

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

Subject: For permission to conduct the add on courses in Geology during the session 2023-2024


Respected Sir,

This is to request you that, the teachers of Geology department have prepared the syllabus and modules of the 30 hours certificate courses for the session 2023-2024.

The details of the course module, syllabus and time table is submitted here with.

Hence please permit to run the add on courses and oblige me.

Thanking you

  
Yours sincerely

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

Permitted  
MSHORE

Shri Shivaji Education Society Amravati's  
Science College, Congress Nagar, Nagpur

**2023-2024**

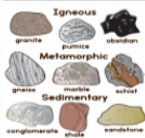
### **Notice**

All the students of B.Sc. Geology are hereby informed that to register their names for the certificate course on “**Advanced Petrology**” in the first week of **December 2023**. All Geology UG students can register for this course in the Geology Department lab contact to the course coordinator **Mr. Mahesh D. Phalke**. The classes will start immediately after the registration is done. All Students must register their names.

Venue: Department of Geology Lab, SSESAs Science College, Congress Nagar, Nagpur



Mr Mahesh D. Phalke  
Coordinator & Head



### Course Objectives:

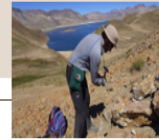
- To Understand basic petrology.
- To understand the basic concept of rocks.
- To understand Various types of rocks.
- To understand the interrelationship between different rocks and minerals.
- To Identify different minerals in hand specimens.
- To Identify different rocks in hand specimens.
- To identify physical properties of minerals and rocks in hand specimens and in under the



## Department of Geology



Only  
Geology  
Students



## CERTIFICATE COURSE IN ADVANCED PETROLOGY

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

Registration Date: 01/12/2023 Onwards  
Coordinator: Mr. Mahesh D. Phalke (HOD, Geology)

An advanced petrology course mainly focuses on the in-hand and on-field experience of different minerals and rocks exposed in the field, providing students with a comprehensive understanding of the physical properties of the rocks. This course integrates the fundamental knowledge of the mainly three types of rocks studied under the branch of petrology. It prepares students for careers in geoscience, research and geoscience-related fields. Petrology is 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.

Mr Mahesh D. Phalke  
Coordinator & Head

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**COURSE MODULE AND SYLLABUS**

**Course Title: Certificate Course in Advanced Petrology**

**Course Coordinator: Mr. Mahesh D. Phalke**

**Course Description:**

An advanced petrology course mainly focuses on the in-hand and on-field experience of different minerals and rocks exposed in the field, providing students with a comprehensive understanding of the physical properties of the rocks. This course integrates the fundamental knowledge of the mainly three types of rocks studied under the branch of petrology. It prepares students for careers in geoscience, research and geoscience-related fields. Petrology is very important to know the status of the area to know the soil type, groundwater conditions, drainage, crop patterns etc. in order to perform different work. Rocks and Minerals may change between igneous, sedimentary and metamorphic. Petrology is important because it tells about earth history. It is key to the discovery and development of mineral resources and fundamental principles and lessons learned from petrology have application in modern industry. Identify and describe various physical properties of megascopic specimens and optical properties of minerals and rocks under a microscope. Compare various crystals based on symmetry, and symmetry functions and explain crystal systems, and mineral groups based on physical and optical properties. Outline the application of different micro-analytical tools used in mineral analysis and rock identification. Categorize industrial applications and economic importance of various minerals and rocks. Justify selection of microanalytical technique selected for the mineral and rock analysis. 6) Prepare a report on a rocks and mineral sample by performing the necessary tests and suggesting its applications in various fields. Understand fundamental concepts, principles and processes of rock-forming mineral processes and its linkage with related disciplinary areas/subjects. Demonstrate an understanding of a wide range of rock-forming minerals. Undertake the chemical compositions of various minerals, and rocks, categorized as silicate mineral types and types of rocks.

**Course Objectives:**

- **To Understand basic petrology.**
- **To understand the basic concept of rocks.**
- **To understand Various types of rocks.**
- **To understand the interrelationship between different rocks and minerals.**
- **To Identify different minerals in hand specimens.**
- **To Identify different rocks in hand specimens.**
- **To identify physical properties of minerals and rocks in hand specimens and in under the microscope.**

**Instructional Strategies:** Theory class, Practical, Samples etc.

**Evaluation Strategies:** Oral discussions and Final MCQ examination.

### Course outline: (Relevance)

- 1) Petrology and its relation to other sciences.
- 2) Importance of rocks and minerals.
- 3) Identification of different rocks and minerals.
- 4) Scope of petrology in geosciences.
- 5) Classify different rocks based on various methods.
- 6) Three major types of rock classification.
- 7) Main goals of rock identification in the field.
- 8) Main objectives of petrology in geosciences.
- 9) Common problems of rock identification in the field.
- 10) New challenges of identifying rocks when it's weathered.
- 11) Physical properties of rocks and minerals.


