

Shri Shivaji Education Society Amravati's
SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR

Session 2022 – 2023

Department of Geology

Report on “Certificate Course on Soil and Water Conservation”

COORDINATOR- Ms. Apurva Dilip Fuladi

Duration: 06/01/2023 to 11/03/2023

Time: 04:00 PM– 6:00PM

Department of Geology, SSES's Science College, Nagpur organized a Certificate course on “Certificate Course on Soil and Water Conservation” for all UG students of B.Sc. Geology and the duration of the course from 06/01/2023 to 11/03/2023 from 04:00 PM to 06:00 PM each Friday and Saturday of the week in the given period. The coordinator of this program was Ms. Apurva Dilip Fuladi conducted all the necessary lectures and practicals and other all related work of this course. The Programme started with the permission of Principal Prof. M. P. Dhore.

All three-year students of Geology registered their names for this course and all 79 students successfully completed this course with good grades in the final exam. This course offers exposure to the various methods of conservation of soil and water resources. Currently, Indian agriculture struggles with the issues of soil erosion, irregular rainfall, poor agricultural practices, lack of irrigation which impedes the agricultural growth of our country. To have an understanding about the degradation of productive soil and the causes of its erosion. To make the students understand about the measurement techniques for soil loss and wind erosion. Identify different erosion processes and assess factors contributing to soil erosion in agricultural landscapes. Design and analyze soil and water conservation structures and techniques considering site-specific conditions and requirements. Evaluate the effectiveness and performance of soil and water conservation structures. It prepares students for careers in geoscience, research and geoscience-related fields.



Field work

Soil and water are very important to know the status of the area in order to know the soil type, groundwater conditions, drainage, crop patterns etc in order to perform different work.

Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur..

Signature of IQAC Coordinator
Internal Quality Assurance Cell
(IQAC)
S. S. E. S. Amravati Science College
Congress Nagar, Nagpur (C-2)



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

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

Subject: Permission to conduct the add on courses in the Geology department
(2022-2023)

Respected Sir,

This is to request you that, we wish to conduct the add on courses in Geology department; these are the certificate courses of thirty hours' time duration.

The details of the courses are submitted here with.

Hence please permit to run the same and oblige me.

Thanking you

2/07/2022

Yours sincerely

Amravati
HEAD

Department of Geology
S. S. E. S. Amravati's
Science College, Nagpur.

Permitted
MSHore

SSES AMT's SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

Certificate Course in Soil and Water Conservation

Notice

All the admitted students of B.Sc. Geology is hereby informed that the certificate course on “**Soil and Water Conservation**” Theory and practical classes will be held on **Mon, 6th of Jan 2023 at 4:00 PM**. For all Geology UG students are informed to enroll for this course All admitted Students must attend Theory and practical classes.

Time: 4:00 AM to 5:00 PM.

Venue: Department of Geology Lab, SSES's Science College, Congress Nagar, Nagpur



Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.



Department of Geology

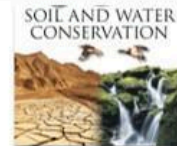


Only
Geology
Students

Course Objectives:

- For proper land use
- Prevention of Soil erosion
- Maintenance of soil fertility
- Reduction of water runoff
- Prevention of water pollution
- Safe drainage and irrigation on slope land
- Prevention of wind erosion.

CERTIFICATE COURSE IN SOIL AND WATER CONSERVATION



- Duration: 30 Hours (10 Weeks)
- Registration: Early birds will be admitted

Registration Date: 01/12/2022 Onwards
Coordinator: Apurva D. Fuladi

Soil and water conservation course mainly understands to conserve Soil & surface run off along with restoration of ecological balance and adoption of income generating program among rural beneficiaries; to reduce all forms of soil erosion, to increase agricultural productivity in sustainable manner; Efficient use of rainfall and development of water harvesting structure such as Farm Pond, Check dam, Nalla bunds etc; Restoration of ecological balance; Ensure food and income security for all, through technological innovations and sustainable agriculture

Apurva D. Fuladi

Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF GEOLOGY

COURSE MODULE AND SYLLABUS

Course Title: Certificate Course in Soil and Water Conservation

Course Coordinator: Ms. Apurva D. Fuladi

Course description:

Soil and water conservation course mainly understands to conserve soil & surface run off along with restoration of ecological balance and adoption of income generating program among rural beneficiaries; to reduce all forms of soil erosion, to increase agricultural productivity in sustainable manner; Efficient use of rainfall and development of water harvesting structure such as Farm Pond, Check dam, Nalla bunds etc; Restoration of ecological balance; Ensure food and income security for all, through technological innovations and sustainable agriculture.

Course Objectives:

- For proper land use
- Prevention of soil erosion
- Maintenance of soil fertility
- Reduction of water runoff
- Prevention of water runoff
- Prevention of water pollution
- Safe drainage and irrigation on slope land
- Prevention of wind erosion

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

Evaluation Strategies: Oral discussions and Final MCQ examination.

