Seat	
No.	

M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023 **APPLIED GEOLOGY** Mineralogy (MSC19101)

Day & Date: Wednesday, 19-07-2023 Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. Nos. 1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

- is measure of the bending of a ray of light when passing from 1) one medium into another.
 - a) Index of refraction
 - b) c) Index of reflection d)
- 2) If the velocity of ordinary ray is greater than that of extraordinary ray the mineral is .
 - a) Optically Balanced

c) Optically positive

b) Optically negative

Relief index

None of the these

- d) None of the these
- 3) _ is the colours produced when the analyser is inserted on a thin-section microscope.
 - a) Interference color

c) Index color

c) Apatite

- b) Pleochroism d) All of these
- 4) Which of the following is belongs to Epidote Group mineral?
 - a) Hornblend Zoisite b)
 - c) Lepidolite Plagioclase d)
- Which of the following mineral is isotropic? 5)
 - a) Halite Calcite b)
 - d) Both b and C
- 6) Which of the following is mineral belongs to garnet group?
 - a) Pyrope b) Grossular
 - c) Both a & b d) None of these

7) ____ is an optical phenomenon in which a substance has different colors when observed at different angles, especially with polarized light.

- Pleochroism a) Interference color b)
- None of these c) Both a & b d)
- In which crystal structure two horizontal axis have same length and 8) third vertical axis have different length _
 - a) Orthorhombic Cubic b)
 - c) Tetragonal d) Hexagonal
- 9) of the following are polymorphs.
 - a) Quartz and cristobalite Simple
 - b) Diamond and graphite
 - c) Both a & b
 - d) None of these

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SLR-SB-1

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Max. Marks: 80

- Which of the following is not a type of twinning in minerals? 10)
 - a) Simple twinning b) Cross hatched twinning
 - d) None of these

Fill in the blanks OR write True or False. B)

c) Single hatched

- _____ is define as imaginary plane which passes through the center 1) of a crystal can divides it into two equal portions which are exactly the mirror images of each other.
- 2) _ is a technique for analyzing the atomic or molecular structure of minerals.
- A mineral which transmits no light through a thin section under a 3) microscope is called as Mineral.
- 4) Crystal lattice is the symmetrical three-dimensional structural arrangements of atoms, ions or molecules (constituent particle) inside a crystalline solid as points (True/False).
- a axis \neq b axis \neq c axis is refers to tetragonal system. (True/False) 5)
- Anisotropic minerals are minerals that have the same properties in all 6) directions. (True/False)

	a) b) c) d)	Explain isotropic & anisotropic minerals with example of each. Define polymorphism and pseudo morphism. Write a note on ionic substitution & its types. Write a note on uniaxial & biaxial minerals.
Q.3	Ans a) b)	swer the following. Write a detail note on x ray diffraction. Write a detail note on concept of light under microscope.

Q.4 Answer the following.

Q.2 Answer the following.

a) Write a detail note on Olivine group. **08 b)** Write a detail note on Mica group. **08**

Q.5 Answer the following.

Q.6

a) b)	a) Write a note on types of crystal symmetry and explain it for isometric system.b) Write a detail note on types and causes twinning.				
An	swer the following.				
a)	Write a detail note on types of bonding in mineral formation.	08			
b)	Write in detail about epidote group mineral.	08			

b) Write in detail about epidote group mineral.

Q.7 Answer the following.

a)	Write a detail note on silicate structures.	08
b)	Write a note on common optical properties of minerals.	08

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Seat No.		Set
М	I.Sc. (Semester -	I) (New) (CBCS) Examination: March/April-2023

APPLIED GEOLOGY Indian Stratigraphy (MSC19102)

Day & Date: Thursday, 20-07-2023 Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. Nos. 1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

- The stratigraphic boundary demarcating the Archaean rocks from 1) Closepet granite is termed as _
 - a) Non-conformity b) Disconformity
 - c) Angular Unconformity d) Eparchaean Unconformity
- The sediments of the 'Dharwar Super-group' were deposited over a 2) basement of:
 - a) Slates and phyllites
 - b) Marbles and Conglomerates
 - c) Sargur Schists and Peninsular Gniessic complex
 - d) Basalts and conglomerates

3) The oldest group of Cuddapah Super-group is: Nallamalai Group

- a) Papaghni Group b)
- c) Chitravati Group d) Kurnool Group
- The Vindhyan system lies unconformably on the: 4)
 - a) Kurnool rocks

c) Cuddapah rocks

b) Deccan rocks d) Bijawar group rocks

Proterozoic

- The age of Tillite beds of Gondwana is 5)
 - Middle Jurassic a) Lower Permian b)
 - c) Upper Carboniferous d)
- The correct chronological sequence (older to younger) of the 6) Precambrian stratigraphic units listed below is
 - a) Sargur Group, Chitradurga Group, Alwar Group, Kaimur Group
 - b) Chitradurga Group, Sargur Group, Kaimur Group, Alwar Group
 - c) Sargur Group, Alwar Group, Chitradurga Group, Kaimur Group
 - d) Sargur Group, Chitradurga Group, Kaimur Group, Alwar Group
- 7) During which geological time Dinosaur was flourish on earth?
 - a) Proterozoic b)
 - c) Jurassic d) Tertiary
- 8) An extinction event or mass extinction is a widespread and rapid decrease in biodiversity on Earth. Such an event first observed during _ period.
 - a) Neoproterozoic b)
 - Tertiary c)
- Palaeogene
- d) Ordovician

Max. Marks: 80

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			c)	Geological map	d)	Structural map	
		10)	The a) c)	e Lilang Group in Spiti is cor Permian Triassic	nsider b) d)	ed the Indian type area for the Jurassic Cretaceous	
	B)	Fill i	n the	e blanks OR write True or	False	·	06
	-	1)	Wh	io introduced the term Gond	wana	?	
		2)	Wh	ich formation of Saucer gro	up is l	more important for manganese	
		3)	ore Wh		al tim	e intervals witnessed the first	
		4)	app Lor	nar crater in Buldhana distric	sm in ct, Ma	harashtra was formed by	
		5)	The (Tr	e land covered by water from	n all s	ides is called as Peninsula.	
		6)	Ce	nozoic is the youngest era ir	n Geo	logical time scale. (True/False)	
Q.2	Ans a)	swer ti Sargu	h e fo ir Sc	bllowing. hist			16

Analysis of stratigraphic thickness is carried out with the help of_____.

b)

Lithostratigraphic map

a) b) Indravati basin

9)

Flora and fauna of Gondwana C)

a) Isopach maps

d) Iron ore series

Q.3	 3 Answer the following. a) Write down Stratigraphy, classification and evolution of the Siwlaik b) Discuss in detail Achaean - Proterozoic boundary in India. 			
Q.4	An	swer the following.		