### Course Outcomes (COS):


1. Identify and describe various physical properties of megascopic specimens and optical properties of minerals and rocks under a microscope.
2. Identify and describe various physical properties of megascopic specimens and optical properties of minerals and rocks in hand specimens.
3. Outline the application of different micro-analytical tools used in rocks and mineral analysis.
4. Categorize industrial applications and economic importance of various rocks and minerals.
5. Justify the selection of technique selected for the mineral and rock analysis.
6. Prepare a report on a rock and mineral sample by performing the necessary tests and suggesting its applications in various fields.


**Duration of course:** Ten weeks (30 Hours)

### The Structure of the Syllabus and system of evaluation-

Course	Theory Papers and Practicals	Total marks	
		Theory	Practical
Certificate Course in Advanced Petrology	Theory paper-Advanced Petrology * 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	

  
M.D. Phalke  
Course Coordinator

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

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

**Certificate Course (10 weeks)**

**Advanced Petrology**

**Theory:**

**UNIT – I**

**Study of the minerals and rocks in hand specimens.**

**Petrology and its relation with other geosciences**

**Mineral Groups**

**Types of Rocks**

**Significance**

**Occurrence**

**Distribution**

**UNIT-II**

**Igneous Petrology**

**Types of Igneous rocks**

**Texture and Structure**

**Classification**

**UNIT- III**

**Sedimentary Petrology**

**Types of Sedimentary rocks**

**Texture and Structure**

**Occurrence & Significance**

**Classification**

**Metamorphic Petrology**

**Types of rocks**

**Texture and Structure**

**Classification**

**Practicals:**

- A) Study of physical properties in hand specimens of the minerals in the field.
- B) Study of physical properties in hand specimens of the rocks in the field.
- C) Study of optical properties of minerals under the microscope.
- D) Study of optical properties of rocks under the microscope.

**Distribution of marks:**

- |   |    |
|---|----|
| 1. Primary aids: -                        | 05 |
| 2. Identification of Minerals: -          | 05 |
| 3. Identification of Rocks: -             | 05 |
| 4. Identification under the Microscope: - | 05 |
| 5.  |    |



Mr Mahesh D. Phalke

Coordinator & Head

**Week-wise teaching plan: -**

<b>Week</b>	<b>Hours</b>	<b>Syllabus</b>
<b>W-1</b>	<b>1</b>	<b>Introduction of petrology</b>
	<b>1</b>	<b>Types of rocks</b>
	<b>1</b>	<b>Introduction of minerals</b>
<b>W-2</b>	<b>1</b>	<b>Study of minerals in hand specimens</b>
	<b>2</b>	<b>Study of rocks in hand specimens</b>
<b>W-3</b>	<b>1</b>	<b>Study of mineral groups</b>
	<b>2</b>	<b>Identification of minerals</b>
<b>W-4</b>	<b>1</b>	<b>Study of Igneous rocks</b>
	<b>1</b>	<b>Classification of Igneous rocks</b>
<b>W-5</b>	<b>2</b>	<b>Texture and structure study of minerals and rocks</b>
	<b>1</b>	<b>Identification of texture and structure</b>
<b>W-6</b>	<b>2</b>	<b>Study of sedimentary rocks and their classification</b>
<b>W-7</b>	<b>1</b>	<b>Texture and structure of Sedimentary rocks and their classification</b>
<b>W-8</b>	<b>2</b>	<b>Study of Metamorphic rocks</b>
	<b>1</b>	<b>Texture and structure of metamorphic rocks</b>
<b>W-9</b>	<b>2</b>	<b>Occurrence and distribution of three rock types and minerals</b>
	<b>1</b>	<b>Classification of metamorphic rocks</b>
<b>W-10</b>	<b>2</b>	<b>Study of optical properties of all three types of rocks under the microscope</b>
	<b>1</b>	<b>Study of optical properties of minerals under the microscope</b>



Mr Mahesh D. Phalke

Coordinator & Head

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**CERTIFICATE COURSE IN ADVANCED PETROLOGY**

**Time Table**

<b>Day</b>	<b>Theory</b>
<b>Friday</b>	<b>(B9) Theory 4:00 PM – 5:00 PM</b>
<b>Saturday</b>	<b>(Geology Lab) Practical 4:00 PM – 5:00 PM</b>
	<b>(B9) Theory 5:00 PM – 6:00 PM</b>