Course outline: Course Outlines: (Relevance)

Soil erosion - Introduction, causes and types - geological and accelerated erosion, agents, factors affecting and effects of erosion. Water erosion - Mechanics and forms - splash, sheet, rill, gully, ravine and stream bank erosion. Gullies - Classification, stages of development. Soil loss estimation – Universal soil loss equation (USLE) and modified USLE. Soil erodibility -topography, crop management and conservation practice factors. Measurement of soil erosion - Runoff plots, soil samplers. Water erosion control measures - agronomic measures - contour farming, strip cropping, conservation tillage and mulching. Engineering measures– Bunds and terraces. Bunds - contour and graded bunds - design and surplussing arrangements, compartmental bunding. Terraces - level and graded broad base terraces, bench terraces - planning, design and layout procedure, contour stonewall and trenching (CCT, SCT, & deep

CCT). Gully and ravine reclamation - principles of gully control - vegetative measures, temporary structures and diversion drains. Grassed waterways and design. Wind erosion- Factors affecting, mechanics, soil loss estimation and control measures - vegetative, mechanical measures, windbreaks and shelterbelts and stabilization of sand dunes. Land capability classification. Rate of sedimentation, silt monitoring and storage loss in tanks.

Course Outcomes (COs):

This course offers exposure to the various methods of conservation of soil and water resources. Currently, Indian agriculture struggles with the issues of soil erosion, irregular rainfall, poor agricultural practices, lack of irrigation which impedes the agricultural growth of our country.

- To have an understanding about the degradation of productive soil and the causes of its erosion.
- To make the students understand about the measurement techniques for soil loss and wind erosion .
- Identify different erosion processes and assess factors contributing to soil erosion in agricultural landscapes.
- Design and analyze soil and water conservation structures and techniques considering site-specific conditions and requirements.
- Evaluate the effectiveness and performance of soil and water conservation structures.

Duration of course: Ten weeks (30 Hours)

The Structure of Syllabus and system of evaluation -

Course	Theory Papers and Practical	Total Marks	
		Theory	Practical
Certificate Course in Soil and Water Conservation	Theory paper- Certificate Course in Soil and Water Conservation * Theory examination will be of MCQ pattern having 60 or 80 questions each with equal marks.	80	20
	* Practical examination will be based on performance evaluation in the laboratory	100	


 Course Coordinator
 Shivaji Science College, Nagpur


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


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

SYLLABUS

Certificate course (10 weeks)
Certificate Course in Soil and Water
Conservation

Theory-

UNIT- I Origin of soil and its Classification. Soil erosion - introduction, causes and types; Geological and accelerated erosion; Erosion agents; Factors affecting and effects of erosion. Water erosion - Mechanics and forms; Gullies – Classification & stages of development

UNIT – II Measurement of soil erosion - Runoff plots, soil samplers. Water erosion control measures - agronomic measures - contour farming, strip cropping, conservation tillage and mulching; Engineering measures– Bunds and terraces. Bunds - contour and graded bunds - design and surplussing arrangements. Terraces - level and graded broad base terraces, bench terraces - planning, design and layout procedure, contour stonewall and trenching.

UNIT – III Gully and ravine reclamation - principles of gully control - vegetative measures, temporary structures and diversion drains. Wind erosion- Factors affecting, mechanics, soil loss estimation and control measures - vegetative, mechanical measures.

Practicals-

- a) General status of soil conservation in India
- b) Estimation of soil loss
- c) Measurement of soil loss
- d) Preparation of contour maps
- e) Design of graded bunds
- f) Study of terraces
- g) Problem of wind erosion
- h) Identification of different types of erosion as per field visit

Distribution of marks: -

- | | |
|--------------------------------|----|
| 1. Estimation of soil loss | 05 |
| 2. Measurement of soil loss | 05 |
| 3. Preparation of counter maps | 05 |
| 4. Problem of wind erosion | 05 |

Week-wise teaching plan:

Week	Hrs.	Syllabus
Week 1	1	-General status of soil conservation in India (practical) -Measurement of soil loss (practical) -Estimation of soil loss
	1	Origin of soil and its Classification
	1	Soil Classification
Week 2	1	Soil erosion - introduction, causes and types; Geological and accelerated erosion;
	2	Erosion agents; Factors affecting and effects of erosion
Week 3	1	Water erosion - Mechanics;
	2	Water erosion - forms
Week 4	1	Gullies –Classification & stages of development
	1	Stages of development
Week 5	2	Measurement of soil erosion - Runoff plots,
	1	soil samplers.
Week 6	2	Water erosion control measures - agronomic measures - contour farming, strip cropping, conservation tillage and mulching;
	1	Engineering measures– Bunds and terraces.
Week 7	2	-Preparation of contour maps -Design of graded bunds -Study of terraces (Practical)
	1	Bunds - contour and graded bunds - design and surplussing arrangements
Week 8	2	Terraces - level and graded broad base terraces, bench terraces - planning, design and layout procedure,
	1	contour stonewall and trenching.
Week 9	2	-Problem of wind erosion -Identification of different types of erosion as per field visit
	1	Gully and ravine reclamation - principles of gully control - vegetative measures, temporary structures and diversion drains.
Week 10	1	Wind erosion- Factors affecting mechanics.
	2	soil loss estimation and control measures - vegetative, mechanical measures

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF GEOLOGY

Certificate Course in Soil and Water Conservation

Time Table

Day	Theory
Friday	ADF (B9) Theory 4.00 PM – 5.00 PM
Saturday	ADF (Geo.lab) practical, 4.00 PM – 5.00 PM
	ADF (B9) Theory, 5.00 PM – 6.00 PM

Abadi

Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.