- a) Discuss in detail Structure, Stratigraphy & Tectonic evolution of Cuddapah Basin.
- **b)** Write in detail the evolution of Himalayas.

Q.5	 Answer the following. a) Write an essay on Deccan Trap. b) What are the principles and concept of Litho, Bio and Chrono Stratigraphy? 				
Q.6	 Answer the following. a) Explain in detail Tectonic sub-divisions of India. b) Discuss in detail stratigraphy and depositional environment of Mesozoic rocks of Kachchh. 				
Q.7	Answer the following.	16			

- a) Write a note on Trans- Himalayan and Karakoram granite batholiths.
- **b)** Write a full note on Geological Time scale.

SLR-SB-2

16

'	1	,	
	involves the creation of n	ew m	ineral crystals different from the
pro	tolith.		
a)	Phase change	b)	Neocrystallization
C)	Metamorphism	d)	None of the above
Orc	genic metamorphism is the	type	of metamorphism associated with
a) b) c) d)	Convergent plate boundary Divergent plate boundary Transform plate boundary None of the above	,	
The So	e clasts of sedimentary rock	are b	etween 5 mm and 10 mm in size,
a)	Shale	 b)	Sandstone
c)	Conglomerate	d)	Siltstone
Wh flak	at is the name of a rock that es arranged in a parallel ma	is co inner	mposed largely of abundant mica ?
a)	Gneiss	b)	Schist
c)	Shale	d)	Slit

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M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023 **APPLIED GEOLOGY**

Sedimentary and Metamorphic Petrology (MSC19103)

Day & Date: Friday, 21-07-2023 Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. Nos. 1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

- Which of the following is the smallest megascopic structure in a 1) sedimentary sequence?
 - a) Lamination
 - c) Stratum
- Diatoms are _____ 2)
 - a) Calcareous deposit
 - c) Phosphateic deposit
- 3) Metamorphic rock shows alternative dark and light colour band known as _ .

b)

d)

b)

d)

Bed

None of the above

Siliceous deposit Carbonaceous deposit

- a) Slate b) Schist
- c) Gneiss d) Marble
- is rock beneath the Earth's surface experiences equal pressure 4) exerted on it from all directions because of the weight of the overlying rock.
 - a) Lithostatic pressure b) c) Fluid pressure
- **Directive pressure** d) None of the above
- 5) the prote
 - a)
 - c)
- 6) Oroc with
 - a)
 - b)
 - c)
 - d)

8)

- 7) The size, So tl
 - a) c)

Max. Marks: 80

10

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9) Sedimentary grains exhibit very fine skewness of

- a) -0.10 to -0.30 +0.10 to -0.10 b)
- c) -0.10 to +0.30 d) -0.30 to -1.00
- In which metamorphic environment would geologist find a 10) metamorphic aureole?
 - a) Regional metamorphism b) Contact metamorphism
 - c) Shock metamorphism d) Cataclastic metamorphism

B) Fill in the blanks OR Write True or False.

- The gradient is defined as the increase in temperature with 1) depth in the Earth.
- In Precambrian shield geothermal gradient within the Earth's surface 2) is about 12 to 20° C/km. (True/False)
- gradient is the increase in pressure with increase in depth. 3)
- The main mineral produced in burial metamorphism is 4)
- Most of the rocks in tropical regions are often covered by an 5) extensive layer of a product of chemical leaching called
- 6) Rock formed by process of solid-state crystallization of preexisting rock is called _____.

Q.2	Write a short note on:	
	a) Diagenesis process of sedimentary rocks	

- b) Spherocity
- c) Agents of metamorphic processes
- d) Hydrothermal metamorphism

Answer the following. Q.3

- a) Describe the characteristics of eclogite facies metamorphism. Add a note on types of mineral assemblages of eclogite.
- b) Write a brief note on charnockites.

Answer the following. Q.4

- a) With neat sketch, describe the depositional sedimentary structure, with emphasis on their applications in determining paleocurrent directions.
- **b)** Describe types of physical weathering.

Q.5 Answer the following. a) Write a note on metamorphic processes. b) Write a note on contact metamorphism. Answer the following. Q.6

- a) Discuss in details types of metamorphic textures with examples.
- **b)** Discuss phase rule and its applications on the phase diagrams.

Q.7 Answer the following.

- a) Write a brief note on marine deposition environment of sedimentary rocks.
- **b)** Write a brief note on metamorphic differentiation.

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M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023 APPLIED GEOLOGY **GEOCHEMISTRY (MSC19108)**

Day & Date: Saturday, 22-07-2023 Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. Nos. 1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

- The Big-bang theory has been given for: 1)
 - a) Origin of the Universe b) Isostasy
 - c) Plate-tectonics d) Earthquake
- 2) The fastest planet in the solar system is:
 - a) Neptune b) Mercury
 - c) Venus d) Jupiter

3) Elements concentrated in the metal are:

- a) More electropositive b) Less electropositive
- c) Neutral d) None of these
- Some elements show affinity for more than one group because the 4) distribution of any element is dependent to some extent on:
 - a) Temperature
 - b) Pressure
 - c) The chemical environment of the system as a whole
 - d) All the above

The geochemical character of an element is largely governed by the: 5)

- a) Number of protons in the nucleus
- b) Number of neutrons in the nucleus
- c) Electronic configuration of its atoms
- d) All the above
- 6) Elements which readily form ions with an outermost 8-electron shell are:
 - a) Siderophile Chalcophile b)
 - c) Lithophile d) Atmophile
- What is the average percentage of SiO₂ in the Igneous rocks: 7)
 - a) 59.14% b) 65.50%
 - c) 79.15% d) 80.00%
- Verve-clock method can be used for getting geologic-time from: 8)
 - a) 0-100 yrs. only
 - c) 0-10,000 yrs. only
- Chondrites are consisting primarily of: 9)
 - a) Olivine only
 - c) Olivine and/or pyroxene