Mr Mahesh D. Phalke

Coordinator & Head



**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**CERTIFICATE COURSE IN ADVANCED PETROLOGY**

**List of Admitted Students**

<b>Sr. No.</b>		<b>Name of the Student</b>
1	Ku	SURPAM SHREYA UMESH
2	Ku	SHRIVASTAV ARYAMAN MANOJ
3	Ku	BANKAR SHRUTI WAMAN
4	Ku	YELNE TANUSHREE DEVANAND
5	Ku	BAGHEL DEEPAK SURENDRASINGH
6	Ku	RAJPUT RIDDHI BHAIYALAL
7	Ku	CHANDANKHEDE YASH CHINTAMAN
8	Ku	DEOGADKAR MANASI SANJAY
9	Ku	DESHKAR BHUMIKA DEVENDRA
10		SHRIVASTAV ARYAMAN MANOJ
11	Ku	HUMNE JANHAVI PURAN
12	Ku	INWATE RISHI RANJEET
13	Ku	JAMRE SHANU OMPRAKASH
14	Ku	KALE SHAMALI PRAKASH
15		KALSE SAHIL RAMESHWAR
16	Ku	KATHANE ASHWINI DINESH
17	Ku	NARTAM ARYA RAJU
18	Ku	NIMJE BHUMIKA SITARAM
19	Ku	HATMODE SAKSHI VIJAY
20	Ku	PATEL KAYNAT WAJID
21		KANOJE YUGANSH NANDU
22	Ku	SELOTE SALONI RAJU
23	Ku	SURYAWANSHI SHWETA BASANTLAL
24	Ku	UIKEY SHIVANI VINOD
25	Ku	ANSARI AIMAN RAVISH NISAR AHMAD
26	Ku	BAWANE VAISHNAVI PURUSHOTTAM
27	Ku	SIDRA MAHVEEN ABDUL SALAM
28	Ku	GAIGAWALI SAYALI RAJU
29	Ku	MANDAOKAR MRUNMAYEE DILIP
30		KHARE JATIN SURESH
31	Ku	RAMTEKE PALASH PURUSHOTTAM
32	Ku	VISHWAKARMA LUCKY ANIL
33	Ku	MARSKOLHE MANAN SUNIL
34	Ku	PATEWAR SHARVARI MANIKRAO
35	Ku	WANKAR NANDINI LAXMAN

36	Ku	WANKHEDE SNEHAL SANJAY
37	Ku	ADHAU PURVA PRAMOD
38	Ku	BAGDE AYUSHI MANOJKUMAR
39	Ku	BAGHEL RIYA KISHOR
40		BAHORIYA KARAN NARESH
41	Ku	BHUJADE SAKSHI BABLU
42		BHOUTKAR HARSH PRAKASH
43		CHARUTKAR VANSI PRAMOD
44	Ku	CHAVHAN VAISHNAVI SAHEBRAO
45	Ku	BOPCHE PAYAL NANDKISHOR
46	Ku	DUNDE SHRUTI PRATIK
47	Ku	GAJBHIYE SAMIKSHA ANKUSH
48	Ku	GOUTIYA MUSKAN JAGDISH
49		GUPTA KSHITIJ ADITYASHEKHAR
50	Ku	HAJARE POOJA RAJU
51	Ku	INGLE NISHCHAL SHILPA
52	Ku	JANGLE VAISHNAVI ROSHAN
53	Ku	KUNDARPAWAR ARYA VIKAS
54		MADAVI DHURUV BHUPENDRASHAHA
55	Ku	MASKHARE MAYUR PRASHANT
56	Ku	BANGALE SWARUP VIJAY
57	Ku	BHADANGE SARANG SANJAY
58	Ku	LONARKAR JANHAVI PRAMOD
59	Ku	DAKAHA ANSHIKA SANJEET
60	Ku	DHENDE YASH ANAND
61	Ku	DHOLE TRUPTI MAROTRAO
62	Ku	GAIKWAD RADHIKA SANDEEP
63	Ku	KUMBHRE FALGUNI VINOD
64	Ku	LOKHANDE KASHISH ASHOK
65	Ku	RANGARI YASHIKA SUSHIL
66	Ku	MALEWAR KIRTI BHAUDAS
67	Ku	NIKHADE PALASH ANAND
68	Ku	NINAWA VISHAKHA INDRAPAL
69	Ku	NISTANE PAYAL TULSIRAM
70	Ku	PANCHBUDHE GOURI PRASHANT
71	Ku	SALVE SAKSHI NITIN
72	Ku	SINGH DHIRAJKUMARI INDRAJEET
73	Ku	TRIPATHI DURGESHWARI DHIRALAL
74	Ku	WADIBHASME ADITYA BHAGWAN
75	Ku	WANKHADE ATHARWA SHIOKUMAR
76	Ku	DUBEY SAKSHI VIJAYKANT
77		KHOT ANSHUL LAXMAN
78	Ku	GAIKWAD RADHIKA SANDEEP
79		TIDKE PRIYOG RAMKRUSHNA

Shri Shivaji Education Society Amravati's  
Science College, Congress Nagar, Nagpur

**2023-2024**

### **Notice**

All the students of B.Sc. Geology is hereby informed that the certificate course on “**Advanced Petrology**” Theory and practical classes will be held on **Friday & Saturday, 15th & 16th of December 2023 onwards at 04:00 pm to 06:00 pm**. For all Geology UG students admitted to this course in the Geology Department lab. The classes will start on time. All Students must attend both Theory and Practical classes.

Time: 04:00 PM to 06:00 PM.

