SLR-EK-2

Seat	
No.	

	APPLIED GEO	DLOGY (New)	
-	d Date : Monday, 17-11-2014 11.00 a.m. to 2.00 p.m.	То	otal Marks : 70
ı	5) Answer any two sl	equal marks.	
1. Mu	Itiple choice question :		14
1)	Which of the following rocks is chabelts?	aracteristic to Post-Paleozoic	orogenic
	a) Granulites	b) Eclogite facies	
	c) Glaucophane schist	d) None	
2)	Pyroxene granulites on retrograde m	netamorphism give rise to	
	a) Hbl-granulites	b) Amphibolites	
	c) Eclogite	d) All the above	
3)	The lime bearing feldspar yield dispresence of	tinct of zoisite and epidote, d	ue to the
	a) Sericitization	b) Saussaritization	
	c) Pneumatolysis	d) Diagenesis	
4)	The process by which a solid melts different composition than the original	•	d, both of
	a) Congruent melting	b) Incongruent melting	
	c) Equilibrium melting	d) Partial melting	



5)	plutons are empla	ace	d after an orogenic/metamorphic
	episode, and the igneous rocks thus lac	k a	ny deformation features.
	a) Post-tectonic	b)	Syn-tectonic
	c) Pre-tectonic	d)	None
6)	The original ACF triangular diagram for by	mi	neral assemblage was proposed
	a) Eskola	b)	Harkar
	c) Goldschmidt	d)	None
7)	Fenitization is fore runner of which rock	em	nplacement.
	a) Neph-syenite	b)	Granite
	c) Carbonatite	d)	None
8)	According to Peacock's classification t series	he	amount of silica in calc alkaline
	a) 56-61%	b)	61-70%
	c) 51-56%	d)	46-51%
9)	Complete destruction of the original text	ure	e is due to
	a) Regional metamorphism	b)	Contact metamorphism
	c) Dynamothermal metamorphism	d)	Metasomatism
10)	Carbonatites are often associated with		
	a) Granites	b)	Syenites
	c) Nepheline rich rocks	d)	None
11)	Find the odd one out.		
	a) Alkali trachyte	b)	Phonolite
	c) Granite	d)	Andesite
12)	In the ACF diagram the alphabet 'C' rep	res	ents
	a) $C = CaO - 3.3P_2O_5$	b)	C = CaO
	c) $C = CaO + K_2O - Na_2O$	d)	None of the above
13)	The rock which develops during the con	tac	t metamorphism
	a) Buchite	b)	Skarn rock
	c) Kimberlite	d)	Charnockite
14)	A granulite rock with the mineral assemble can be identified as	age	e of garnet, kyanite and omphacite
	a) Leptynite	b)	Khondalite
	c) Eclogite	d)	Charnokite

2.	What is regional metamorphism? Add a note on the metamorphic products of pelites and impure calcareous rocks.	14
3.	Describe fractional crystallization of magma. Add note on BADR sequence of igneous rocks.	14
4.	Describe mineralogy, genesis and occurrence of carbonatite in India.	14
5.	Enumerate in brief : a) Calc-alkaline rocks b) IUGS classification of igneous rocks.	14
6.	Write short note on : a I type granites and S type granites b) Bowens reaction series.	14
7.	Explain in short : a) Significance of ACF b) Thermal metamorphic facies.	14

SLR-EK - 3



Seat	
No.	

M.Sc. – I (Semester – I) Examination, 2014 APPLIED GEOLOGY (Paper – III) (New) Sedimentology and Palaeontology

Sedimentology and Palaeontology			
Day and Date : Wednesday, 19-11-2014 Time : 11.00 a.m. to 2.00 p.m.		Max. Marks : 70	
Instructions: 1) Q. 1 is compulsory. 2) Attempt any two ques 3) Attempt any two ques 4) All questions carry eq 5) Neat diagrams should	stions from Section – B. J ual marks.	ressary.	
 Multiple choice question : Sapropelites are generally deposited in a) Oxidising environments Reducing environments Partly oxidizing and partly reducing d) None of the above 		14	
2) Which of the following is NOT erosionala) Channel marksc) Scour marks	b) Rill marks d) Swash marks		
3) Which of the following types of bed foresetlaminae in one coset?a) Tidal beddingc) Herringbone bedding	dding is characterized b) Flaser bedding d) Convolute bedding	by reversed	
4) Which of the following is a flood basin ofa) Point bar depositc) Crevasse splay deposit	deposit ? b) Lag deposit d) Marsh deposit	P.T.O.	