Max. Marks: 80

10

Ρ Set

SLR-SB-4

									• · ·	
		10)	Ho	w many rare ea	rth elements	are t	here?			
			a)	10		d)	14 17			
			0)	10		u)	17			
	B)	Fill i	n the	e blanks.						06
	,	1)	A li	ght year is a wa	y of measuri	ng		·		
		2)	Age	e of big bang ex	plosion is	-	•			
		3)	Cha	ange in internal	energy and v	volun	ne of co	onstant pressu	ire called	
		4)	A s	mallest planet i	n our solar sy	ystem	n is	•		
		5)		stage does	s not change	with	time.			
		6)	Act idea	al conditions.	of the effect	ive _	01	chemical spe	cies under	
Q.2	An	swer tl	he fo	ollowing.						16
	a)	Laws	of G	oldschmidt						
	b)	Entha	lpy a	and Entropy						
	C)	Chem	ical	Bonding						
	d)	Half li	fe of	the elements						
Q.3	An	swer tl	he fo	ollowing.						16
	a)	Geocl	hemi	ical composition	of the earth	and	its cons	stituent parts.		
	b)	Descr	ibe \	arious thermon	uclear proce	ss in	origin o	of elements.		
Q.4	An	swer tl	he fo	ollowing.						16
	a)	Prima	ry D	ifferentiation of	Elements.					
	b)	Eh - p	H di	agrams and the	ir significanc	e.				
Q.5	An	swer tl	he fo	ollowing.						16
	a)	Write	a no	te on Composit	ion of Biosph	nere.				
	b)	Write	a no	te on compositi	onal differen	ce be	etween	sea and river	waters.	
Q.6	An	swer tl	he fo	ollowing.						16
	a)	Expla	in de	ecay clocks? Wr	ite a note on	vario	ous ma	terials used in	dating	
		decay	cloc	cks.					6 . 1	
	b)	Discu	ss va sphe	arious physical a re.	and chemica	I asp	ects of	vertical layers	of the	
Q.7	An	swer tl	he fo	ollowina.						16
	a)	Golds	chm	idt's geochemic	al classificat	ion of	f eleme	nts.		- •
	ь́\	10/10:4-			ا ا م م م م	0.00	vala			

b) Write a note on Wet and Dry chemical analysis.

Time	e: 11:	:00 A	M To	02:00 PM				
Instr	ucti	ons:	1) Qu 2) Att 3) Fig	estion no. 1 an empt any three ure to right ind	d 2 are com questions f cate full ma	ipulsor rom Q arks.	y. No. 3 to Q. No. 7.	
Q.1	A)	Chc 1)	why Why a) b) c) d)	correct alterna basalt is fine g Basalt formed Basalt formed Gabbro forme Formed at hig	tive. (MCQ) frained than from quick from slow o d from quic h temperate) cooling cooling k coolii ure	ro? g of magma of magma ng of magma	10
		2)	Wha a) b) c) d)	t is the essenti Quart + Augite Quartz + Feld Augite + Plagi Carbonate mi	al mineral c e + Plagiocl spar oclase nerals	ompos ase	ition of Granite?	
		3)	Basa a) b) c) d)	alt isrock Sedimentary Plutonic Both igneous Volcanic	«. and metam	orphic		
		4)	Mafi igne a) c)	c igneous rocks ous rock. Quartz Aluminium	s contain m	ore am b) d)	ounts of as compared to felsic Iron Pink feldspar	
		5)	Ando a) b) c) d)	esitic rocks forr Continent-Cor Ocean-Contin Ocean-Ocean Continental rif	n in: ntinent collis ent collision collision t	sion 1		
		6)	Carb	onatite is	rock?			

M.Sc. (Semester - II) (New) (CBCS) Examination: March/April-2023 APPLIED GEOLOGY Igneous Petrology (MSC19201)

- a) Igneous rocks
- b) Chemical deposit
- c) Volcanogenic sedimentary rocks
- d) Metamorphic rocks
- 7) What is the state of lava or magma?
 - a) Liquid

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- b) Solid
- c) Gaseous
- d) Mixture of solid, liquid, gas

SLR-SB-6

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Max. Marks: 80

16

- 8) _____is the last mineral which crystalized in Bowen reaction series.
 - a) Hornblende b) Olivine
 - c) Quartz d) Calcite
- 9) _____texture is an igneous rock texture in which large crystals are set in a finer-grained or glassy groundmass.
 - a) Poikilitic b) Exsolution
 - c) Myrmekitic d) Porphyritic

10) The Norms or CIPW classification is essentially a _____classification.

- a) Mineralogical b) Chemical
- c) Genetic d) Textural

B) Fill in the blanks OR write True or False.

- 1) Lamprophyre is an Igneous rock. (True/False)
- 2) Pyroclastic flows contain a high-density mix of hot lava blocks, pumice, ash and volcanic gas. (True/False)
- 3) Diorite is the plutonic (intrusive) equivalent of andesite. (True/False)
- 4) What is the mineral composition of Gabbro?
- 5) Dunite is a monomineralic rock contains _____mineral.
- 6) Dolerite is a _____ igneous rock.

Q.2 Answer the following.

- a) Short notes on temperature, viscosity, and composition of Magma.
- b) Brief note on Ocean Island Basalt (OIB).
- c) Petrographic properties of Granite.
- d) Write short note on Textures of Igneous rocks.

Q.3 Answer the following.

- a) How volcanic rocks are classified on the basis of Total alkali versus Silica 08 content (TAS Classification).
- b) Discuss in detail the field characteristics, minerology and petrogenesis of Kimberlites.
 08

Q.4 Answer the following.

a) Discuss various structures of Igneous rocks with neat diagram.
 b) Explain evolution of Magma with various processes of Magmatic
 08
 08
 08

Q.5 Answer the following.

- a) Describe the Magmatism associated with Plate tectonics.
- **b)** Differentiate between the alkaline basalt and tholeiitic basalt.