Venue: Department of Geology Lab, SSESAs Science College, Congress Nagar, Nagpur



Mr Mahesh D. Phalke  
Coordinator & Head

SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12


DEPARTMENT OF GEOLOGY

EXAMINATION OF CERTIFICATE COURSE IN ADVANCED PETROLOGY

List of Students for the examination

Sr. No.	Name of the Student	Roll No.	Signature
1	Ku SURPAM SHREYA UMESH	1	Shreya
2	Ku SHRIVASTAV ARYAMAN MANOJ	2	Shrivastav
3	Ku BANKAR SHRUTI WAMAN	3	Bankar
4	Ku YELNE TANUSHREE DEVANAND	4	Yelne
5	Ku BAGHEL DEEPAK SURENDRASINGH	5	Baghel
6	Ku RAJPUT RIDDHI BHAIYALAL	6	Riddhi
7	Ku CHANDANKHEDE YASH CHINTAMAN	7	Chandankhede
8	Ku DEOGADKAR MANASI SANJAY	8	Deogadkar
9	Ku DESHKAR BHUMIKA DEVENDRA	9	Bhumika
10	SHRIVASTAV ARYAMAN MANOJ	10	Shrivastav
11	Ku HUMNE JANHAVI PURAN	11	Humne
12	Ku INWATE RISHI RANJEET	12	Rishi
13	Ku JAMRE SHANU OMPRAKASH	13	Jamre
14	Ku KALE SHAMALI PRAKASH	14	Kale
15	KALSE SAHIL RAMESHWAR	15	Kalse
16	Ku KATHANE ASHWINI DINESH	16	Kathane
17	Ku NARTAM ARYA RAJU	17	Nartam
18	Ku NIMJE BHUMIKA SITARAM	18	Bhumika
19	Ku HATMODE SAKSHI VIJAY	19	Sakshi
20	Ku PATEL KAYNAT WAJID	20	Kaynat
21	KANOJE YUGANSH NANDU	21	Kanoje
22	Ku SELOTE SALONI RAJU	22	Selote
23	Ku SURYAWANSHI SHWETA BASANTLAL	23	Suryawanshi
24	Ku UIKEY SHIVANI VINOD	24	Uikey
25	Ku ANSARI AIMAN RAVISH NISAR AHMAD	25	Ansari
26	Ku BAWANE VAISHNAVI PURUSHOTTAM	26	Vaishnavi
27	Ku SIDRA MAHVEEN ABDUL SALAM	27	Sidra
28	Ku GAIGAWALI SAYALI RAJU	28	Sayali
29	Ku <b>MANDAKAR MRUNMEE DELEP</b>	29	Mrunmee
30	KHARE JATIN SURESH	30	Khare
31	Ku RAMTEKE PALASH PURUSHOTTAM	31	Palash
32	Ku VISHWAKARMA LUCKY ANIL	32	Vishwakarma
33	Ku MARSKOLHE MANAN SUNIL	33	Marskolhe
34	Ku PATEWAR SHARVARI MANIKRAO	34	Patewar
35	Ku WANKAR NANDINI LAXMAN	35	Nandini

36	Ku	WANKHEDE SNEHAL SANJAY		
37	Ku	ADHAU PURVA PRAMOD	36	
38	Ku	BAGDE AYUSHI MANOJKUMAR	37	Suankhede
39	Ku	BAGHEL RIYA KISHOR	38	Purvaadha
40		BAHORIYA KARAN NARESH	39	Ayushi
41	Ku	BHUJADE SAKSHI BABLU	40	Riya
42		BHOUTKAR HARSH PRAKASH	41	Kbhoriyar
43		CHARUTKAR VANSI PRAMOD	42	Shujade
44	Ku	CHAVHAN VAISHNAVI SAHEBRAO	43	Bhoutkar
45	Ku	BOPCHE PAYAL NANDKISHOR	44	Vansh
46	Ku	DUNDE SHRUTI PRATIK	45	Chavhan
47	Ku	GAJBHIYE SAMIKSHA ANKUSH	46	Bopche
48	Ku	GOUTIYA MUSKAN JAGDISH	47	Shruti
49		GUPTA KSHITIJ ADITYASHEKHAR	48	Gajbhiye
50	Ku	HAJARE POOJA RAJU	49	Goutiya
51	Ku	INGLE NISHCHAL SHILPA	50	Kshitij
52	Ku	JANGLE VAISHNAVI ROSHAN	51	Pooja
53	Ku	KUNDARPAWAR ARYA VIKAS	52	Jangle
54		MADAVI DHRUV BHUPENDRASHAHA	53	Arya
55	Ku	MASKHARE MAYUR PRASHANT	54	Madavi
56	Ku	BANGALE SWARUP VIJAY	55	Maskhare
57	Ku	BHADANGE SARANG SANJAY	56	Swarup
58	Ku	LONARKAR JANHAVI PRAMOD	57	Bhadange
59	Ku	DAKAHA ANSHIKA SANJEET	58	Lonarkar
60	Ku	DHENDE YASH ANAND	59	Dakaha
61	Ku	DHOLE TRUPTI MAROTRAO	60	Dhende
62	Ku	GAIKWAD RADHIKA SANDEEP	61	Dhole
63	Ku	KUMBHRE FALGUNI VINOD	62	Gaikwad
64	Ku	LOKHANDE KASHISH ASHOK	63	Kumbhare
65	Ku	RANGARI YASHIKA SUSHIL	64	Lokhande
66	Ku	MALEWAR KIRTI BHAUDAS	65	Yashika
67	Ku	NIKHADE PALASH ANAND	66	Malewar
68	Ku	NINAWA VISHAKHA INDRAPAL	67	Nikhade
69	Ku	NISTANE PAYAL TULSIRAM	68	Nishakha
70	Ku	PANCHBUDHE GOURI PRASHANT	69	Nistane
71	Ku	SALVE SAKSHI NITIN	70	Panchbudhe
72	Ku	SINGH DHIRAJKUMARI INDRAJEET	71	Salve
73	Ku	TRIPATHI DURGESHWARI DHIRALAL	72	Singh
74	Ku	WADIBHASME ADITYA BHAGWAN	73	Tripathi
75	Ku	WANKHADE ATHARWA SHIOKUMAR	74	Wadibhasme
76	Ku	DUBEY SAKSHI VIJAYKANT	75	Wankhade
77		KHOT ANSHUL LAXMAN	76	Dubey
78	Ku	GAIKWAD RADHIKA SANDEEP	77	Khot
79		TIDKE PRIYOG RAMKRUSHNA	78	Gaikwad
			79	Tidke

