

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR – 639 005

B.Sc. GEOLOGY COURSE STRUCTURE UNDER CBCS SYSTEM

(For the candidates admitted from the year 2015-2016 onwards)

SEMESTER	COURSE	SUBJECT TITLE	SUBJECT CODE	INSTR. HOURS WEEK	CREDIT	EXAM HOURS	MARKS		TOTAL
							INT	ESE	
I	Tamil - I	Tamil – I	U15L1T1	6	3	3	25	75	100
	English - I	English - I	U15L1E1	6	3	3	25	75	100
	Core Course - I	Understanding The Earth	U15GL1C1	6	5	3	25	75	100
	Core Course - II	Practical – I Structural Geology and surveying	-	3	-	-	-	-	-
	First Allied Course – I	Allied physics-1	U15PH1A1	5	3	3	25	75	100
	First Allied Course - II	Allied Physics -II(Practical)		2	-	-			
	Value Education	Value Education	U15VE1	2	2	3	25	75	100
				30	16				500
II	Tamil - II	Tamil – II	U15L2T2	6	3	3	25	75	100
	English – II	English– II	U15L2E2	6	3	3	25	75	100
	Core Course - II	Practical I– Structural Geology And Surveying	U15GL2C2P	3	4	3	25	75	100
	Core Course – III	Structural Geology	U15GL2C3	6	5	3	25	75	100
	First Allied Course – II	Allied Physics-II (Practical)	U15PH2A2P	2	4	3	25	75	100
	First Allied Course – III	Allied Physics-III	U15PH2A3	5	3	3	25	75	100
	Environmental Studies	Environmental Studies	U15ES2	2	2	3	25	75	100
				30	24				700
III	Tamil - III	Tamil – III	U15L3T3	6	3	3	25	75	100
	English – III	English – III	U15L3E3	6	3	3	25	75	100
	Core Course – IV	Physical Geology	U15GL3C4	6	5	3	25	75	100
	Core Course – V	Practical – II Palaeontology and Crystallography	-	3	-	-	--	--	--
	Second Allied Course I	Allied Maths - I	U15MM3A1	5	3	3	25	75	100
	Second Allied Course II	Allied Maths-II	-	2	-	-	--	--	--
	Non Core Elective I	Bio Statistics	U15ST3N1	2	2	3	25	75	100
				30	16				500
IV	Tamil – IV	Tamil – IV	U15L4T4	6	3	3	25	75	100
	English – IV	English – IV	U15L4E4	6	3	3	25	75	100
	Core Course – V	Practical – II Palaeontology and Crystallography	U15GL4C5P	5	4	3	25	75	100
	Core Course – V I	Palaeontology and Crystallography	U15GL4C6	2	5	3	25	75	100
	Second Allied Course II	Allied Maths - II	U15MM4A2	2	4	3	25	75	100
	Second Allied Course III	Allied Maths - III	U15MM4A3	5	3	3	25	75	100
	Skill Based Elective I	Descriptive and Optical Mineralogy	U15GL4S1	2	4	3	25	75	100
	Non Core Elective II	Bio Statistics Practical	U15ST4N2P	2	2	3	25	75	100
				30	28				800
V	Core Course – VII	Stratigraphy	U15GL5C7	5	5	3	25	75	100
	Core Course – VIII	Igneous and Metamorphic Petrology	U15GL5C8	5	4	3	25	75	100
	Core Course – IX	Sedimentary Petrology	U15GL5C9	4	3	3	25	75	100
	Core Course - X	Practical – III Rock Megascopy & Microscopy	-	3	-	-	-	-	-
	Core Course - XI	Practical – IV Ores & Mineral Megascopy, Microscopy and Blowpipe Analysis	-	3	-	-	-	-	-
	Elective Course - I	Remote Sensing & GIS	U15GL5E1	4	4	3	25	75	100
	Skill Based Elective II	Economic Geology	U15GL5S2	2	4	3	25	75	100
	Skill Based Elective III	Engineering and Environmental Geology	U15GL5S3	2	4	3	25	75	100
	Soft Skills Development	Soft Skills Development	U15SSD3	2	2	3	25	75	100
				30	26				700
VI	Core Course – X	Practical – III Rock Megascopy & Microscopy	U15GL6C10P	3	4	3	25	75	100
	Core Course – XI	Practical – IV Ores & Mineral Megascopy, Microscopy and Blowpipe Analysis	U15GL6C11P	3	5	3	25	75	100
	Core Course – XII	Mining Geology and Geophysics	U15GL6C12	6	5	3	25	75	100
	Core Course – XIII	Geochemistry and Gemmology	U15GL6C13	6	5	3	25	75	100
	Elective Course - II	Hydrogeology	U15GL6E2	5	5	3	25	75	100
	Elective Course - III	Fuel Geology	U15GL6E3	6	4	3	25	75	100
	Extension Activities	Extension Activities		-	1	-	-	-	-
	Gender Education	U15EA4	1	1	3	25	75	100	
				30	30				700
TOTAL				180	140				3900

CHAIRMAN
BOARD OF STUDIES IN GEOLOGY

CONTROLLER OF EXAMINATIONS

அரசு கலைக் கல்லூரி (தன்னாட்சி) - ஈருர் - 5
கலையியல் / அறிவியல் / வணிகவியல் / பட்ட வகுப்பு
 (2015 - 2016 ஆம் கல்வியாண்டு முதல் பயிலும் மாணவர்களுக்குரியது)
 பகுதி - 1 பொதுத்தமிழ் -1 - முதல் பருவம்
 மரபுக்கவிதை, புதுக்கவிதை, சிறுகதை, இலக்கணம், இலக்கிய வரலாறு

பொதுத்தமிழ் -1 முதல் பருவம்

(மரபுக்கவிதை, புதுக்கவிதை, சிறுகதை, இலக்கணம், இலக்கிய வரலாறு)

அலகு 1 மரபுக்கவிதைகள்

- | | | |
|--|---|-----------------|
| அ) தமிழ்த்தாய் | - | பாரதியார் |
| ஆ) புத்தகச்சாலை | - | பாரதிதாசன் |
| இ) புத்தரும் ஏழைச்சிறுவனும்
(ஆசியஜோதி) | - | கவிமணி |
| ஈ) நோயற்ற வாழ்வு | - | நாமக்கல் கவிஞர் |
| உ) இரசம் தீர்ந்து விட்டது
(இயேசு காவியம்) | - | கண்ணதாசன் |
| ஊ) அதிவீரராம பாண்டியன் | - | சுரதா |

அலகு 2 புதுக்கவிதைகள்

- | | | |
|---|---|-----------------|
| அ) மீரா கவிதைகள் (நான் மனிதன்) | - | மீரா |
| ஆ) தேசப்பிதாவுக்கு ஒரு தெருப்பாடகனின் அஞ்சலி (கண்ணீர்ப்பூக்கள்) | - | மு.மேத்தா |
| இ) வடலூரும் வார்தாவும்(நேயர் விருப்பம்)- | - | அப்துல் ரகுமான் |
| ஈ) சர்ப்ப யாகம் | - | சிற்பி |
| உ) விசுவாமித்திரர் (அவதார புருஷன்) | - | வாலி |
| ஊ) நிலத்தை ஜெயித்த விதை
(இன்னொரு தேசிய கீதம்) | - | வைரமுத்து |
| எ) ஒரு வண்டி சென்றியூ(10 கவிதைகள்)- | - | ஈரோடு தமிழன்பன் |

அலகு 3 சிறுகதை

- | | | |
|--------------------|---|--------------------------|
| சிறுகதைத் தொகுப்பு | - | நியூ செஞ்சுரி புக் ஹவுஸ் |
|--------------------|---|--------------------------|

அலகு 4 இலக்கணம்

- | | | |
|-------------------------|---|-----------------|
| வல்லினம் மிகும் இடங்கள் | - | நல்ல தமிழ் எழுத |
|-------------------------|---|-----------------|

வேண்டுமா?

- | | | |
|-----------------------|---|------------------|
| வல்லினம் மிகா இடங்கள் | - | அ.கி.பரந்தாமனார் |
|-----------------------|---|------------------|

அலகு 5 இலக்கிய வரலாறு

மரபுக்கவிதை, புதுக்கவிதை, சிறுகதை

பரிந்துரை நூல்

- முனைவர் கா.வாசுதேவன் -பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு
 தேவன் பதிப்பகம்,16/43, திருநகர்,
 திருவானைக்கோவில்,திருச்சி

ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

வினாத்தாள் அமைப்பு முறை

பகுதி அ (ஒரு மதிப்பெண் வினா - 20)

- | | |
|--|-------|
| அ) பொருத்தமான விடையைத் தேர்ந்தெடுத்தல் | 5*1=5 |
| ஆ) கோடிட்ட இடங்களை நிரப்புதல் | 5*1=5 |
| இ) பொருத்துதல் | 5*1=5 |
| ஈ) ஒரே சொற்களில் விடையளித்தல் | 5*1=5 |

பகுதி ஆ (ஐந்து மதிப்பெண் வினா)

இது அல்லது அது என்ற வகையில் அமைதல் வேண்டும் 5*5=25

பகுதி இ (பத்து மதிப்பெண் வினா)

ஐந்தில் எவையேனும் மூன்றனுக்கு மட்டும் கட்டுரை வடிவில் விடை எழுத வேண்டும்.

3*10=30 மொத்த மதிப்பெண் -75

Sl. No.:

Subject Code:

U15L1E1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR- 05
ALL UG COURSES - I SEMESTER - PART – II - ENGLISH
(For the candidates admitted from the year 2015-16 onwards)

ENGLISH – I

Unit I

- Monday Morning - Mark Twain
My Financial Career - Stephen Leacock

Unit II

- Indian Women - S. Radhakrishnan
Head Ache - R. K. Narayan

Unit III

- Thomas Alva Edison - Egon Larson
Helen Keller - Patrick Pringle

Unit IV

Word Classes

- I. Open Classes
1. Nouns
2. Adjectives
3. Verbs
4. Adverbs
- II. Closed Classes
1. Pronouns
2. Determiners
3. Prepositions
4. Conjunctions
5. Exclamations / Interjections

Unit V

1. Spelling Rules
2. Words Often Confused or Misused
3. Homophones

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Sl. No.:

Subject Code:

U15GL1C1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR**B.Sc., - GEOLOGY – I SEMESTER – CORE COURSE - I**

(For the candidates admitted from the year 2015-2016 onwards)

UNDERSTANDING THE EARTH

OBJECTIVE AND METHODOLOGY: Geology is the science of the Earth. Understanding the earth deals with different branches of geology. The teaching and learning methods involves the class lectures, field and laboratory demonstrations.

Outcome of learning: The student understands the geology as an emerging science.

Unit 1

Earth system sciences: Definition - Branches and scope of Geology. Solar system - Origin of the solar system – Nebular hypothesis – Planetesimal hypothesis – Tidal hypothesis – Von weiszacker's hypothesis and Dust Cloud hypothesis. Big Bang Theory. Members of the solar system, Terrestrial and Jovian Planets. Planets – Satellites – Asteroids – Meteorites – Comets. Kepler's law of planetary motion – Bode's law.

The age of the earth: Element of radio activity – Radio minerals and their decay – Isotopes – Sedimentation method – Salinity method – Kelvin's rate of cooling method. *Radiometric methods:* Uranium-Lead, Thorium-Lead and Potassium-Argon methods. Note on C¹⁴ method. *Relative dating methods:* Unconformable surfaces – changes in litho units – super imposed beds and their occurrences. *Indirect methods:* A brief account of Glacial and Lacustrine Varves – Dendrochronology – Oceans salinity. Earth's dimensions, size, shape, axis of rotation, revolution – Perigee and Apogee positions.

Unit 2

Earth and Its Interior: Layered structure of earth - Differentiation of Earth's Core, Mantle and Crust – Seismic boundaries and discontinuities – Shadow zones.

Earth As A System of Interacting Components - Solid earth, Atmosphere, Hydrosphere, Biosphere. History of development of Geological thoughts – Neptunism, Plutonism, contribution of Werner, Hutton, Smith and Lyell.

Earthquakes: Definition, causes, elastic rebound theory, focus and epicentre, intensity and magnitude. Effects of Earthquakes. Seismic waves, Seismograms, Travel-time curve for seismic waves. Locating epicentre and Determining magnitude. Earthquake belts. seismic zones of India. Prediction of Earthquakes and Remedial Measures. **Tsunami and Seiche Waves:** Definition - Kinds – Generation of waves – Remedial measures. A case study on impact of Tsunami along the Indian coast during 2004.