R-E	K-3	<u></u>	
5)	According to Wentworth's scale par 64 mm – 4 mm are described as	cles having diameter between	
	a) Gravels	b) Pebbles	
	c) Cobbles	d) Coarse sands	
6)	The fossils which are eroded, trans	-	ınger age
	a) Fossil assemblage	b) Parental fossils	
	c) Reworked fossils	d) Infiltrated fossils	
7)	Petrified wood is an example of		
	a) Substitution	b) Encrustation	
	c) Alteration	d) Desiccation	
8)	Which of the protozoans is not a me	nber of foraminifera group?	
	a) Nummulites	b) Radiolaria	
	c) Globigerina	d) Lagena	
9)	'TILOBITES' are a) Ancestors of trilobites b) Trail like markings of trilobites c) Temporary resting traces or bur d) The most dominant type of gastr	ows of trilobites	
10)	The thickness cross bedding are m	st often found in	
	a) Alluvial deposits	b) Aeolian deposits	
	c) Glacial deposits	d) Lake deposits	
11)	Ripples formed by water and wind of a)SymmetryRipple index	ffer in b) Scale d) Azimuth	
12)	Rocks having particles of gravel siz a) Arenaceous c) Rudaceous	is known as b) Argillaceous d) None of the above	



	13)	The process in which new minerals as mineral grains.	re formed as out growth over detrital	
		a) Authigeneousis	b) Inversion	
		c) Neomorphism	d) Recrystallization	
	14)	Limestone containing more than 30% o	f clay and sand is called	
		a) Chalk	b) Argillaceous limestone	
		c) Shelly limestone	d) Kankar	
		SECTION	N – A	
2.		nat are clastic sedimentary rocks? Give aracteristics of major classes of sand s	_	14
3.		fine shape of sedimentary particles. Disape.	scuss in brief different aspects of	14
4.	Di	scuss the microfossil foraminifera.		14
		SECTION	N-B	
5.	W	rite note on any two :		14
	a)	Classification of limestone		
	b)	Mass extinction		
	c)	Upper Gondwana flora.		
6.	W	rite an essay on any two :		14
	a)	Continental environment		
	b)	Reynold and Froude number		
	c)	Origin of sediments		
7.	W	rite in brief (any two) :		14
	a)	Genesis and environment of evaporate	deposits	
	b)	Dolomitisation and dedolomitisation		
	c)	Cross bedding and their significance		

SLR-EK-4



Seat	
No.	

M.Sc. - I (Semester - I) Examination, 2014

		APPLIED GEOLOGY ructural Geology a	` '	•	
-	d Date : Friday I 1.00 a.m. to 2			Max. Marks :	70
I	Instructions :	 Answer any five questions carry All questions carry Question 1 is comp Answer any two es Answer any two sh Draw neat and labe 	equal marks. Pulsory. Psay questions from Proof of the	s from 5, 6, 7 .	
1. Fill	in the blanks	:			14
1)	Parallel faults	having a central upthro	own block is a	faults.	
	a) Graben	b) Horst	c) Trench	d) None	
2)	is reflected in	is a dominant control them.	factor in the evolu	tion of landforms and	
	a) Geomorp	hological structure	b) Climate		
	c) Geologica	al structure	d) All of the abo	ove	
3)	Banded calca	reous deposits are calle	ed		
	a) Tufa	b) Drip stones	c) Travertine	d) Stalactites	
4)	The hinge line	e of a doubly plunging fo	old will be		
	a) Rectilinea	ır	b) Curvilinear		
	c) Horizonta	I	d) Vertical		
5)	An unconforn	nity is actually			
	a) A surface of rocks	of erosion or non depos	sition or both as de	tected in a sequence	
	b) A layer of	boulders and pebbles i	n a sequence of ro	ocks	
	c) A layer of	clay or shale in an igne	eous mass		
	d) None of the	ne above			



