KAKATIYA UNIVERSITY
U.G. Skill Enhancement Course - IV
(Under CBCS)
B.Sc. Final Year
SEMESTER - VI
(FOR ALL SCIENCE FACULTY DEPARTMENTS)

QUANTITATIVE APTITUDE TEST

Credits: 2

Theory: 2 hours/week **Marks - 40**

Unit – I ARITHMETICAL ABILITY

1.1 Arithmetical Ability: Ratio & Proportion
1.2 Arithmetical Ability: Time & Work, Time & Distance
1.3 Arithmetical Ability: Simple Interest, Compound Interest
1.4 Arithmetical Ability: Stocks & Shares

Unit – II DATA INTERPRETATION

2.1 Data Interpretation: Tabulation
2.2 **Data Interpretation**: Bar Graphs
2.3 **Data Interpretation**: Pie Charts
2.4 **Data Interpretation**: Line Graphs

Text Book: Quantitative Aptitude by Dr. R.S.Aggarwal

KAKATIYA UNIVERSITY
U.G. B.Sc. Final Year (Under CBCS)
Semester – VI: Generic Elective Paper-II
(FOR ALL SCIENCE FACULTY DEPARTMENTS)

WATER RESOURCES MANAGEMENT

UNIT-I

1. Importance of Natural Resources – Different Types Resources
2. Significance of Water Resources and their uses
3. Conservation of water and recycling of the water – Global distribution of water
4. Water shed programmes and their management
5. Storing the rain water in tanks and recharging ground water.

Unit-II

6. Rain water harvesting in rural areas (chekdam, trenches etc.,)
7. Over use of surface and ground water and control measures.
8. Aims, objectives and implementation of Mission Bhagiratha (Telangana Government Drinking water programme)
9. Aims, objectives and implementation of Mission Kakatiya (Telangana Government minor irrigation programme)
10. Issues and challenges in Water Resources Management

KAKATIYA UNIVERSITY
U.G. Geology (Under CBCS)
B.Sc. Final Year (DSC-1F)
SEMESTER – VI

Economic Geology

(3 hrs/week) **Credits-3**
(45 hours)

Unit I

Definition of Economic Geology. Ore and gangue. Industrial minerals, tenor and grade; syngenetic deposits, epigenetic deposits. Classification of mineral deposits – Bateman's classification modified by Jensen. Processes of formation of mineral deposits; endogenetic and exogenetic processes.

UNIT-II

Study of Ore deposits of gold, copper, lead, zinc, aluminum, Iron, manganese, chromium, uranium and thorium, with respect to their mineralogy, uses, mode of occurrence, origin and distribution in India.

UNIT-III

Distribution of Industrial Minerals in India for the following industries; Abrasives, cement, Ceramic, Glass, Fertilizers & Chemicals. Gemstones and Dimensional stones.

UNIT - IV

Fossil fuels: Coal, origin and types of coal – coal deposits of India.
Oil and Natural Gas: Origin, migration and entrapment – and distribution in India.
Atomic Minerals**:** Uranite, Pitchblende, Coffenite – Beach sands: Monazite, Ilmenite, Rutile and Zircon and their use, Mineral resources of Telangana.

Practicals : (3 hrs/week) **45 hrs (Credits: 1)**

1. Megascopic study, mode of occurrence, distribution in India and uses of the following economic minerals, haematite, magnetite, pyrite, Pyrolusite, Psilomelane, Chalcopyrite, malachite, Azurite, Bauxite, Chromite, Galena Sphalerite, Magnesite, Gypsum, Asbestos, Steatite, Graphite, Monazite, Illemnite, Zircon, Fluorite, Barytes, Corundum, Topaz, Calcite, Kaolinite, Kyanite, Sillimanite, Garnet, Mica.

Text Books:

1**.** Indian mineral resources - S.Krishna swamy.
2. Introduction of India's economic Minerals - N.L.Sharma, K.S.V.Ram.
3. Geology & Mineral resources of Andhra Pradesh - N.V.B.S.Dutt.
4. Mineral Resource of Andhra Pradesh - Dr.P.K.Ramam.