Q.6 Answer the following.

a) Enumerate difference between Batholith, Phacolith and laccolith with neat diagram.
b) Write a note on Ab-Or binary silicate systems.
08

Q.7 Answer the following.

a) Explain the Clausius-Clapeyron Equation.08b) Write a note on Lunar basalt.08

08

			Structural Geology	and lect	onics (MISC19202)
Day Time	& Da e: 11:	te: Su 00 AN	nday, 23-07-2023 1 To 02:00 PM			Max. Ma
Instr	uctio	ons: 1 2 3) Q. Nos. 1 and 2 are comp) Attempt any three question) Figure to right indicate fu	pulsory. ons from Q. II marks.	. No. 3 to Q. No. 7.	
Q.1	A)	Cho 1)	ose correct alternative. Terms used to describe s perceptible displacement prefer one of the falling te	surfaces act are many. erms:	ross which there has t However, most geolo	oeen gists would
			a) Joints c) Cracks	b) d)	Fractures faults	
		2)	Which of the following is a) megapascal c) Kilobars	not a stress b) d)	s term? Pascal kilometers	
		3)	Fold having inclined axis a) Overturned c) Plunging	are called _ b) d)	fold. Recumbent Isoclinal	
		4)	An unconformity in which younger series of beds is a) Angular unconformity c) Disconformity	the oldest called / b) d)	series of beds paralle Conformity Non conformity	I to the
		5)	The angle between bedd	ing plain ar	nd horizontal plane is	

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Max. Marks: 80

M.Sc. (Semester - II) (New) (CBCS) Examination: March/April-2023 **APPLIED GEOLOGY**

parallel to the

- ane is _____. 91 a)
 - Dip b) Strike
 - c) Rake d) Bearing

6) If a bed strikes east-west, it must have the dip _____.

- a) Towards north Towards south b)
- c) It is a vertical d) Information is insufficient

In _____unconformity underlying rock is igneous and overlying rock 7) is sedimentary.

- a) Angular Non conformity b)
- c) Buttress d) None of the above
- The strata that dip in one direction at uniform angle the fold is called 8) as
 - a) Monocline b) Homo cline
 - Structural terrace c) Open d)
- 9) The shearing stress is denoted by
 - a) Sigma Tau b) c) Rho d) Phi

SLR-SB-7



16

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- The joints whose strike are parallel to the dip of the bedding plane, 10) are called as _____.
 - a) Strike joint
- b) Bedding joint
- c) Dip joint d) Both a and b

Fill in the blanks OR write True or False. B)

- Fault blocks, bounded by normal faults, that drop down or uplifted are 1) known as
 - is defined as trend of the rock formation.
- The joint which runs in a direction that lies between the strikes and 3) dip direction of the beds are called an _
- Continental slope lies between the continental shelf and deep sea 4) zone. (True/False)
- In a basin where the beds dip radially outward in all direction form the 5) center. (True/False)
- The theory of was first proposed by Harry Hess in 1960. 6)

Q.2 Answer the following.

- a) Geometric classification of the fault.
- **b)** Drag fold

2)

- c) Normal and reverse faults
- d) Dome and basin

Q.3 Discuss the following.

a)	Types of sedimentary structures useful in structural geological study and	08
	their significance.	
b)	Sea floor spreading.	08

Q.4 Answer the following.

- Distinguish between 'concordant' and 'discordant' bodies of igneous rocks. 10 a) Explain in detail dyke and sill structures of igneous rocks.
- **b)** Describe the types of drainage patterns with geological significance. 06

Q.5 Answer the following.

- a) Write a note on lineaments
- b) What are folds? Describe it geometry and discuss the criteria for their 06 recognition in the Held.

Q.6 Answer the following.

a) Write a detail note on plate tectonics. 80 b) What arc joints? Describe the genetic classification of joints. 80

Q.7 Answer the following.

- a) Discuss the seismic characters of convergent plate boundaries with suitable 08 example. 80
- **b)** Write a note on brittle and ductile deformation.

M.\$	Sc. (Semester - II) (New) (CBCS) Examination: Marc APPLIED GEOLOGY Hydrogeology (MSC19206)
Day & Da Time: 11	ate: Tuesday, 25-07-2023 :00 AM To 02:00 PM
Instructi	 ons: 1) Question no. 1 and 2 are compulsory. 2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.
Q.1 A)	 Choose correct alternative. 1) Water table in the upper surface of zone of saturation is surface.

- e of saturation is known as surrace.
 - Piezometric a) c) Hygroscopic

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Phreatic b) d) None of the above

- Water which has recently been involved in atmospheric circulation, 2)
 - i.e. it has become a part of hydrological cycle is known as . Juvenile water
 - a) connate water c) Vadose water
- b) d) Meteoric water
- _ is the founder of Groundwater Hydrology. 3)
 - Edme Mariotte a) Aristotle b) c) Toad K
 - d) Edmond David
- 4) A saturated formation in which yield inappreciable quantity of water but through which appreciable leakage of water is possible is called as
 - a) Aquifuge
- Aquifer b) d) Aquitard
- c) Aquiclude
- 5) Dating of groundwater is done by _____
 - a) Sodium salt dissolved in water b) Radionucleods present in it

 - c) Carbon dioxide dissolved in it
 - d) None of the above
- 6) The force of adhesion in capillary water is ____ than Hygroscopic water.
 - a) Less b) More c) Equal d) fluctuates time to time
- 7) Reverse and rotary drill is used for _____
 - a) Drilling blast hole for seismic prospecting in aquifer
 - b) Groundwater drilling
 - c) Oil well drilling in aquiclude
 - d) All the above

SLR-SB-8

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nation: March/April-2023

Max. Marks: 80

		8)	At 2 wat	25° C the total dissolved s ter is determined by the fo	solids (T prmula _	DS) in parts per million of natural	
			a)	$\frac{TDS}{EC \ X \ 10^6} = 0.64$	b)	$\frac{EC}{TDS X 10^6} = 0.64$	
			c)	$\frac{EC X 10^6}{TDS} = 0.64$	d)	$\frac{TDS}{10^6} = 0.64$	
		9)	The a) c)	e chief source of potassiu Alkali feldspar Small flakes of micas	m in gro b) d)	undwater is Plant debris Halites	
		10)	Mo a) c)	st suitable well in limesto Cable tool Rotary percussion	ne regio b) d)	n is Rotary None of the above	
	B)	Fill in 1)	the "Th hea	e blanks/True or False. he flow rate through porou ad loss & inversely propor law.	s media tional to	is directly proportional to the the length of flow path" is	06
		2) 3) 4) 5) 6)	Free The in t Gro Sha The is c	esh water found in soil & re e difference between the he pumped well is called bundwater is not subordin ale is having lowest poros e percentage of rocks tota called as	ock laye original as ate to su sity. (Tru al volume	rs below earth's surface is called water table level & the water level urface water. (True / False) e / False) e that is taken up by pore space	
Q.2	Ans a) b) c) d)	swer th Origin Salt w Linear Effect	of v of v ater nen of g	ollowing. vater. intrusion in aquifer. t mapping using remote s proundwater over exploitat	ensing a	and GIS techniques.	16
Q.3	Ans a) b)	swer th Explai What a with ne	n in are eat l	bllowing. detail various types of aq surface geological metho abelled diagrams.	uifers w ds of gro	ith neat labelled diagram. oundwater exploration? Explain	16
Q.4	Ans a) b)	swer th Write i constr Explai	ne fo in de uction n in	bllowing. etail types of wells and the on wells. detail rain water harvesti	eir differ ng and i	ent drilling methods of ts methods.	16
Q.5	Ans a) b)	swer th Explai What i	ne fo n va is gr	ollowing. arious methods for evalua roundwater balance estim	tion of a ation?	quifer parameters.	16
Q.6	Ans a) b)	swer th Explai What i	n e fo n su is gr	bllowing. Ib surface movement of w ound water legislation?	vater wit	h neat labelled diagram.	16
Q.7	Ans a) b)	swer th Explai Descri	ne fo n in ibe g	bllowing. detail the groundwater pr groundwater recharge me	ovinces thods in	of India. detail.	16