SLR-EI	K – 4	1		-2-		
6)	6) Most common characteristic drainage pattern of the Deccan trap is		n trap is			
	a)	Radial	b) Dendritic	c)	Trellis	d) None
7)	Fin	d odd one out.				
	a)	Exfoliation		b)	Frost action	
	c)	Carbonation		d)	Thermal effect	
8)	Fac	ctors for formation	n of soil.			
	a)	Parent rock		b)	Climate	
	c)	Topography		d)	All of the above	е
9)	Baı	udins are formed	under	re	gime.	
	a)	Compressive st	ress	b)	Tensile stress	
	c)	a) and b) both		d)	None of these	
10)	Del	tas are formed w	hen			
	a)	Absence of any	strong sea curi	rents o	r wave	
	b)	The slope of sea	ashore where th	ne stre	am enters the s	sea
	c)	Presence of goo	od quantity of se	edimer	nt load	
	d)	All of the above				
11)	Slic	ken slides, gaug	je and breccia a	are fiel	d guides to reco	ognise
	a)	Fault		b)	Angular uncon	formity
	c)	Joints		d)	Fold	
12)	Wh	ich of the followi	ng is secondar	y struc	ture?	
	a)	Foliation		b)	Cleavage	
	c)	Lineation		d)	Folds	
13)		movements of thown as		result	ing from the te	ctonic processes is
	a)	Aggradational		b)	Diastrophic	
	c)	Degradational		d)	Volcanic	
14)				en the	tributaries flow i	n opposite direction
		heir master strea	am.			
	-	Insequent		•	Obsequent	
	C)	Subsequent		d)	None	

	-3-	SLR-EK – 4
2.	Explain in detail mechanisms of folding and	its geometry. 14
3.	Explain briefly the geological work of river wifeatures.	th erosional and depositional 14
4.	Explain fundamental concept in geomorphole	ogy with examples. 14
5.	Write short notes on :	14
	a) Drainage pattern	
	b) Linear aspects of morphometric analysis	
6.	Write in brief on :	14
	a) Types of stresses and behaviour of mate	rial
	b) Drag folds.	
7.	Discuss in short :	14
	a) Geometrical classification of fault	
	b) Rejuvenation.	



Seat	
No.	

M.Sc. (Part – I) (Semester – II) Examination, 2014 APPLIED GEOLOGY (Paper – VI) Indian Stratigraphy

			India	an Stratigraphy	1	
	•	d Date : Tuesda 11.00 a.m. to 2	ay, 18-11-2014 .00 p.m.		Max. M	larks : 70
	,	Instructions :	 Answer any Section B. Draw neat and 	·	ch from Section A and ms wherever necessar	y .
1.	Fill	in the blanks v	vith appropriate	words:		14
	1)	The smallest t	ime unit is know	n as	_	
		a) Phase	b) Age	c) Epoch	d) Period	
	2)	Karharbari for	mation from lowe	er Gondwana is m	ainly composed is	
		a) Shales	b) Coals	c) Gritty	d) None of these	
	3)	A diamondifer	ous conglomera	te of Panna forma	tion belong to	
		a) Semri grou	р	b) Kaimur gr	oup	
		c) Rewa grou	р	d) Bhander g	roup	
	4)	In the western	part of cuddapa	ah basin,	is exposed.	
		a) Kurnool gro	oup	b) Chitravati	group	
		c) Nallamalai	group	d) Papaghni	group	
	5)	The older succ	cession of Kalad	dgi basin is called	the	
		a) Bagalkot g	roup	b) Badami gı	oup	
		c) Kurnool gro	oup	d) None of th	nese	
						DTA



