ANSWER KEY

SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2026

PART-I/II/III

SUBJECT: GEOLOGY

CODE NO: 229 SY

VERSION: 1

60 SCORES

2 HOURS

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
		SECTION-I		
1		Gradded bedding	1	1
2		Response	1	1
3		Trace fossils or lehno fossils / foot prints / trail marks / crawlings / burrows	1	1
4		Obsedian	1	1
5		Syngenetic deposit	1	1
		SECTION-II		
6.		Evaporate deposits provide many valuable non metallic minerals essential for our daily life., for example / Definition of evaporites Gypsum: used to make plaster of paris and cement Halite: used as table salt Formation of evaporites (any two points)	2	2
7.	a	Magnitude / intensity	1	
	b	Richter Scale / Mercalli scale	1	2

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
8		Permineralisation / Petrifaction / petrified wood Replacement carbonization (Any two)	2	2
9		Ore - material from which one or more valuable metals can be extracted / example Gangue - The worthless non metallic mineral associated with an ore / example	1 1	2
10		Channel modification - Increase cross sectional area Retention pond - large basins trap surface runoff levees - raised banks along a stream channel Floodgate - adjustable gate restrain out pouring water Flood plain buiding - allows structures that can withstand the high velocity of flood water Flood plain zoning - Flood plains - zoned for agricultural uses, recreation etc - Any two flood mitigation methods	2	2
11		Name / characteristic of either Anthracite or Bituminous coal Both have high carbon content and less moisture. produce - high heat with little or no smoke The coke which is made from bituminous coal is used for metallurgical operations; Name / reason	2	2
12		Mould - Imprints of an organism in the sediment / External + internal moulds Cast - mould is filled with sediment or mineral matter Definition of mould / cast / types of mould	1 1	2
13		Contact metamorphism / Thermal metamorphism Temperature / heat is the major factor influence the metamorphism	1 1	2
14		I can share the following information that Excel glass factory / - extensive good quality silica sand suitable for glass industry are available in chardhala / silica sand / glass sand / quartz / sand	2	2

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
		SECTION - III		
15		Coastal erosion is a serious concern in Kerala due to extensive long coastline monsoon waves, Sea level rise and human interventions Measures to mitigate coastal erosion / Names of three strategies. Seawall – Structure constructed parallel to the coastline Groins – Coastal structure constructed perpendicular to the coastline Jetties – Walls designed to protect entrance of a distructive wave to a harbour. Breakwaters – offshore structure built Parallel to the coast. Beach nourishment – Periodic supply of Sediment, coastal revegetation, dune building / coastal vegetation / sand dunes / mangroves – 3 points on coast zone management	1+1+1	3
16		1. The Circum - Pacific Belt, 2. The mediterranean Belt / Indonesian 3. Trans - Himalayan Belt / two belts – 3 belt The earthquakes belts are closely associated with weaker zones and tectonically disturbed areas of the globe / Elastic rebound theory / causes of earthquakes / Seismic zones	3	3
17		Holocrystalline – Entirely made up of crystal eg: Granite, Gabbro Holohyaline – Entirely glassy with no crystal eg: obsedian Merocrystalline – Both crystalline and glassy materials eg: Rhyolite Three textures of igneous rocks / examples.	1 1 1 1	3
18		Source rock – rock where organic matter is converted into oil by burial and post depositional changes / migration of oil / Reservoir rock – Porous and permeable rock to store and transmit the petroleum Oil trap – : A cap rock or a set of conditions which hold the oil in the reservoir rock 3 conditions – Names	1 1 1	3

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
19		1. depletion of sand in the stream bed and along coastal areas / water scarcity / lowering of stream bed 2. Deepen the river channel / drowning 3. Cause threat to bridges, river banks and near by structures / loss of habitat 4. lowering of water table / accelerates erosion 5 cause salt water intrusion - Three points on sand mining	3	3
20		The poster must include the following points - 3 points on global warming (I) Sea level rise (II) Global climatic changes (III) changes in the ice pattern (IV) Changes in the ecosystem drought / floods / crop failures	3	3
21			1+1+1	3

