari Agriculture University	Gujarat	2
Climate Change Research Institute	New Delhi	1
University of Delhi	New Delhi	2
MGS University	Rajasthan	2
MDS University	Rajasthan	2
NIMS University	Rajasthan	1
Tiger Watch Ranthambore	Rajasthan	1
Central University of Rajasthan	Rajasthan	3
Gurukul Kangri University	Uttarakhand	2
Indian Institute of Technology, Roorkee	Uttarakhand	3
Indian Institute of Remote Sensing, Dehradun	Uttarakhand	1
ENV DAS Pvt. Ltd. Consultancy	Uttar Pradesh	2
Allahabad University	Uttar Pradesh	4

There are participants from six states. Figure 1 shows the state-wise percentage distribution of participation.

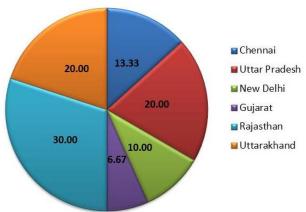


Figure 1: State-wise percentage distribution of participation (*Chennai-4; Gujarat-2; New Delhi-3; Rajasthan-9; Uttarakhand-6; Uttar Pradesh-6*)

### **Budget Summary**

a) Grant sanctioned for training: 250000.00
b) Grant received: 200000.00
c) Total Expenditure Incurred: 209939.00

d) Amount to be reimbursed: 9939.00 (to Central University of Rajasthan)

The detail of expenditure and utilization certificate is enclosed in Annexure- VI.

### **Annexure - I**

### About Central University of Rajasthan

The Central University of Rajasthan was established under the act of Parliament (Act No. 25 of 2009). The Central University of Rajasthan aspires to be one of India's most dynamic and vibrant universities, responsive to the changing global trends, providing unparalleled educational opportunities for the learner community especially for those coming from the lower socioeconomic strata of society seeking quality education.

#### Introduction

Geospatial technology is the synergy of multiple disciplines, namely GIS, Remote Sensing, Photogrammetry, GPS, Information Technology and Geodesy. It is fundamental to all the disciplines which use data identified by their locations. Geomatics deals with spatial and non-spatial data, their methods of acquisition, management, analysis, display and dissemination. Applications of geomatics are mainly oriented to real world management problems pertaining to natural and man-made environments. Geospatial technology is an increasingly universal information processing system and its ubiquitous nature poses new research challenges and provides new opportunities for wider range of applications.

### **Target Participants**

The participants should possess or pursuing (last year) M.Tech / ME / M.Sc, etc., degree from any of the recognized universities in any branch of Civil engineering /Earth sciences / Soil Science / Hydrology/ Geomorphology / Water Resource Engineering / Environmental Science / Remote Sensing & GIS/ Geosciences/Atmospheric Science / Computer Sciences/Physics. Total seats for participants is 30.

#### Registration

Eligible and interested participants are requested to send their applications in the prescribed format to <code>geotechcurai2017@gmail.com</code> The last date for the receipt of the application (By E-mail only) is 10<sup>th</sup> Feb, 2017. The candidates selected for the training programme will be informed by 12th Feb, 2017.

### **Travel and Accommodation**

The participants will be paid to and fro travel fare by railways (sleeper Class) and normal bus fare. Actual TA will be paid on production of original tickets by the participant for journey from the place of duty to the training course location and back by the shortest route (Within India only). For the out-station participants, accommodation on sharing basis will be available in the university guest house/, hostel.

