

Krantiguru Shyamji Krishna Verma

# **Kachchh University**

**BHUI : 370 001**



**SYLLABUS (CBCS)**

# **GEOLOGY**

(With effect from June 2011)

# K.S.K.V. KACHCHH UNIVERSITY

## SYLLABUS OF B. Sc. (GEOLOGY)

(In force from June 2011)

**Subject Code:** CEGE101

### **SEMESTER-1**

#### **CEG-101 EARTH SYSTEM SCIENCE & MINERALOGY**

##### **Unit : 1 Earth System Science and the origin of solar system: (15 Marks)**

- Earth Systems Science: Definitions, Branches and Scope.
- Elementary information: Solar system, Members of the solar system, Terrestrial and Jovian planets.
- Origin of the solar system, Origin of planets, Nebular and other hypotheses.
- Parts of Earth as a planet: lithosphere, Hydrosphere and atmosphere.

##### **Unit : 2 Internal structure of the Earth: (15 Marks)**

- Internal structure of the Earth, Differentiation into crust, mantle and core, Temperature, Pressure conditions and the density of rocks in the interior of the earth. Seismological evidences.

##### **Unit: 3 Introduction to Mineralogy : (15 Marks)**

- Definition of mineral and Ore. Intro to Classification of minerals into families..
- Important uses of minerals. Gem minerals and their essential properties.
- Petro logical Microscope, parts, accessories and uses

##### **Unit : 4 Identification of Minerals: (15 Marks)**

- Identification of minerals,
- Physical and Chemical properties of minerals including isomorphism, polymorphism, pseudomorphism, fluorescence and phosphorescence.

**KSKV Kutch University, BHUJ**

FIRST YEAR B.Sc. : Semester : I (ONE)

SUBJECT : GEOLOGY (CEGE101)

(THEORY)

Total Marks : 60

Passing standard : 24 Marks

Duration : 2 Hours

**PATTERN OF QUESTION PAPER FOR SEMESTER-END EXAMS**

1. Internal options are compulsory (i.e. Q.1 or Q.1; Q.2 or Q.2 likewise.)
2. There are four questions (Q. 1 to Q. 4) each question carries 15 marks

**The structure for the questions is as under:**

Questions	Section		Marks
Que- 1 Unit – I	A	(Objective type) ( <i>no internal option</i> )	05
	B	(Descriptive - Essay type / Short notes <i>with internal option</i> )	10
Que – 2 Unit –II	A	–do–	05
	B	–do–	10
Que – 3 Unit – III	A	–do–	05
	B	–do–	10
Que – 4 Unit – IV	A	–do–	05
	B	–do–	10

**Note :** Types of questions for section A are varied like: one line answers/ two line answers/ definitions/ reasoning/ drawing small figures/ matching the figures etc. **but not fill in the blanks.**

## **GEOLOGY PRACTICALS** **(50 Marks)**

- **Study of the physical properties of the common rock forming minerals** –Talc, Gypsum, Muscovite, Biotite, Calcite, Fluorite, Apatite, Orthoclase, Microcline, Plagioclase, Quartz, Amethyst, Chalcedony, Agate, Bloodstone, Flint, Jasper, Opal, Topaz, Corundum.

### **PATTERN OF QUESTION PAPER FOR SEMESTER-END PRACTICAL EXAM**

## **KSKV Kutch University : BHUJ**

**FIRST YEAR B.Sc. : Semester : I (ONE)**

**SUBJECT : GEOLOGY CEGE101**

**(PRACTICAL)**

**Total Marks : 50**

**Passing standard : 24 Marks**

**Time: 11:00 to 5:30 pm**

**Centre : BHUJ**

**Place : Shri R. R. Lalan College, Bhuj**

### **QUESTION PAPER**

**Q-1 Identify the Mineral specimen megascopically in Group no. 1 to 20 . Give their physical properties, chemical composition, crystal system and at least two uses.**

**(1 SP X 20 GP X 2 Mark =40 Marks)**

**Q.2 Certified Journal and Viva Voce )**

**(10 Marks)**

#### **Reference books:**

- Introduction to Physical Geology, A. K. Datta, Kalyani Publisher, New Delhi.
- A Text Book of Geology, P. K. Mukerjee, World press.
- Rutley's Elements of Mineralogy, H. H. Read, CBS publishers

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# **Kachchh University**

**BHUIJ : 370 001**



**SYLLABUS (CBCS)**

**SEMESTER-II**

**GEOLOGY (CEGE-201)**

(With effect from June 2011)

**SEMESTER- 2**

**CEGE-201 INTRODUCTION TO PALEONTOLOGY & PETROLOGY  
(CEGE-201)**

**Unit : 1 Introduction to Paleontology: (15 Marks)**

- Definition and branches of Paleontology, Conditions essential for fossilization, Modes of preservation and occurrence of fossils.
- Terminology related to palaeontology: Body fossil, Chemical fossil, Trace fossil, Living fossil, Facies fossil, Micro fossil, Pseudo-fossil, Mineralized fossil, Chronostratigraphy, Bio Stratigraphy, Palaeo climate, Palaeoenvironment and Palaeo- Ecology.
- Significance of fossil study.

