

FIRST YEAR HIGHER SECONDARY EXAMINATION - 2018 MARCH

SUBJECT: GEOLOGY

CODE NO: 122

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
1	a.	Structural Geology / Stratigraphy / Geomorphology	1	2
	b.	Geological Survey of India.	1	
2	a.	Drainage basin :- entire area drained by a stream and its associated tributaries.	2	2
	b.	Ox-bow Lakes :- horse-shoe or crescent-shaped water bodies, formed from cut-off meander loops. (Description about any one - a or b.)		
3		Recharge of aquifers through artificial means / by the intervention of man. Benefits of artificial recharge - mitigation of saline water intrusion, rising of water table, fulfillment of agricultural need, addition of water to ground water, minimising water pollution, solving problems of water scarcity, meeting water for domestic, industrial and agricultural need, addition of water in proportion to the discharge of Groundwater etc. (Any two relevant points related with artificial or natural recharge methods or significance of recharge)	2	2
4.		Glacial Plucking :- Mechanical removal of rock particles by the force of moving ice or Glacial Abrasion :- Removal of rock particles by the scraping action of particles transported by glaciers.	2	

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		(Description of any one)		2
5.		Land forms formed by glacial deposition:- Erratics, drumlins.	2	2
6.		Mud banks / Chakara :- Unique feature during monsoon season, carries enormous amount of suspended sediments in sea water near the coast. / appearing during monsoon season / unique to Kerala coast / Important for fishing activities. (any two relevant points related to Chakara)	2	2
7		Horst :- Blocks of earth that are elevated after faulting. The upthrown blocks - Horst downthrown blocks - Graben / Part of block mountain / Mountains formed by faulting / diagram of Horst and Graben.	2	2
8	a. Fracture. b. Vitreous or metallic. etc. (any correct answer a or b)		2	2
9	a- karst topography / any land form or topography formed by ground water erosion or deposition (Sink holes, caves and caverns etc)		1	
	b- Colluvium / Regolith / Soil / Sediments.		1	

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10	c-	Base level of erosion / lowest level of erosion / Mean sea level.	1	3
	a-	Mid-Atlantic Ridge :- Divergent Plate motion / Divergent Plate boundary / Spreading ridge / Mid-oceanic ridge / American-African Plate boundary	1	
	b-	The Himalayan ranges :- Continent - Continent convergence / collision boundary / fold mountain / convergent boundary / Indo-African Plate boundary	1	
11	c-	The San-Andreas Fault :- Shear boundary / Transform boundary / Slide past or horizontal motion / North American Pacific boundary	1	3
	a-	water table	1	
	b-	Porosity :- Total volume of pore spaces in a formation / rock / capacity to store water. Permeability :- Ability of a rock to transmit water through it. / Capacity related to interconnected pore spaces.	1	
12	a-	Proterozoic and Phanerozoic (any one of the Eon)	1½	3
	b-	Quaternary (Name of any one period)	1½	

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13		Construction Industry :- Clay, Gypsum, Silica sand, gravels, Slate, metals such as copper, iron, aluminium etc that are extracted from minerals / any three rocks or minerals or industrial materials used in building purpose.	3	3
14	a -	Orogeny.	1	3
	b -	Volcanic, Dome, Fold, Fault (Tectonic) Relict / Residual mountains / name of any two mountains / examples such as Himalaya, Alps, Western Ghats etc.	2	
15	a -	Magmatism.	1	3
	b -	System Concept :- To understand the earth processes comprehensively, interaction among subsystems provides a frame work for understanding geomorphic processes / flow of energy and matter among various subsystems makes the earth to become functioning. / Concept of earth system / earth processes / significance (Any relevant point regarding the system concept.)	2	
16		• Diagram showing the structure of the earth. • Marking of Discontinuities / Mohorovicic / Gutenberg / Crust / mantle / core (Any two of the above)	1 2	3

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17	a-	Diamond.	1	
	b-	Mineral - Hardness		
		Calcite - 3		
		Orthoclase - 4		
		Quartz - 7	2	
		Corundum - 9		
		(Hardness of any two minerals from the list.)		3
18	a-	Deflation / Erosion / Aeolian action	1	
	b-	Abrasion / Geological activity of wind / erosion	1	
	c-	Ventifacts.	1	3
19.	a-	<u>Atolls</u> are circular reefs encircling a lagoon. Barrier reefs: Reefs that are separated from the land by wide expanses of water and follow the coastline.	1 1/2	
	b-	35 ppt / 35 g/d / 3.5%	1 1/2	
	c-	Pelagic sediments / Manganese nodules / evaporate deposits (Correct answer of any two)		3
20		<u>A</u> Island Arc's - <u>B</u> Japanese Islands - <u>C</u> Pacific ocean.	1	
		Oceanic trenches - Mariana trench - Challenger deep	1	
		Oceanic ridges - Mid-Atlantic ridge - Atlantic ocean.	1	
		(Matching of A to B / A to C / B to C)		3

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
21	a- b- c-	Planetisimal hypothesis. Nebular hypothesis. Planetisimals during their continued revolution around Sun coalesced and collided to form planets (Any two relevant points regarding Planetisimal hypothesis)	1 1 2	4
22	a- b-	Gravity. Weathering :- Process of mechanical disintegration and chemical decomposition of rocks/ breaking of rocks/ Mechanical fracturing. Erosion :- Removal and of weathered rock particles/ Transportation of weathered materials. Deposition :- Settling down or dropping of transported/ eroded sediments. (Any three relevant points regarding weathering/ Erosion/ deposition)	1 1 1 1	4
23		Erosional features of Streams:- Pot holes, valleys, Canyons, water falls etc. Description of any two fluvial land forms/ Name of any four fluvial land forms.	4	4
24		Mass wasting :- Down slope movement of soil and/rock under the influence of gravity.	1	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
25		Explanation on creep, falls, flow, slides, avalanches, topples etc - any two.	$1\frac{1}{2} + 1\frac{1}{2} = 3$	4
		Earth Science :- Extraction of minerals, fossil fuels, rocks, gem stones etc, civil-engineering projects, management of water resources, protection of environment, disaster management, Collection of earth Science information to the Government and public. (Any four relevant points regarding the topic) etc	4	4
26	a-	Palaeomagnetism :- Magnetism preserved in rocks / magnetic reversals - Alternating symmetrical bands in basaltic rocks / Paramagnetism, bipolar magnetism etc.	2	4
	b-	Sea floor spreading :- Creation of new ocean floor and destruction of old rocks / Plate tectonic movement / types of Plate boundary etc. (Detailed explanation of a or b)	2	