Seat	
No.	

M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2023 APPLIED GEOLOGY

Climatology & Oceanography (MSC019301)

Day & Date: Monday, 10-07-2023 Time: 11:00 AM To 02:00 PM

Instructions: 1) Question no. 1 and 2 are compulsory.

- 2) Attempt any three questions from Q. No. 3 to Q. No. 7.
- 3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative.

- 1) Convection is a process of transfer of heat _
 - a) From one body to another body without the aid of a medium
 - b) Through the molecules of matter in a body
 - c) Through movement of a substance from one place to other
 - d) None of the above
- 2) High tides are formed when ____
 - a) The sun and the moon are at the position of right angle with reference to the earth
 - b) The sun, the earth and the moon are in the same line
 - c) The sun and the earth at the position of 45° with reference to the moon
 - d) None of the above
- 3) Choose the correct statement.
 - a) Overall salinity of ocean increases with increasing depth.
 - b) Salinity decreases with increasing depth in low latitudes.
 - c) Salinity is higher at the surface at equator and lower below the water surface.
 - d) Salinity increases with increasing depth in high latitudes.
- 4) Specific heat of water is almost _____
 - a) Two times greater than land
 - b) Three times greater than land
 - c) Four times greater than land
 - d) Five times greater than land

c) Negative lapse rate

- 5) The phenomenon of increasing temperature with increasing altitude from the earth's surface is called _____.
 - a) Normal lapse rate b) 7
 - b) Temperature inversiond) Both 'b' and 'c'
- 6) The average slope of continental slope is about _____.
 - a) 30° b) 45° c) 5° d) 10°
- 7) Flat-topped volcanoes on the ocean floor are known as _____.
 - a) Seamounts b) Guyots
 - c) Plateaus d) Oceanic ridges

10

Set |

Max. Marks: 80

16

- 8) Siliceous animal remains consist of _____
 - a) Skeletons of radiolaria b) Skeleton of algae
 - c) Skeleton of diatoms d)
 - None of the above
- 9) Isohalines are
 - a) The lines that join the places of equal salinity.
 - b) The lines that join the places of equal temperature.
 - c) The lines that join the places of equal humidity.
 - d) The lines that join the places of equal precipitation.
- 10) The warmest and coldest months in northern hemisphere respectively are ____.
 - a) June and December b) May and January
 - c) July and January d) July and December

B) Fill in the blanks OR write True or False.

- The water cycle affects weather when _____ falls as rain or snow. 1)
- 2) At any latitude, the higher the , the colder the temperature.
- The tilting of the earth axis is 23 1/2°. (true/ false) 3)
- Indian dipole movement depend on the two high pressure and low-4) pressure poles. (true/ false)
- Jetstream form on the equator only. (true/ false) 5)
- Water has high Albido. (true/ false) 6)

Q.2 Answer the following.

- a) Earth sun relationship explain with net diagram.
- b) Write a note on Submarine Canyons.
- c) Give a brief note on Abyssal Plains.
- d) Explain Single-Cell Model.

Q.3 Answer the following.

- a) Explain nutrients in the ocean, their cycles and factors influencing their 08 distribution.
- b) Describe with sketch distribution of Wind and Pressure over the surface of **08** the earth.

Q.4 Answer the following.

- a) What is a scope of climatology in applied science and write different climate **08** zones on earth?
- b) Write a note on Petroleum occurrences and exploration activity in the **08** oceanic floor.

Q.5 Answer the following.

- a) Give an account of sediment distribution on the Indian Ocean floor. **08**
- **b)** How earth has latitudinal Variations in Solar Radiation and its effect on **08** climates.

Q.6 Answer the following.

- a) Give an account of Equatorial Trough and Inter Tropical Convergence Zone. 08 **08**
- **b)** Write a note on Chemical properties of sea water.

Q.7 Answer the following.

a) Explain Three-Cell Model of the General Circulation. **08** b) Describe Origin and evolution of the Indian Ocean. **08**

			Mineral Exploration (MSC019302)	
Day Time	& Da e: 11:	ate: Tu 00 AM	esday, 11-07-2023 Max. Marks: 8 To 02:00 PM	0
Instr	ructio	ons: 1 2 3) Question no. 1 and 2 are compulsory.) Attempt any three questions from Q. No. 3 to Q. No. 7.) Figure to right indicate full marks.	
Q.1	A)	Choc 1)	Pse the correct alternative. 1 The Value of Universal Gravity constant in S.I. Unit is a) 6.67× 10 ⁻⁸ Nm²/kg² b) 6.67×10 ⁻⁹ Nm²/kg² c) 6.67× 10 ⁻⁷ Nm²/kg² d) 6.67×10 ⁻¹¹ Nm²/kg²	0
		2)	 Diamond drilling can be used to bore hole in a) Horizontal direction b) Vertical direction c) Both horizontal and vertical direction d) None of these 	
		3)	In which of the following configuration, the electrodes are uniform spaced? a) Schlumberge array b) Pole- dipole array c) Wenner d) Pole-pole array	
		4)	 Which of the following rock show high resistivity? a) Sedimentary b) Igneous and Metamorphic c) Igneous, sedimentary and metamorphic d) None of these 	
		5)	 Drilling is employed for i) Determination of stratigraphic or rock sequence ii) Locating and evaluating subsurface of economic value iii) Extracting economically valuable substances iv) Obtaining data for correlation a) ii and iii are correct b) i and ii are correct c) ii, iii and iv are correct d) all of the above are correct 	
		6)	Currently lithium is extracted only from a) Anorthosites b) Syenites c) Granites d) Pegmatites	
		7)	The Galmi flora is geobotanical indicators for a) Radioactive minerals b) Gallium deposits c) Sulphide deposits d) None of these	
		8)	Well logging is technique in exploration.	