SSES AMT's SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

Certificate Course in Soil and Water Conservation



Students photograph during the course



Field work

**Shri Shivaji Education Society Amravati's, Science College, Congress Nagar,
Nagpur Subject:- Certificate Course in Soil and water conservation**

Department of Geology

Session 2022 – 2023

Sr. No.	Students Full Name
1	BHAGWAT SAKSHI ARVIND
2	CHOUDHARI POOJA DILIP
3	DONGARWAR AARTI ANGAD
4	GEDAM ARYAN VILAS
5	GODGHATE UTKARSHA SUNIL
6	GUPTA MUSKAN ASHU
7	MALOKAR CHARUL GOPAL
8	MESHARAM ANSHUL BABAN
9	MESHARAM PURVA PUNYASHIL
10	MUDE YOGINI PRAMOD
11	PALIWAL TANIYA DEVENDRA
12	SOMKUWAR NEHA GENDLAL
13	WADIWE HARSHAL VINOD
14	WAGHMARE JANVI JAYENDRA
15	BANSOD PRASHIK VILAS
16	BHOTMANGE AARYAN ASHOK
17	BHUJADE BHAVANA DILIP
18	CHAWARE SAMIKSHA BALKRUSHNA
19	DESHPANDE TEJAS TAYANAND
20	KHOBRAGADE LEKHITA RAMESHWAR
21	MAHULE YASH NITIN
22	MEHAR YASH VISHNU
23	MOHOD MADHAVI SANJAY
24	MOTGHARE ITISHA GANGADHAR
25	NANDURKAR VAIBHAVI SUNIL
26	NANNAWARE CHINMAYEE PRATAP
27	POHANKAR PRAJWALI PRASHANT
28	RUIKAR SHRUTI ISHWAR
29	BOKARE ADITI ANAND
30	DONGRE SAKSHI SUNIL
31	JOSHI RENUKA PRAVIN

32	MANDAOKAR MRUNMAYEE DILIP
33	PATEL STUTI HRUDES
34	PAZARE PRATHAM VINOD
35	RATHOD RANAPRATAP LAKHAN
36	SHAHARE UTKARSH RUPCHAND
37	SHELKE RUTUJA RUSHI
38	SHINDE SHWETA ANIL
39	SONEKAR LOKESH GANESH
40	ATTRI PRIYANSHU GYANENDRA SINGH
41	MISHRA ANSUMAN SURENDRA
42	BORKAR SANIYA KAILASH
43	PATLE DEVESH DHURVAJI
44	DHUNDALE ARYAN RAJENDRA
45	DUBEY SAKSHI VIJAYKANT
46	JOSHI RUGVED DINESH
47	KHOT ANSHUL LAXMAN
48	KHOTELE SWATI PURUSHOTTAM
49	MEHAR HARSHAL ASHOK
50	MESHRAM MRUNALI ROSHAN
51	PARSHURAMKAR GAURAV MANOHAR
52	BAGDE SAKSHI SATISH
53	BHALAVI SIDDHESH RAMESHWAR
54	TIDKE PRIYOG RAMKRUSHNA
55	CHOUDHARI VAISHNAVI SUBHASH
56	DHOLE ISHA ANIL
57	GEDAM DIKSHA RAVINDRA
58	GHUTKE SWETA CHARAN
59	PATLE GAURI SHRIKANT
60	JOSHI SANCHIT MADHUSUDAN
61	MASKHARE MAYUR PRASHANT
62	CHAUDHARI DURGESHWARI RAMPRASAD
63	MESHRAM MASUM SUDHAKAR
64	SHEIKH MANTESHA TABASSUM ALTAF
65	TUPAT MAYURI RAJESH
66	WUIKEY ARYA ARUN
67	JANGLE VAISHANAVI ROSHAN
68	BANSOD ANJALI VISWAS
69	BEDADE MANISHA JANARDAN
70	LONARKAR JANHAVI PRAMOD

71	UIKEY GAYATRI TEJRAM
72	NARNAWARE SAKSHI ANIL
73	NIMJE ARNIKA SUSHILKUMAR
74	RAMTEKE HITALI PADMAKAR
75	SALVE SAKSHI NITIN
76	UIKE VIDYA MAROTRAO
77	WAHANE KOMAL DEVANAND
78	NEMADE RAM ARUN
79	WANKHEDE SNEHAL SANJAY

A. W. J. J.

Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.

SSES AMT's SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

Certificate Course in Soil and Water Conservation

Notice

All the admitted students of B.Sc. Geology is hereby informed that the certificate course on “**Soil and Water Conservation**” **Theory** examination will be held on **Mon, 13th of March 2023 at 11:00 AM**. For all Geology UG students admitted to this course in the Geology Department lab. The exam will start on time. All Students must attend this exam.

