ANSWER KEY

SECOND YEAR HIGHER SECONDARY EXAMINATION March 2023

PART-II/III

SUBJECT: GEOLOGY

CODE NO: ~~229~~ SY529 VERSION: Q

60 SCORES 2 HOURS

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
1		Acid mine drainage	1	1
2		Chalcopyrite or $CuFeS_2$	1	1
3		Replacement/Alteration of hard parts	1	1
4		Bio gas	1	1
5		CO_2	1	1
6		P-waves (Any 5 Questions)	1	1
7		petrol, aviation fuel, diesel, lubricants, gas oil, kerosene, lubricating oil, asphalt. (Any two relevant points)	2	2
8		Indian Rare Earths Ltd, Malabar cements Ltd, Kundara Ceramics Ltd. Excel Glass Industry, etc. (Any two)	2	2
9		Lowering of water table, degradation of stream bottom, threat to bridges, river banks and structures, destruction of aquatic habitat, coastal erosion salt water intrusion etc. (any two)	2	2
10.		Leave from beaches, stay out of danger, co-operate with emergency organizations, Leave from near by		

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		buildings, move to higher ground, keep calm and so on. (Any two)	2	2
11		Separation of heavy minerals during transportation, concentration in the form of alluvial placers, beach placers, gravity separation, mechanical concentration, Eg:- Gold, diamond, Ilmenite, Rutile, monazite Any two relevant points.	1 1	2
12		Magnitude:- measure of energy released, Richter scale, calculated from the amplitude of seismic waves	1	
		Intensity:- damages happened, Mercalli scale, applied by conducting surveys of people's response, measure of Ground shaking and destructions	1	2
13		Strike:- direction of intersection of bedding plane with ~~the~~ the imaginary horizontal plane.	1	
		Dip:- measure of inclination, denote the angle that beds make with the horizontal, measured in a vertical plane perpendicular to the strike direction; Expressed in terms of amount and direction	1	2
14		Elastic:- Temporary changes, object resumes its original shape when the stress is removed. Plastic:- Ductile deformation, permanent	1	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
		change, object does not recover original shape when stress is released (Any 6 Questions)	1	2
15	(a)	Economic geology	1	
	(b)	Gangue	1	
	(c)	Grade of an ore or Tenor	1	3
16		Careful use of resources, proper management of resources to prevent exploitation and destruction	1	
		Recycling, substitution, prevention of waste, use of low grade ores (any two)	2	3
17		(a) Point of origin of earthquake	1	
		(b) waves of elastic energy	1	
		(c) Instrument that records the arrival of seismic waves	1	3
18		Gabbro - plutonic - coarse grained	1	
		Dolerite - Hypabyssal - medium grain	1	
		Basalt - volcanic - fine grained	1	3
19		(a) Dunite or Sandstone or Quartzite.	1	
		(b) Quartzite	1	
		(c) Laterite	1	3
20		Preservation of fossils:- posession of hard parts, rapid burial escape from physical, chemical and biological destruction, suitable environment for fossilisation etc. (any three points) Any 3 Relevant Points	3	3

Any 5 questions

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
21		Peat:- first stage in coalification, less alteration	1	
		Lignite:- Higher to peat, carbon below 70 %, earthy and brown	1	
		Bituminous coal:- coking coal, carbon content 80 %, harder than lignite	1	
		Anthracite:- Highest quality, black or brownish, High carbon content, low in moisture and volatiles (Four Points)	1	4
22		Structural damage, ground rupture, tsunami, Seiches, sea quakes, fire landslides, flooding, liquefaction, after shocks - any four descriptions	4	4
23		Uniformitarianism, Super position original horizontality, cross cutting relationship, faunal succession Any two	2	
		Description of principles/ statements/ Four Principles.	2	4
24		Sea walls, groins, jetties, break waters, beach nourishment, coastal vegetation, dune building. (Any four)	4	4
25	(a)	Anticline:- Up arched fold, convex upward, older rocks at the core	1	
		Syncline:- Down arched, convex down ward, dip towards the crest, younger rocks at the core, or labelled Diagrams of anticline and syncline	1	

Q.No.	Sub. Qn.	Answer key/value points	Score	Total score
	(b)	Normal fault:- Hanging wall appears to have move downward relative to the foot wall Reverse fault:- Hanging wall appears to have moved upward relative to the footwall or Diagrams of ~~hanging~~ Normal and Reverse fault [Any 4 Questions]	1 1	4
26	(a)	Igneous:- formed by the consolidation of magma/lava / crystallization process Sedimentary:- lithification of sediments derived by the weathering of pre-existing rocks / clastic sedimentary process / non-clastic rock formation Metamorphic:- solid state transformation of pre-existing rocks in to a new distinct rock / metamorphic processes / Types/ Any three relevant points about rocks.	1 1 1	
	(b)	Diagram showing the rock cycle, processes involved in transformation of one rock in to another	3	6
27	(a)	Causes of landslides:- steep slopes, heavy rain fall, human interventions, Land use problems, over cultivation, absence of drainage etc. Any three relevent points.	3	
	(b)	Retaining walls, slope modification, drainage pipes fitting, construction of buttresses, rock bolts, rock anchors, etc. Any three points.	3	6

Qn. No	Sub Qn.	Answer key / value points	Score	Total Score
28		Land:- deforestation, land degradation, land subsidence, landslides, accumulation of quarry wastes (any two)	2	
		Water:- water pollution, acid mine drainage, lowering of water table (any two)	2	
		Air:- Noise pollution, air pollution, fly rocks. Any six relevant points	2	6
		[Any 2 Questions]		

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