Bhima basin is we	ell known for its l	arg	e reserves of		
a) Silt stone		b)	Limestone		
c) Sand stone		d)	Shale		
Alwar group is un	derlain by				
a) Ajabgarh grou	р	b)	Delhi group		
c) Railo group		d)	All of the abo	ve	
		n as	signed		_ age on the basis
a) Lower Ordovid	cian	b)	Middle Ordov	/ician	
c) Upper Ordovid	cian	d)	Cambrian		
Erinpura granite is	s noted for				
a) Tungsten mine	eralisation	b)	Thorium mine	eralisa	tion
c) Ilmenite miner	alisation	d)	Uranium min	eralisa	ition
The thickest coal	seam in India is	at_			
a) Jharia	b) Raniganj	c)	Singruli	d) Sir	ngareni
The rocks belong	ing to Gondwana	gr	oup are of		
a) Fluviatile origi	n	b)	Lacustrine or	igin	
c) Glacial origin		d)	Marine origin		
Wardha valley is	known for				
a) Clay	b) Asbestos	c)	Diamond	d) Co	pal
The duration of e	ruption of Deccar	n Ba	asalt is		_
a) 4.8 Ma	b) 60.5 Ma	c)	61.20 Ma	d) 66	.2 Ma
Gangamopteris b	eds of Kashmir b	elo	ngs to	 	_
a) Mississippian		b)	Artinskian		
c) Pennysylvania	an	d)	Tartarian		
	a) Silt stone c) Sand stone Alwar group is un a) Ajabgarh grou c) Railo group The Garbyang for of flat gastropods a) Lower Ordovic c) Upper Ordovic c) Upper Ordovic Erinpura granite is a) Tungsten mine c) Ilmenite miner The thickest coal a) Jharia The rocks belong a) Fluviatile origi c) Glacial origin Wardha valley is a) Clay The duration of el a) 4.8 Ma Gangamopteris b a) Mississippian	a) Silt stone c) Sand stone Alwar group is underlain by	a) Silt stone c) Sand stone d) Alwar group is underlain by a) Ajabgarh group b) c) Railo group d) The Garbyang formation has been as of flat gastropods recovered. a) Lower Ordovician b) c) Upper Ordovician d) Erinpura granite is noted for a) Tungsten mineralisation b) c) Ilmenite mineralisation d) The thickest coal seam in India is at a) Jharia b) Raniganj c) The rocks belonging to Gondwana gra a) Fluviatile origin b) c) Glacial origin d) Wardha valley is known for a) Clay b) Asbestos c) The duration of eruption of Deccan Ba a) 4.8 Ma b) 60.5 Ma c) Gangamopteris beds of Kashmir belo a) Mississippian b)	a) Silt stone c) Sand stone d) Shale Alwar group is underlain by a) Ajabgarh group b) Delhi group c) Railo group d) All of the about the about the agent and a strong a	c) Sand stone d) Shale Alwar group is underlain by



SECTION-A

2.	Give detailed account on the stratigraphy of the Western Dharwar Craton.	14
3.	Define stratigraphy and write a note on Siwalik formation of India.	14
4.	Give detailed account on lithostratigraphy of cuddapah basin.	14
	SECTION - B	
5.	Write notes on : a) Intertrappean bed b) Stratigraphy of Main Deccan Plateau.	14
6.	Describe in brief : a) Bhilwara supergroup b) Bag beds.	14
7.	Write short notes on : a) Jurassic stratigraphy of Kachchh b) Malanjkhand granite and Dongargarh granite.	14

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Seat	
No.	

M.Sc. – I (Semester – II) Examination, 2014 APPLIED GEOLOGY (Paper – VIII)

		hemistry	
-	nd Date : Saturday, 22-11-2014 : 11.00 a.m. to 2.00 p.m.	Max. Marks : 7	0
		rry equal marks.	
I. C	choose the correct answer :	1	4
1) A neutral fence is controlled by		
	a) limestone formation	b) pH	
	c) E ^h	d) none	
2	2) The Greek word lithophile means	the love of an element to	
	a) sulphur	b) oxygen	
	c) free iron	d) atmosphere	
3	 The most stable mineral occurring rule is 	on the earth surface according to Goldich	
	a) quartz	b) olivine	
	c) pyroxene	d) feldspar	
4	River water and sea water are opp has	osite in chemical character, the sea water	
	a) Na > Mg > Ca	b) Mg > Ca > Na	
	c) Na > Ca > Mg	d) None	
5	5) The evolution of the atmosphere i	s on the aspect	
	a) primeval atmosphere	b) addition during geological time	
	c) losses during geological time	d) all the above	