Time: 11:00 AM to 1:00 PM.

Venue: Department of Geology Lab, SSES's Science College, Congress Nagar, Nagpur



Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.

SSES AMT's SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

Certificate Course in Soil and Water Conservation

Notice

All the admitted students of B.Sc. Geology is hereby informed that the certificate course on “**Soil and Water Conservation**” Practical examination will be held on **Mon, 13th of March 2023 at 2:00 PM**. For all Geology UG students admitted to this course in the Geology Department lab. The exam will start on time. All Students must attend this exam.

Time: 2:00 AM to 3:00 PM.

Venue: Department of Geology Lab, SSES's Science College, Congress Nagar, Nagpur



Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.

Shri Shivaji Education Society Amravati's,
Science College, Congress Nagar, Nagpur
Subject:- Add on Course in Soil and water conservation
Department of Geology
Session 2022 – 2023

Sr. No.	Students Full Name	Signature
1	BHAGWAT SAKSHI ARVIND	Sakshi
2	CHODHARI POOJA DILIP	Pooja
3	DONGARWAR AARTI ANGAD	Aarti
4	GEDAM ARYAN VILAS	Aryan
5	GODGHATE UTKARSHA SUNIL	Utakarsha
6	GUPTA MUSKAN ASHU	Muskan
7	MALOKAR CHARUL GOPAL	Charul
8	MESHARAM ANSHUL BABAN	Anshul
9	MESHARAM PURVA PUNYASHIL	Purva
10	MUDE YOGINI PRAMOD	Yogini
11	PALIWAL TANIYA DEVENDRA	Taniya
12	SOMKUWAR NEHA GENDLAL	Neha
13	WADIWE HARSHAL VINOD	Harshal
14	WAGHMARE JANVI JAYENDRA	Janvi
15	BANSOD PRASHIK VILAS	Prashik
16	BHOTMANGE AARYAN ASHOK	Aaryan
17	BHUJADE BHAVANA DILIP	Bhavana
18	CHAWARE SAMIKSHA BALKRUSHNA	Samiksha
19	DESHPANDE TEJAS TAYANAND	Tejas
20	KHOBRAGADE LEKHITA RAMESHWAR	Lekhita
21	MAHULE YASH NITIN	Yash
22	MEHAR YASH VISHNU	Yash
23	MOHOD MADHAVI SANJAY	Madhavi
24	MOTGHARE ITISHA GANGADHAR	Itisha
25	NANDURKAR VAIBHAVI SUNIL	Vaibhavi
26	NANNAWARE CHINMAYEE PRATAP	Chinmayee
27	POHANKAR PRAJWALI PRASHANT	Prajwali
28	RUIKAR SHRUTI ISHWAR	Shruti
29	BOKARE ADITI ANAND	Aditi
30	DONGRE SAKSHI SUNIL	Sakshi
31	JOSHI RENUKA PRAVIN	Renuka
32	MANDAOKAR MRUNMAYEE DILIP	Mrunmayee
33	PATEL STUTI HRUDESH	Stuti
34	PAZARE PRATHAM VINOD	Pratham
35	RATHOD RANAPRATAP LAKHAN	Ranapratap
36	SHAHARE UTKARSH RUPCHAND	Utakarsh
37	SHELKE RUTUJA RUSHI	Rutuja
38	SHINDE SHWETA ANIL	Shweta

39	SONEKAR LOKESH GANESH	Lokesh
40	ATTRI PRIYANSHU GYANENDRA SINGH	Attri
41	MISHRA ANSUMAN SURENDRA	Anishu
42	BORKAR SANIYA KAILASH	Saniya
43	PATLE DEVESH DHURVAJI	Devsh
44	DHUNDALE ARYAN RAJENDRA	Dhundale
45	DUBEY SAKSHI VIJAYKANT	Sakshi
46	JOSHI RUGVED DINESH	Rugved
47	KHOT ANSHUL LAXMAN	Khot
48	KHOTELE SWATI PURUSHOTTAM	Khotele
49	MEHAR HARSHAL ASHOK	Mehar
50	MESHARAM MRUNALI ROSHAN	Mrunali
51	PARSHURAMKAR GAURAV MANOHAR	Parshuramkar
52	BAGDE SAKSHI SATISH	Bagde
53	BHALAVI SIDDHESH RAMESHWAR	Bhalavi
54	TIDKE PRIYOG RAMKRUSHNA	Priyo
55	CHODHARI VAISHNAVI SUBHASH	Chaudhari
56	DHOLE ISHA ANIL	Isha
57	GEDAM DIKSHA RAVINDRA	Gedam
58	GHUTKE SWETA CHARAN	Ghutke
59	PATLE GAURI SHRIKANT	Patle
60	JOSHI SANCHIT MADHUSUDAN	Sanchit
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68	BANSOD ANJALI VISWAS	Bansod
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74	RAMTEKE HITALI PADMAKAR	Hitali
75	SALVE SAKSHI NITIN	Salve
76	UIKE VIDYA MAROTRAO	Uike
77	WAHANE KOMAL DEVANAND	Wahane
78	NEMADE RAM ARUN	Nemade
79	WANKHEDE SNEHAL SANJAY	Wankhede

Arbadi

Course Co-Ordinator

Department of Geology

Shivaji Science College, Nagpur.