### Patron

Prof. Arun K. Pujari (Vice Chancellor)

### Academic Advisors

Prof. R.T. Pardasani, Dean (Academics) Prof. A.K. Gupta, Dean (Research) Prof. Manish Shrimali, Dean (School of Earth Sciences)

### Organizing Committee

Dr. L.K. Sharma (Convener) Dr. Devesh Sharma (Co convener) Dr. Ritu Singh (Member) Dr. Alok Kumar (Member) Dr. Subrat K Panda (Member)

#### **Course Structure**

The entire training shall have theory sections, invited expert lectures, assignments and practical sessions. The training program shall broadly cover:

- Introduction to Geospatial Science and Technologies and their applications
- Geospatial technologies, Geospatial data-procurement and Geometric and radiometric corrections
- Spatial analysis of the Geospatial data
- Principles of map making, projection, scale and data quality
- Remote sensing and GIS operations
- Assignments and Practicals

#### Correspondence

#### Dr. L. K. Sharma

Convener, Training Programme on Geospatial Technologies Department of Environmental Science School of Earth Sciences Central University of Rajasthan NH-8, Bandarsindari, Kishangarh-305801 Ajmer, Rajasthan, India

E-mail: geotechcuraj2017@gmail.com Phone: +91-1463-238586/238742





## THREE DAYS TRAINING PROGRAMME

ON

## GEOSPATIAL TECHNOLOGIES



### Sponsored by

### NRDMS

Department of Science and Technology Government of India, New Delhi

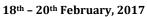
### Organized by

Department of Environmental Science School of Earth Sciences Central University of Rajasthan NH-8, Bandarsindri, Kishangarh-305817 Ajmer, Rajasthan, India www.curaj.ac.in



## **DST-NRDMS Sponsored Three Days Training Programme** On

## **GEOSPATIAL TECHNOLOGIES**





## **Application Form**

Name (Block Lette	rs) :		
Designation Affiliation	: :		Passport Size Photo
	•		
Date of Birth Address for Corres		Gender:	
	ds clearly since corresponden	E-mail*: ace will be made on these mobile number	rs and e-mail ids)
Academic Qualifica			
Specialization/ Res	earch Interests:		
Computer Skill:			
•		on RS/GIS/GPS: last program/ workshop attended)	Yes / No
Year:	Duration:	Place:	
	•	se mention the utility of this program ir	Yes / No n your
Signature of the Ap	oplicant:	Signature and Forwarding Au	
Date:	Place:	roi wai ding At	инопц

Note: The last date for receipt of form is Feb 10, 2017. Scanned copy of the application form must reach at E-mail id geotechcuraj2017@gmail.com positively before the last date. Only forms received on or before the last date and duly forwarded by competent authority will be considered.

## **Annexure-II**



## DST-NRDMS Sponsored Three Days Training Programme On

## **GEOSPATIAL TECHNOLOGIES**

18th – 20th February, 2017

Department of Environmental Science, Central University of Rajasthan



## **TRAINING SCHEDULE**

## **Day 1** (18th February 2017/Saturday)

0900-1000	Registration
1000-1115	Opening Ceremony
1115-1145	Group photograph and Tea break
1145-1300	Understanding Geospatial Literacy (Session- 1.1)
	(Prof. M.S. Nathawat, Director, School of Sciences, IGNOU, New Delhi)
1300-1400	Lunch
1400-1515	Geospatial Science and its applications (Session- 1.2)
	(Prof. M.S. Nathawat, Director, School of Sciences, IGNOU, New Delhi)
1515-1530	Tea Break
1530-1630	Geospatial Applications – Case studies (Session- 1.3)
	(Dr. L.K. Sharma, Central University of Rajasthan)
1630-1730	GIS Software Learning - Lab Session (Session- 1.4)
	(Dr. Devesh Sharma, Central University of Rajasthan)

## Day 2 (19th February 2017/Sunday)

9.30-10.30	Introduction to QGIS- Digitization and Map Making (Session- 2.1)
9.50-10.50	
	(Dr. Devesh Sharma, Central University of Rajasthan)
1030-1115	Digital Image Processing-1 (Session- 2.2)
	(Prof. P.K. Joshi, SES, JNU, New Delhi)
1115-1130	Tea Break
1130-1300	Digital Image Processing-1 (Session- 2.3)
	(Prof. P.K. Joshi, SES, JNU, New Delhi)
1300-1400	Lunch
1400-1515	Digital Image Processing-2 (Session- 2.4)
	(Prof. P.K. Joshi, SES, JNU, New Delhi)
1515-1530	Tea Break
1530-1730	Digital Image Processing-2 (Session- 2.5)
	(Prof. P.K. Joshi, SES, JNU, New Delhi)