  
M.D. Patil  
Coordinator

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**CERTIFICATE COURSE IN ADVANCED PETROLOGY**

**Student's photographs during the course**



Shri Shivaji Education Society Amravati's  
Science College, Congress Nagar, Nagpur  
2023-2024

### Notice

All the students of B.Sc. Geology are here by informed that the certificate course on “**Advanced Petrology**” Final examination will be held on **Thursday, 7th of March 2024 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, SSESAs Science College, Congress Nagar, Nagpur



Mr Mahesh D. Phalke  
Coordinator & Head

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**CERTIFICATE COURSE IN ADVANCED PETROLOGY**

**Final Theory Examination Question Paper**

**Questions: 40**

**Total marks:100**

**Note: All questions are compulsory**

**Each question carries 2 marks**

1. The branch of geology which deals with various aspects of rocks is \_\_\_\_\_
  - a) Petrology
  - b) Mineralogy
  - c) Lithology
  - d) Rockology
2. What is the chemical composition of Quartz?
  - a)  $\text{SiO}_4$
  - b)  $\text{Si}_2\text{O}_3$
  - c)  $\text{SiO}_2$
  - d)  $\text{Al}_2\text{O}_3$
3. Which of the following is not true about a mineral?
  - a) Naturally occurring
  - b) Inorganic substance
  - c) Organic substance
  - d) Definite chemical composition
4. Mineralogy deals with?
  - a) Individual properties of minerals
  - b) Formation of minerals
  - c) Mode of occurrence
  - d) Properties, formation and occurrence
5. Carbonate minerals are found usually in \_\_\_\_\_
  - a) Igneous rocks
  - b) Sedimentary rocks
  - c) Sedimentary and metamorphic rocks
  - d) Metamorphic and igneous rocks
6. Which quartz mineral shows blue colour?
  - a) Rose quartz
  - b) Blue quartz
  - c) Smoky quartz
  - d) Rock crystal
7. The streak given by the quartz group is \_\_\_\_\_
  - a) White
  - b) Colourless
  - c) Blue
  - d) Pale yellow
8. What is the cleavage shown by quartz minerals?
  - a) Basal
  - b) Prismatic



- c) Rhombohedral
  - d) No cleavage
9. Quartz is found in which type of rock?
- a) Igneous rock
  - b) Sedimentary rock
  - c) Metamorphic rock
  - d) Igneous, sedimentary and metamorphic rocks
10. Stratification can be seen widely in which of the following rocks?
- a) Igneous rocks
  - b) Metamorphic rocks
  - c) Sedimentary rocks
  - d) Fossil rocks
11. Outcrop is seen on land everywhere on earth.
- a) True
  - b) False
12. What is the state of lava or magma?
- a) Liquid always
  - b) Solid
  - c) Gaseous
  - d) Mixture of liquid, crystals and gases
13. Where are the volcanic rocks formed?
- a) Under the surface of earth
  - b) On the surface of earth
  - c) Inside the core
  - d) Between mantle
14. What is the grain size of volcanic rocks?
- a) Very coarse
  - b) Coarse
  - c) Intermediate
  - d) Very fine
15. The rock is coarse grained in \_\_\_\_\_
- a) Volcanic rocks
  - b) Plutonic rocks
  - c) Hypabyssal rocks always
  - d) Not found in igneous rocks
16. Pick the plutonic igneous rock.
- a) Granite
  - b) Granite porphyry
  - c) Syenite porphyry
  - d) Marble
17. The rocks which exhibit mixed characteristics of volcanic and plutonic rocks are \_\_\_\_\_
- a) Intermediate rocks
  - b) Mixed rocks
  - c) Hypabyssal rocks
  - d) Secondary rocks
18. Which is the most dominant constituent of igneous rock?
- a)  $Al_2O_3$
  - b)  $SiO_2$
  - c)  $CaCO_3$
  - d)  $CaO$
19. The texture of granite is \_\_\_\_\_
- a) Equigranular