Unit – 3

Origin of Continents and Oceans – Distribution and Characteristics. Continental margins and Ocean basins: Continental shelf, Continental slope, Continental rise, Abyssal plain, Oceanic trenches, Oceanic ridges and Volcanic islands. Continental Drift: Definition – Mechanisms – Wegner and Taylor hypothesis. Seafloor spreading – Definition – Mechanism – Evidences.

Mass Movements – Definition – classification – slow movements: Soil creep, Rock creep and Solifluction. Rapid movements: Earth flows, Rock falls and Landslides. Causes and remedial measures.

Unit – 4

Atmosphere: Definition – Composition and Structure – Geothermal gradient – Wind systems: Planetary winds – Trade winds, westerlies and polar easterlies; Monsoon winds and Local winds. **Mountains:** Origin and classification of mountains – Life cycle of mountains.

Plate Tectonics – Concept of plate tectonics – Different kinds of crustal plates – Plate movements and their causes. Plate boundaries: Convergent, Divergent and Transform. Features related to Plate Tectonics: Island Arc systems – Mountain chains, Subduction zones – Rift and Ramp valleys. Ring of Fire. Volcanic and earthquake belts in relation to plate tectonics. Transform faults.

Isostasy: Pratt's and Airy's hypothesis – Causes, effects and evidences of sea level changes. Gravity anomalies of Earth, Bouguer and Free-air anomalies. Concept of isostasy and compensation.

Geosynclines: Stille's, Kay's, Strahler's and Schuchert's Classifications of Geosynclines. Characters and distribution of Geosynclines.

Unit - 5

Plateaus and Plains: Definition - origin, types and characteristics. Deccan plateau – origin and mode of occurrence, aerial extent and economic importance.

Weathering: Definition – mechanism – agents of weathering. Classification of weathering – Physical, Chemical and Biological. Factors affecting weathering – products of weathering.

Rivers: Definition – origin – three stages of river – formation and geological importance of deltas and alluvial fans. Drainage patterns and its significance.

Seas and oceans: Definition – outlines of geological process and landforms

Lakes: Definition – classification and geological process.

Text Books:

1. Press, F., Siever, R., Grotzinger, J. and Jordan, T.H., 2004, Understanding Earth, 4th Edn., W.H. Freeman, 567 p. [A later 5th Edn., will also be useful]
2. Tarbuck, E.J. and Lutgens, F.K., 2006, Earth Science, 11th Edn., Pearson Prentice Hall, New Jersey, 726 p. [Earlier editions e.g. 10th or 9th, or even earlier, will also be useful].
3. Arthur Holmes Principles of physical Geology: Thomas Nelson & sons London.
4. Philip G. Worcester A textbook of geomorphology: D. Van Nostrand co., London.
5. Radhakrishnan. V. General Geology - V.V.P. Press.
6. Mahapatra, G.B. A text book of Geology, CBS, Delhi

Reference Books:

1. Duff, P.McL.D., editor, 1992, Holme's Principles of Physical Geology, ELBS – Chapman Hall, 791p. [Earlier editions will also be helpful]
2. Skinner, B.J., Porter, S.C. and Park, J., 2003, The Dynamic Earth: An Introduction to Physical Geology [With CDROM], John Wiley & Sons, 631 p. [Earlier editions will also be helpful]
3. Skinner, B.J., 2010, The Blue Planet: An Introduction to Earth System Science, John Wiley & Sons, 592 p.
4. William J. Miller Principles of physical Geology : Thomas Nelson & sons , London.
5. W. D. Thornbury A text book of geomorphology : D. Van Nostrand co., London.
6. A.L. Bloom General Geology V.V.P. Press.
7. L.D. Leet & Judson Physical Geology : Prentice Hall, India

Sl. No.:

Subject Code:

U15VE1

அரசு கலைக் கல்லூரி (தன்னாட்சி), ஈரூர் - 639005
அனைத்து இளநிலை - முதல் பருவம் - பகுதி - 4
(2015 - 2016 கல்வியாண்டு முதல் பயிலும் மாணவர்களுக்கு
உரியது)

மதிப்புக்கல்வி

அலகு 1

வாழ்வியல் கல்வி ஓர் அறிமுகம் - தனிமனித நெறிமுறைகள் - சமுதாய நெறிமுறைகள் - ஆன்மீக நெறிமுறைகள் - வாழ்வியல் நெறிகளின் மூலங்கள் - வாழ்வியல் நெறிகளின் அவசியம் - நன்னடத்தையும் நற்செயல்களும் - நற்பண்புகள் உருவாக்கம்.

அலகு 2

சமூக நற்பணி - சமூக நலப்பணித்திட்டங்கள் - சமுதாயத் தீமைகள் குறித்த விழிப்புணர்வு - போதை மருந்துகளுக்கு அடிமையாதல் - மதுப்பழக்கம் - புகைப்பிடித்தல் - தற்கொலை.

அலகு 3

இந்து சமயத்தின் போதனைகள் - இஸ்லாம் போதிக்கும் நெறிகள் - கிறித்துவம் போதிக்கும் நெறிகள் - சமயச் சார்பின்மை - சமய நல்லிணக்கம்.

அலகு 4

காந்தியடிகளின் அகிம்சை கொள்கை - அன்னை தெரசாவின் தொண்டுகள் - தன்னலமின்மையின் வடிவம் பெருந்தலைவர் காமராசர்.

அலகு 5

சமூகநீதி - மனித உரிமைகளும் - அவற்றின் பாதுகாப்பும் - மகளிர்க்கு எதிரான வன்முறைகள் - நாட்டின் ஒருமைப்பாடு.

Text Book:

1. மதிப்புக் கல்வி - Y.K.55,கூட்டுறவு பண்டகசாலை, அரசு கலைக்கல்லூரி(தன்னாட்சி), ஈரூர் - 5.

CHAIRMAN – BOS

COE

Sl. No.:

Subject Code:

U15L2T2

அரசு கலைக் கல்லூரி (தன்னாட்சி) - ஈரூர் - 5
கலையியல் / அறிவியல் / வணிகவியல் / பட்ட வகுப்பு
(2015 - 2016 ஆம் கல்வியாண்டு முதல் பயிலும் மாணவர்களுக்குரியது)
பகுதி - 1 பொதுத்தமிழ் -2 - இரண்டாம் பருவம்
(பக்தி இலக்கியங்கள், சிற்றிலக்கியங்கள், உரைநடை, இலக்கணம், இலக்கிய வரலாறு)

அலகு 1 பக்தி இலக்கியங்கள்

தேவாரம்

- திருநாவுக்கரசர்
 (திருவையாறு- 4ஆம் திருமுறை)
 மதுரகவி ஆழ்வார்(கண்ணி நுண்
 சிறுத்தாம்பு)

தெய்வமணிமாலை

- இராமலிங்க வள்ளலார்

பராபரக்கண்ணி

- குணங்குடி மஸ்தான் சாகிபு

யாக்கை நிலையாமை

- திருமந்திரம்

அலகு 2 சிற்றிலக்கியங்கள்

தமிழ்விடுதூது

- முதல் 16 கண்ணிகள்

திருக்குற்றாலக் குறவஞ்சி

- குறத்தி மலைவளம் கூறல்

நந்திக்கலம்பகம்

- பாடல் எண்கள்:

34,35,36,37,38,39,44,45,46,49

அபிராமி அந்தாதி

- 11-20 பாடல்கள்

கயிலாசநாதர் சதகம்

- அரிதெனல், இறந்தும்
 இருக்கின்றவர், இருந்தும் இறந்தவர்,
 கோபக்கொடுமை, கல்விச் சிறப்பு

அலகு 3 உரைநடை

இனியவை நாற்பது

- முனைவர் இரா.மோகன்

அலகு 4 இலக்கணம்

வாக்கிய வகைகள்

- நல்ல தமிழ் எழுத வேண்டுமா?
 அ.கி.பரந்தாமனார்

அலகு 5 இலக்கிய வரலாறு

பக்தி இலக்கியங்கள், சிற்றிலக்கியங்கள், உரைநடை

பரிந்துரை நூல்

முனைவர் கா.வாசுதேவன்

-பன்முக நோக்கில் தமிழ் இலக்கிய

வரலாறு

தேவன் பதிப்பகம்,16/43, திருநகர்,
 திருவானைக்கோவில்,திருச்சி

ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

வினாத்தாள் அமைப்பு முறை

பகுதி அ (ஒரு மதிப்பெண் வினா - 20)

அ) பொருத்தமான விடையைத் தேர்ந்தெடுத்தல் 5*1=5

ஆ) கோடிட்ட இடங்களை நிரப்புதல் 5*1=5

இ) பொருத்துதல் 5*1=5

ஈ) ஒரே சொற்களில் விடையளித்தல் 5*1=5

பகுதி ஆ (ஐந்து மதிப்பெண் வினா)

இது அல்லது அது என்ற வகையில் அமைதல் வேண்டும் 5*5=25

பகுதி இ (பத்து மதிப்பெண் வினா)

ஐந்தில் எவையேனும் மூன்றனுக்கு மட்டும் கட்டுரை வடிவில் விடை எழுத வேண்டும்.

3*10=30

மொத்த மதிப்பெண் -75

Sl. No.:

Subject Code:

U15L2E2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR- 05

ALL UG COURSES - II SEMESTER - PART – II - ENGLISH

(For the candidates admitted from the year 2015-16 onwards)

ENGLISH – II

Unit I

- The Luncheon - Somerset Maugham
A Cup of Tea - Katherine Mansfield

Unit II

- A Work of Art - Anton Checkov
The Necklace - Guy de Maupassant

Unit III

- My Lord the Baby - Rabindranath Tagore
An Astrologer's Day - R.K Narayan

Unit IV

The Sentence

1. Types of Sentences
2. Simple, Compound and Complex Sentences
3. Sentence Patterns

Unit V

Transformation of Sentences

1. Affirmative into Negative and vice versa
2. Interrogative into Assertive and vice versa
3. Exclamatory into assertive and vice versa
4. Simple, Compound and Complex sentences
5. Voice: Active and Passive
6. Degrees of Comparison

CHAIRMAN – BOS

COE

Sl. No.

Subject Code:

U15GL2C2P

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.SC., - GEOLOGY– II SEMESTER - CORE COURSE – II

(For the candidates admitted from the year 2015-2016 onwards)

PRACTICAL - I

STRUCTURAL GEOLOGY AND SURVEYING

1. Reading and interpretation of topographic maps to recognize different landforms, major structures such as folds, faults, unconformities, fracture patterns, shear zones and intrusions.
2. Use of clinometer and Brunton compass, measurement of altitude of planar and linear structural elements. Use of Global Positioning Systems (GPS) to know the mean sea level (MSL), latitude and longitude.
3. Problems to interpret trend of outcrop of different beds and reading of solid maps – measuring the dip and strike of a outcrop. Graphical solution of true dip and apparent dip problems. Two- and three-point problems.
4. Stereographic projection of planes and lines: solution of simple structural problems using a stereonet. E.g. True dip – apparent dip relations, determination of axis of cylindrical folds.
5. Construction of block diagrams of homoclinal (unfolded) beds and folded beds. Describing the fold and fault maps. Construction of vertical sections. Determination of throw and heave of vertical faults.
6. Reading of Unconformable Solid Maps – Construction of sections in the geological maps to describe the geological history of the area – Interpretation of the structures – Determining the order of superposition of beds. Determination of vertical and true thickness by simple calculations.

Understanding the Topographic Sheets Describe of features in Survey of India(SOI)'s Toposheet: Extra-marginal, Marginal, Intra-marginal information. Major conventional signs and symbols. Physical and socio-cultural features.

SURVEYING

Chain Surveying: Open traverse and Closed traverse.

Prismatic Compass Surveying: Determination of the distance between two inaccessible stations.

Radiation method and Intersection method.

Plane Table Surveying: Determination of the distance between two inaccessible stations. Radiation method and Intersection method.

Levelling: Dumpy level – Rise and Fall method

FIELD TRAINING PROGRAMME: In partial fulfilment of B.Sc. geology degree course students should undergo local field work to study the petrology, structural geology of the area in and around Karur district, for a period of 7 days. The student should submit a field report on field training programme along with specimens collected from the field.

Internal assessment marks for the practicals are Practical class attendance = 5marks; Practical test=10; Field training report=25 marks; Total = 40 marks.

