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Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2018
CE3CO03 Engineering Geology

Programme: B.Tech.

Branch/Specialisation: CE

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The tidal hypothesis about the origin of the solar system Was propounded by **1**
(a) American scientist Moulton.
(b) British Astronomer Jeans.
(c) German physicist Weizascker
(d) Soviet Mathematician Schmidt
- ii. Soil profile indicates **1**
(a) The slope of an area measured on the surface.
(b) The composition of the top layer of the soil in an area.
(c) The character of weathering as reflected by the type of weathered products upto a certain depth
(d) None of these
- iii. Cleavage of a mineral is **1**
(a) Tendency to split along certain directions yielding smooth surfaces.
(b) Appearance on a broken surface of a mineral
(c) Arrangement of minerals in layers due to pressure etc. at the time of its formation.
(d) None of these
- iv. If $a_1 = a_2 = a_3$ and $\alpha_1 = \alpha_2 = \alpha_3 = 90^\circ$, The crystal system will be **1**
(a) Tetragonal system (b) Orthorhombic system
(c) Monoclinic system (d) Cubic system

P.T.O.

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- v. Granite is a **1**
(a) Volcanic igneous rock (b) Hypabyssal igneous rock
(c) Plutonic igneous rock (d) None of these
- vi. Maximum percentage of coal in India is found in **1**
(a) Vindhyan group (b) Kuddaph group
(c) Gondwana group (d) Dharwar group
- vii. A fault is essentially a fracture **1**
(a) With or without a relative displacement having taken place.
(b) Along which some definite amount of relative displacement has taken place
(c) That has opened up without a relative displacement
(d) None of these
- viii. An unconformity is actually **1**
(a) A surface of erosion or non deposition or bothas detected in the sequence of rock
(b) A layer of boulders and pebbles in a sequence of rocks
(c) A layer of clay or shale in an igneous mass
(d) None of these
- ix. An aquifer is a rock formation which is **1**
(a) Porous and not necessarily permeable
(b) Porous and essentially permeable
(c) Highly porous and impermeable
(d) None of these
- x. Artisan aquifers yield water **1**
(a) With pumping (b) Without pumping
(c) With long pumping (d) None of these
- Q.2 i. Define geology and name its branches **2**
ii. What are the various methods of earth's age determination? Explain in brief? **3**
iii. Explain weathering and its types in detail. **5**
OR iv. Explain in detail various layers of earth's interior with neat sketches. **5**

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- Q.3 i. Define minerals and its types. **2**
ii. Write notes on : **3**
(a) Plane of symmetry
(b) Axis of symmetry
(c) Centre of symmetry
iii. Write physical properties of **5**
(a) Talc (b) Gypsum (c) Calcite (d) Felspar
(e) Quartz
- OR iv. Write notes on: **5**
(a) Moh's Hardness scale (b) Cleavage of a mineral
- Q.4 i. Define rocks and their types. **2**
ii. Explain in brief the agents of metamorphism. **3**
iii. How sedimentary rocks are formed? Explain in detail **5**
OR iv. Write in detail about physiographic subdivisions of India **5**
- Q.5 i. Draw a neat sketch of part of a fold. **2**
ii. Define Dip, Strike, and Outcrop. **3**
iii. Write notes on **5**
(a) Angular unconformity (b) Normal and reverse fault
- OR iv. Give detailed classification of folds. **5**
- Q.6 Attempt any two:
i. Write notes on **5**
(a) Types of aquifer (b) Water table
ii. Explain prevention of engineering structures from earthquakes. **5**
iii. How the study of remote sensing is useful in civil engineering? **5**

Marking Scheme
CE3CO03 Engineering Geology

Q.1	i.	The tidal hypothesis about the origin of the solar system Was propounded by (b) British Astronomer Jeans.		1
	ii.	Soil profile indicates (c) The character of weathering as reflected by the type of weathered products upto a certain depth		1
	iii.	Cleavage of a mineral is (a) Tendency to split along certain directions yielding smooth surfaces.		1
	iv.	If $a_1 = a_2 = a_3$ and $a_1 = a_2 = a_3 = 90^\circ$, The crystal system will be (d) Cubic system		1
	v.	Granite is a (c) Plutonic igneous rock		1
	vi.	Maximum percentage of coal in India is found in (c) Gondwana group		1
	vii.	A fault is essentially a fracture (b) Along which some definite amount of relative displacement has taken place		1
	viii.	An unconformity is actually (a) A surface of erosion or non deposition or both as detected in the sequence of rock		1
	ix.	An aquifer is a rock formation which is (b) Porous and essentially permeable		1
	x.	Artisan aquifers yield water (b) Without pumping		1
Q.2	i.	Definition geology	1 mark	2
		Name of branches	1 mark	
	ii.	Name of methods earth's age determination	1 marks	3
		Explanation	2 marks	
	iii.	Definition weathering and types	2 marks	5
		Explanation	3 marks	

OR	iv.	Name of layers earth's interior	1 marks	5
		Sketch of interiors	1 marks	
		Explanation	3 marks	
Q.3	i.	Definition	1 mark	2
		Types	1 mark	
	ii.	Write notes on :		3
		(a) Plane of symmetry	1 mark	
		(b) Axis of symmetry	1 mark	
		(c) Centre of symmetry	1 mark	5
	iii.	Write physical properties of 1 mark for each	(1 mark *5)	
		(a) Talc (b) Gypsum (c) Calcite (d) Felspar (e) Quartz		
OR	iv.	Write notes on:		5
		(a) Moh's Hardness scale		
		Hardness Definition	1 marks	
		Hardness scale	1.5 marks	
		(b) Cleavage of a mineral		
		Definition	1 marks,	
		Explanation	1.5 marks	
Q.4	i.	Definition of rocks	1 marks	2
		Type of rocks	1 marks	
	ii.	Name of agents	1 marks	3
		Explanation	2 marks	
	iii.	Steps of formation of sedimentary rocks	2 marks	
		Explanation	3 marks	5
OR	iv.	Name of physiographic subdivisions of India	1 marks	
		Explanation	4 marks	
Q.5	i.	Diagram of part of a fold	1 marks	2
		Naming	1 marks	
	ii.	Dip	1 mark	3
		Strike	1 mark	
		Outcrop	1 mark	

	iii.	Write notes on		5
		(a) Angular unconformity		
		Definition	1 marks	
		Explanation and diagram	1.5 marks	
		(b) Normal and reverse fault		
		Explanation and Diagram normal fault	2 marks	
		Reverse fault	0.5 marks	
OR	iv.	Classification	2 marks	5
		Diagram and Explanation	3 marks	
Q.6		Attempt any two:		
	i.	Write notes on		5
		(a) Types of aquifer		
		Definition	1 marks	
		Types	1 marks	
		Diagram	0.5 marks	
		(b) Water table		
		Definition	1 marks	
		Types	1 marks	
		Diagram	0.5 marks	
	ii.	Prevention of engineering structures from earthquakes		5
		Only name	2 marks	
		Detailed explanation	3 marks	
	iii.	Remote sensing is useful in civil engineering		5
		Definition	1 marks	
		Application explanation	4 marks	