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF GEOLOGY

Course Title: Certificate Course in Soil and Water Conservation

(Session 2022-23)

Time :Two hours

Maximum Marks: 80

**Note :—(1) There are 40 objective type questions and each question carries two mark.
(2) All questions are compulsory**

1. The least effective vegetation for protecting the soil from erosion is____
 - a) tall tree crops
 - b) low height crops with big leaves
 - c) dense grass
 - d) grain crops

2. The problem of soil erosion in cultivated areas occurs. When. ____
 - a) soil is without cover
 - b) soil is sloppy
 - c) soil under cover
 - d) soil under submergence

3. A continuous growing of crops such as cereals, rubber, oil palm, maize, sugar beet etc. in a given field, causes .
 - a) moderate to severe erosion problem
 - b) not erosion problem
 - c) moderate erosion problem
 - d) severe erosion problem

4. Pasture lands are generally considered as no erosion problem area, however erosion problem arises when
 - a) vegetative cover is removed either by overgrazing
 - b) grasses are harvested smoothly
 - c) vegetative cover is destroyed by burning
 - d) both (a) and (c)

5. Soil erosion is a ____
 - a) single phase phenomena i.e. transportation

- b) two phase phenomena i.e. detachment and transportation
- c) cycle phenomena
- d) three phase phenomenon i.e. detachment and transportation and deposition

6. During soil erosion, the deposition occurs when .

- a) transporting energy is lesser than resistance energy
- b) transporting force is dominating the resisting forces
- c) detachability is high
- d) detachability is poor

7. When eroding agents have sufficient capacity to transport more quantity of materials than the materials supplied through detachment, then soil erosion is referred as

- a) detachment limited
- b) deposition limited
- c) transport limited
- d) none of above

8. During raindrop impact highest percentage of KE is lost against

- a) frictional resistance
- b) evaporation of water
- c) condensation of water
- d) both (b) and (c)

9. The value of critical velocity water flow for detachment, transportation and deposition of soil particles IS function of . . .

- a) particle size
- b) particle shape
- c) particles roughness
- d) all above

10. Particle detachment is least in day soil because of

- a) greater cohesive force
- b) lesser cohesion force
- c) greater transportability
- d) lesser deposition

11. Effect of soil resistance on erosion is incorporated _____

- a) soil erodibility
- b) rainfall intensity.
- c) soil strength
- d) both (a) and (b)

12. The scale of soil loss occurring from the surface is expressed as _____

- 11) mass per unit area
- b) mass per unit area per unit time
- c) volume per unit area unit time
- d) both (b) and (c)

13. In geological erosion_____.

- a) soil loss is greater than soil formation
- b) soil formation is greater than soil loss
- c) soil loss is equal to soil formation
- d) none of above

14. Geologic erosion is also known as. ____

- a) normal erosion.
- b) off time erosion
- c) natural erosion
- d) both (a) and (c)

15) Accelerated erosion is _____

- a) in excess of normal erosion
- b) lesser than the geologic erosion
- c) equal to natural erosion
- d) none of above

16) Scouring of soil particles from river/ gully section during run-off flow is the phenomenon of

- a) abrasion
- b) attrition
- c) solution
- d) all above

17) On increment of land slopes by 4 times, the transportation of particle is increased by ____

- a) 4 times
- b) 8 times
- c) 16 times
- d) 32 times

18) At a greater land slope, the possibility of

- a) soil splash is more
- b) soil detachment is less
- c) soil detachment is more

d) both a & c

19) Slope length affects the erosion mainly by

- a) increasing the flow velocity for shorter duration
- b) decreasing flow velocity for shorter duration
- c) increasing flow velocity for longer duration
- d) increasing deposition

20) The limit of slope length at which soil erosion begins is called as ____

- a) optimum slope length
- b) critical slope length
- c) allowable slope length
- d) none of above

21) The order of soil erosion with respect to slope shape is ____

- a) convex>complex>concave
- b) concave>complex>convex
- c) convex<complex<concave
- d) none of above

22) Transportation of soil particles under splash erosion will be greater.

- a) level land surface
- b) uniform sloppy land surface
- c) irregular surface
- d) level land without cover

23) A straight drop structure consist of

- a) inlet and outlet
- b) inlet, conduit and outlet
- c) apron, weir and conduit
- d) earth dam and outlet

24) Soil detachment by raindrop is independent of

- a) land slope
- b) soil type
- c) soil depth
- d) soil texture

25) Maximum movement of soil particle takes place, when flow depth is_____

- a) about or equal to particle diameter

- b) less than 5 cm
- c) equal to 10cm
- d) equal to 10cm

26) Favorable factors for susceptible of sheet erosion to take place, are

- a) soil condition and nature
- b) shallow soil layer overlain by subsoil of low permeability
- c) steep slope and slope length
- d) both (a) & (b)

27) Rill erosion is also known as_____

- a) gully erosion
- b) micro channel erosion
- c) micro erosion
- d) path erosion