TEXT BOOKS :

1. M.P. Billings : Structural Geology: Prentice Hall, Englewood Cliffs, U.S.A,
2. C.M. Novin : Principles of structural Geology John Wiley, New York.
3. De Sitter : Structural geology - McGraw Hill, New York
4. Gokhale, N.W. 1996 Theory of Structural Geology. CBS Publishers.
5. Davis, G.H. and Reynolds, S.J., 1996, Structural Geology of Rocks and Regions, 2nd Edn., John Wiley & Sons, New York, 776 p.
6. Van der Pluijm B.A. and Marshak, S., 2004, Earth Structure: An Introduction to Structural Geology and Tectonics, 2nd Edn., W.W. Norton & Co., New York, 656 p.

REFEREANCE BOOKS:

1. V.V. Belousov - Structural Geology – Moscow
2. P.C. Bedgley - Structural and Tectonic, Principles: Harper & Row, New York.
3. E.W. Spencer - An Introduction to structural Geology: Mc Graw Hill, New York
4. Twiss, R.J. and Moores, E.M., 2007, Structural Geology, 2nd Edn., W.H. Freeman, New York, 736 p. [Earlier edition (1992) of the same book will be equally useful]
5. Ghosh, S.K., 1993, Structural Geology: fundamentals and modern developments, Pergamon, Oxford,

Sl. No.:

Subject Code:

U15GL2C3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR

B.Sc., - GEOLOGY - II SEMESTER- CORE COURSE - III

(For the candidates admitted from the year 2015-2016 onwards)

STRUCTURAL GEOLOGY

Broad objective and methodology: structural geology is the study of different kinds of structures exhibited in rock surface formed by various forces applied above and below the earth surface. The teaching and learning methodology involves class lectures, laboratory and field demonstrations.

Learning outcomes: the students acquire knowledge on structures observed rock through structural geology.

Unit – 1

Introduction of structural geology: Definition – geometric, kinematic and dynamic analysis of structures. Penetrative and non-penetrative structural elements: Primary and secondary planar and linear structural elements, strike and dip, pitch and plunge. Representation of planes and lines in stereographic and equal area projection diagrams. Outcrops of planes on horizontal and uneven surfaces: Outlier and inlier. Scales of observation of structures. Scope of structural geology.

Unit – 2

Folds: Definition – parts of fold, antiform, synform, neutral fold, anticline. Nomenclature of folds based on fold shape and orientation of axis and axial plane. Ramsay's classification of folds. Variation of thickness of folded layers, isogons. Relation between major and minor folds.

Foliation: Definition – kinds of foliation and their geometrical relation to folds. Morphological features of cleavage and schistosity, Morphological classification of rock cleavage. Relation of cleavage and schistosity to major folds.

Lineation: Definition – types of lineation and their geometrical relation to folds.

Unit – 3

Stress and strain: Concept of stress – normal stress - shear stress – principal axes of stress – plane of maximum shear stress. Displacement and strain longitudinal and shear strain – principal axes of strain, homogeneous and heterogeneous strain – rotational and irrotational strain. Pure shear and simple shear. Strain ellipse and strain ellipsoid. Brittle and ductile deformation. Creep of rocks - elastic, viscous and plastic behaviour.

Unit – 4

Deformation: basic concepts of superimposed deformation, interference patterns in superimposed folding, deformation of older planar and linear structures, geometry of new structures. Concept of buckle (flexure), flexure slip, bending and slip(shear) folds, geometrical characteristics of folds formed by buckling and heterogeneous simple shear.

Fracturing of rocks: Tension and shear fractures. Joint – definition, mechanisms, bold and joint systems, relation of joints to folds.

Unit -5

Definition, mechanisms – Translational and rotational movements, slip and separation. Nomenclature of faults based on geometrical relation of faults to beds. Effects of faults on outcrop of strata. Horst and Graben, Autochthon, Allochthon, Nappe, Window and Kippe. Criteria for recognition of faults in the field.

Fold and thrust belt, Imbricate structure, Fault related folding, Duplex structure. Shear zone – basic concepts, shear zone rocks, common structures in shear zones. Shear zones in Tamil Nadu, geologic and economic importance of shear zones.

Unconformity: definition, mechanism, types of unconformity, criteria for distinguishing unconformity from faults and intrusive contacts. Significance of unconformity in various geological studies, type

TEXT BOOKS :

1. M.P. Billings : Structural Geology: Prentice Hall, Englewood Cliffs, U.S.A,
2. C.M. Novin : Principles of structural Geology John Wiley, New York.
3. De Sitter : Structural geology - McGraw Hill, New York
4. Gokhale, N.W. 1996 Theory of Structural Geology. CBS Publishers.
5. Davis, G.H. and Reynolds, S.J., 1996, Structural Geology of Rocks and Regions, 2nd Edn., John Wiley & Sons, New York, 776 p.
6. Van der Pluijm B.A. and Marshak, S., 2004, Earth Structure: An Introduction to Structural Geology and Tectonics, 2nd Edn., W.W. Norton & Co., New York, 656 p.

REFERENCE BOOKS:

1. V.V. Belousov - Structural Geology – Moscow
2. P.C. Bedgley - Structural and Tectonic, Principles: Harper & Row, New York.
3. E.W. Spencer - An Introduction to structural Geology: Mc Graw Hill, New York
4. Twiss, R.J. and Moores, E.M., 2007, Structural Geology, 2nd Edn., W.H. Freeman, New York, 736 p. [Earlier edition (1992) of the same book will be equally useful]
5. Ghosh, S.K., 1993, Structural Geology: fundamentals and modern developments, Pergamon, Oxford,

Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05
ALL UG COURSES - II SEMESTER – PART – IV
(For the candidates admitted from the year 2015-16 onwards)

ENVIRONMENTAL STUDIES

Unit 1

Environment – Introduction – Nature – Scope – Content – Need for study:
Natural resources – Forest and Energy resources – use and over exploitation –
deforestation – Energy resources – reviewable and non reviewable energy resources.

Unit 2

Eco System: Concept – Structure and function – Procedures – consumers and
decomposers – Food Chains – Food Webs and Ecological Pyramids – Biodiversity
and its conservation : Introduction – definition – genetic – species and eco system
diversity – conservation of biodiversity.

Unit 3

Environmental Pollution – Definition – causes – effects and control Measures –
Types – Air – Water – Soil – Thermal and Nuclear hazards – solid waste and
Management – Disaster Management – Role of an individuals in controlling pollution
– Earth Quake –Earth Quake and Cyclone – Flood.

Unit 4

Social issues and the environment: urbanization – urban problems related to
energy – Water Shed Management – Environmental ethics: issues and possible
solutions – Wasteland reclamation – Climate Change – Global Warming - Acid rain –
Ozone layer depletion – Public awareness.

Unit 5

Human Population and the environment: Population growth, Variation among
nations – Population explosion – Family Welfare Programme – Human rights –
HIV/AIDS – Women and Child Welfare – Role of information technology in
environment and human health.

Text Book:

1. சுற்றுச்சூழல் கல்வி - முனைவர். ஆ. சசிலா அப்பாத்துரை -
நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட், சென்னை.

CHAIRMAN – BOS

COE

Sl. No.:

Subject Code:

U15L3T3

அரசு கலைக் கல்லூரி (தன்னாட்சி) - ஈநர் - 5
கலையியல் / அறிவியல் / வணிகவியல் / பட்ட வகுப்பு
 (2015 - 2016 ஆம் கல்வியாண்டு முதல் பயிலும் மாணவர்களுக்குரியது)
 பகுதி - 1 பொதுத்தமிழ் - 3 - மூன்றாம் பருவம்
 (காப்பியங்கள், நாடகம், இலக்கணம், இலக்கிய வரலாறு)

அலகு 1 காப்பியங்கள்

சிலப்பதிகாரம் (புறஞ்சேரியிறுத்த காதை)
 மணிமேகலை (சிறைக்கோட்டம் அறக்கோட்டம் ஆக்கிய காதை)
 கம்பராமாயணம் (இரணிய வதைப்படலம்)

அலகு 2 காப்பியங்கள்

பெரியபுராணம் (இளையான்குடி மாற நாயனார் புராணம்)
 தேம்பாவணி (நாட்டுப்படலம்)
 சீராப்புராணம் (பாந்தள் வசனித்த படலம்)

அலகு 3 நாடகம்

சேர தாண்டவம் - பாரதிதாசன்

அலகு 4 இலக்கணம்

நிறுத்தக் குறிகள்

அலகு 5 இலக்கிய வரலாறு

காப்பியங்கள், நாடகம்

பரிந்துரை நூல்

முனைவர் கா.வாசுதேவன் - பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு

தேவன் பதிப்பகம், 16/43, திருநகர்,
 திருவானைக்கோவில், திருச்சி

ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

வினாத்தாள் அமைப்பு முறை**பகுதி அ (ஒரு மதிப்பெண் வினா - 20)**

அ) பொருத்தமான விடையைத் தேர்ந்தெடுத்தல் 5*1=5
 ஆ) கோடிட்ட இடங்களை நிரப்புதல் 5*1=5
 இ) பொருத்துதல் 5*1=5
 ஈ) ஒரே சொற்களில் விடையளித்தல் 5*1=5

பகுதி ஆ (ஐந்து மதிப்பெண் வினா)

இது அல்லது அது என்ற வகையில் அமைதல் வேண்டும் 5*5=25

பகுதி இ (பத்து மதிப்பெண் வினா)

ஐந்தில் எவையேனும் மூன்றனுக்கு மட்டும் கட்டுரை வடிவில் விடை எழுத வேண்டும்.

3*10=30

மொத்த மதிப்பெண் -75

Sl. No.:

Subject Code:

U15L3E3

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR- 05

ALL UG COURSES - III SEMESTER - PART – II - ENGLISH

(For the candidates admitted from the year 2015-16 onwards)

ENGLISH – III

Unit I

- A Prayer for My Daughter - W.B Yeats
A Poison Tree - William Blake

Unit II

- Stopping by Woods on a Snowy Evening - Robert Frost
Because I Could Not Stop For Death - Emily Dickinson

Unit III

- My Grand Mother's House - Kamala Das
Small Scale Reflections on a Great House - A.K Ramanujan

Unit IV

1. Error Correction
2. One word Substitution
3. Idioms and Phrases

Unit V

1. Comprehension
2. Note Making and Summarizing
3. Précis Writing

CHAIRMAN – BOS

COE

Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - III SEMESTER – CORE COURSE - IV

(For the candidates admitted from the year 2015-16 onwards)

PHYSICAL GEOLOGY

UNIT – I

Elementary Ideas of Continental Drift - Sea floor spreading and the theory of plate tectonics - Types of plates - Causes and rate of plate movement, plate boundaries, present day configuration of plates - Application of theory of plate tectonics in Geology to explain origin of mineral deposits - Mountains - Earthquake belts - Island arcs and various Petro-genesis.

UNIT – II

Rock Weathering - Difference between Weathering and Erosion - Mechanism of Weathering - Products of Weathering - economic significance of Weathering - Types of Weathering, Soil formation - Soil profile and soil types - Geological works of River, Glacier, Wind, Ocean and Groundwater and resulting land forms.

UNIT – III

Earthquakes: Their causes - effects and distribution - Earthquake wave - Measurement of Earthquakes - Earthquakes - causes, elastic rebound theory, focus and epicentre, intensity and magnitude - Seismic waves, Seismogram - travel - time curves for seismic waves, seismic discontinuities, locating epicentre, and determining magnitude - Earthquake belts - Effects of Earthquakes, seismic zones of India - *Volcanoes:* Types, products and recent volcanism in India.

UNIT – IV

Oceanography: Geological Work of Ocean; Physical features of Oceans, Coasts, Deep Sea trench - Mid oceanic Ridges and Abyssal plain - Generations of Oceanic currents, surface currents and global ocean Conveyor system; wave erosion and beach processes; ocean as a thermostat for the earth's surface heat balance.

UNIT – V

Climatology: Atmospheric circulation, weather and climate changes, Land-Air-Sea interaction, Earth's heat budget and global climatic changes - Glacial - Interglacial periods and ice ages evidence & cause.

Suggested Readings:

Text Books:

1. **Philip G.Worcester:** A text book of Geomorphology – D. Nostrandcomp Inc. New York.
2. **Radhakrishnan. V, (1996)** General Geology, VVP, Tuticorin.
3. **Mahapatra, G.B.** A Text Book of Geology, CBS, Delhi.
4. **Chakranarayanan, A.B. et.al:** Concepts of Geology, Scientifica Publication.