## **Day 3** (20<sup>th</sup> February 2017/Monday)

1000-1115	Geospatial Modelling & Application (Session- 3.1)
	(Dr. I.C. Das, NRSC, Hyderabad)
1115-1130	Tea Break
1130-1300	Introduction to SAGA GIS – Georeferencing (Session- 3.2)
	(Prof. M.P. Punia, BISR, Jaipur)
1300-1400	Lunch
1400-1530	Valedictory Ceremony

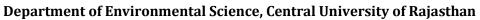
## **Annexure- III**



## DST-NRDMS Sponsored Three Days Training Programme On

## **GEOSPATIAL TECHNOLOGIES**

18th - 20th February, 2017





### **INAUGURATION CEREMONY**

18th February, 2017

Time	Theme	Speaker	
10:00 to 10:05 AM	Lamp Lightening		
10:05 to 10:15 AM	Welcome Address	Dr. L.K. Sharma	
		Head,	
		Department of Environmental Science	
10:15 to 10:30 AM	Opening Remarks by Chief	Prof. M.S. Nathawat	
	Guest	Director	
		School of Sciences (IGNOU)	
10:30 to 10:50 AM	Inaugural Address	Prof. Manish Shrimali	
		Dean, School of Earth Sciences	
		Prof. Someshwar Das	
		Department of Atmospheric Science	
10:50 to 11:10 AM	Participant's Introduction		
11:10 to 11:15 AM	Vote of Thanks (Dr. Devesh Sharma)		
11:15 to 11:45 AM	Group Photograph and High	Tea	

### **VALEDICTORY CEREMONY**

20th February, 2017

Time	Theme	Speaker
14:00 to 14:10 PM	Brief report of Training	Dr. Devesh Sharma
	Programme	Department of Environmental Science
14:10 to 14:20 PM	Participant Feedback	
14:20 to 14:40 PM	Remarks by Resource	Dr. I.C. Das
	Persons	NRSC, Hyderabad
		Prof. M.P. Punia
		DST Representative
		BSIR, Jaipur
14:40 to 14:50 PM	Presidential Remarks	Prof. Arun K. Pujari
		Vice-Chancellor
		Central University of Rajasthan
14:50 to 15:10 PM	Distribution of Certificates	
14:10 to 15:15 PM	Vote of Thanks	Dr. L.K. Sharma
		Head, Environmental Science Deptt.
15:15 to 15:30 PM		High Tea

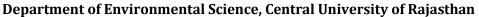
## **Annexure- IV**



## DST-NRDMS Sponsored Three Days Training Programme On

## **GEOSPATIAL TECHNOLOGIES**

18th - 20th February, 2017



TRAINING FEEDBACK FORM



# PARTICIPANT'S NAME -

AFFILIATION -						
EMAIL ADDRES	SS -					
1) What is you Fair to 5-Poor		assessment o	f the even	t? (1-Excellent	t 2-Very Good	3-Good 4-
	1	2	3	4	5	
2) Which topic	-	cts of the work			· ·	
•						
3) Did the wor	kshop ach	ieve the progr	amme obj	ectives?		
Yes		No				
If no, why?						
4) Knowledge	and infor	mation gained	from parti	cipation at thi	s event?	
Met your expe	ectations	Ye	s No Sc	mehow		
Will be useful,	/applicabl	e in your work	? Definit	ely Mostly So	mehow Not a	t all
5) How do you	ı think the	workshop cou	ıld have be	en made more	e effective?	