28) Sheet flow is generated, when._____

- a) land slope is steep
- b) land surface is tough
- c) land surface is smooth with uniform slope
- d) both(a) &(b)

29) Rill formation is not found common in._____

- a) impermeable formation
- b) more resistant materials
- c) sandy soils with hard pan below
- d) both (a) & (b)

30) Rill erosion usually begins in the_____

- a) lower part of land slope
- b) upper part of land slope
- c) middle of land slope
- d) entire length of land slope

31) Sediment yield will be higher from the watershed dominated by_____

- a) splash or raindrop erosion
- b) sheet erosion
- c) rill erosion
- d) both (a) & (b)

32) Detachment and transportation of soil particle is greater in_____

- a) splash erosion
- b) rill erosion
- c) sheet erosion
- d) both (b) & (c),

33) Soil detachment in raindrop erosion takes place due to.____

- a) KE. of raindrop
- b) running flow
- c) P.E. of raindrop
- d) land slope

34) Detachment of soil particles by flowing water varies as.____

- a) square of its velocity
- b) square root of its velocity
- c) power three of its velocity
- d) power 1.5 of its velocity

35) Transportation ability of flowing water varies as_____

- a) fifth power of its velocity
- b) square of its velocity
- c) square root of its velocity
- d) fourth power of its velocity

36) Organic erosion occurs in the form of_____

- a) phytogenic erosion
- b) zoogenic erosion
- c) attrition
- d) both (a) & (b)

37) Removal of soil from fields during plant harvesting is associated to

- a) extraction
- b) attrition
- c) phytogenic erosion
- d) zoogenic erosion

38) Removal of soil from fields by animals when they move from one place to another either search of food or shelter is associated to'-----

- a) phytogenic erosion
- b) zoogenic erosion

- c) attrition
- d) detracton

39) Erosion under shifting cultivation, deforestation cultivation on steep slopes without protective measures is associated to

- a) anthropogenic erosion
- b) phytogenic erosion
- c) zoogenic erosion
- d) extraction

40) Sheet erosion is also termed as

- a) attrition
- b) laminar erosion
- c) detrition
- d) phytogenic erosion



Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.

SSES Amravati's Science College, Congress Nagar, Nagpur-12
DEPARTMENT OF GEOLOGY
Course Title: Certificate Course in Soil and Water Conservation
(Session 2022-23)

Answer key

Sr. No.	Answer key
1	a
2	a
3	a
4	a
5	a
6	d
7	a
8	a
9	a
10	a
11	a
12	d
13	c
14	d
15	a
16	a
17	d
18	d
19	c
20	b
21	a

22	b
23	c
24	d
25	a
26	d
27	b
28	c
29	d
30	a
31	c
32	b
33	a
34	a
35	a
36	a
37	c
38	b
39	a
40	a

Afzadi

SSES Amravati's Science College, Congress Nagar, Nagpur-12

DEPARTMENT OF GEOLOGY

Course Title: Certificate Course in Soil and Water Conservation

(Session 2022-23)

Time :One hours

Maximum Marks: 20

Q.1 On the outline map of India demarcates soil degradation of India. 10 M

Q2. Example: Calculate the annual soil loss from a given field subject to soil erosion problem, for the following information: 10 M

- Rainfall erosivity index = 1000 m.tonnes/ha
- Soil erodibility index = 0.20
- Crop management factor = 0.50
- Conservation practices factor = 1.0
- Slope length factor = 0.10

Also explain how the soil loss is affected by soil conservation practices.



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(Session 2022-23)

Marksheet

Sr. No	Students Full Name	Practical Internal (Out of 20)	Theory (Out of 80)	Total (Out of 100)	Grade
1	BHAGWAT SAKSHI ARVIND	14	68	82	A+
2	CHOUDHARI POOJA DILIP	18	56	74	A
3	DONGARWAR AARTI ANGAD	20	74	94	O
4	GEDAM ARYAN VILAS	20	68	88	A+
5	GODGHATE UTKARSHA SUNIL	20	50	70	B+
6	GUPTA MUSKAN ASHU	12	48	60	B
7	MALOKAR CHARUL GOPAL	18	34	52	B
8	MESHARAM ANSHUL BABAN	20	56	76	A
9	MESHARAM PURVA PUNYASHIL	18	72	90	A+
10	MUDE YOGINI PRAMOD	10	36	46	P
11	PALIWAL TANIYA DEVENDRA	20	72	92	O
12	SOMKUWAR NEHA GENDLAL	20	52	72	A
13	WADIWE HARSHAL VINOD	20	30	50	C
14	WAGHMARE JANVI JAYENDRA	14	68	82	A+
15	BANSOD PRASHIK VILAS	20	56	76	A
16	BHOTMANGE AARYAN ASHOK	18	72	90	A+
17	BHUJADE BHAVANA DILIP	10	36	46	P
18	CHAWARE SAMIKSHA BALKRUSHNA	20	72	92	O
19	DESHPANDE TEJAS TAYANAND	20	52	72	A
20	KHOBRAGADE LEKHITA RAMESHWAR	20	30	50	C
21	MAHULE YASH NITIN	14	68	82	A+
22	MEHAR YASH VISHNU	14	68	82	A+
23	MOHOD MADHAVI SANJAY	18	80	98	O
24	MOTGHARE ITISHA GANGADHAR	20	74	94	O

