ACHARYA NAGARJUNA UNIVERSITY

I B.Sc., Semester-I under CBCS (w.e.f. 2020-21)

Geology Practical Paper- I (Physical geology, Crystallography and Mineralogy)

Time: Three hours **Maximum: 50 Marks**

Scheme of Examination:

S.No.	Description of the Item	Number to be performed	Marks distribution	Time to be given
I	Identification of geomorphological models	2	2x5= 10	30 min.
II	Identification of crystal models	5	5x2=10	60 min.
III	Megascopic identification of minerals	5	5x2=10	60 min.
IV	Microscopic identification of minerals	2	2x5= 10	30 min.
Practical Total			40	180 min.
V	Record marks (Internal Evaluation)		10	
Total marks			50	

Scheme of Valuation:

I. Identification of geo morphological models (Each 5 marks)
   a) Figure - 2 marks
   b) Description- 3 marks

II. Identification of crystal models (Each 2 marks)
   a) Symmetric elements, class and system – 1 mark
   b) Forms present- 1mark

III. Megascopic identification of minerals (Each 2 marks)
   a) Diagnostic properties and Inference - 2 marks

IV. Microscopic identification of minerals (Each 5 marks)
   a) Properties observed under polarised light – 2 marks
   b) Properties observed under crossed Nicols – 2 marks
   c) Inference – 1mark

ACHARYA NAGARJUNA UNIVERSITY

I B.Sc., Semester-II under CBCS (w.e.f. 2020-21)

Geology Practical Paper- II (Petrology and Structural geology)

Time: Three hours **Maximum: 50 Marks**

Scheme of Examination:

S.No.	Description of the Item	Number to be performed	Marks distribution	Time to be given
I	Megascopic identification of rocks	6	6x2= 12	30 min.
II	Microscopic identification of rocks	2	2x4= 8	60 min.
III	Structural problems	2	2x5=10	60 min.
IV	Geological map	1	1x10= 10	30 min.
Practical Total			40	180 min.
V	Record marks (Internal Evaluation)		10	
Total marks			50	

Scheme of Valuation:

I. Megascopic identification of rocks (Each 2 marks)
   a) Identification of Minerals and Texture - 1 mark
   b) Origin and Inference - 1mark

II. Microscopic identification of rocks (Each 4 marks)
   a) Texture - 1 mark
   b) Identification of Minerals – 2 marks
   c) Origin and Inference - 1mark

III. Structural problems - Each 5 marks

IV. Geological map (10 marks)
   a) Drawing the strike lines – 2 marks
   b) Drawing the section – 3 marks
   c) Geology of area – 5 marks

ACHARYA NAGARJUNA UNIVERSITY

II B.Sc., Semester- III under CBCS (w.e.f. 2021-22)

Geology Practical Paper- III (Palaeontology)

Time: Three hours **Maximum: 50 Marks**

Scheme of Examination:

S.No.	Description of the Item	Number to be performed	Marks distribution	Time to be given
I	Fossils	10	10x4= 40	180 min.
II	Record marks (Internal Evaluation)		10	
Total marks			50	

Scheme of Valuation:

I. Fossils (Each 4 marks)
   a) Classification - 1 mark
   b) Morphology - 3 marks

ACHARYA NAGARJUNA UNIVERSITY

II B.Sc., Semester-IV under CBCS (w.e.f. 2021-22)

Geology Practical Paper- IV (Economic geology and Mineral exploration)

Time: Three hours **Maximum: 50 Marks**

Scheme of Examination:

S.No.	Description of the Item	Number to be performed	Marks distribution	Time to be given
I	Megascopic identification of economic minerals	8	8x3= 24	120 min.
II	Problems on estimation of Ore reserves (included area & excluded area methods)	2	2x8= 16	60 min.
Practical Total			40	180 min.
III	Record marks (Internal Evaluation)		10	
Total marks			50	

Scheme of Valuation:

I. Megascopic identification of economic minerals (Each 3 marks)
   a) Diagnostic properties and Inference- 2 marks
   b) Origin, occurrence and Distribution in India - 1 mark

II. Problems – Each 8 marks

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II B.Sc., Semester-IV under CBCS (w.e.f. 2021-22)

Geology Practical Paper- V (Mining geology and Ore dressing)

Time: Three hours **Maximum: 50 Marks**

Scheme of Examination:

S.No.	Description of the Item	Number to be performed	Marks distribution	Time to be given
I	Megascopic identification of Ore & Industrial minerals	10	10x3= 30	180 min.
II	Field work report (External Evaluation)		10	
Practical Total			40	180 min.
III	Record marks (Internal Evaluation)		10	
Total marks			50	

Scheme of Valuation:

I. Megascopic identification of Ore & Industrial minerals -Each 3 marks
   a) Diagnostic properties and Inference - 1 mark
   b) Origin of occurrence - 1 mark
   c) Distribution in India and uses - 1mark

ACHARYA NAGARJUNA UNIVERSITY

B.Sc. Degree Examination, (w.e.f. 2020 – 21 & 2021 - 22)

Geology

For I, II, III & IV semesters (Papers I,II,III,IV & V)

Instructions for question paper setting

- Two questions should be given from each unit having 15 marks validity for each.
- Out of 10 questions, 2 to 3 questions having short answers (With Internal choice) should be given by covering the syllabus of all the units in that section (by dividing it to 4 parts as a,b,c,d as shown in the model paper)
- For each section there should be **ONE** short answer type (With Internal choice) question by covering the syllabus of all the units in that section
- Every question paper should contain both English along with telugu version

ACHARYA NAGARJUNA UNIVERSITY

B.Sc. Degree Examination, (w.e.f. 2020 - 21)

First Year – First Semester
Geology
Paper I - Physical Geology, Crystallography and Mineralogy

MODEL PAPER

Time: Three hours Maximum: 75 Marks

Answer any **FIVE** questions by choosing at least **ONE** from each Section

All questions carry equal marks 5X15 = 75 marks

SECTION – A (PHYSICAL GEOLOGY)

1. Write an essay on weathering of rocks
2. Describe the geological work of rivers
3. Give an account of earthquakes
4. Write a short note on any **TWO** of the following
   a) Morains
   b) Wind deposits
   c) Plate techtonics
   d) Earth crust

SECTION – B (CRYSTALLOGRAPHY AND MINERALOGY)

5. Classify the crystals
6. Describe the symmetry elements and forms present in the normal class of cubic system
7. Explain the silicate structures
8. Describe the physical properties, chemical composition and mode of occurrence of Felspars
9. Write an essay on optical properties of minerals
10. Write a short note on any **TWO** of the following
    a) Symmetry elements
    b) Hardness
    c) Nicol prism
    d) Polarising microscope

ACHARYA NAGARJUNA UNIVERSITY

B.Sc. Degree Examination, (w.e.f. 2020 - 21)

First Year – Second Semester
Geology
Paper II – Petrology and structural Geology

MODEL PAPER

Time: Three hours Maximum: 75 Marks

Answer any **FIVE** questions by choosing at least **ONE** from each Section

All questions carry equal marks 5X15 = 75 marks

SECTION – A (PETROLOGY)

1. Describe the concordant and discordant forms with neat sketches
2. Give a brief account on the textures of igneous rocks
3. Classify the sedimentary rocks
4. Write an essay on the structures of sedimentary rocks
5. Briefly describe the agents and types of Metamorphism
6. Write a short note on any **TWO** of the following
   a) Tyrrel classification
   b) Residual deposits
   c) Zones of metamorphism
   d) Structures of metamorphic rocks

SECTION – B (STRUCTURAL GEOLOGY)

7. Describe the classification of Folds with neat sketches
8. Discuss different types of unconformities and their recognition in the field
9. Explain the classification of Faults with neat sketches
10. Write a short note on any **TWO** of the following
    a) Clinometer
    b) Joints
    c) Structural geology
    d) Criteria for faulting