6) Please co Fair to 5-Po		ne organizat	ion of the eve	ent (1-Excelle	nt 2-Very Goo	d 3-Good 4
	1	2	3	4	5	
	ts and sugge the future)		ding activitie	es or initiativ	es you think w	ould be
Further con	nments or su	iggestions				

Thank You for your engagement and feedback.
BEST WISHES FOR THE FUTURE

## <u>Annexure- V</u> Information of Participants

S. No.	Applicant Name	Gender	Affiliation	Place	Mobile No
1	R.Harish	Male	Anna University	Chennai	9488228882
2	S.Pavithrapriya	Female	Anna University	Chennai	9788502885
3	S. Guganesh	Male	Anna University	Chennai	9940390389
4	Abinaya B	Female	Anna University	Chennai	9791990507
5	Nirdesh Ravi	Male	University of Allahabad	Allahabad	8004605005
6	Pir Mohammad	Male	IIT Roorkee	Roorkee	7409929538
7	AmitVishwakarma	Male	IIT Roorkee	Roorkee	8223892370
8	Shailender kumar	Male	University of Delhi	Delhi	9650522707
9	Guncha Sharma	Female	University of Delhi	Delhi	9711595559
10	Ankita Sharma	Female	IIRS Dehradun	Dehradun	9808601981
11	Saurav Rajput	Male	ENV DAS Pvt. Ltd.	Lucknow	8052734062
			Consultancy		
12	Sandhya Sharma	Female	ENV DAS Pvt. Ltd.	Lucknow	8565873800
			Consultancy		
13	Roushan Thakur	Male	Gurukul Kangri	Haridwar	9471945613
			Vishwavidyalaya		
14	Om KanwarRathore	Female	MGS University	Bikaner	8209140452
15	ArunPurohit	Male	MGS University	Bikaner	9636133366
16	ParulSen	Female	MDS University	Ajmer	8058190424
17	Ashwini Kumar	Male	MDS University	Ajmer	9413056691
	vaishnav				
18	Vikram Singh	Male	University of Allahabad	Allahabad	9118602242
19	Pashupatinath	Male	GurukulKangri University	Haridwar	9795258291
20	Tarun Kumar Yadav	Male	University of Allahabad	Allahabad	9451520291
21	Muhammad Bello	Male	NIMS University	Jaipur	7296835404
	Haruna				
22	ShashiRai	Male	IIT Roorkee	Roorkee	9410564088
23	Aditya Sharma	Male	Central University of	Delhi	9811441638
			Rajasthan		
24	Awanish Kumar	Male	Central University of	Bihar	9955301416
			Rajasthan		
25	Manish Choudhary	Male	Central University of	Jaipur	9461699679
			Rajasthan		
26	Rajani Kant Verma	Male	Tiger Watch Ranthambore	Ranthambhor	9610893044
27	Chintan Dholariya	Male	Navsari Agricultural	Gujarat	9662030014
			University		
28	Shubham Gupta	Male	Allahabad University	Allahabad	9651531053
29	Munmun	Female	Allahabad University	Allahabad	9336871537
	Chakarvorty				
30	Kikani Himanshu	Male	Navsari Agricultural U.	Gujarat	7698732585

### **Annexure-VI**

Three days training programme on "Geospatial Technologies" Sponsored by Natural Resources Data Management System (NRDMS) programme, Department of Science & Technology, New Delhi (18<sup>th</sup> – 20<sup>th</sup> February, 2017)

### FINAL STATEMENT OF EXPENDITURE

Sanction Letter/ Order No and date of sanctioning the project:-

NRDMS/04/90/016 Dated-2.8.2016

Total Project Cost:--

INR 250000.00 (Sanctioned)

(Sanctioned/ Revised Project Cost, if applicable)

Date of Commencement of Project: 18th February, 2017

Date of Completion of Project:

20th February, 2017

Grant received in each year (financial year):