Reference Books:

1. **Don Leet, & Sheldon Judson, (1960)** Physical Geology – Prentice Hall, Internation Inc. Englewood, Cliff, U.S.A.
2. **Arthur Holmes, (1992)** Principles physical Geology Thomos Nelson & sons, London.
3. **Miller, (1949)** An introduction to physical Geology, D. Van Nostrand Company, Inc New York.
4. **Dutta A.K.,** Physical Geology.

Sl. No.:

Subject Code:

U15L4T4

அரசு கலைக் கல்லூரி (தன்னாட்சி) - ஈரூர் - 5
கலையியல் / அறிவியல் / வணிகவியல் / பட்ட வகுப்பு
(2015 - 2016 ஆம் கல்வியாண்டு முதல் பயிலும் மாணவர்களுக்குரியது)
பகுதி - 1 பொதுத்தமிழ் - 4 - நான்காம் பருவம்
(சங்க இலக்கியம், புதினம், இலக்கணம், இலக்கிய வரலாறு)

அலகு 1

நற்றிணை - 5,21,27,80,92
 குறுந்தொகை -10 பாடல்கள் (2,16,20,40,62,67,202,244,263,286)
 ஐங்குறுநூறு (அன்னாய் வாழிப்பத்து)
 அகநானூறு - 2 பாடல்கள் (10,23)
 புறநானூறு - 5 பாடல்கள் (74,192,204,206,312)
 கலித்தொகை- 2 பாடல்கள் (11,88)

அலகு 2

சிறுபாணாற்றுப்படை (முழுவதும்)

அலகு 3

பூர்வீக பூமி - சூரியகாந்தன்

அலகு 4 கட்டுரை

பொதுக்கட்டுரை, விண்ணப்பம், மடல், அலுவலகக் கடிதங்கள் எழுதப் பழகுதல்

அலகு 5

இலக்கிய வரலாறு - சங்க இலக்கியம், புதினம்

பரிந்துரை நூல்

முனைவர் கா.வாசுதேவன் -பன்முக நோக்கில் தமிழ் இலக்கிய வரலாறு

தேவன் பதிப்பகம்,16/43, திருநகர், திருவானைக்கோவில்,திருச்சி

ஐந்து அலகுகளிலும் சம அளவில் வினாக்கள் அமைதல் வேண்டும்.

வினாத்தாள் அமைப்பு முறை

பகுதி அ (ஒரு மதிப்பெண் வினா - 20)

- | | | |
|----|-------------------------------------|-------|
| அ) | பொருத்தமான விடையைத் தேர்ந்தெடுத்தல் | 5*1=5 |
| ஆ) | கோடிட்ட இடங்களை நிரப்புதல் | 5*1=5 |
| இ) | பொருத்துதல் | 5*1=5 |
| ஈ) | ஒரே சொற்களில் விடையளித்தல் | 5*1=5 |

பகுதி ஆ (ஐந்து மதிப்பெண் வினா)

இது அல்லது அது என்ற வகையில் அமைதல் வேண்டும் 5*5=25

பகுதி இ (பத்து மதிப்பெண் வினா)

ஐந்தில் எவையேனும் மூன்றனுக்கு மட்டும் கட்டுரை வடிவில் விடை தருக.

3*10=30

மொத்த மதிப்பெண் -75

CHAIRMAN - BOS

COE

Sl. No.:

Subject Code:

U15L4E4

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR- 05

ALL UG COURSES - IV SEMESTER - PART – II - ENGLISH

(For the candidates admitted from the year 2015-16 onwards)

ENGLISH – IV

Unit I

- Grand Mother's Gold - Ella Adkins
Medieval Magic - Geoffrey Chaucer

Unit II

- The little Man - John Galsworthy
The Pot of Broth - W.B Yeats

Unit III

- The Proposal - Anton Checkov
The Bishop's Candle Sticks - Norman Mc Kinnell

Unit IV

1. Letter Writing
2. Developing Hints
3. Complete the Dialogue

Unit V

1. Essay
2. Group Discussion
3. Interview Techniques

CHAIRMAN – BOS

COE

Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - IV SEMESTER – CORE COURSE - V

(For the candidates admitted from the year 2015-16 onwards)

PRACTICAL - II

PALAEONTOLOGY AND CRYSTALLOGRAPHY

UNIT – I

Hard part morphology, identification and modes of preservation and elementary structure - function relations of Cephalopod: *Nautilus*, *Ceratites*, *Perisphinctes*, *Macrocephalites*, *Belemnites* and *Acanthoceras*. Hard part morphology and identification and inferences on modes of living of Bivalvia: *Unio*, *Ostrea*, *Pecten*, *Venus*, *Hippurites* and *Gryphaea*.

UNIT – II

Hard part morphology and identification of Gastropod: *Turritella*, *Cerithium*, *Nerita*, *Natica*, *Conus*, *Murex*, *Cypraea*, *Physa* and *Bellerophon*. Hard part Morphology, identification and modes of preservation of Gondwana flora: *Glossopteris*, *Gangamopteris*, *Vertebraria*, *Ptilophyllum*, *Schizoneura*, *Pterophyllum*, *Cladophlebis* and *Dadoxylon*. Hard part morphology and identification of Coelenterate – *Calceola*, *Zapherenits*, *Lithostratium* and *Favosites*.

UNIT – III

Measurements of interfacial angle using Contact Goniometer. Stereographic Plotting using symmetry elements of normal classes of the six crystal system Identification. Description of the following crystal models:- **Isometric system** - Galena, Garnet, Fluorite, Magnetite Pyrite, Tetrahedrite, Sphalerite, Cuprite, and Boracite. **Tetragonal system**- Zircon, Cassiterite, Rutile, Octahedrite, Apophyllite, Vesuvianite, Scheelite, Meonite and Chalcopyrite. **Hexagonal system** - Beryl, Zincite, Calcite, Hematite, Corundum, Dolomite, Tourmaline, Phenacite and Quartz.

UNIT – IV

Description of the following crystal models:- **Orthorhombic system** - Olivine, Topaz, Barite, Andalusite, Cordierite, Sulphur, Staurolite, Hypersthene, Calamine and Epsomite. **Monoclinic system** - Gypsum, Orthoclase, Augite, Amphibole, Hornblende, Epidote and Sphene. **Triclinic system** - Axinite, Albite, Anorthite, Kyanite, and Rhodinite.

UNIT – V

Study of twin crystal models of the following crystal system: Spinel, Iron Cross twin. Tetragonal: Rutile, Zircon and Cassiterite. Hexagonal: Brazil law – Calcite and Quartz. Orthorhombic: Cruciform, Aragonite – Staurolite. Monoclinic: Mica and Orthoclase. Carlsbad, Manebach and Baveno type, Gypsum, Triclinic: Albite - Simple twin.

Field Training Programme: II Year of the Course.

In partial fulfilment of the B. Sc Geology degree course, the students should be taken to areas with outcrops of fossil bearing rocks for a period of 10 days to collect and study modes of preservation of fossils. They should present the collected fossils and submit a report on the field training at the time of the main Practical Examination.

Internal Assessment Marks for the practical are given below:

Attendance in Practical Classes: 5 marks; **Practical tests:** 10 marks. **Full Attendance during field training, collection and submission of field report:** 25 marks. Total: 40 mark

Suggested Readings

Text Books:

1. Dana, E.S, (2006) A Text Book of Mineralogy, Wiley Eastern.
2. Berry Mason, L.G, (1985) Mineralogy, W.H. Freeman &Co.
3. Kerr B.F, (1995) Optical Mineralogy. McGraw Hill, 5th Edition, New York.

Reference Books:

1. Nield, E.W., and Tucker, V.C.T. (1985) Palaeontology: An Introduction, 1st Edn., Pergamon Press, 178 p.
2. Raup, D.M., and Stanley, S.M. (1985) Principles of Palaeontology, 1st Edn., CBS Publishers, 481 p.
3. Foote, M., and Miller, A.T. (2007) Principles of Palaeontology (3rd Edn. of Raup & Stanley), W.H. Freeman, 480 p.
4. Dasgupta, A. (2007) An Introduction to Palaeontology, 1st Edn., The World Press, Kolkata.
5. Moore, R.C., Lalicker, C.G., and Fischer, A.G. (1952) Invertebrate Fossils, McGraw Hill 766p.
6. Clarkson, E.N.K. (1998) Invertebrate Palaeontology and Evolution, 4th Edn., Blackwell, 468.

Sl. No.:

Subject Code:

U15GL4C6

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - IV SEMESTER – CORE COURSE - VI

(For the candidates admitted from the year 2015-16 onwards)

PALAEONTOLOGY AND CRYSTALLOGRAPHY

UNIT – I

Introduction: Definition and types of fossils; Major disciplines in palaeontology; Brief introduction to Precambrian and Phanerozoic life forms. Fossilization: Definition, Conditions, modes and preservation of fossils, Taphonomy; imperfection of fossils record. Law of faunal succession.

UNIT – II

Taxonomy: Hierarchical nature of classification of Organism - species to kingdom; Identification and classification; species concept in Biology and binomial nomenclature; Rules and procedure for naming a new species; typomorphic and cladistic taxonomy. Index fossils – definition and their distribution in space and time.

UNIT – III

Invertebrate palaeontology - A brief study of morphology classification, evolutionary trends and distribution of bivalves, Cephalopod and Gastropod, Echinoids, Corals and Brachiopods. **Vertebrate Palaeontology** - Brief study of vertebrate life through ages. Evolution of reptiles and mammals; Siwalik vertebrate fauna; Biodiversity and mass extinction events; evidence of life in Precambrian times; Introduction to Micropaleontology; Types of microfossils; Plant fossils - Gondwana flora and their significance. Palynology: introduction and applications.

UNIT – IV

Definition of Crystal - Essential characteristics of crystalline and non-crystalline states of matter. Crystal measurements-interfacial angle, zone - law of constancy of interfacial angles - Principles of Stereographic projection - notation of crystal faces, edges and corners - crystallographic axes - Miller indices - Law of rational indices - general zonal relations of faces.

UNIT – V

Crystal symmetry: elements of symmetry -32 classes of symmetry - Hermann - Mauguin symmetry notation - Crystal forms - classification and nomenclature. Classification of crystals into systems and classes. Crystal habit - types of crystal aggregates, general twin laws - Space lattice - unit cell.

Suggested Readings:

Text Books:

1. **Woods, H. (1985)** 'Invertebrate Palaeontology' CBS Publishers and Distributions. New Delhi.
2. **Black, R.M. (1989)** Elements of Palaeontology, 2nd Edn., Cambridge University Press, 420 p.
3. **Doyle, P., Doyle, M. and Florence, M.L. (1996)** Understanding Fossils: An Introduction to Invertebrate Palaeontology, John Wiley & Sons, 426 p.
4. **Ray, A.K. (2008)** Fossils in Earth Sciences, 1st Edn., Prentice Hall, India, 444 p.

Reference Books:

1. **Nield, E.W., and Tucker, V.C.T. (1985)** Palaeontology: An Introduction, 1st Edn., Pergamon Press, 78 p.
2. **Raup, D.M., and Stanley, S.M. (1985)** Principles of Palaeontology, 1st Edn., CBS Publishers.481 p.
3. **Foote, M., and Miller, A.T. (2007)** Principles of Palaeontology (3rd Edn., of Raup & Stanley), W.H. Freeman, 480 p.
4. **Dasgupta, A. (2007)** An Introduction to Palaeontology, 1st Edn., The World Press, Kolkata.
5. **Moore, R.C., Lalicker, C.G., and Fischer, A.G. (1952)** Invertebrate Fossils, McGraw Hill 766 p.

Clarkson, E.N.K. (1998) Invertebrate Palaeontology and Evolution, 4th Edn., Blackwell, 468 p.

Sl. No.:

Subject Code:

U15GL4S1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - IV SEMESTER – SKILL BASED ELECTIVE - I

(For the candidates admitted from the year 2015-16 onwards)

DESCRIPTIVE AND OPTICAL MINERALOGY

UNIT – I

Physical properties of minerals. Physical properties of Important Silicate and economic minerals. Concept of Isomorphism, Polymorphism, Solid solution, Exsolution. Elementary idea about structure and classification of silicate minerals. Physical properties of the following minerals. Tourmaline, Talc, Gypsum, Fluorite, Calcite, Apatite, Barite, Asbestos, Corundum. Phosphorites, Beryl, Kyanite, Galena, Sphalerite, Chalcopyrite, Pyrite, Magnetite, Hematite, Chromite, Pyrolusite and Psilomelane, Bauxite, Coal and Lignite.