Mineral	Types of deposits	uses
Gypsum	Evaporate deposits	plaster of paris
Silica Sand	placer	Glass industry
Bauxite	Residual	Aluminium

Section. IV

Qn. No	Sub Qns	Answer Key / Value points	Score	Total Score
22		Compositional / textural classification – Sample I – Felsic Igneous rocks Ex: Granite, Rhyolite Sample II – Intermediate Igneous rocks Ex: Diorite, Andesite Sample III – Mafic Igneous rocks Ex: Basalt, Gabbro Sample IV – Ultramafic Igneous rocks Eg: Dunite, Peridotite. OR Plutonic / hypabyssal / volcanic rocks & Examples	1 1 1 1	4
23		Elastic Rebound Theory helps to explain the origin of Earthquakes. According to this theory earthquakes occur when rocks have been elastically deformed by stress suddenly break and come back to their original shape and position, releasing stored energy as seismic waves Elastic Rebound theory suggests that when the slippage does occur energy released causes an earthquake / Diagram	4	4
24		Stages of formation an angular unconformity 1. a set of rocks are deposited 2 uplifted and tilted by tectonic forces 3. erosion of the tilted layers 4 new horizontal layers are deposited after subsidence Formation / definition / explanation / diagrams of an unconformity.	1 1 1 1	4

Qn No	Sub Qns	Answer Key / Value points	Score	Total Score
25		Four types of coal- Lignite - decomposed vegetable matter more than that in peat - brown coal - carbon less than 73% (72.95)	1	4
		Bituminous coal - cooking coal, soft coal - little vegetable matter - Black clour waxy, - Carbon content 84.24%	1	
		Anthracite - highest rank coal hardest - black or brownish - high carbon calorific value - burns with little flame and no smoke	1	
		Coke - cake like product obtained by heating powdered coal in a crucible	1	
		Peat - is the first formed coal from vegetable matter		
		Names / description / characteristics -		
26		Principle of Superposition This principle states that in an undeformed horizontal sequence of sedimentary rock the oldest beds are on the bottom with successively younger layers on the top / diagram / statement	3	4
		Parallel unformity or Disconformity / Any other unconformity / figure.	1	

SECTION – V

Qn No	Sub Qns	Answer Key / Value points	Score	Total Score
27		Mining and quarrying are activities that involve removing valuable minerals and stones from the earth surface Effects (points to be included) 1. Destruction of natural habitats 2. Soil erosion and land degradation 3 water pollution / quarry waste / land slide 4. Air pollution / acid mine drainage. 5. Noise pollution / lowering of water table. 6. Lowering of groundwater table Remedial measures (points to be included) 1. Promote sustainable mining practices 2. Rehabilitation of mined areas 3. Strict goverment regulations 4. Reduce use, Reuse and recycle materials 5. Awareness and education Provide a brief of each points / Any six impacts of mining & quarrying.	3 3	6
28		a) Causes of landslide – Three points – (i) Continous heavy rainfall (ii) Construction activities on slopes (road, building etc) (iii) Unscientific agricultural practices (iv) Deforestation (v) steep slopes (vi) Mining and Quarrying (vii) Urbanisation / unscientific land use. b) Mitigation measures (i) Regulate construction activities on slopes, if possible avoid the activities. (ii) Use modern technologies in mining and quarry operations.	3	

Qn No	Sub Qns	Answer Key/Value points	Score	Total Score
		(III) Forestation (IV) relocation of settlement and infrastructure (V) Build retaining walls to stop slippage (VI) ~~Cover the~~ slope with concrete or wire mesh (VII) emplace bolting in a slope of highly fracture rock (VIII) Insert drainage pipes for the easy flow of water (IX) Over steepened slopes could be graded or terraced to reduce the slope (X) Construct buttress — man made mound or hill of soil placed at the toe of the slope (XI) Geotechnical studies and proper landuse (3 points)	3	6

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