25	NANDURKAR VAIBHAVI SUNIL	20	68	88	A+
26	NANNAWARE CHINMAYEE PRATAP	20	50	70	B+
27	POHANKAR PRAJWALI PRASHANT	12	48	60	B
28	RUIKAR SHRUTI ISHWAR	18	34	52	B
29	BOKARE ADITI ANAND	20	56	76	A
30	DONGRE SAKSHI SUNIL	18	72	90	A+
31	JOSHI RENUKA PRAVIN	10	36	46	P
32	MANDAOKAR MRUNMAYEE DILIP	20	72	92	O
33	PATEL STUTI HRUDES	20	52	72	A
34	PAZARE PRATHAM VINOD	20	30	50	C
35	RATHOD RANAPRATAP LAKHAN	14	68	82	A+
36	SHAHARE UTKARSH RUPCHAND	20	68	88	A+
37	SHELKE RUTUJA RUSHI	20	50	70	B+
38	SHINDE SHWETA ANIL	12	48	60	B
39	SONEKAR LOKESH GANESH	18	34	52	B
40	ATTRI PRIYANSHU GYANENDRA SINGH	20	56	76	A
41	MISHRA ANSUMAN SURENDRA	18	72	90	A+
42	BORKAR SANIYA KAILASH	10	36	46	P
43	PATLE DEVESH DHURVAJI	20	72	92	O
44	DHUNDALE ARYAN RAJENDRA	20	52	72	A
45	DUBEY SAKSHI VIJAYKANT	14	68	82	A+
46	JOSHI RUGVED DINESH	18	56	74	A
47	KHOT ANSHUL LAXMAN	20	74	94	O
48	KHOTELE SWATI PURUSHOTTAM	20	68	88	A+
49	MEHAR HARSHAL ASHOK	20	50	70	B+
50	MESHARAM MRUNALI ROSHAN	12	48	60	B
51	PARSHURAMKAR GAURAV MANOHAR	18	34	52	B
52	BAGDE SAKSHI SATISH	20	56	76	A
53	BHALAVI SIDDHESH RAMESHWAR	18	72	90	A+
54	TIDKE PRIYOG RAMKRUSHNA	10	36	46	P
55	CHOUDHARI VAISHNAVI SUBHASH	20	72	92	O
56	DHOLE ISHA ANIL	20	52	72	A
57	GEDAM DIKSHA RAVINDRA	20	30	50	C
58	GHUTKE SWETA CHARAN	14	68	82	A+
59	PATLE GAURI SHRIKANT	12	48	60	B

60	JOSHI SANCHIT MADHUSUDAN	18	34	52	B
61	MASKHARE MAYUR PRASHANT	20	56	76	A
62	CHAUDHARI DURGESHWARI RAMPRASAD	18	72	90	A+
63	MESHARAM MASUM SUDHAKAR	10	36	46	P
64	SHEIKH MANTESHA TABASSUM ALTAF	20	72	92	O
65	TUPAT MAYURI RAJESH	20	52	72	A
66	WUIKEY ARYA ARUN	20	30	50	C
67	JANGLE VAISHANAVI ROSHAN	14	68	82	A+
68	BANSOD ANJALI VISWAS	14	68	82	A+
69	BEDADE MANISHA JANARDAN	18	56	74	A
70	LONARKAR JANHAVI PRAMOD	20	74	94	O
71	UIKEY GAYATRI TEJRAM	20	68	88	A+
72	NARNAWARE SAKSHI ANIL	20	50	70	B+
73	NIMJE ARNIKA SUSHILKUMAR	12	48	60	B
74	RAMTEKE HITALI PADMAKAR	18	34	52	B
75	SALVE SAKSHI NITIN	20	56	76	A
76	UIKE VIDYA MAROTRAO	14	68	82	A+
77	WAHANE KOMAL DEVANAND	18	56	74	A
78	NEMADE RAM ARUN	20	74	94	O
79	WANKHEDE SNEHAL SANJAY	20	68	88	A+

Afzaladi




Course Coordinator
Department of
Geology
Shivaji Science College, Nagpur.



Shri Shivaji Education Society, Amravati's
SCIENCE COLLEGE
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<u>Add-on Course</u>			
Course Exam Name: Certificate Course in Soil and Water conservation			
Name of Student:		INSTRUCTIONS FOR FILLING THE SHEET 1. This sheet should not be folded or crushed. 2. Use only a blue/ black ball point pen to fill the circles. 3. Use of pencil is strictly prohibited. 4. Circles should be darkened completely and properly. 5. Cutting and erasing on this sheet is not allowed. 6. Do not use any stray marks on the sheet. 7. Do not use marker or white fluid to hide the mark.	
..... <u>Madhavi S. Mohod</u>			
Roll No.:	<u>023</u>	Session: 2022-23	
Test Date: 13/03/2023	Max. Marks: 80		
 Invigilator Signature	Obtained Marks:	<u>80</u>	WRONG METHODS CORRECT METHOD  

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



Shri Shivaji Education Society Amravati's
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CERTIFICATE

Mr./Ku. **MOHOD MADHAVI SANJAY** is awarded with certificate on successful completion of the course entitled, Certificate course in "Soil and water Conservation".