- b) Directive
  - c) Inequigranular
  - d) Intergrowth
- 20.** What can be said about the grain size of pegmatite?
- a) Fine grained
  - b) Medium grained
  - c) Fine to medium grained
  - d) Coarse grained
- 21.** Which rock is also called secondary rock?
- a) Igneous rock
  - b) Sedimentary rock
  - c) Metamorphic rock
  - d) No class of rock is termed so
- 22.** Which is the rock present in the majority on the surface of earth?
- a) Igneous rock
  - b) Sedimentary rock
  - c) Metamorphic rock
  - d) No class of rock in particular
- 23.** Rock salt may be formed by \_\_\_\_\_
- a) Erosion
  - b) Winds
  - c) Continued evaporation
  - d) Continued precipitation
- 24.** Animal and vegetable life don't contribute to the formation of sedimentary rocks.
- a) True
  - b) False
- 25.** The layered arrangement in sedimentary rocks is called \_\_\_\_\_
- a) Mud cracks
  - b) Stratification
  - c) Rain prints
  - d) Ripple marks
- 26.** Type of bedding where sorting and arrangement has occurred based on grain size is \_\_\_\_\_
- a) Cross bedding
  - b) Lamination
  - c) Graded bedding
  - d) Mud cracks
- 27.** Graded bedding occurs due to which phenomenon?
- a) Wind settling
  - b) Sunlight
  - c) Gravitational settling
  - d) Loading
- 28.** Mud cracks are common in which type of sedimentary rocks?
- a) Fine grained
  - b) Medium grained
  - c) Coarse grained
  - d) Not particular
- 29.** Give an example for rudaceous rock.
- a) Breccia
  - b) Shale
  - c) Limestone
  - d) Sandstone

- 30.** Which of the following are finest grain sized?  
a) Rudaceous rocks  
b) Arenaceous rocks  
c) Argillaceous rocks  
d) Psephites
- 31.** Conglomerate belong to which group of sedimentary rocks?  
a) Rudaceous rocks  
b) Argillaceous rocks  
c) Arenaceous rocks  
d) Any group
- 32.** Sandstone belongs to which group of sedimentary rocks?  
a) Rudaceous rocks  
b) Argillaceous rocks  
c) Arenaceous rocks  
d) Any group
- 33.** Conglomerates consist of which shaped fragments mostly?  
a) Angular  
b) Sub-angular  
c) Rounded  
d) Edged
- 34.** Which is the dominant mineral in sandstone?  
a) Mica  
b) Diamond  
c) Quartz  
d) Felspar
- 35.** The term quartzite is associated with which type of sandstone?  
a) Siliceous sandstone  
b) Calcareous sandstone  
c) Argillaceous sandstone  
d) Ferruginous sandstone
- 36.** Red Fort in India is built using which sedimentary rock?  
a) Shale  
b) White Sandstone  
c) Red sandstone  
d) Breccia
- 37.** The non-clastic sedimentary rock chiefly made of carbonate of calcium is \_\_\_\_\_  
a) Limestone  
b) Sandstone  
c) Shale  
d) Breccia
- 38.** The major use of limestone is \_\_\_\_\_  
a) Primary source material for manufacture of Portland cement  
b) Used in metallurgical industries as flux  
c) Used as building stone  
d) Used as a source of magnesium
- 39.** What is a metamorphosed sedimentary rocks?  
a) Shale  
b) Limestone  
c) Coal  
d) Dolomite

40. The grade of coal with very low calorific value is \_\_\_\_\_

- a) Peat
- b) Lignite
- c) Bituminous
- d) Anthracite

Mahesh D. Phalke

Mr



Coordinator & Head

Shri Shivaji Education Society Amravati's

Science College, Congress Nagar, Nagpur

2023-2024

### Notice

All the students of B.Sc. Geology are hereby informed that the certificate course on “**Advanced Petrology**” **Practical** examination will be held on **Thursday, 29th of February 2024 at 11:00 AM**. For all Geology UG students admitted to this course. 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, SSESAs Science College, Congress Nagar, Nagpur