References :

1. Indian mineral year book (1997) Indian Bureau of Mines.
2. Fuel Minerals - A.K.Brown & Dey.

KAKATIYA UNIVERSITY
U.G. Geology (Under CBCS)
B.Sc. Final Year (DSC-1F)
SEMESTER – VI

Economic Geology Practical

Credits: 1

Time: 2½ Hours Max.Marks:25

Model Paper

1) Identify the given economic minerals 1-8 and write their physical properties, chemical composition, origin, occurrence, distribution in India and uses. (8x2=16 M)

2) Identify the given economic minerals 9-10 and write their diagnostic properties. (2x2=4 M)

3) Record &Viva (5 M)

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KAKATIYA UNIVERSITY
U.G. Geology (Under CBCS)
B.Sc. Final Year (DSE-1F)
SEMESTER – VI

Discipline specific Elective

A) Environmental Geology

(3 hrs/week) **Credits-3**
(45 hours)

UNIT-I
Scope of Environmental Geology – Environmental Awareness –Urbanisation and its impact on environment, air, water, sound and land pollution, Global warming and green house effect,

UNIT – II
Disaster management: Natural hazards - Earth quakes, Tsunamis, Coastal erosion - protection and management, floods and landslides.
Man made hazards - Man as agent of mass wasting and land scarification.

UNIT-III
Geo technical constructions and its impact on environment - Dams, Highways, Urbanisation.
Mining and its impact on the environment – Health Hazards associated with mining –
Mine waste disposal.

UNIT-IV
Waste disposal practices, recycling. Role of Geologist in Environmental Protection and Planning. Environment conservation and management

PRACTICALS: (3 hrs/week) **45 hrs (Credits: 1)**
1. Study of maps of seismic zones, earthquake-prone, landslide-prone and flood-prone areas in India.
2. Methods of water analyses for physical and chemical parameters.

Text Books:-
1. Strahler- Environmental Geology
2. Lindgren- Environmental Geology
3. Keller: Environmental Geology.
4. K.S. Valdiya. Environmental Geology

KAKATIYA UNIVERSITY
U.G. Geology (Under CBCS)
B.Sc. Final Year (DSE-1F)
SEMESTER – VI

Discipline specific Elective

A) Environmental Geology Practical

Credits: 1

Time: 2½ Hours Max.Marks:25

Model Paper

1) Study of maps of seismic zones, earthquake-prone, landslide-prone and flood-prone areas in India. (10 M)
2) Analyse the given water sample and estimate their chemical parameters. (10 M)
3) Record &Viva (5 M)

KAKATIYA UNIVERSITY
U.G. Geology (Under CBCS)
B.Sc. Final Year (DSE-1F)
SEMESTER – VI

Discipline specific Elective

B) Mining Geology and Mineral Beneficiation

(3 hrs/week) **Credits-3**
(45 hours)

UNIT-I

Mining Terminology. Types of Mining Methods - Alluvial Mining – pan and Betea. Sluicing, Derricks and Cable Way, Hydraulic Drift Mining. Fore poling and Dredging. Mine ventillation and illumination.

UNIT-II

Open Cast Mining- Glory Hole Mining and Strip Mining, open pit mining, quarrying. Underground Mining- Gophering, Breast, Stopping, Open Overhand stopping, Pillar and Chamber Method, Sub-Level Stopping method. Long wall mining.

UNIT-III

Coal Mining Method – Panel System, Board and Pillar Method, Long wall Mining, Advance and Retreat, Horizon Mining, Strip Mining, Mine Supports, Lighting Ventilation.

UNIT-IV

Introduction to mineral beneficiation. Crushing- Jaw Crushers, Gyratory Crushers, Cone Crushers, Sledging Rolls, Hammer Mill or Pulverator, Stamping, Spring Rolls, Manual Crushing. Grinding - Tumbling mills - ball mills and rod mills,roller mill.

PRACTICALS : (3 hrs/week) **45 hrs (Credits: 1)**

Problems related to mining: Bore hole problems, reserve estimation (vein type and bedded type) .

Field training / Mine visit.

Text Books :

1. Courses in Mining Geology- Arogyaswamy
2. Principles of Mineral Dressing- Gaudin
3. Mining Policy Initiatives- Dhar, Gautam
4. Mineral Processing Technology-Wills

Note: A Geological field trip including open cast and Underground mine visit is recommended for the BSc. Geology final year students.

KAKATIYA UNIVERSITY
U.G. Geology (Under CBCS)
B.Sc. Final Year (DSC-1F)
SEMESTER – VI

Discipline specific Elective

B) Mining Geology and Mineral Beneficiation Practical

Credits: 1

Time: 2½ Hours Max.Marks:25

Model Paper

1) Bore hole problems. (10 M)
2) Ore reserve estimation (vein type and bedded type) (10 M)
3) Record &Viva (5 M)