**Unit : 2 Techniques of Paleontology: (15 Marks)**

- Geological Time-scale, Evolution of life through geological time
- Collection techniques of fossils.
- Imperfection of geological records

**Unit : 3 Igneous Petrology (15 Marks)**

- Definition of rock, Types of rocks and their characteristics, Origin of Igneous rocks and their classification. Common textures of igneous rocks.

**Unit : 4 Sedimentary and Metamorphic Petrology (15 Marks)**

- Characteristics of Sedimentary rocks, Grain size of rocks and classification based on it. Origin of sedimentary rocks, lithification (welding and cementation), conditions of deposition (chemical and Organic with examples). Textures of sedimentary rocks.
- Characteristics of Metamorphic rocks process of metamorphism. Types and agents of metamorphism, common metamorphic rocks with their texture.

**KSKV Kutch University : BHUJ**

FIRST YEAR B.Sc. : Semester : I (ONE)

SUBJECT : GEOLOGY

(THEORY)

Total Marks : 60

Passing standard : 24 Marks

Duration : TWO Hours

**PATTERN OF QUESTION PAPER FOR SEMESTER-END EXAMS**

1. Internal options are compulsory (i.e. Q.1 or Q.1; Q.2 or Q.2 like wise.)
2. There are four questions (Q. 1 to Q. 4) each question carries 15 marks

**The structure for the questions is as under:**

Questions	Section		Marks
Que- 1 Unit – I	A	(Objective type) ( <i>no internal option</i> )	05
	B	(Descriptive - Essay type / Short notes <i>with internal option</i> )	10
Que – 2 Unit –II	A	-do-	05
	B	-do-	10
Que – 3 Unit – III	A	-do-	05
	B	-do-	10
Que – 4 Unit – IV	A	-do-	05
	B	-do-	10

*Note* : Types of questions for section A are varied like: one line answers/ two line answers/ definitions/ reasoning/ drawing small figures/ matching the figures etc. **but not fill in the blanks.**

## **GEOLOGY PRACTICALS**

**(50 Marks)**

- **Study of modes of fossilization:** Petrification, Carbonization or Distillation, Replacement, Moulds and Casts, Imprints, Tracks and Trails, Preservation of Original hard parts of the organisms. **(20 Marks)**
- **Megascopic study of typical Igneous rocks :** Granite, Porphyritic Granite, Graphic granite, Basalt, Pegmatite. **(10 Marks)**
- **Megascopic study of typical Sedimentary rocks :** Shale, Sandstone, Conglomerate, Breccia, Limestone. **(10 Marks)**
- **Megascopic study of typical Metamorphic rocks:** Marble, Schist, Gneiss. **(10 Marks)**



**PATTERN OF QUESTION PAPER FOR SEMESTER-END PRACTICAL EXAM**

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**KSKV Kutch University : BHUJ**

FIRST YEAR B.Sc. : Semester : I (ONE)

SUBJECT : GEOLOGY ((CEGE-201)

(PRACTICAL)

Total Marks : **50**

Passing standard : **24 Marks**

Time: 11:00 to 5:30 pm

Centre : BHUJ

Place : Shri R. R. Lalan College, Bhuj

**QUESTION PAPER**

**Q-1** With the help of neat sketch describes **Mode of preservation of fossil specimen** in **Group no.1 to 4.** **(1 SP X 4 GP X 4 Mark =16 Marks)**

**Q-2** Describe the **Rock specimen** megascopically in **Group no. 5 to 16** . Describe their textures, mineral constituents in the order of abundance, origin and structures if any. **(1 SP X 12 GP X 2 Mark =24 Marks)**

**Q.3** Certified Journal and Viva Voce **(10 Marks )**

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**Reference books:**

- Invertebrate Palaeontology, H. Woods (1982), Cambridge University Press.
- The Principles of Petrology, G. W. Tyrell (1960), Asia Publishing House.
- Petrology, W. T. Haung (1962), Mc. Graw Hill.
- Palaeontology, Jain and Ananthraman