Mr Mahesh D. Phalke

Coordinator & Head

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**CERTIFICATE COURSE IN ADVANCED PETROLOGY**

**Final Practical Examination Question Paper**

**Total marks:20**

**Note: All questions are compulsory**

**Each question carries 10 marks**

**Q.1 Identify the given minerals in hand specimens. (3-spots) Marks-06**

**Q.2 Identify given rocks in hand specimens and under a microscope. (7-spots)**

**Marks-14**



Mr Mahesh D. Phalke

Coordinator & Head

**SSES AMRAVATI'S SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12**

**DEPARTMENT OF GEOLOGY**

**EXAMINATION OF CERTIFICATE COURSE IN ADVANCED PETROLOGY**

**Final Mark list of examination (Theory & Practical)**

<b>Sr. No.</b>		<b>Name of the Student</b>	<b>Marks Obtained (Out of 80)</b>	<b>Practical Marks (Out of 20)</b>	<b>Grade</b>
1	Ku	SURPAM SHREYA UMESH	70	20	A+
2		SHRIVASTAV ARYAMAN MANOJ	80	20	O
3	Ku	BANKAR SHRUTI WAMAN	75	20	O
4	Ku	YELNE TANUSHREE DEVANAND	76	20	A+
5		BAGHEL DEEPAK SURENDRASINGH	68	18	A+
6	Ku	RAJPUT RIDDHI BHAIYALAL	40	20	B
7		CHANDANKHEDE YASH CHINTAMAN	72	20	O
8	Ku	DEOGADKAR MANASI SANJAY	70	18	A+
9	Ku	DESHKAR BHUMIKA DEVENDRA	68	20	A+
10		SHRIVASTAV ARYAMAN MANOJ	80	20	O
11	Ku	HUMNE JANHAVI PURAN	76	20	O
12	Ku	INWATE RISHI RANJEET	74	20	O
13	Ku	JAMRE SHANU OMPRAKASH	68	18	A+
14	Ku	KALE SHAMALI PRAKASH	72	20	O
15		KALSE SAHIL RAMESHWAR	58	20	A
16	Ku	KATHANE ASHWINI DINESH	72	20	O
17	Ku	NARTAM ARYA RAJU	76	20	O
18	Ku	NIMJE BHUMIKA SITARAM	74	20	O
19	Ku	HATMODE SAKSHI VIJAY	60	18	A
20	Ku	PATEL KAYNAT WAJID	44	20	B+
21		KANOJE YUGANSH NANDU	80	20	O
22	Ku	SELOTE SALONI RAJU	78	20	O
23	Ku	SURYAWANSHI SHWETA BASANTLAL	74	20	O
24	Ku	UIKEY SHIVANI VINOD	70	20	A+
25	Ku	ANSARI AIMAN RAVISH NISAR AHMAD	68	20	A+
26	Ku	BAWANE VAISHNAVI PURUSHOTTAM	76	20	O
27	Ku	SIDRA MAHVEEN ABDUL SALAM	70	20	A+
28	Ku	GAIGAWALI SAYALI RAJU	46	20	B+

29	Ku	MANDAOKAR MRUNMAYEE DILIP	72	20	O
30		KHARE JATIN SURESH	66	20	A+
31	Ku	RAMTEKE PALASH PURUSHOTTAM	68	20	A+
32	Ku	VISHWAKARMA LUCKY ANIL	70	20	A+
33	Ku	MARSKOLHE MANAN SUNIL	32	18	C
34	Ku	PATEWAR SHARVARI MANIKRAO	68	20	A+
35	Ku	WANKAR NANDINI LAXMAN	72	20	O
36	Ku	WANKHEDE SNEHAL SANJAY	70	20	A+
37	Ku	ADHAU PURVA PRAMOD	74	20	O
38	Ku	BAGDE AYUSHI MANOJKUMAR	72	20	O
39	Ku	BAGHEL RIYA KISHOR	76	20	O
40		BAHORIYA KARAN NARESH	66	20	A+
41	Ku	BHUJADE SAKSHI BABLU	36	18	B
42		BHOUTKAR HARSH PRAKASH	48	18	B+
43		CHARUTKAR VANSI PRAMOD	62	20	A+
44	Ku	CHAVHAN VAISHNAVI SAHEBRAO	68	20	A+
45	Ku	BOPCHE PAYAL NANDKISHOR	68	20	A+
46	Ku	DUNDE SHRUTI PRATIK	70	20	A+
47	Ku	GAJBHIYE SAMIKSHA ANKUSH	72	20	O
48	Ku	GOUTIYA MUSKAN JAGDISH	60	20	A
49		GUPTA KSHITIJ ADITYASHEKHAR	80	20	O
50	Ku	HAJARE POOJA RAJU	76	20	O
51	Ku	INGLE NISHCHAL SHILPA	72	20	O
52	Ku	JANGLE VAISHNAVI ROSHAN	70	20	A+
53	Ku	KUNDARPAWAR ARYA VIKAS	78	20	O
54		MADAVI DHRUV BHUPENDRASHAHA	70	20	A+
55	Ku	MASKHARE MAYUR PRASHANT	56	20	A
56	Ku	BANGALE SWARUP VIJAY	64	20	A+
57	Ku	BHADANGE SARANG SANJAY	70	20	A+
58	Ku	LONARKAR JANHAVI PRAMOD	72	20	O
59	Ku	DAKAHA ANSHIKA SANJEET	70	20	A+
60	Ku	DHENDE YASH ANAND	72	20	O
61	Ku	DHOLE TRUPTI MAROTRAO	32	18	C
62	Ku	GAIKWAD RADHIKA SANDEEP	80	20	O
63	Ku	KUMBHRE FALGUNI VINOD	72	20	O
64	Ku	LOKHANDE KASHISH ASHOK	72	20	O
65	Ku	RANGARI YASHIKA SUSHIL	68	20	A+
66	Ku	MALEWAR KIRTI BHAUDAS	64	20	A+
67	Ku	NIKHADE PALASH ANAND	66	20	A+
68	Ku	NINAWA VISHAKHA INDRAPAL	68	20	A+
69	Ku	NISTANE PAYAL TULSIRAM	70	20	A+
70	Ku	PANCHBUDHE GOURI PRASHANT	72	20	O
71	Ku	SALVE SAKSHI NITIN	68	20	A+
72	Ku	SINGH DHIRAJKUMARI INDRAJEET	70	20	A+