Year 2016-17

INR 200000.00

### Statement of Expenditure

Sr No	Sanctioned Heads	Funds Allocated (indicate sanctioned or revised)	Expenditure Incurred	Balance, if any	Remarks
(I)	(II)	(III)	(IV)		
1.	TA/Honorarium	100000.00	78377.00	21623.00	
2.	Lodging/Boarding	80000.00	77700.00	2300.00	
3.	Local Travel	20000.00	8200.00	11800.00	
4.	Contingencies/misc.	50000.00	45662.00	4338.00	7
	Total	25000.00	209939.00	40061.00	Amount to be reimbursed: 9939.00

Grant sanctioned for training:	250000.00
Grant received:	200000.00
Total Expenditure Incurred:	209939.00
Amount to be reimbursed:	9939.00

Name and Signature of Principal Investigator:

Signature of Competent financial/ audit authority:

(with seal)

Date:

Finance Officer Central University Of Rajasthan N.H.-8, Bandarsindri, Teh-Kishangarh PIN-305817 Distr-Ajmer (Rajasthan)

Three days training programme on "Geospatial Technologies" Sponsored by Natural Resources Data Management System (NRDMS) programme, DST, New Delhi  $(18^{th}-20^{th}$  February, 2017)

### UTILISATION CERTIFICATE

FOR THE FINANCIAL YEAR 2016-17

1.	Title of the Project/Scheme	3 Day training programme on "Geospatial Technologies" under NRDMS programme, DST
2.	Name of the institution	Central University of Rajasthan
3.	Principal Investigator	Dr. L.K. Sharma
4.	Department of Science& Technology Letter no. & date sanctioning the project	No. NRDMS/04/90/016 Dated-2.8.2016
5.	Head of account as given in the original sanction letter	Demand No. 77, DST
6.	Amount brought forward from the previous financial year quoting DST letter No. and date in which the authority to carry forward the said amount was Given.	Not applicable
7.	Amount received during the financial year (Please give No. & Date of DST's sanction letter for the amount)	200000.00 (NRDMS/04/90/016, 2.8.2016)
8.	Total amount that was available for the expenditure (excluding commitments) (Sl. No. 6+7)	200000.00
9.	Actual expenditure (Excluding commitments) incurred during the financial year(Up to 31 st March)	209939.00
10	Balance amount available at the end of the financial year	Nil
11.	Unspent balance refunded if any (Please give details of Cheque No. etc.)	Not applicable
12.	Amount to be carried forward to the next financial year (if applicable)	Not applicable

Signature of PI Date 18 8 17

Signature of Registrar/Head

Accounts Officer of the

Institute

Date REGISTRAR Institute

Central University of Rajasthan Date, Finance Officer Finance Office

### UTILISATION CERTIFICATE

Certified that out of Rs 250000.00 of grants-in-aid sanctioned during the year 2016-17 in favor of Central University of Rajasthan under this Ministry/Department Letter No. NRDMS/04/90/016 Dated-2.8.2016 and a sum of Rs. 209939.00 as been utilized for the purpose of 3 Day training programme on "Geospatial Technologies" for which it was sanctioned and that the balance of Rs...NIL...remaining unutilized at the end of the year has been surrendered to the Government.

Signature of PI
Date |8|8|2017

Signature of Registrar/Head Date Accounts Officer of the Institute Date ntral University Of Rajasthan

REGISTRAR
N.H.-8, Bandarsindri, Teh-Kishangarh
N.H.-8, Bandarsindri, Teh-Kishangarh
N.H.-8, Bandarsindri, Teh.-Kishangarh
PIN-305 817 Distt-Ajmer (Rajasthan) INDIA

Dr. LAXMI KANT SHARMA
Associate Professor
Department of Environmental Science
School of Earth Sciences
Central University of Rajasthan
NH-8. Bandarsindri-305817 (Ajmer), Raj.

(TO BE FILLED IN BY DST)

Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been fulfilled/area and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned:

Kinds of checks exercised: 1.

- 2.
- 3.
- 4.
- 5.

Signature Designation Date