UNIT – II

Petrological microscope and its construction; principles of optics as applied to Orthoscopic and Conoscopic study of minerals: Colour, Form, Birefringence, Pleochroism, Uniaxial and Biaxial characters of minerals. Study of optical properties of Muscovite, Biotite, Quartz, Orthoclase, Microcline, Plagioclase, Olivine, Augite and Hornblende.

UNIT – III

Mineralogical study of the following families. (i) Olivine (ii) Pyroxene (iii) Amphiboles, (iv) Quartz (v) Feldspar (vi) Mica (vii) Garnet

UNIT – IV

Optical behaviour of crystals Propagation of light. Ordinary light ; Polarized light, Refraction & Reflection - Refractive index - Brewster's law , Nichol prism , Double refraction, Polarization of light, methods of production of plane polarized light, construction of polarizing microscopes; Ray velocity surface, Optical indicatrix of Uniaxial and Biaxial crystal

UNIT – V

Absorption colour and Pleochroism. Interference phenomenon in crystals, order of interference colour, birefringence, extinction. Determination of Refractive Index by (a) comparative method using Becke line, and by (b) liquid immersion method of isotropic minerals. Optical classification of minerals. Isotropic – Anisotropic minerals.

Suggested Readings:

Text Books:

1. Dana, E.S. (2006) A Text Book of Mineralogy, Wiley Eastern.
2. Nesse, W.D. (2003) Introduction to Optical Mineralogy, 3rd Edn., Oxford University Press. [Older edition of this book will also be useful].
3. Klein, C. (2002) The Manual of Mineral Science, 22nd Edn., John Wiley & Sons, 641 p. [Earlier editions of this book with Hurlbut and Klein as authors will be also useful]
4. Kerr, B.F. (1995) Optical Mineralogy. McGraw Hill, 5th Edition, New York.
5. Berry Mason, L.G. (1985) Mineralogy, W.H. Freeman & Co.

Reference Books:

1. Deer, W.A., Howie, R.A., & Zussman. (2013) An Introduction to Rock forming Minerals, Third Edition, ELBS Ed.
2. Ernest, E. Walstrom. (1979) Optical Crystallography, John Wiley & Sons..
3. Perkins. (2010) Dexter Mineralogy (3rd Edition) Prentice Hall.
4. Ravell Phillips, W.M., and Dana, T. Griffen. (2004) Optical Mineralogy, CBS publishers & Distributors, The Non-Opaque Minerals.
5. Mike Howard., and Darcy Howard. (1998) Introduction to Crystallography and Mineral Crystal Systems, Rock hounding Arkansas.
6. Nesse, W.D. (2000) Introduction to Mineralogy, Oxford University Press, New York, 442p.

Sl. No.:

Subject Code:

U15GL5C7

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - V SEMESTER – CORE COURSE - VII

(For the candidates admitted from the year 2015-16 onwards)

STRATIGRAPHY

UNIT – I

Principles of Stratigraphy: History and Development of Stratigraphy; Stratigraphic procedures (Surface and Subsurface); Concept of Litho facies and Bio facies; Stratigraphic Correlation - Litho, Bio- and Chronostratigraphic Correlation.

UNIT – II

Study of standard stratigraphic code (Lithostratigraphic, Biostratigraphic and Chronostratigraphic); Concepts of Magneto stratigraphy, Chemo stratigraphy, Event stratigraphy, and Sequence stratigraphy; Nomenclature and the modern stratigraphic code. Radioisotopes and measuring geological time. Geological time-scale. Stratigraphic procedures of correlation of unfossiliferous rocks. Precambrian stratigraphy of India: Achaean stratigraphy - tectonic frame-work, geological history and evolution of Dharwar, and their equivalents; Eastern Ghats mobile belt;

UNIT – III

Proterozoic stratigraphy - tectonic framework, geological history and evolution of Cuddapahs and their equivalents. Palaeozoic stratigraphy: Palaeozoic formations of India with special reference to type localities, history of sedimentation, fossil content of Salt range – Age of Saline series, Zanskar formation –Palaeozoic rocks of Spiti valley – (Peninsular India)

UNIT – IV

Mesozoic stratigraphy ; Mesozoic Gondwana formations of Tamilnadu - Triassic of Spiti - Jurassic of Kutch - cretaceous formation of Tiruchirappalli - Bagh beds - Lameta beds. Deccan trap - age - structure – distribution - Infratrappean -Intratrappean beds.

UNIT – V

Cenozoic stratigraphy: Cenozoic formations of India, Rise of the Himalayas and evolution of Siwalik fauna & flora of Siwalik -Tertiary rocks of Assam basin Stratigraphic boundaries: Stratigraphic boundary problems in Indian geology. Gondwana Super group and Gondwanaland. Deccan volcanic. Quaternary stratigraphy - Rock record, Paleoclimates and Palaeo - geography.

Suggested Readings:

Text Books:

1. **Krishnan, M.S. (2006)** Geology of India and Burma, 6th Edition, CBS.
2. **Wadia, D.N. (1953)** Geology of India, TATA McGraw – Hill.
3. **Ravindrakumar, K.R.** Stratigraphy of India.
4. **Lemon, R.Y. (1990)** Principles of Stratigraphy, Merrill Publishing Co.
5. **Kumar, R. (1988)** Fundamentals of Historical Geology and Stratigraphy of India, Wiley, New Delhi.
6. **Weller, J.M. (1960)** Stratigraphic Principles and practice, University Book stall, New Delhi.
7. **Mehdiratta, R.C. (1974)** Geology of India , Pakistan, and Burma, Atma ram & sons, Delhi.

Reference Books:

1. **Pascoe, E.H. (1968)** A manual of the Geology India and Burma, Govt of India Publications.
2. **Gregory, J.W. and Barret B.H.** General stratigraphy mathuen.
3. **Ramakrishnan, M. and Vaidyanathan, R. (2008)** Geology of India, Vol. 1, Geological Society of India, Bangalore.

Sl. No.:

Subject Code:

U15GL5C8

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - V SEMESTER – CORE COURSE - VIII

(For the candidates admitted from the year 2015-16 onwards)

IGNEOUS AND METAMORPHIC PETROLOGY

UNIT – I

Physical properties of magma - factors influencing physical properties of magma; ascent and emplacement of magma. Forms of igneous rock bodies: description of the major forms of Extrusive and Intrusive and a general idea of their mode of emplacement - Central Eruptions, Fissure Eruptions, Pyroclastic Deposit, Volcanic Neck, Sill, Dyke, Ring dyke, Cone, Sheet, Laccolith, Lopolith, Phacolith, Stock, Batholith. Description and origin of the following structures of igneous rocks: Vesicular Structure, Amygdaloidal Structure, Pillow Structure, Flow Banding, Flow Lines, Schlieren, Ropy Lava, Block Lava and Columnar Joint.

UNIT – II

Important mineralogical and textural features of the following rocks with Indian examples: Alkali Feldspar Granite, Alkali Granite, Granite, Granodiorite, Tonalite, Trondhemite, Pegmatite, Aplite; Rhyolite; Syenite; Foid Syenite, Diorite; Trachyte, Phonolite, Andesite; Dolerite, Gabbro, Norite, Anorthosite; Basalt, Spilite, Oceanite, Ankaramite; Pyroxenite, Peridotite, Kimberlite; Lamprophyre, Carbonatite, Pyroclastic rocks including Agglomerate, Volcanic breccia, Ignimbrite, Welded tuff, Tuff, and Ash.

UNIT – III

Studies on crystallization of melts (at 1 atm dry pressure and high pH₂O) in the following systems with particular reference to phase rule: Diopside-Anorthite, Forsterite-Silica, Albite-Anorthite, Albite-Orthoclase, Diopside-Albite-Anorthite; Diopside-Forsterite-Silica, Nepheline-Kalsilite-Silica; Petro genetic significance of these systems; Role of volatiles in magmatic crystallization; Bowen's reaction series and its use in petro genesis. Concept of petrographic consanguinity, and petrographic province. Processes of diversification of igneous rocks: differentiation, assimilation, and partial melting; Petro genesis of the following rocks: Granite, Basalt, Anorthosite, Alkaline rocks.

UNIT – IV

P-T limits of metamorphism, types of changes in metamorphism - mineralogical, textural and chemical. Agents of metamorphism – temperature, pressure and fluid. Source of heat, heat transfer (conduction, convection and advection), geothermal gradient, steady-state and transient geotherm. Load pressure and fluid pressure. Fluids in metamorphism: evidence and role.

UNIT – V

Types of metamorphism on the basis of agents, association, plate tectonic settings and classification of metamorphic rocks. Composition of Protolith and its control on metamorphism. Metamorphic crystallization and growth of Porphyroblasts in relation to deformation. Classification of metamorphic rocks: Basis of classification: Non -foliated and foliated, High strain rocks; Mineralogy and texture of Phyllite, Schist, Green Schist, Greenstone, White Schist, Blue Schist, Amphibolite, Hornfels, Granulite, Eclogite.

Suggested Readings:

Text Books:

1. **Bose, M.K., (1997)** Igneous Petrology, The World Press, Kolkata, 568 p.
2. **Winter, J.D. (2009)** Principles of Igneous and Metamorphic Petrology, 2nd Edn., Prentice Hall, 702 p. [The first edition (2001) named An Introduction to Igneous and Metamorphic Petrology, is also useful].
3. **Turner, F.J., and Verhoogen, J. (2002)** Igneous and Metamorphic Petrology – CBS publishers.

Reference Books:

1. **Phillpotts, A.R. and Ague, J.J., 2009**, Principles of Igneous and Metamorphic Petrology, Cambridge University Press, Cambridge, 667 p. [The older edition from Prentice Hall, 1990, is also useful].
2. **Best, M.G. (2002)** Igneous and Metamorphic Petrology, 2nd Edn., Blackwell, Oxford, 752 p.
3. **Wilson, M. (1989)** Igneous Petrogenesis: a global tectonic approach, Springer (2007), 466 p.
4. **Yardley, B.W.D. (1989)** An Introduction to Metamorphic Petrology, Longmans, 248 p.
5. **Bucher, K., and Frey, M. (2002)** Petrogenesis of Metamorphic Rocks, Springer, 34.

Sl. No.:

Subject Code:

U15GL5C9

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - V SEMESTER – CORE COURSE - IX

(For the candidates admitted from the year 2015-16 onwards)

SEDIMENTRY PETROLOGY

UNIT – I

Scope of Sedimentology. Sediment genesis to diagenesis: processes of sediment generation to formation of sedimentary rocks; Weathering, Erosion, Transportation, Deposition And Diagenesis. Texture: Primary and Secondary; Textural components: Framework, Matrix, Cement, Allochemical and Orthochemical components; Textural parameters: Grain Size, Shape and their statistics; Surface texture; Fabric: Orientation, Packing; Porosity and Permeability.

UNIT – II

Classification of sedimentary rocks: based on composition - Siliciclastic, Limestone, Chert etc., based on source - Terrigenous-Extrabasinal, Chemogenic-Intrabasinal, based on grain size – Conglomerate-Rudaceous, Sandstone-Aranaceous, Shale-Argillaceous, Calcarenite, Calcareous Sandstone, Micrite, based on mode of deposition - Clastic-Terrigenous-Allochemical, Non-Clastic-Orthochemical; Naming of rocks according to Terrigenous-Allochemical-Orthochemical proportions.

UNIT – III

Primary sedimentary structure: Fluidal Flow, Bed Forms - Current, Wave, and Combined Flow and their internal structures; structures generated by mass flow; Soft-sediment deformation structures; Biogenic structures including elementary concepts of stromatolite.

UNIT – IV

Conglomerate and Breccia: Composition, Fabric and Structure, Classification, Mode of Deposition; Intraformational and extra formational conglomerates and their significance. Sandstone, Limestone, Dolostone: definition, composition, classification, petro genesis; Sandstone classification - Pettijohn, Folk; Limestone classification - Dunham, Folk.

UNIT – V

Brief descriptions of Shale, Chert, Evaporate, BIF, and Volcanoclastic; elementary ideas on composition and depositional conditions. Facies concept: Definition of facies; Basic concept of facies association and modelling. Principles of stratigraphic correlation.