R-El	√ −12	-2-	-	
6)	The electro positive elements who and whose oxide requires gregeochemically called as			
	a) sedirophile	b)	chalcophile	
	c) lithophile	d)	none	
7)	Iron in the ferrous state is stable it to be preceded by oxidation to the		• •	
	$\frac{2}{r}$ index is			
	a) 2.0	b)	2.3	
	c) 2.7	d)	4.7	
8)	Which of the thermonuclear proce of elements $A = 28$ to $A = 57$ at the		-	evolution
	a) hydrogen burning	b)	helium burning	
	c) silicon burning	d)	none	
9)	Elements of even atomic number a number on either side. This rule of as			
	a) Goldschmidt rule	b)	Clarke rule	
	c) Wadephole rule	d)	Oddo-Harkin rule	
10)	Find the odd one out			
ŕ	a) H	b)	He	
	c) Na	d)	Ar	
11)	The similar $\frac{z}{r}$ values of Be ²⁺ , Al ²	3+ a	and Ti ⁴⁺ makes the occurrence	e of them
	together inenv	iror	nment.	
	a) limestone	b)	bauxite	
	c) sulphide	d)	none	
12)	The anaerobic conditions, formati sedimentation results to	on	of metal sulphides, large scale	e
	a) eutrophication	b)	photosynthesis	
	c) oligotrophic	d)	none	

- 13) Presence of higher life forms, phytoplanton, zoo plantons and higher Do in water are in the zone of
 - a) thermocline

b) hypolimnion

c) epilimnion

- d) none
- 14) The help life of radionuclide ²³⁵U is

a) $4.47 \times 10^9 \,\text{Y}$

b) $1.31 \times 10^9 \, \text{Y}$

c) 5730 Y

d) none

SECTION - A

Attempt any two question from this Section.

- II. Discuss various concepts to propose geochemical model of the earths interior.
- III. Describe the physico-chemical factors involved during deposition of elements in sedimentation. Add a note on geochemical fence.
- IV. What are accumulation and decay clocks? Write on half life of various radio nuclides and the material used to date geological events.

SECTION - B

Attempt any two questions from this Section.

- V. Write short notes on **any two** of the following:
 - a) Cosmic abundance of elements
 - b) E^h pH diagrams
 - c) Lithophiles.
- VI. Write briefly on **any two** of the following:
 - a) Primary differentiation of elements
 - b) Composition of sea and river water
 - c) Composition of atmosphere.
- VII. Bring out salient aspects on any two of the following:
 - a) Free energy
 - b) Average composition of sedimentary rocks
 - c) Losses and gains to hydrosphere.



Seat	
No.	

M.Sc. (Part - II) (Sem. - III) Examination, 2014 APPLIED GEOLOGY

	Paper – I	X : Structural	Ge	eology and	Ge	otectoni	cs	
-	d Date : Friday, 14 3.00 p.m. to 6.00						Max. Marks	: 70
1	3) 4)	Question numbe Answer any two Answer any two All questions ca Drawneat labelle	qu qu irry	nestions from a nestions from a nequal marks.	Sed Sed	ction B .	er necessary.	
I. Sel	lect the correct ch	oice from those (give	en below :				
1)	Folds with multipl	e hinges are call	ed_	· · · · · · · · · · · · · · · · · · ·				
	a) homoclines		b)	anticlinorium				
	c) polyclinal fold	S	d)	synclinorium				
2)	Plutonic igneous	rocks are essent	iall	y involved in $_$				
	a) Disconformity		b)	Discontinuity				
	c) Angular uncor	nformity	d)	Non conform	ity			
3)	A doubly plunging outcrops.	g anticline on ero	sio	n exhibits		ра	ttern of	
	a) inlier	b) outlier	c)	overlap	d)	off-lap		
4)	An over thrust is	a type of		fault.				
	a) normal	b) reverse	c)	gravity	d)	detachme	ent	
5)	Under high tempe materials.	rature pressure c	onc	litions the rock	s be	ehave as _		-
	a) brittle	b) rigid	c)	elastic	d)	ductile		
6)	For stress-strain	relation the Hook	e's	law holds true	on	ly in the _		_
	a) plastic deform	ation	b)	anelastic lim	it			
	c) linear range o	f elasticity	d)	permanent st	raiı	n		
							P	P.T.O.