73	Ku	TRIPATHI DURGESHWARI DHIRALAL	78	20	O
74	Ku	WADIBHASME ADITYA BHAGWAN	76	20	O
75	Ku	WANKHADE ATHARWA SHIOKUMAR	80	20	O
76	Ku	DUBEY SAKSHI VIJAYKANT	80	20	O
77		KHOT ANSHUL LAXMAN	74	20	O
78	Ku	GAIKWAD RADHIKA SANDEEP	80	20	O
79		TIDKE PRIYOG RAMKRUSHNA	68	20	A+

**Grading: 91-100-O, 81-90-A+, 71-80- A, 61-70- B+, 51-60-B, 46-50- C, 45-P**








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<b>Add-on Course (Geology Department)</b>					
<b>Course Exam Name: Certificate Course in Advanced Petrology</b>					
Name of Student: <u>Shrivastav, Arjuman, Manoj</u>		<b>INSTRUCTIONS FOR FILLING THE SHEET</b> 1. This sheet should not be folded or crushed. 2. Use only 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. <b>WRONG METHODS</b> <b>CORRECT METHOD</b>  			
Roll No.:	<u>002</u>			Session: 2023-24	
Exam Date: 07/03/2024				Max. Marks: 80	
				Obtained Marks:	<u>80</u>
				Coordinator- Mr. M. D. Phalke	

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<u>Add-on Course (Geology Department)</u>			
Course Exam Name: Certificate Course in Advanced Petrology			
Name of Student:		INSTRUCTIONS FOR FILLING THE SHEET	
..... <u>Surpam Shreya Umesh</u> .....		1. This sheet should not be folded or crushed.	
Roll No.:	<u>001</u>	Session: 2023-24	2. Use only blue/ black ball point pen to fill the circles.
Exam Date: 07/03/2024		Max. Marks: 80	3. Use of pencil is strictly prohibited.
	Obtained Marks:	<u>70</u>	4. Circles should be darkened completely and properly.
	Coordinator- Mr. M. D. Phalke		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.
			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	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	11	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	21	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	31	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	41	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	12	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	22	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	32	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	42	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	13	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	23	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	33	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	43	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Mr Mahesh D. Phalke  
 Coordinator & Head











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NAGPUR**



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**'CERTIFICATE**

Mr./Ku. SURPAM SHREYA UMESH is awarded with certificate on successful completion of the course entitled, Certificate course in "Advanced Petrology".

Session 2023-24 under Add-on course conducted for 30 hours from 15/12/2023 to 24/02/2024 by Department of Geology, SSESA's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with 'A+' Grade.

**Mr. M. D. Phalke**  
Coordinator, Department of Geology

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



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## CERTIFICATE

Mr./Ku. SHRIVASTAV ARYAMAN MANOJ is awarded with certificate on successful completion of the course entitled, Certificate course in "Advanced Petrology".

Session 2023-24 under Add-on course conducted for 30 hours from 15/12/2023 to 24/02/2024 by Department of Geology, SSESA's, Science College, congress Nagar, Nagpur 440012.

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

**Mr. M. D. Phalke**  
Coordinator, Department of Geology

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



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

**Session 2023 – 2024**

**Department of Geology**

**Report on “Certificate Course on Advanced Petrology”**

**COORDINATOR**

**Mr. Mahesh Devidas Phalke**

**Duration: 15/12/2023 to 24/02/2024**

**Time: 04:00 PM– 6:00 PM**

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Department of Geology, SSESAs Science College, Nagpur organised a Certificate course on “**Certificate Course on Advanced Petrology**” for all UG students of B.Sc. Geology and the duration of the course from 15<sup>th</sup> December 2023 to 24<sup>th</sup> February 2024 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 Mr Mahesh Devidas Phalke 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 78 students successfully completed this course with good grades in the final exam. The outcome of this course is an advanced petrology course that mainly focuses on the in-hand and on-field experience of different minerals and rocks exposed in the field, providing students with a comprehensive understanding of the physical properties of the rocks. This course integrates the fundamental knowledge of the mainly three types of rocks studied under the branch of petrology. It prepares students for careers in geoscience, research and geoscience-related fields. Petrology is 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.



Mr Mahesh D. Phalke  
Coordinator & Head

## **Action Taken Report**

The department and college authority has assured that matter will be placed in Governing Body Meeting for necessary discussion. In response to their claim for more skill based introduced Skill based course on geology from academic year 2023-24 session-I. Due care will be taken for more skill-based courses in future. It prepares students for careers in geoscience, research and geoscience-related fields. Petrology is 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.

## Feedback Analysis:

After successful completion of the course feedback from all the present students was collected. Analysis of feedback were done and after feedback analysis following observation noted remarkably.