Session 2022-23 under Add-on course conducted for 30 hours from 06/001/2023 to 11/03/2023 by Department of Geology, SSES's, Science College, congress Nagar, Nagpur 440012.

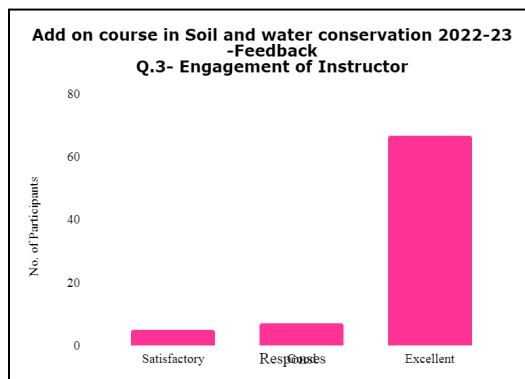
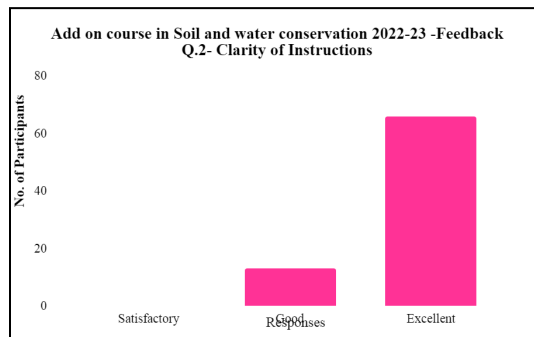
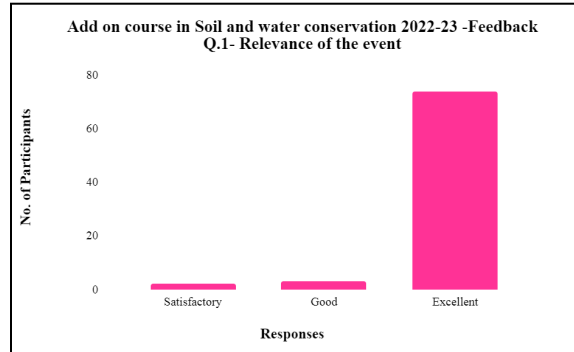
He/She has passed the Examination with 'O_' Grade.

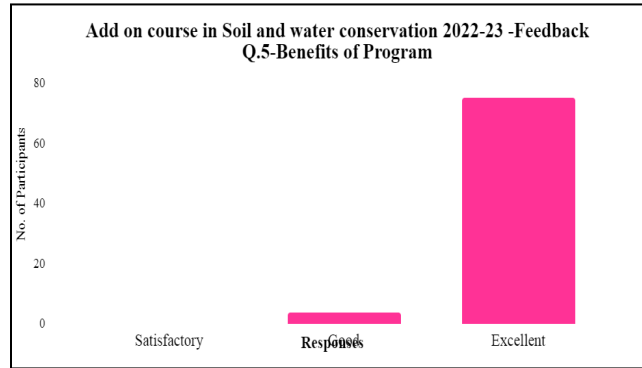
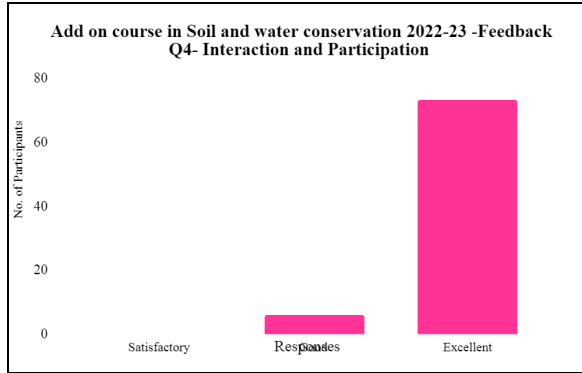

Ms. A. D. Fuladi
Coordinator, Department of Geology


Prof. M. P. Dhore
Principal, Science College, Nagpur

Action Taken Report:

The department and college authority has assured that the matter will be placed in the Governing Body Meeting for necessary discussion. In response to their claim for more skill based introduced Skill based course on geology from academic year 2022-23 session-II. Due care will be taken for more skill-based courses in future. It prepares students for careers in geoscience, research and geoscience-related fields. Soil and water are very important to know the status of the area in order to know the soil type, groundwater conditions, drainage, crop patterns etc in order to perform different work.





[Handwritten Signature]
 Signature of IQAC Coordinator
 Internal Quality Assurance Cell
 (IQAC)
 S. S. E. S. Amravati's College
 Congress Nagar, Nagpur



[Handwritten Signature]
 Signature of Principal
 Principal
 S. S. E. S. Amravati's
 Science College, Nagpur.