Suggested Readings:

Text Books:

1. **Pettijohn, F.J. (1975)** Sedimentary Rocks, 3rd Edn., Harper and Row, New York, 628 p.
2. **Tucker, M.E. (2001)** Sedimentary Petrology – an introduction to the origin of sedimentary rocks, Blackwell, Oxford, 262 p.
3. **Folk, R.L. (1974)** Petrology of Sedimentary Rocks, Hemphill Publishing Company, Austin, 159 p.
4. **Collison, J.D., and Thompson, D.B. (1989)** Sedimentary Structures, Allen & Unwin, London, 194 p.

Reference Books:

1. **Boggs, S.Jr., 2005**, Principles of Sedimentology and Stratigraphy, 4th Edn., Prentice Hall, New Jersey, 688 p.
2. **Sengupta, S., 2007**, Introduction to Sedimentology, 2nd Edn, CBS, 325 p.
3. **Reineck, H.E. and Singh, I.B., 1980**, Depositional Sedimentary Environments, 2nd Edn., Springer- Verlag, Berlin, 551 p.
4. **Blatt, H., Middleton, G., and Murray, R., 1972**, Origin of Sedimentary Rocks, 2nd Edn., Prentice- Hall, New Jersey, 782 p.
5. **Leeder, M.R., 1985**, Sedimentology: Processes and Products, 2nd Edn., Allen & Unwin, London, 344 p.

Sl. No.:

Subject Code:

U15GL5E1

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05
B.Sc., - GEOLOGY - V SEMESTER – ELECTIVE COURSE - I
(For the candidates admitted from the year 2015-16 onwards)

REMOTE SENSING & GIS

Remote Sensing:

UNIT – I

Definition of Remote sensing - Electromagnetic radiation – characteristics, remote sensing regions and bands; General orbital and Sensor characteristics of remote sensing satellites; Spectra of common natural objects – Soil, Rock, Water and Vegetation.

UNIT – II

Types and acquisition of aerial photograph. Scale and resolution. Black and white, colour and infrared film. Photo mosaics. Orthophotographs. Principles of stereoscopy, Lens and Mirror Stereoscopes, Image Parallax, Relief, Displacement, Vertical Exaggeration, Distortion. Elements of air photo interpretation. Identification of Sedimentary, Igneous and Metamorphic rocks. Aeolian, Glacial, Fluvial and Marine Landforms.

UNIT – III

Physical principles of remote sensing. Early history of space imaging. Earth Resources Satellites characteristics and applications of imageries of LANDSAT1 to 7, SPOT missions, Indian Remote Sensing Satellite mission. Basic idea of Radar Images. Recent ISRO launched space vehicles and their applications.

UNIT – IV

Remote sensing applications in interpreting the structure and tectonics, Lithological mapping, mineral resources, natural hazards mitigation, groundwater potentials and environmental monitoring. Land sat, Skylab, Sea sat and other foreign systems of satellites and their interpretation for geological and other studies. Bhaskara and IRS systems and their applications, Thermal IR remote sensing and it's applications, Microwave remote sensing and its applications.

UNIT – V

Geographic Information System: Principles and components of Geographic Information System (GIS): Definition – history – Spatial and attribute data Important GIS software and their producers – GIS operations – Basic of spatial data input, attribute data management, data display, data exploration, data analysis and GIS modelling operations – Advantages and applications of GIS - Global positioning system.

Text Books:

1. **Anji Reddy, M. (2012)** Textbook of Remote Sensing & GIS, BS Publications, Hyderabad.
2. **Curran, P. (1985)** Principles of Remote Sensing, Longman, London.
3. **Sabins, F. F. Jr. (2007)** Remote Sensing Principles and Interpretation, Freeman, Sanfrancisco.
4. **Miller, V.C. (1961)** Photogeology, Mc Graw Hill, New York.

Reference Books:

1. **John, T. Smith, Jr. (1973)** Manual of Colour Aerial Photography (I Edition) American Society of Photogrammetry, ASP Falls Church, Virginia.
2. **Lillesand, T.M. and Kiefer, P.W. (2007)** Remote Sensing and Image Interpretation, John Wiley & Sons, New York. Third Edition.
3. **Rampal, (1999)** Handbook of Aerial Photography and Interpretation, Concept publishing.
4. **Shiv N. Pandey, (1987)** Principles and Applications of Photo geology, Wiley Eastern Limited, India.
5. **Gupta, R.P. (2003)** Remote Sensing Geology, Springer - Verlag - New York, London.

Sl. No.:

Subject Code:

U15GL5S2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - V SEMESTER – SKILL BASED ELECTIVE – II

(For the candidates admitted from the year 2015-16 onwards)

ECONOMIC GEOLOGY

UNIT – I

Economic Geology and its principal contents; Definitions of the Terms: Protore, Ore, Gangue, Tenor, Hypogene and Supergene ore deposits - Epigenetic and Syngenetic Mineral Deposits; mineral beneficiation; Common Morphologies of Mineral Deposits - Mineral deposits their litho-tectonic environments, e.g., in continental rifts and continental margins - Greenstone belts and Ophiolites - in convergent plate boundaries in shallow shelves - accompanied by mafic volcanism.

UNIT – II

Ore forming processes: Magmatic Crystallization - Differentiation and magma immiscibility - precipitation from hydrothermal solutions - Sedimentation - Diagenesis - Ore forming processes on metamorphism and supergene transformation of protore; placer deposits their distribution and origin.

UNIT – III

Mineral deposits in space and time: Metallic mineral deposits of India - such as, Iron of Tamilnadu Jharkhand-Orissa and Karnataka - Manganese of Central India - Chromite of Orissa - Copper of Singhbhum and Malanjkand - Lead-Zinc of ZAWAR - Uranium of Singhbhum and Andhra Pradesh - Gold of Kolar-Hutti - Tungsten of Rajasthan - with particular reference to their geologic set up - modes of occurrence, mineralogy, age and genesis – Mineral Richness & Tamilnadu.

UNIT – IV

Non-metallic mineral deposits of India such as Bauxite, Mica, Phosphates, Barite, Diamond and Graphite, with special reference to their distribution, geology, origin and usage - Specification of the raw (mineral/rock) materials used in the following industries: iron and steel - cement refractory's - fertilizer.

UNIT – V

Coal: its chemical, petrographic constituents - classification and origin of different varieties of Coal and their distribution in India - Special reference to Neyveli Lignite on Geology and occurrences - Study of petroleum and natural gas deposits with special reference to their origin, migration, accumulation, and distribution in India both on-and off-shore.

Text Books:

1. **Evans, A.M. (1997)** An Introduction to Economic Geology and its Environmental Impact, Wiley-Blackwell, 364 p.
2. **Chandra, D. (1990)** The Story of Petroleum, Dev Sahitya Kutir (P) Ltd., Calcutta, 39 p.
3. **Chandra, D., Singh, R.M. and Singh, M.P. (2000)** Text Book of Coal: Indian Context, Tara Book Agency, Varanasi, 402 p.
4. **Banerjee, D.K. (1992)** Mineral Resources of India, The World Press, Calcutta, 440 p.
5. **Bateman Allan, M. (1962)** Economic Mineral Deposits, Asian Publishing House, 2nd Edition.
6. **Lindgren, W. (1933)** Mineral Deposits, McGraw Hill.

Reference Books:

1. **Robb, L.J. (2005)** Introduction to Ore Forming Processes, Wiley-Blackwell, 373 p.
2. **Stanton, R.L. (1972)** Ore Petrology, McGraw-Hill, 713.
3. **Krishnaswamy, S.** - India's Mineral Resources, oxford and IBH.
4. **Deb, S. (1980)** Industrial Minerals and Rocis of India, Allied, 1980.
5. **Gokhale, K.V.G.K. and Rao, T.C. (1978)** Ore deposits of India, their distribution and processing, Thomson press.

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05**B.Sc., - GEOLOGY - V SEMESTER – SKILL BASED ELECTIVE – III**

(For the candidates admitted from the year 2015-16 onwards)

ENGINEERING AND ENVIRONMENTAL GEOLOGY**UNIT – I**

Geological studies and evaluation in planning, design and construction of major civil structures. Elementary concepts of rock mechanics and soil mechanics. Site investigation, characterization and problems related to civil engineering projects: geological and geotechnical investigations for dams, reservoirs and Spillways, Tunnels, Underground Caverns, Bridges, Highways and Shorelines.

UNIT – II

Problems of groundwater in engineering projects. Environmental considerations related to civil engineering projects. Resource evaluation of construction materials. Geological hazards and their remedial measures.

UNIT – III

Concept and definition of Environmental Geology. Processes of soil formation, types of soils, soil degradation and changing land use pattern. Concepts of natural ecosystems on the Earth and their mutual inter-relations and interactions with atmosphere, hydrosphere, lithosphere and biosphere. Environmental changes due to influence of human-dominated environment over nature-dominated system.

UNIT – IV

Concept of biodiversity. Mobility of elements. Impact assessment of water availability, quality and contamination of surface water and groundwater. Atmosphere and air pollution. Soil contamination due to urbanization, industrialization and mining. Basic concepts of environmental laws.

UNIT – V

Distribution, magnitude and intensity of earthquakes. Neotectonics and seismic hazard assessment. Preparation of seismic hazard maps. Impact of seismic hazards on long and short term environmental conditions. Mechanism of landslides causes of major floods, cyclones and storms. Deforestation and land degradation.

Suggested Readings:**Text Books:**

1. **Agrawal, K.M., Sikdar, P.K., and Deb, S.C. (2002)** A text book of environment, 1st Edn., Macmillan India, 464 p.
2. **Karant, K.R. (1987)** Groundwater assessment, development and management, Tata McGraw Hill, 448 p.
3. **Singh, P. (1999)** Engineering and General Geology, S.K. Kataria & Sons, New Delhi 110 006.

Reference Books:

1. **Aswathanarayana, U. (1995)** Geoenvironment - An introduction, Capital Books, 270 p.
2. **Valdiya, K.S. (2004)** Geology, Environment and Society, Universities Press, 240 p.

Sl. No.:

Subject Code:

GOVERNMENT ARTS COLLEGE (AUTONOMOUS) KARUR-05
ALL UG COURSES – V SEMESTER – PART - IV
(For the candidates admitted from the year 2015 - 2016 onwards)

SOFT SKILLS DEVELOPMENT

Learning Objective

Today's world is all about relationship, communication and presenting oneself, one's ideas and the company in the most positive and impactful way. This course intends to enable students to achieve excellence in both personal and professional life.

- UNIT-I Know Thyself/Understanding Self**
Introduction to Soft Skills-Self discovery-Developing positive attitude-Improving perceptions-Forming values.
- UNIT- II Interpersonal Skills/Understanding Others**
Developing interpersonal relationship-Team building-group dynamics-Net working-Improved work relationship.
- UNIT-III Communication Skills / Communication with others**
Art of listening-Art of reading-Art of speaking-Art of writing-Art of writing e-mails-e mail etiquette.
- UNIT-IV Corporate Skills / Working with Others**
Developing body language-Practicing etiquette and mannerism-Time management-Stress management.
- UNIT-V Selling Self / Job Hunting**
Writing resume/cv-interview skills-Group discussion-Mock interview-Mock GD-Goal setting-Career planning.

Text Book:

Meena.K and V.Ayothi (2013) A Book on Development of Soft Skills (Soft Skills : A Road Map to Success), P.R.Publishers & Distributors, No, B-20 & 21, V.M.M. Complex, Chatiram Bus Stand, Thiruchirappalli - 620 002.
(Phone No:0431 - 2702824: Mobile No: 94433 70597, 98430 74472)

Alex. K (2012) Soft Skills - Know Yourself & Know the World, S.Chand & Company LTD, Ram Nagar, New Delhi - 110 055.
Mobile No: 94425 14814 (Dr.K. Alex)

Reference Books

- (i) Developing the leader within you John c Maxwell
- (ii) Good to Great by Jim Collins
- (iii) The seven habits of highly effective people Stephen Covey
- (iv) Emotional Intelligence Daniel Goleman
- (v) You can win Shive Khera
- (vi) Principle centred leadership Stephen Covey.

CHAIRMAN - BOS

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GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05**B.Sc., - GEOLOGY - VI SEMESTER – CORE COURSE - X**

(For the candidates admitted from the year 2015-16 onwards)

PRACTICAL - III**ROCK MEGASCOPIY & MICROSCOPY****UNIT – I**

Identification in hand specimen by studying mineralogical composition and texture of the following rock types: Granite, Granodiorite, Syenite, Nepheline Syenite, Aplite, Granophyre, Diorite, Gabbro, Anorthosite, Pyroxenite, Peridotite, Mica-Lamprophyre, Dolerite, Basalt, Andesite, and Rhyolite.

