Kerala Board

Answer Key

2024

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ANSWER KEY

FIRST YEAR HIGHER SECONDARY EXAMINATION March 2024

PART-~~I~~/II/III

SUBJECT: GEOLOGY

CODE NO: **FY 429** VERSION: E

60 SCORES 2 HOURS

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
1		Weathering	1	1
2		Geological Survey of India / GSI / CESS /	1	1
3		Juvenile/Magmatic water NRSC/ISRO	1	1
4		Ruby	1	1
5		Asbestos/Gypsum/ [illegible]	1	1
6		Erosional – mushroom rocks, Ventifacts	1	2
		Depositional – Loess, Dunes (Any 1 for each)	1	
7.		Locating and extracting minerals, fuels. Designing stable and safe constructions. Forecasting natural hazards. Locating well spots. etc. (Any relevant points on Geology)	2	2
8.		Marked diagram representing zone of aeration, water table and zone of saturation. (Explanation/Figure)	1 1	2
9.		Dentritic – pattern resembles to the branch of a tree. Most common pattern / figure	1	2
		Radial – pattern forms when streams flow in all directions away from a centrally located higher region / figure. (Any 1 drainage pattern figure or explanation or Drainage basin)	1	
10		Barchans – Crescent shaped dunes with the convex pointing windward direction.	1	2
		Parabolic – U shaped dune with convex towards the leeward direction (Any 1 figure or explanation)	1	
11		Salinity – Total salt present in one kilogram of sea water. Average salinity 3.5% / 35ppt 35gm/litre (Any 2 points on salinity) (Sand dune)		
12.		Volcanic mountains – Accumulation of pyroclastic materials from volcanoes.	1	2
		Residual – Large scale erosion of softer rocks (Any 2 points on mountains or examples).	1	

Qn No	Sub Qns	Answer Key/Value Points	Score	Total Score
13	a.	valley, plateaus, plain etc (any one)/ relevant point	1	
	b.	Rocks	1	3.
	c.	Palaeontology	1	
14.		Big bang hypothesis - universe emerged from singularity. Big bang 13.7 Billion years ago. started to expand, formation, atom nucleus, stars and galaxies. (Any 3 points on big bang/ origin of earth)	3	3
15.		External and Internal. External processes on the surface, Internal - within the earth. External further divided as aggradation and degradation. Example weathering and deposition. Internal further divided as diastrophism, magmatism and metamorphism. Examples - (Any 3 points on earths processes or classification)	1½ 1½	3
16.		Porous rocks – rocks with higher degree porosity. example - sandstone, laterite. Permeable rocks - rocks with higher permeability. Example sandstone, gravel (Any 3 points water bearing formations)		3
17	a	continental glacier - an ice sheet covering a considerable part of a continent.	1	
	b.	Arete. knife edged like structure formed by glacial erosion.	1	3.
	c.	Drumlins – Inverted spoon shaped hill formed due deposition by glaciers (Any relevant points on Glaciers)	1	
18		Continental drift theory - Proposed by Alfred Wegener - postulated that there were large scale horizontal movements of continents in the geological past changing their relative positions. Evidences - fit of continental margins, similarity of rock sequences and structural features, fossil evidences etc. (Any 3 points on continental drift - hypothesis)		3.

Q. No.	Sub Qns	Answer Key/Value Points	Score	Total Score
19	a.	Karst	1	
	b.	Orogeny	1	4.
	c.	Geysers	1	
	d.	Atolls	1	
20.		Physical weathering – breakdown of rocks by mechanical processes. Types – unloading due to pressure release – Thermal expansion and contraction – Frost Wedging Chemical Weathering – Decay of rocks by chemical alteration. Types – oxidation, hydration, hydrolysis, carbonation and spheroidal weathering Biological weathering – caused by the physical and chemical activities of organisms or their remains (Any 4 points on Types – root wedging, weathering)		4
21.		Types of mass movements – Creep – imperceptable slow movement of earth masses Fall – abrupt movement of rock masses as free fall. Slide – Downslope movement of coherent block of earth materials along the slopes. Flow – Particles mix with water and flow. Landslide – combination of a wide variety of processes. Avalanches – Sudden downslope movement of snow and ice. (Any 4 types). (Any 4 points on mass wasting/types)		4.
22.		Diagram of ocean floor structure.	1	
		Marking of Continental shelf, and abyssal plain.	1	
		Continental shelf – Broad relatively gentle terrace of continental crust. Depth about 200m.	1	4.
		Abyssal plain – Submarine plain on the deep ocean floor. Depth – 3000 mto 6000m.	1	
		(Explanation or Figure)		

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
23		Divergent – Plates move apart each other. creation of new oceanic ridges; ~~sub~~ convergent – plates move towards each other – 3 types noticed, subduction and formation of trenches. Shear – plates move past each other. best example San Andreas fault. (Any 4 points on Plate tectonics or seafloor spreading)		4
24		Atmosphere – Gaseous envelope of the earth. Consist of various thermal layers. Marked diagram + Explanation of Troposphere, Stratosphere, Mesosphere, Thermosphere and ionosphere. Troposphere – lower most, temperature decreases with height. etc. Stratosphere – temperature increases. Zone of ozone etc. Mesosphere – Coldest layer, temperature again decreases Thermosphere – Highest temperature state region. Atms in ions, ~~in~~ at particular levels. (Explanation or figure – (3 points)		6
25	a.	Alluvial fan – Alluvial deposits at the foothills of a. Shape resembles to Japanese fan. Similar one – alluvial cones.	2	
	b.	Delta – Alluvial deposits of roughly triangular shape. Forms when a river enters to an ocean. / Figure	2	6
	c.	Oxbow lakes – cut off meanders with horse shoe or Crescent shapes. Formed due to greater discharge of streams through meanders / Figure (Explanation of any two or Figure)	2	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
26	a	Lustre - shining of minerals. Two broad types - metallic and non metallic. Metallic - Shining like metals, ex. Magnetite Non metallic further divided as vitreous Glassy - glass like - Example. Quartz Adamantine - like diamond - diamond Pearly - like pearl - Ex. Muscovite Silky - like silk - Ex - chrysotile. (Any 3 points on Lustre)	3	6
	b	Hardness - Resistance to which a mineral offers against rubbing. Different for different minerals. Can be measured using Moh's scale of hardness. Consist of 10 minerals which are Talc-1, Gypsum 2, Calcite-3, Fluorite-4, Apatite-5, Orthoclase-6 Quartz-7, Topaz-8, Corundum-9 and Diamond-10. (Any 3 minerals in the order of hardness in Hardness scale)	3	

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