M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2023 APPLIED GEOLOGY

Instructions: 1	Question no 1 and 2 are compulsory

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- 0)
 - a) Surface c) S. P. Method
- Sub-surface b)
- Gamma-Gamma logging d)

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- 9) Natural gamma ray log exhibits a high response from
 - b) Limestone
 - c) Dolomite d) Sandstone
- The unit to express magnetic field strength is _____. 10)
 - Tesla a) Oaster b) c) Weber
 - d) Maxwell

B) Fill in the blanks OR write True or False.

a) Shale

- is the attraction on one body due to the mass of another body. 1)
- 2) The values of gravitational acceleration on the earth surface various from about 9.78 m/s^2 at the equator to about 9.83 m/s^2 at the pole. (True / False)
- A magnetic dipole is inclined about _____ from earth rotational axis. 3)
- 4) The magnetic field is composed of vector having both magnitude and direction. (True / False)
- 5) The temperature inside the earth rises at a rate of about per km.
- 6) Induced polarization (IP) method is only method that can indirectly detect disseminated _____ mineralization.

Q.2 Write a short note on:

Q.L	a) b) c) d)	Polygonal method of ore reserve estimation Geochemical dispersion Elastic properties of rocks Goldschmidt classification of elements	04 04 04 04
Q.3	An a) b)	swer the following. Write brief note on geological criteria of mineral exploration. Define Sampling and discuss in brief types of sampling methods.	08 08
Q.4	An a) b)	swer the following. Write a note on various types of equipment's used for mineral exploration with their advantages and disadvantages. Write brief note on cable tool drilling, rotary drilling and Jet drilling with their advantages and disadvantages.	08 08
Q.5	An a) b)	swer the following. Write a brief note on Gravity survey. Write a brief note on self-potential methods of geophysical survey.	08 08
Q.6	An a) b)	swer the following. Write note on Geobotanical and Biogeochemical indicators of geochemical exploration. Discuss in detail geochemical prospecting for mineral exploration.	08 08
Q.7	An a) b)	swer the following. Write a note on types of geochemical exploration techniques. Write note on magnetic survey, its principles and types of magnetization.	08 08

ay ime	& Da : 11:	ite: We 00 AM	ednesday, 12-07-2023 Max. Marks: 1 To 02:00 PM	80
str	uctio	ons: 1) 2) 3)) Question no. 1 and 2 are compulsory. 2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.	
.1	A)	Choo 1)	ose the correct alternative. Which state in India has the most numbers of large dams? a) Karnataka b) Orissa c) Maharashtra d) Madhya Pradesh	10
		2)	 What is very critical about gravity dams? a) Strength of the concrete used b) Strength of the masonry used c) Strength of the rock foundation d) The type of water stored in the reservoir 	
		3)	The type of valley most common on earth isa) Rain valleysb) Erosional valleysc) Wind valleysd) Tectonic valleys	
		4)	The downgrade movement of mass along no definite surface is called?a) Flowageb) Slidingc) Subsidenced) Earthquake	
		5)	Which of the following is not a part of Drilling machine? a) Spindle b) Head c) Colom d) Mandrel	
		6)	 Water content of soil can a) Never be greater the 100% b) Take values only from % to 100 c) Be less than 0% d) Be greater than 100% 	
		7)	Knowing the Lithology of the site is very important in terms of its safety and feasibility. a) True b) False	
		8)	The arch dam in India is situated in which state? a) Karnataka b) Gujrat c) Karela d) Maharashtra	
		9)	For good building stone, how much is the required crushing strength? a) Less than 50 N/mm ² b) Greater than 100 N/mm ² c) 155 N/mm ² d) 10 N/mm ²	

M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2023 APPLIED GEOLOGY

Engineering Geology & Rock Mechanics (MSC019306)

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		 10) Soil is made of a) Weathered rock and minerals b) Dead plants and animals c) Air and water d) All of the above 	
	B)	 Fill in the blanks. Crushing strength of rock Basalt is The very top layer of soil is mostly made of The is responsible for earth's magnetic field. is the longest dam in India? The underground routes or passages driven through the ground without disturbing overlying soil cover are called is a pure white limestone and which is soft and easy to from powder. 	06
Q.2	Wri a) b) c) d)	ite a short note on: Physical characters of building stones What are the causes of earthquake? Grouting method Write short note on. 1) Porosity 2) Permeability	16
Q.3	An: a) b)	swer the following. Explain the scope of geology in civil engineering. Give different causes of landslide.	08 08
Q.4	An: a) b)	swer the following. Air- Rotary drilling. Explain the types of mining.	08 08
Q.5	An: a) b)	swer the following. Discuss various types of Tunnels. Explain preliminary geological investigation for Reservoir site.	08 08
Q.6	An: a) b)	swer the following. Explain the terminology of dam and types of dam. Discuss in detail RQD.	08 08
Q.7	An: a) b)	swer the following. Drilling equipment and their uses. Explain strain and strength of rock.	08 08

