	Ulledh
Name:	
Roll No.:	To draw of Exercising and Explane
Invigilator's Signature :	

CS/B.TECH (CT-OLD)/SEM-3/CT-302/2011-12 2011

Time Allotted: 3 Hours Full Marks: 70

GEOLOGY

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP - A

(Objective Type Questions)

				(J	JF - C	,	,	
1.	Answer any <i>one</i> of the following.					1 × 10 = 10		
	A)			the blanks	with	correc	t answers	s from the $10 \propto 1 = 10$
		i)	Ca	lcite crystalliz		system.		
			a)	Cubic		b)	Hexagona	ıl
			c)	Orthorhom	bic	d)	Monoclini	ic.
		ii)	When polymorphic substances are interit is known as					rchangeable
			a)	Monotropy		b)	Enantiotr	ору
		iii)		Alteration d) F iO $_2$ content of Dacite is			Replacem	
			a)	55 - 66%		b)	< 66%	
			c)	> 66%		d)	< 55%.	

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				<u> </u>	Unean \		
iv)	Pyrophyllite is abrasive due to						
	a)	Quartz	b)	Sericite	O'Familia Ind Explicat		
	c)	Zircon	d)	Corundu	m.		
v)	Loh	ardaga is iı	mportant	for th	ne mineral		
	a)	Magnesite	b)	Bauxite			
	c)	Sillimanite	d)	Andalusi	te.		
vi)	Qua	rtz transforms i	nto	• • • • • • • • • • • • • • • • • • • •	at 1470°C.		
	a)	Chrystobalite	b)	Mullite			
	c)	Tridymite	d)	Zeolite.			
vii)	is an impure variety of Talc.						
	a)	Steatite	b)	Soapston	ie		
	c)	Brunnerite	d)	Brug.			
viii)	Orth	norhombic syst	em has		binary		
	axes	s of symmetry.					
	a)	4	b)	2			
	c)	3	d)	6.			
ix)	Gon	dwana coals of	India wer	e deposite	d during the		
		Per	riod.				
	a)	Carboniferous	b)	Permian			
	c)	Jurassic	d)	Eocene.			
x)	Bred	ccia is a/an	• • • • • • • • • • • • • • • • • • • •	sedim	entary rock.		
	a)	Arenaceous	b)	Rudaceo	us		
	c)	Argillaceous	d)	Organic.			
Write ${\bf T}$ for true or ${\bf F}$ for false against the statements :							
					$10 \times 1 = 10$		
i)	Alabaster is a variety of Magnesite.						
ii)	SiO $_2$ -content of Nepheline-Syenite is > 66%.						
iii)	Hardness of Apatite according to Mohs' scale is 4.						
iv)	Mohorovicic discontinuity separates mantle from						
	the core of the earth.						
v)	Lithotype of coal that soils hand is Fusain.						

B)



- vi) Molecular formula of Mullite is Al $_6$ Si $_2$
- vii) Salem is important for good magnesite deposits.
- viii) Albite is a polymorph of anorthite.
- ix) The Fe-rich magnesite is known as brunnerite.
- x) Macerals of coal were classified by Stopes in 1935.

GROUP - B

(Short Answer Type Questions)

Answer any one question of the following.

 $1 \times 15 = 15$

- 2. Write short notes on any *three* of the following : 3×5
 - a) Index minerals
 - b) Heavy minerals
 - c) Polymorphism
 - d) Dyke and sills
 - e) Hexagonal system.
- 3. Answer the following questions:
 - a) i) Andalusite has got an advantage over Kyanite in its use as refractory material. Why?
 - ii) Nepheline-Syenite has a long firing range. Why? 3
 - b) i) Indian Gondwana coals are in general of high ash content. Why?
 - ii) Woolastonite is used as an extender in oil and water paints and in producing wall-boards. Why?

3

- c) i) Dolomite is used in glass industry. Why?
 - ii) Potash feldspar is preferred in ceramic bodies and soda feldspar in glazes. Why?3

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GROUP - C



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(Long Answer Type Questions)

Answer any three questions. $3 \times 15 = 45$ Give the colour, streak, cleavage, hardness and form 4. a) and structure of any four of the following minerals: $4 \times 2^{\frac{1}{2}}$ i) Calcite Fluorite ii) iii) Talc iv) Selenite v) Orthoclase. Write the varieties and characteristics of magnesite. b) 2 + 35. What is a rock? 2 a) Classify sedimentary rocks on the basis of mode and b) mechanism of accumulation and consolidation. Explain Bowen's Reaction Principle with a diagram. c) What is its importance? 7 + 26. a) What is the composition of Gypsum? 1 b) What is evaporite? 1 What is the composition of Bauxite? 1 c) Write the origin and mode of occurrence of Bauxite. d) 8 + 47. 1 Write the composition of Wollastonite. a) 5 b) Describe the different varieties of Gypsum. Write the origin and mode of occurrence of Gypsum. c) 6 + 2

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d)

What is hemihydrate?