7)	The forces that pull apart a body in stresses in it.	op	posite direction	n ge	enerate
	a) compressive b) tensile	c)	shearing	d) 1	normal
8)	New oceanic plates are formed at				
	a) subduction zones	b)	convergent be	oun	daries
	c) mid-oceanic ridges	d)	deep oceanic	tre	nches
9)	When two continental plates collid	e, _			
	a) one of them subducts below th	e o	ther		
	b) none of them subducts below t	he	other		
	c) a rift valley is formed				
	d) a deep oceanic trench is formed	ed			
10)	The Beni off plane occurs on				
	a) over-riding continental plate				
	b) subducting continental plate				
	c) subducting oceanic plate				
	d) over-riding oceanic plate				
11)	Strips of similar palaeomagnetic p of	rop	erties are para	allel	to and on either sides
	a) continental margins	b)	deep oceanic	tre	nches
	c) mid oceanic ridges	d)	convergent pl	late	boundaries
12)	Hot spots are a result of		_		
	a) Upward diverging mantle conv	ecti	on		
	b) Movements in the Earth's core)			
	c) Decending convection currents	3			
	d) Isostatic adjustments				
13)	Palaeomagnetic studies on ocear	flo	or have suppo	orted	d the concept of
	a) Isostasy	b)	continental di	rift	
	c) Convection currents	d)	paired metan	norp	hic belts
14)	The transform fault boundary is ch	nara	acterised by _		faults.
	a) Normal b) Reverse	c)	Dip-slip	d) :	Strike-slip



SECTION - A

Answer any two questions from this Section:

- II. Describe the behaviour rock material stress in detail.
- III. Discuss the mechanics of folding with examples.
- IV. Describe the physiographic divisions of India from geotectonic point of view.

SECTION - B

Answer any two questions from this Section:

- V. Write notes on:
 - a) Orogenesis
 - b) Tripple junction.
- VI. Explain in detail:
 - a) Plume hypothesis
 - b) Foliation.
- VII. Discuss the significance of the following:
 - a) Lineations in tectonics
 - b) Shear zones.

Seat	
No.	

	M.Sc. (ester – III) Exai OLOGY (Papei Il Exploration		
-	d Date : Monda 3.00 p.m. to 6.0	-		Max. Marks :	70
		and IV and two 4) All questions of	is compulsory . t two questions fro questions from C carry equal marks	om Question Numbers II, III Question No.s V , VI and VII .	
I. Ch	oose the correc	ct answer :			
1)	Threshold is considered as		of an element	above which a sample is	
	a) Dispersive	b) Anamolors	c) Background	d d) Cut-off	
2)	The rocks which	ch have lithium be	aring minerals		
	a) Pegmatites	b) Syenites	c) Granites	d) Anorthosites	
3)	Pyrite of sedim	nentary origin has			
	a) Co < Ni	b) Co > Ni	c) K > Ni	d) Na > Ni	
4)	Eclogites are _ pipes.	derive	ed rocks carried on	to the surface by kimberlite	
	a) Mantle	b) Core	c) Crust	d) Terrestrial	
5)	The geobotan	ical indicator of su	lphide ore deposi	t is	
	a) Halophytic	flora	b) Selenium flo	ora	
	c) Galmi flora		d) None of the	above	
6)	Well logging is	stech	nnique in explorati	ion.	
	a) Surface		b) Sub-surface	е	
	c) S. P. Metho	od	d) Gamma-Ga	amma logging	
7)	In electrical re	sistivity, apparent	resistivity (ho) is $($	denoted by	
	a) $\rho = \frac{V}{I}$	b) $\rho = 2\pi a \frac{V}{I}$	c) $\rho = V \times I$	d) $\rho = \frac{1}{V}$	