Seat No.					Set	Ρ
М.	Sc. (Se	mester - IV) (New) (CBCS APPLIED G Economic Geolog	6) Ex 6EOL av (N	amination: March/Ap .OGY ISC019401)	oril-2023	
Day & D Time: 03	0ate: Mo 3:00 PM	nday, 10-07-2023 To 06:00 PM	.	N	/lax. Mark	s: 80
Instruct	t ions: 1) 2) 3)	Q. Nos. 1 and 2 are compulson Attempt any three questions fr Figure to right indicate full mar	ry. om Q ks.	. No. 3 to Q. No. 7.		
Q.1 A)) Rewi alter 1) 2)	ite the sentences by choosin natives: What is the chemical composit a) MnO ₂ c) TiO ₂ Dilation or Lenticular vein are g	g cor ion of b) d) genera	rect answer from given Sphalerite CuFeS ₂ ZnS ally associated with		10
	3)	 a) Granites c) Basalts Identify the odd pair of mineral a) Goethite - siderite c) Pyrite - pyrrhotite 	b) d) s amo b) d)	Schists Marbles ong the following. Pyrite - marcasite Hematite - magnetite		
	4)	Galena is an ore of a) Arsenic c) Iron	b) d)	Copper Lead		
	5)	In nature ores occurs in a) Oxide c) Carbonate	_ forn b) d)	n. Sulphide All the three		
	6)	Rich deposits of bauxite in Ind a) Rajasthan c) Orissa	ia are b) d)	observed in Maharashtra Jammu & Kashmir		
	7)	Temperature range for the forr a) 300 - 700° c) 300 - 450°	natior b) d)	of hypothermal deposit is 300 - 500° 300 - 400°	S	
	8)	Which one of the following depa) Manganesec) Monazite	bosits b) d)	is a placer deposit? Zinc Cobalt		
	9)	Which of the following element a) Arsenic c) Antimony	ts is p b) d)	athfinder for gold? Platinum Mercury		
	10)	Diamond in kimberlite is good a) Injected c) Disseminated	exam b) d)	ple of deposits. Segregated Pegmatitic		

Page **1** of **2**

	B)	Fill in the blanks OR write True or False.			
	-	1) The Agnigundala belt of Andhra Pradesh is famous for ore			
		minerals.			
		 Malajknand copper mineralization hosted by igneous rock. The ere minerals are always confined within specific strate and are 			
		distributed in a manner that resembles particles in a sedimentary rock			
		is called as			
		4) Quartz mineral has 2.65 g/cm ³ specific gravity. (true / false)			
		5) Chemical composition of Hematite mineral is Fe ₂ O ₃ . (true / false)			
		6) Rich Uranium deposits is found in Jaduguda area of Andhra Pradesh.			
		(true / faise)			
Q.2	Write short notes on				
	a)	Physical properties of Hematite ore mineral			
	b)	Heavy mineral separation method			
	(C)	Short note on Industrial and refractory minerals			
	u)				
Q.3	Answer the following.				
	a)	Define hydrothermal deposit. Explain in details cavity filling deposit with	08		
	L)	suitable example.	00		
	D)	Textures of ore deposit.	08		
Q.4	Ans	swer the following.			
	a)	What is wall rock alteration? Discuss in short various types of alteration.	80		
	b)	Write a note on ores in Igneous rocks.	08		
05	Δn	swer the following			
Q.J	a)	Explain geology, stratigraphy and depositional environment of Khetri copper	08		
	,	deposit.			
	b)	Write a note on strategic, critical and essential minerals.	08		
0.6	Ans	swer the following.			
	a)	Discuss full note on Fluid Inclusion thermocryometry.	08		
	b)	Write down different optical properties for identification ore minerals under	80		
		reflected light microscope.			
Q.7	An	swer the following.			
	a)	Discuss Early magmatic deposit.	80		
	b)	Mechanical concentration	08		

Seat No.

M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2023 **APPLIED GEOLOGY** Fuel Geology (MSC019402)

Day & Date: Wednesday, 12-07-2023 Time: 03:00 PM To 06:00 PM

Instructions: 1) Q. Nos. 1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7. 3) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

- Which of the following is the most stable of all the petroleum hydrocarbons? 1)
 - a) C2H6 CH4 b)
 - c) C3H8 d) C4H10
- 2) Significant hydrocarbon generation begins at _____.
 - 1000 F a) 500 F b)
 - c) 1500 F d) 3000 F
- 3) Which of the following energy sources does not produce carbon dioxide?
 - a) Oil b) Uranium
 - c) Coal d) Natural gas
- Wellsite geologist detects the oil in the mud by _____under ultraviolet 4) light.
 - a) Fluorescence b) Phosphorescence c)
 - Thermo-luminescence d) All of the above
- Majority of world's coal resources are restricted to the following 5) geological time period:
 - a) Triassic b) Permo-carboniferous
 - c) Carboniferous-Ordovician d) Eocene
- 6) Which of the following is a non-renewable energy resource?
 - a) Solar b) Methane
 - d) Coal c) Hydroelectric
- 7) The reservoir rock of Bombay High Oil Field is:
 - a) Sandstone Limestone b)
 - c) Shale d) Clav
- Which of the following is least likely to contain an oil trap? 8)
 - a) an anticline b) Fault
 - c) natural stratigraphy d) syncline
- Gas oil or commonly known as fuel oil has the highest boiling point up 9) degree Celsius: to
 - 300 b) 350 a)
 - 1000 c) 500 d)

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Set

Max. Marks: 80

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16

- 10) Which of the following problems is associated with the burning of coal?
 - a) acid rain
 - b) carbon dioxide emissions
 - c) ash with toxic metal impurities
 - d) All of these

B) Fill in the blanks OR write True or False.

- 1) Petroleum reservoirs are normally found in _____ rocks.
- 2) Minerals like petroleum and natural gas, found far below the Earth's surface, are extracted by the process of remote sensing. (true / false)
- 3) Plutonium-239 and uranium-235 are the most common isotopes used in nuclear weapons. (true / false)
- 4) _____ is a sedimentary deposit composed predominantly of carbon that is readily combustible.
- 5) What is the full form of CIL?
- 6) Jharkhand has the largest reserves of coal in India followed by Odisha and Chhattisgarh. (true / false)

Q.2 Answer the following.

- a) Radioactive decay
- **b)** Source rock for petroleum
- c) Oil Migration
- d) Geology of Assam petroliferous basin

Q.3 Answer the following.

- a) Give an account of the geology and hydrocarbon occurrence in Bengal basin.
- b) Write on the occurrence and distribution of major radioactive minerals (U-Th) 08 of India.

Q.4 Answer the following.