C.I.P.W. norm calculation of granitic and basic rock (without foid).

UNIT – II

Study, under microscope, of the following textures of igneous rocks: Porphyritic, Poikilitic, Ophitic, Intergranular, Intersertal, Graphic, Perthitic, Myrmekitic, Hypidiomorphic, Allotriomorphic, Corona, Flowage.

UNIT – III

Description and identification by microscopic characters of the following rocks: Granite, Granodiorite, Tonalite, Syenite, Nepheline Syenite, Aplite, Granophyre, Diorite, Gabbro, Anorthosite, Pyroxenite, Peridotite, Mica-Lamprophyre, Dolerite, Rhyolite, Basalt, Andesite.

UNIT – IV**Sedimentary Petrology**

Description and identification of the following rocks in hand specimens & Thin sections:

Sandstone, Grit, Limestone, Shale, Conglomerate. Study on sedimentary structures and their paleo environmental significance, Particle size distribution and statistical treatment, Heavy mineral analysis and provenance, paleo current analysis. Exercises based on vertical sedimentary sequences of different terrestrial, coastal and marine environments, Petrography of clastic and non-clastic rocks through hand specimens and thin sections.

UNIT – V**Metamorphic petrology**

Description and identification of the following rocks in hand specimens & thin sections:

Megascopeic and microscopic study (textural and mineralogical) of the following metamorphic rocks:

Low grade metamorphic rocks: Serpentinites, Albite-Epidote-Chlorite-Quartz schist, Slate, Talc-Tremolite Calcite-Quartz schist. Medium to high grade metamorphic rocks: Gneisses, Amphibolite, Hornfels, Garnetiferous schists, Sillimanite-Kyanite-bearing rocks, Granulites, Eclogite, Diopside-Forsterite marble.

Laboratory exercises in graphic plots for petro chemistry and interpretation of Para genetic diagrams.

Suggested Readings:

1. **Phillpotts, A.R. and Ague, J.J. (2009)** Principles of Igneous and Metamorphic Petrology, Cambridge University Press, Cambridge, 667 p. [The older edition from Prentice Hall, 1990, is also useful].
2. **Turner, F.J., and Verhoogen, J. (2002)** Igneous and Metamorphic Petrology – CBS publishers.
3. **Bucher, K., and Frey, M. (2002)** Petrogenesis of Metamorphic Rocks, Springer, 34.
4. **Pettijohn, F.J. (1975)** Sedimentary rocks, Harper & Bros. 3rd Ed.
5. **Turner, F.J. and Verhoogen, J. (1960)** Igneous and Metamorphic petrology, Mc Graw Hill Book Co.,
6. **Tyrell, G.W. (1989)** Principles of petrology, Methuren and Co., (Students ed.).
7. **Best, M.G. (2002)** Igneous and Metamorphic Petrology, 2nd Edn., Blackwell, Oxford, 752 p.
8. **Wilson, M. (1989)** Igneous Petrogenesis: a global tectonic approach, Springer (2007), 466 p.
9. **Yardley, B.W.D. (1989)** An Introduction to Metamorphic Petrology, Longmans, 248 p.

Sl. No.:

Subject Code:

U15GL6C11P

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - VI SEMESTER – CORE COURSE - XI

(For the candidates admitted from the year 2015-16 onwards)

PRACTICAL - IV

ORES AND MINERALS MEGASCOPY, MICROSCOPY AND BLOW PIPE ANALYSIS

UNIT – I

Description of Mineral Physical habits:

Form, Structure, Color, Streak, Diaphaneity, Luminescence, Cleavage, Fracture, Hardness, Specific Gravity, Taste, Odour And Feel, Tenacity, Magnetism, Electricity And Radio Activity, Reaction With Acid.

UNIT – II

Study of physical properties of minerals in hand specimen - *Quartz Group*: Chert, Flint, Chalcedony, Agate, Jasper, Amethyst, Rose quartz, Smoky quartz and Rock crystal. ***Feldspar Group*:** Orthoclase, Albite, Anorthite, Labradorite and Bytownite. ***Feldspathoids*:** Nepheline, Leucite and Sodalite.

***Pyroxene Group*:** Enstatite, Bronzite, Hypersthene, Pigeonite, Diopside, Hedenbergite, Augite, Aegirine (Acmite), Jadeite, Spodumene and Omphacite. ***Amphibole Group*:** Cummingtonite, Tremolite, Actinolite, Hornblende and Anthophyllite.

UNIT – III

Study of physical properties of minerals in hand specimen – *Mica Group*: Muscovite, Phlogopite, Biotite, Lepidotite, Glauconite, Chlorite and Appophyllite. ***Clay Group*:** Kaolinite, Montmorillonite and vermiculite.

Study of optical characters of common rock forming minerals:

Quartz, Plagioclase, Microcline, Muscovite, Biotite, Fluorite, Olivine Garnet. Tourmaline, Staurolite, Andalusite, Kyanite, Sillimanite, Cordierite. Hypersthene, Augite, Diopside, Hornblende, Tremolite- Actinolite. Corundum, Beryl, Calcite and Barite

UNIT – IV

Study of physical characters of common ore forming minerals:

- ***Oxides*:** Magnetite, Magnesite, Hematite, Martite, Goethite, Limonite, Psilomelane, Pyrolusite, Braunite, Hausmanite, Chromite, Ilmenite, Columbite, Tantalite, Cassiterite, Uraninite, Pitchblende.
- ***Sulfides*:** Galena, Sphalerite, Pyrite, Pyrrhotite, Chalcopyrite, Bornite, Molybdenite, Realgar, Orpiment, Stibnite.
- ***Carbonates*:** Aragonite, Calcite, Dolomite, Magnesite, Rhodochrosite, Witherite, Siderite, Strontianite.
- ***Sulphates*:** Barite, Gypsum, Anglesite, Anhydrite, Celestite.

UNIT – V

Study of optical properties of common ore forming minerals:

Galena, Sphalerite, Pyrite, Pyrrhotite, Chalcopyrite.

Magnetite, Hematite, Psilomelane, Pyrolusite.

Study of association of ore forming and typical gangue minerals.

Preparation of maps showing distribution of important ores and other economic minerals in India.

Identification of the following mineral powders by simple blow pipe tests:-

Apatite, Barite, Calcite, Celestite, Cerusite, Chalcopyrite, Galena, Gypsum, Chromite, Hematite, Magnesite, Magnetite, Psilomelane, Pyrolusite, Siderite, Sphalerite, Strontianite, Witherite, Stibnite, Ilmenite and Wolframite.

Suggested Readings:

Text Books:

1. **Dana, E.S. (2006)** A Text Book of Mineralogy, Wiley Eastern.
2. **Nesse, W.D. (2003)** Introduction to Optical Mineralogy, 3rd Edn., Oxford University Press. [Older edition of this book will also be useful].
3. **Klein, C. (2002)** The Manual of Mineral Science, 22nd Edn., John Wiley & Sons, 641 p. [Earlier editions of this book with Hurlbut and Klein as authors will be also useful]
4. **Kerr, B.F. (1995)** Optical Mineralogy. McGraw Hill, 5th Edition, New York.
5. **Berry Mason, L.G. (1985)** Mineralogy, W.H. Freeman & Co.
6. **Kerr B.F. (1995)** Optical Mineralogy. McGraw Hill, 5th Edition, New York.
7. **Rabindra Nath Hota, (2012) - Geochemical Analysis**, CBS Publishers & Distributors (Reprint).

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05**B.Sc., - GEOLOGY - VI SEMESTER – CORE COURSE - XII**

(For the candidates admitted from the year 2015-16 onwards)

MINING GEOLOGY AND GEOPHYSICS**UNIT – I**

Role of geology in mining industries – definition of mining terms - Shaft, Hanging wall, Adit, Roof, Drive, Cross cut, Tunnel, Raise, Winze and Stope – overhand stope and under hand stope, Level, Bonanza, Glory hole, Tenor, Gangue, Run – off- Mine, Ore suit, Ore country, Nuggets. Outline of mining policies and mining plan preparation. Scope of Mining Geology.

UNIT – II

Surface methods of mining, Alluvial mining - Pan & Batea, sluicing, Hydraulic mining, Dredging. **Open cast mining**. benches, explosives, working slope, mining equipments - Dragline, Power shovels. **Subsurface mining**: - advantages and limitations. Stopping - open stopes, supported stopes and pillar. Resource reserve definitions; mineral resources in industries – historical perspective and present. A brief overview of classification of mineral deposits with respect to processes of formation in relation to exploration strategies. Principles of mineral exploration, Prospecting and exploration-conceptualization, methodology and stages.

UNIT – III

Sampling, subsurface sampling including pitting, trenching and drilling, core and non-core drilling, planning of bore holes and location of boreholes on ground. Core - logging. Geochemical exploration-nature of samples, anomaly, strength of anomaly and controlling factors, coefficient of aqueous migration. Evaluation of sampling data. Mean, mode, median, standard deviation and variance, symmetrical and non-symmetrical variation, evaluation of assay values and determination of one sided cut-off grade.

UNIT – IV

Interrelationship between geology and geophysics - Role of geological and geophysical data in explaining. Geodynamical features of the earth. General and Exploration geophysics- Different types of Geophysical Methods; Gravity, Magnetic, Electrical, Seismic- their principles and applications. Concepts and Usage of corrections in geophysical data

UNIT – V

Principles of reserve estimation, density and bulk density, factors affecting reliability of reserve estimation, reserve estimation based on geometrical models (square, rectangular, triangular and polygon blocks), regular and irregular grid patterns, statistics and error estimation. Introduction to geophysical methods of exploration - Different types of surveys, grid and route surveys, profiling and sounding techniques, scales of survey, interpretation of geophysical data. Ambiguities in geophysical interpretation, Planning and execution of Geophysical surveys.

Suggested Readings:**Text Books:**

1. **Ramachandra Rao, M.B., Prasaranga. (1975)** Outlines of Geophysical Prospecting - A manual for geologists, University of Mysore, Mysore.
2. **Lowrie, W. (2007)** Fundamentals of Geophysics. 2nd ed. Cambridge University Press, New Delhi.
3. **Ramachandra Rao, M.B. (1993)** Outlines of Geophysical Prospecting. EBD, Dhanbad.
4. **Telford, W.M., Geldart, L.P. and Sheriff, R.E. (1990)** Applied Geophysics. 2nd ed. Cambridge University Press, New Delhi.
5. **Hartman, H.L. (1992)** SME Mining Engineering Handbook. SMME Inc. Colorado.
6. **Kearey, P., Brooks, M., and Hill. I. (2002)** An Introduction to Geophysical Exploration, 3rd ed. Blackwell Science, Wiley Delhi.
7. **Dobrin, M.B. (1984)** An introduction to Geophysical Prospecting, McGraw Hill, New Delhi.
8. **Bhimasarikaram, V.L.S. (1990)** Exploration Geophysics - An Outline by Association of Exploration Geophysicists, Osmania University, Hyderabad.

Reference Books:

1. **Arogyaswamy, R.N.P. (1980)** Courses in Mining Geology. Oxford & IBH, New Delhi.
2. **Banerjee, P. K., and Ghosh, S. (1997)** Elements of Prospecting for Non Fuel Mineral Deposits, Allied Publishers, Chennai.
3. **Dobrin, M.B., and Savit, C.H. (1988)** Introduction to Geophysical Prospecting. 4th ed. McGraw Hill, New Delhi.
4. **Hawkes, H. E. (1959)** Principles of Geochemical Prospecting, Bulletin 1000F. USGS.
5. **Moon, C.J., Whateley, M.K.G., and Evans, A.M. (2006)** Introduction to Mineral Exploration, Wiley Blackwell, New Delhi.
6. **Mussett, A.E., and Khan, M.A. (2000)** Looking into the Earth: An introduction to Geological Geophysics, Cambridge University Press, New Delhi.
7. **Parasnis, D.S. (1975)** Principles of Applied Geophysics, Chapman & Hall. New York.
8. **Sharma, P.V. (1997)** Environmental and Engineering Geophysics, Cambridge University Press, New Delhi.
9. **Telford, W.M., Geldart, L.P., Sheriff, R.E., and Keys D.A. (1976)** Applied Geophysics Oxford and IBH Publishing Co. Pvt., Ltd. New Delhi.
10. **Arokyaswami, R.P. (1980)** – Courses in Mining Geology, Oxford & IBH, New Delhi.