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	8)) The best geophysical method used in oil structures is					
		a) Gravity	b) Magnetic	c)	Electrical	d)	Seismic
	9)	Find the odd one	out?				
		a) Sonic logging		b)	Neutron logg	ing	
		c) S. P. logging		d)	Sampling		
	10)	The gravity at an	y point on the ea	rth'	s surface dep	end	ds on
		a) Latitude	b) Elevation	c)	Density	d)	All the above
	11)	The bauxite depo	sits of Eastern G	hat	s are due to _		concentration.
		a) Mechanical	b) Magmatic	c)	Hydrotherma	al	d) Residual
	12)	Nepheline syenit	es are the lost ro	cks	for		_
		a) Diamonds	b) Uranium	c)	Corundum	d)	Graphite
	13)	Which among is t	the airborne expl	ora	tion technique	es?	1
		a) Remote sensi	ng	b)	G.I.S.		
		c) G.S.I.		d)	Field mappin	g	
	14)	Chromite is associ	ciated with				
		a) Sedimentary	rocks	b)	Granites		
		c) Nepheline sye	enites	d)	Ultramatic ro	ocks	3
II.	De	fine prospecting a	nd exploration. E	xpla	ain structural ç	guio	les with neat sketches.
III.		olain how do you e efly explain catego				dde	d type and vein type?
IV.		fine geochemical kimberlite pipes.	dispersion of ele	me	nts. Explain th	ne s	trategy for exploration
V.	Wr	ite short notes on	:				
	a)	Electrical resistiv	itv				
	,	Magnetic surveys	-				
VI.		ite short notes on					
	a)	Resistivity logging	9				
	b)	Radiometric surve	eys.				
VII.	Wr	ite short notes on	:				
	a)	Types of sampling	a				
	-	Mineral provinces	_				
	~,						



Seat	
No.	

	APPLIED GE	·	
i	Paper – XII : Natural Resources a	and Watershed Management	
-	d Date : Friday, 21-11-2014 3.00 p.m. to 6.00 p.m.	Max. Marks :	: 70
1	Instructions: 1) Answer five questions 2) All questions carry eq 3) Question 1 is compuls 4) Answer any two ques 5) Draw neat and labeled	ual marks. sory .	
1. Ans	swer with correct choice:		14
1)	The scale used for cadastral map is 1 cr	n =	
	a) 10 m	b) 50 m	
	c) 40 m	d) 25 m	
2)	The ethic that believes that mankind sh retain them as pure form is called as		
	a) Management	b) Conservation	
	c) Development	d) Preservation	
3)	By the standard of the Indian metrologic 60% of normal rainfall then it is a		
	a) Abnormal	b) Excess	
	c) Normal	d) Scanty	
4)	The New National Mineral Policy (NNMF) was announced in	
	a) August 1990	b) August 2004	
	c) March 1993	d) January 1994	
5)	The fresh water suitable for human use of billion cubic Kilometers		
	a) 1.4	b) 2.7	
	c) 1×10^{-5}	d) 10×0^{-5}	



6)	A man made structure		
	barrier to wave action to protect shore a		
	a) Dyke	,	Bulkhead
٦١	c) Sill	,	Break water
1)	In favorable zones fractured and vericul	lai	basaits a recharge rate or
	a) 10 to 15%	b)	2 to 3%
	c) 7 to 9%	d)	None of these
8)	The rain, snow, atmospheric moisture v	vith	pH less than 7 is called
	a) Acid precipitation	b)	Tonential rain
	c) Rain	d)	Desaling
9)	The earthquake is said to be deep when	th	e depth of origin is more than
	a) 58 kmr	b)	110 kmr
	c) 200 kmr	d)	300 kmr
10)	Culturable waste lands are		
	a) Water logged land	b)	Stony wastes
	c) Degraded forest land	d)	Both a) and c) are correct
11)	Drought difference widely depending on		
	a) Macro soil	b)	Micro soil
	c) Climatic condition	d)	All of the above
12)	Soil formed in place by the disintegratio	n a	nd decomposition of rock
	a) Residual soil	b)	Cumulose soil
	c) Peat soil	d)	Muck soil
13)	Of total geographic area of Maharashtra		% is drought prone.
	a) 30	b)	35.2
	c) 45	d)	20
14)	Find odd man out		
	a) Farm bunding	b)	Nalla bunding
	c) Drip imigatic	d)	Check damr



PART-I

- 2. Describe various types of coastal erosions and their management.
- 3. Write in detail about integrated resources survey.
- 4. Highlights the legislation aspects of mining sector with respect to issues on environment.