Q.5

Q.6

a) b)	Write a brief note on Coal bed Methane (CBM). Write brief note on non- conventional energy resource.	08 08
An a) b)	swer the following. Write a brief account on classification of petroliferous basins in India. Write a brief note mineralogy and geochemistry of Uranium radioactive minerals.	08 08
An a) b)	swer the following. Describe various geological and geophysical techniques of exploration of natural hydrocarbons. Write a note on coal gasification.	08 08

Q.7 Answer the following.

a)	Write a note on distribution of Tertiary coal deposits in India.	08
b)	Write a note on petroliferous basins in Kutch (Kachchh).	08

3)	igure to right indicate full mai	ks.	NO. 0 10 Q. NO. 7.			
Choo 1)	e correct alternative. (MCQ) arthquake can lead to) Landslide) Liquefaction	 b) d)	Volcano Both a & c	1(
2)	/hat are the health effects of) Fluorosis) Lung disease	exces b) d)	s fluoride in drinking water? Toothaches Intestinal infection			
3)	Sundarbans" the largest man) West) East	grove b) d)	forest in the world lies in India. North South			
4)	/hich of the following is not a) Earthquake) Pollution	natura b) d)	al hazard? Drought Both a & b			
5)	 What is drought? a) No rainfall for a long continuous period b) Heavy rainfall for a long continuous period c) Moderate rainfall for a long continuous period d) None of the above 					
6)	 The energy level in energy pyramid is a) Decrease from producer to consumer b) Increase from producer to consumer c) Not change at all d) None of these 					
7)	he common factors of wildfire) Lightening) EI – nino	e haza b) d)	rds are: Volcanic eruption All of the above			
8)	/hich one is sedimentary cycl) Oxygen cycle) Nitrogen Cycle	e? b) d)	Hydrogen Cycle Phosphorous Cycle			
9)	/hich one of the following is a) Tsunami) Haze	geolo b) d)	ogical disaster? Storm Wildfire			
	 3) F Choose 1) E 2) Ma 2) Ma 3) "S 4) A 5) A 6) T 6) T 6) T 8) A 9) Ma 	 2) Attempt any three questions in 3) Figure to right indicate full mar Choose correct alternative. (MCQ) 1) Earthquake can lead toa) Landslide c) Liquefaction 2) What are the health effects of a) Fluorosis c) Lung disease 3) "Sundarbans" the largest mange a) West c) East 4) Which of the following is not a a) Earthquake c) Pollution 5) What is drought? a) No rainfall for a long contine b) Heavy rainfall for a long contine b) Heavy rainfall for a long contine c) Moderate rainfall for a long contine b) Heavy rainfall for a long contine c) Moderate rainfall for a long contine c) None of the above 6) The energy level in energy pyr a) Decrease from producer to b) Increase from producer to c) Not change at all d) None of these 7) The common factors of wildfire a) Lightening c) EI – nino 8) Which one is sedimentary cycle a) Oxygen cycle c) Nitrogen Cycle 9) Which one of the following is a a) Tsunami c) Haze 	 3) Figure to right indicate full marks. Choose correct alternative. (MCQ) Earthquake can lead to Landslide b) Liquefaction d) 2) What are the health effects of excess a) Fluorosis b) c) Lung disease d) 3) "Sundarbans" the largest mangrove a) West b) c) East d) 4) Which of the following is not a natura a) Earthquake b) c) Pollution d) 5) What is drought? a) No rainfall for a long continuous b) Heavy rainfall for a long continuous b) Heavy rainfall for a long continuous b) Heavy rainfall for a long continuous b) Increase from producer to consu c) Not change at all d) None of the above 6) The energy level in energy pyramid i a) Decrease from producer to consu b) Increase from producer to consu b) Increase from producer to consu c) Not change at all d) None of these 7) The common factors of wildfire haza a) Lightening b) c) EI – nino d) 8) Which one is sedimentary cycle? a) Oxygen cycle d) 9) Which one of the following is a geolog a) Tsunami b) c) Haze d)	 3) Figure to right indicate full marks. 3) Figure to right indicate full marks. Choose correct alternative. (MCQ) Earthquake can lead to a) Landslideb) Volcano c) Liquefactiond) Both a & c 2) What are the health effects of excess fluoride in drinking water? a) Fluorosisb) Toothaches c) Lung diseased) Intestinal infection 3) "Sundarbans" the largest mangrove forest in the world lies inIndia. a) Westb) North c) Eastd) South 4) Which of the following is not a natural hazard? a) Earthquakeb) Drought c) Pollutiond) Both a & b 5) What is drought? a) No rainfall for a long continuous period b) Heavy rainfall for a long continuous period c) Moderate rainfall for a long continuous period d) None of the above 6) The energy level in energy pyramid is a) Decrease from producer to consumer b) Increase from producer to consumer c) Not change at all d) None of these 7) The common factors of wildfire hazards are: a) Lightening b) Volcanic eruption c) EI – nino d) All of the above 8) Which one is sedimentary cycle? a) Oxygen cycle d) Phosphorous Cycle f) Which one of the following is a geological disaster? a) Oxygen cycle		

M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2023 **APPLIED GEOLOGY**

Environmental Geology & Disaster Management (MSC019403)

Day & Date: Friday, 14-07-2023 Time: 03:00 PM To 06:00 PM

Seat

No.

Instructions: 1) Question no. 1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7

Q.1

SLR-SB-16

Set

Max. Marks: 80

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						•=•	•
		10) G a) c)	enerally, the numbers on the 0 to 6 0 1 to 5	Richt b) d)	er scal 0 to 9 1 to 1	e range between 2	
	В)	Fill in th 1) Bł 2) Tł 3) W 4) Tł 5) Pr 6) Tł	e blanks OR write True or F hopal gas disaster is a kind of he word disaster comes from then did 'Earth Day' celebrate he Taj Mahal was being affect rimary consumer is also called he number of consumers in fo	d? ed by a pr od w	/ Soun oducei eb is n	d pollution. (True / false) r. (True / false) ot fixed. (True / false)	06
Q.2	Wri a) b) c) d)	Vrite a short note on: Write short note on coastal pollution. Food chain. Fly ash. Explain in short BOD & COD.				16	
Q.3	Ans a) b)	Iswer the following. Discuss in details various aspects of atmosphere. What are natural hazards. Explain causes of landslide.			16		
Q.4	Ans a) b)	 nswer the following. Explain the various type of waste. Add note on solid waste disposal. What is Earthquake? Describe their causes, controlling measures and prediction. 				16	
Q.5	Ans a) b)	 Answer the following. What are floods? explain cause and suggest mitigation measures. Volcanic hazards. 			16		
Q.6	Ans a) b)	nswer the following. Write a note on natural disaster like Koyana Earthquake. Write in detail the Biogeochemical cycle.					16
Q.7	Ans a)	swer the f	following. use of GIS & Remote sensing	in N	atural o	disaster studies.	16

b) Define pollution. Discuss in detail causes and effects of Air pollution.