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05**B.Sc., - GEOLOGY - VI SEMESTER – CORE COURSE - XII**

(For the candidates admitted from the year 2015-16 onwards)

GEOCHEMISTRY AND GEMMOLOGY**GEOCHEMISTRY:****UNIT – I**

Introduction to properties of elements: The periodic table, chemical bonding, states of matter and atomic environments, geochemical classification of elements, the composition of different earth reservoirs and the Nucleus and Radioactivity. Conservation of mass, isotopic and elemental fractionation. Concept of radiogenic isotopes in geochronology and isotopic tracers ; dating by radioactive nuclides, Carbon 14, Beryllium 10, K-Ar method, radiogenic tracers.

UNIT – II

Aqueous geochemistry: basic concepts, speciation in solutions, elements of marine chemistry. Marine reactions – diagenesis and hydrothermal reactions. The solid earth – geochemical variability of magma, melting of the mantle and growth of continental crust. The earth in the solar system, the formation of solar system, composition of the bulk silicate earth. Meteorites- composition, size, shape, origin, kinds of meteorites, brief account of meteorite impact the and causes in the Earth. Geochemical behaviour of selected elements like Si, Al, K, Na etc.

GEMMOLOGY:**UNIT – III**

Definition and scopes of gemmology. Gemstones, classification of gemstones. Essential characters and features of gemstones. Identification of gemstones: basic megascopic and microscopic properties of gemstones - gemstone refractometers, Polaroid films, hardness testing kits, heavy liquids, UV light, and spectroscope methods. Artificial gem stones-their identification from natural gemstone characters and features.

UNIT – IV

Outline on exploration methods adopted in prospecting. Country rocks for gemstone origin and occurrence. Different processes and methods adopted for gemstone cutting and polishing. Small scale gemstone cutting and polishing industries in Tamilnadu. Gemstone occurrences and industries in other than Tamilnadu.

UNIT – V

Important gemstone provinces in Tamilnadu –Karur – Kangeyam belt – Manavadi, Ayyarmali, Panchampatti, Manikkapuram etc, Sittampundi layered complex, Samalpatti, Pakkanadu- Mulakkadu and Edappadi area. Brief note of mining policies and rules of gemstones in India.

Suggested Readings for Geo chemistry:

1. **Mason, B. (1986)** Principles of Geochemistry – 3rd Edition, New York.
2. **Hugh Rollinson. (2007)** using geochemical data- evaluation, presentation and interpretation 2nd Edition.
3. **Walther John, V. (2009)** Essentials of Geochemistry, Student Edition. Jones and Bartlett Publishers.
4. **Albarede, F. (2003)** An Introduction to Geochemistry, Cambridge University Press.

Suggested Readings for Gemmology:

1. **Keller, P.C. (1990)** Gemstones and their origins, VanNostrand Reinhold, New York.
2. **Herbert Smith, G.F. (1912)** Gemstones, Methuen, London.
3. **Read, P.G. (2005)** Gemmology III edition Elsevier, Singapore.
4. **Wadia, D.N,** Mineral deposits in India.

Sl. No.:

Subject Code:

U15GL6E2

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05

B.Sc., - GEOLOGY - VI SEMESTER – ELECTIVE COURSE - II

(For the candidates admitted from the year 2015-16 onwards)

HYDROGEOLOGY

UNIT – I

Hydrologic cycle – origin and sources of ground water - meteoric water, connate water, juvenile water. Surface water-groundwater interaction - Rock properties affecting ground water occurrence - Porosity - primary and secondary porosities- Permeability - Permeameter - factors affecting the permeability – permeable rocks and examples .Vertical distribution of groundwater.

UNIT – II

Classification of aquifers – unconfined, confined, leaky and perched aquifers- aquiclude, aquitard, aquifuge, isotropic and anisotropic aquifers. Water table and piezo metric surface – phreatic water table. Properties of aquifer – Porosity, hydraulic conductivity, transmissivity and storage coefficient. Ground water in non-indurated sediments. Pumping tests and analysis of test data for evaluation of aquifer parameters.

UNIT – III

Darcy's law and its validity – sheet flow – turbid flow. Coefficient of permeability. Springs – mechanism of springs – rock properties affecting the origin of springs – kinds of springs – spring water quality – medicinal value of springs – hot springs in India. Wells – kinds of well – rock structures controlling the well- well water quality in Tamilnadu – causes of overdraft of ground water– artificial water recharge methods- construction of percolation ponds and lake, desiltation monitoring in canal, pond, and lake. Rain water harvesting – importance and different methods. Insight of water conservation techniques in ancient period of Tamilnadu.

UNIT – IV

Ground water exploration: field geological traversing – reconnaissance survey- structural approach – satellite imagery interpretation – geophysical resistivity survey: Wenner array, Schlumberger array, Dipole method, and dowsing method – Water indicating plants. Brief account on drilling techniques for exploring ground water.

UNIT – V

Groundwater Quality and Chemistry: water salinity – causes of salinity, physical character of ground water- colour, odour, and density – chemical analyses of ground water – TDS and hardness of ground water. Graphical representations of quality of ground water – bar, vector, and pie. Biological analyses of ground water. Brief note on water quality chart for agriculture, domestic and industrial use. Ground water provinces of Tamilnadu.

Text Books:

1. **David Keith Todd., and Larry W. Mays. (2013)** Groundwater Hydrology, wiley.
2. **Fetter, C.W. (2007)** Applied Hydrology, CBS Publications.
3. **Herman Bouwer, (2014)** Groundwater Hydrology, McGraw hill education private limited.
4. **Raghunath, H. M. (2003)** Groundwater, New age international publications.

Reference Books:

1. **Demam, MCJ., Smith G.S., and Verstappen, H.T. (1986)** Remote Sensing for resources development and environmental management, A.A.Balkema Publishers, Totterdam, Netherlands.
2. **Paine, D.P. (1981)** Aerial photography and image interpretation for resource management, Wiley and Sons, New York.
3. **Ramakrishnan, S. (1998)** Groundwater, CBS Publishers & Distributors.

GOVERNMENT ARTS COLLEGE (AUTONOMOUS), KARUR-05**B.Sc., - GEOLOGY - VI SEMESTER – ELECTIVE COURSE - III**

(For the candidates admitted from the year 2015-16 onwards)

FUEL GEOLOGY**UNIT – I**

Coal and its properties: Different varieties and ranks of coal. Origin of coal. Coalification process and its causes. Litho types, microlithotypes and macerals: their Physical, Chemical and Optical Properties. Maceral analysis of Coal: Mineral and organic matter in Coal. Petrographical methods and tools of examination.

UNIT – II

Fundamentals of Coal petrology, concept of Coal maturity, Peat, Lignite, Bituminous And Anthracite Coal. Application of Coal geology in hydrocarbon exploration. Applications of Coal petrography. Proximate and ultimate analyses. Indian Coal & Lignite deposits.

UNIT – III

Industrial evaluation of Coal characteristics with reference to Coal classification. Geology and coal petrography of different coalfields of India. Uses of coal for various industries e.g. carbonization, liquefaction, power generation, gasification and coal-bed methane production.

UNIT – IV

Petroleum: its different states of natural occurrence, chemical composition and physical properties of crudes in nature. Origin of petroleum (Organic and Inorganic theories), Bitumen and Kerogen; Types of kerogen. Maturation of kerogen. Reservoir rocks: General attributes and petrophysical properties. Porosity (Primary and Secondary) and Permeability (Absolute, Relative, Effective). Control of sediment character (grain size, texture) on Petrophysical property. Classification of reservoir rocks - fragmental reservoir rocks and chemical reservoir rocks.

UNIT – V

Migration of Oil and Gas: geologic framework of migration; short and long distance migration, primary and secondary migration; geologic factors controlling hydrocarbon migration; forces responsible for migration, migration routes and barriers.

Hydrocarbon Traps: definition; anticlinal theory and trap theory, classification of hydrocarbon traps - structural, stratigraphic and combination; time of trap formation and time of hydrocarbon accumulation. Cap rocks - definition and general properties.

Suggested Readings

Bjorlykke, K. (1989) Sedimentary and Petroleum Geology. Springer

1. North, F.K. (1985) Petroleum Geology. Allen & Unwin.

2. **Hobson, G.D. and Tiratsoo, E.N. (1975)** Introduction to Petroleum Geology and Geochemistry, Gulf Publishers.

3. **Shelley, R.C. (1997)** Elements of Petroleum Geology. Academic Press.

4. **Levorsen, A.I. (1985)** Geology of Petroleum, CBS Publishers and Distributors, Delhi, Second Edition.

Sl. No.:

Subject Code:

U15EA4

அரசு கலைக் கல்லூரி (தன்னாட்சி), ஈரூர் - 639005
அனைத்து இளநிலை - ஆறாம் பருவம் - பகுதி - 5
(2015 - 2016 கல்வியாண்டு முதல் பயிலும் மாணவர்களுக்கு
உரியது)

பாலின சமத்துவம்

அலகு 1

பாலினம்தொடர்பான கோட்பாடுகள் : பாலியல் - பாலினம் - உடற்கூறு ரீதியில் நிருணயித்தல் - ஆணாதிக்கம் - பெண்ணியம் - பாலின பாகுபாடு - பாலின வேலைப் பாகுபாடு - பாலின ஒருபடித்தானவர்கள் - பாலின உணர்வூட்டல் -பாலின சமவாய்ப்பு - பாலின சமத்துவம் - பாலின மையநீரோட்டமாக்கல் - அதிகாரப்படுத்துதல்.

அலகு 2

மகளிரியல் : பாலினசமத்துவக்கல்வி - பல்கலைக்கழக மானியக்குழுவின் வழிகாட்டுதல்கள் - ஏழாவது ஐந்தாண்டு திட்டம் முதல் பதினோராவது ஐந்தாண்டுத்திட்டம் வரை - பெய்ஜிங் மாநாடு - பெண்களுக்கு எதிரான அனைத்தவகையான பாகுபாடுகளையும் நீக்கும் ஒப்பந்தம் - 1979 (CEDAW) - சட்டத்தில் பெண்களுக்கு ஆதரவானவற்றை இணைத்தல் அல்லது உட்படுத்துதல் -பெண்களுக்கு எதிரானவற்றை ஒதுக்குதல்.

அலகு 3

பாலியல் பாகுபாட்டிற்கான தளங்கள் : குடும்பம் - பாலின விகிதாச்சாரம் - கல்வி - ஆரோக்கியம் - ஆளுமை - மதம் - வேலைவாய்ப்பு - ஊடகங்கள் - அரசியல் - சட்டம் - பாலியல் துன்புறுத்தல்கள்.

அலகு 4

பெண்கள் மேம்பாடு மற்றும் பாலின சமத்துவ மேம்பாடு : பெண்களுக்கான சமத்துவ முயற்சிகள் - சர்வதேச பெண்களுக்கான சகாப்தம் - சர்வதேச பெண்களுக்கான ஆண்டு - பெண்களின் மேம்பாட்டிற்கான தேசியக் கொள்கைகள் - பெண்கள் அதிகார ஆண்டு 2001 - சர்வதேசக் கொள்கைகளை மையநீரோட்டமாக்கல்.

அலகு 5

பெண்கள் இயக்கங்கள் மற்றும் பாதுகாப்பு நிறுவன ஏற்பாடுகள் : தேசிய மகளிர் ஆணையம் - மாநில மகளிர் ஆணையம் - அனைத்து மகளிர் காவல் நிலையங்கள் - குடும்ப நீதிமன்றங்கள் - குடும்ப வன்முறையிலிருந்து பெண்களைப் பாதுகாக்கும் சட்டம் 2005 - பணியிடங்களில் பெண்கள் மீதான பாலியல் துன்புறுத்தல்களைத் தடுப்பதற்கான உச்சநீதிமன்ற வழிகாட்டுதல்கள் - விசாகா தீர்ப்பு - தாய் சேய் சேம நலச்சட்டம் - பெண் சிசுவை கருவில் கண்டறிவதைத் தடை செய்யும் சட்டம் 1994 - ஈவ்ஓசிங் - பெண்களைத் தொல்லை செய்தல் தடுப்புச் சட்டம் - மகளிர் சுயஉதவிக்குழுக்கள் - பஞ்சாயத்து அமைப்புகளுக்கான 73வது மற்றும் 74வது சட்டத்திருத்தம்.

Text Book:

1. பாலின சமத்துவம் - முனைவர். ஆ. ஜெகதீசன் - ராஜா பதிப்பகம், திருச்சி.

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