PART-II

- 5. Write notes on:
 - a) Disposal of Hazardous Haster.
 - b) Satellite data for resource management.
- 6. Write in brief:
 - a) Soil management
 - b) Moisture stress in vegetation.
- 7. Write short note:
 - a) Land slide management
 - b) Conservation principles used in mineral resources.

Seat	
No.	

M.Sc. (Semester – I) Examination, 2014 APPLIED GEOLOGY (Paper – I) (New) Mineralogy and Optics

3,	•			
4-11-2014 0 p.m.		Max. Marks: 70		
Answer any two qu Answer any two qu All questions carry	estions from Section – A . estions from Section – B . equal marks.			
ch correct choice :		14		
owing minerals is an	ortho-pyroxene?			
b)	Diopside			
d)	Wollastonite			
2) Which of the following minerals is an isotropic mineral?				
b)	Chlorite			
d)	Olivine			
an Out'				
b)	Plagioclase			
d)	Garnet			
) Glaucophane belongs to which of the following groups?				
b)	Olivine			
d)	Amphibole			
Ba($Al_2Si_2O_8$) is the chemical composition of which of the follow				
b)	Anorthoclase			
d)	Albite			
	Objective Question Answer any two que Answer any two que All questions carry Draw neat sketches ch correct choice: owing minerals is an b) d) owing minerals is an b) d) an Out' b) elongs to which of the b) d) the chemical compositions	Objective Question No. 1 is compulsory. Answer any two questions from Section – A. Answer any two questions from Section – B. All questions carry equal marks. Draw neat sketches wherever necessary. The correct choice: owing minerals is an ortho-pyroxene? b) Diopside d) Wollastonite owing minerals is an isotropic mineral? b) Chlorite d) Olivine an Out' b) Plagioclase d) Garnet elongs to which of the following groups? b) Olivine d) Amphibole		



6)	Re	efractive index of Canada Balsar	n is	
	a)	1.2	b)	1.543
	c)	1.9	d)	1.65
7)	Ρi	geonite is a variety of		
	a)	Amphibole	b)	Feldspar
	c)	Olivine	d)	Pyroxene
8)	W	nich of the following is a biaxiall	уро	ositive mineral ?
	a)	Biotite	b)	Garnet
	c)	Calcite	d)	Sillimanite
9)	Pla	agioclase typically exhibits – typ	e o	f twinning.
	a)	Cross	b)	Knee shape
	c)	Repeated	d)	Cross-halching
10)	Ze	olites show type	of s	ilicate structure.
	a)	Single chain	b)	Framework
	c)	Double chain	d)	Sheet
11)	Which of the following is a dioctahedral mica?			
	a)	Biotite	b)	Muscovite
	c)	Phlogopite	d)	Lepidolite
12)	Which of the following is a nonpleochroic mineral?			
	a)	Hornblende	b)	Biotite
	c)	Hypersthene	d)	Garnet
13)	W	hich of the following has the higl	nes	t sp.gr. ?
	a)	Beryl	b)	Olivine
	c)	Baryte	d)	Garnet
14)	W	hich of the fallowing has a mond	oclii	nic crystal system ?
	a)	Hypersthene	b)	Wollastonite
	c)	Angite	d)	Pyrite

	SECTION – A	
2.	Write an essay on mineralogy and optical characters of feldspathoid group.	14
3.	Write an essay on structure, optical properties and paragenesis of alumino silicates.	14
4.	What is an interference figure? Describe procedure for finding interference figure of uniaxial mineral.	14
	SECTION - B	
5.	Write short notes on (any two):	14
	a) Paragenesis of base metals	
	b) Diagnostic properties Olivine	
	c) Flash figure.	
6.	Write in brief (any two):	14
	a) Silicate structures of minerals.	
	b) Structure and chemistry of epidote.	
	c) Laws of twinning in feldspar.	
7.	Describe the following (any two):	14
	a) Acute bisetrix	
	b) Structure and chemistry and garnet	
	c) Nomenclature of mica group of minerals.	