ACHARYA NAGARJUNA UNIVERSITY

B.Sc. Degree Examination, (w.e.f. 2021 - 22)

Second Year – Third Semester
Geology
Paper III - Indian geology and Palaeontology

MODEL PAPER

Time: Three hours Maximum: 75 Marks

Answer any **FIVE** questions by choosing at least **ONE** from each Section

All questions carry equal marks 5X15 = 75 marks

SECTION – A (INDIAN GEOLOGY)

1. Describe the Cuddapah's of the type area. Add a note on their economic importance.
2. Give an account of Siwalic system
3. Write an essay on standard geological time scale.
4. Write a short note on any **TWO** of the following
   a) Economic wealth of Archeans
   b) Deccan traps
   c) Peninsular India
   d) Gondwana succession

SECTION – B (PALAEONTOLOGY)

5. Give detailed account of the conditions of fossilisation and modes of preservation.
6. Describe the morphological features of Brachiopods
7. Explain the morphology and geological distribution of Gastenopods
8. Describe the morphological features of Echinoids with neat sketches
9. Write a short note on any **TWO** of the following
   a) Uses of fossils
   b) Corals
   c) Trilobites
   d) Index fossils
10. Write a short note on any **TWO** of the following
    a) Physa
    b) Nautilus
    c) Monograptus
    d) Glossopteris

ACHARYA NAGARJUNA UNIVERSITY

B.Sc. Degree Examination, (w.e.f. 2021 - 22)

Second Year – Fourth Semester
Geology
Paper IV – Economic geology and Mineral exploration

MODEL PAPER

Time: Three hours Maximum: 75 Marks

Answer any **FIVE** questions by choosing at least **ONE** from each Section

All questions carry equal marks 5X15 = 75 marks

SECTION – A (ECONOMIC GEOLOGY)

1. Explain the formation of ore deposits through magmatic concentration with Indian examples
2. Give an account of Iron deposits of India
3. Give an account of raw materials used in cement industry
4. Write an essay on coal fields of India
5. Write a short note on any **TWO** of the following
   a) Importance of economic minerals
   b) Bateman's classification
   c) Ores of copper
   d) Refractories
6. Write a short note on any t **TWO** of the following
   a) Atomic minerals
   b) Types of coal
   c) Gold deposits
   d) Muscovite

SECTION – B (MINERAL EXPLORATION)

7. Describe the structural guides in mineral exploration
8. Explain the principles and methods of geochemical prospecting
9. Give a detailed account of electrical methods employed in geophysical prospecting
10. Write a short note on any **TWO** of the following
    a) Path finders
    b) Aerial photography
    c) Magnetic methods
    d) Secondary description

ACHARYA NAGARJUNA UNIVERSITY

B.Sc. Degree Examination, (w.e.f. 2021 - 22)

Second Year – Fourth Semester
Geology
Paper V - Mining geology and Ore dressing

MODEL PAPER

Time: Three hours Maximum: 75 Marks

Answer any **FIVE** questions by choosing at least **ONE** from each Section

All questions carry equal marks 5X15 = 75 marks

SECTION – A (MINING GEOLOGY)

1. Classify the mining methods
2. Briefly describe the open cast mining methods
3. Write an essay on mining hazards and safety measures
4. Write a short note on any **TWO** of the following
   a) Mine explosives
   b) Ventilation in mines
   c) Stopping methods in mining
   d) Criteria for selection of mining method

SECTION – B (ORE DRESSING)

5. Give a brief account on mineral processing
6. Explain the techniques of ore dressing
7. Describe different drilling methods
8. Write an essay on the principles of mineral economics
9. Write an essay on National mineral policy
10. Write a short note on any **TWO** of the following
    a) Sieve analysis
    b) Classification of mineral deposits
    c) Mineral conservation
    d) Mineral Economics