ANSWER KEY

FIRST YEAR HIGHER SECONDARY EXAMINATION JUNE 2022

PART-I/II/III

SUBJECT: GEOLOGY

CODE NO: FY 29 VERSION: A

60 SCORES 2 HOURS

(1)/6

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
		SECTION I		
		(Questions 1 to 5) Attempt any 4 questions. Each question carries 1 score. (4×1 = 4)		
1.		ONGC 2. Streak. 3. Graphite		
4.		Waterfalls/rapids/cascades (5)/siliceous sinter/travertine/stalactite/stalagmite. (Any four.)	4×1	4
		SECTION II		
		(Questions 6 to 13) Attempt any 5 questions. Each question carries 2 score. (5×2 = 10)		
6	a)	ventifact b) water table	2×1	2
7	a)	diamond b) corundum	2×1	2
8		- exploration of coal, petroleum, natural gas - new ore deposits, - location of tunnels, highways, dams (any two points)	2×1	2
9		- green house gases such as CO_2, CH_4 and N_2O act like shields, they trap and radiate heat,		2
10		- direct sinking or lowering of a mass of earth material below the surrounding ground level. - such processes can occur, both on slopes or on flat ground.		2
11		- where two mountain glaciers converge or when two tributary glaciers merge, their lateral moraines unite to form a dark band of rock fragments		

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		traceable along the medial portion of the resulting glacier.		2
12		- diagram of horst ——— 1 - diagram of graben ——— 1		2
13		- the tendency of a mineral to break along certain definite directions yielding more or less smooth, planar surfaces.		2
		SECTION III (Questions 14 to 22) Attempt any 6 questions. Each question carries 3 score. (6×3 = 18)		
14		a) exfoliation b) barchan c) island arc.	3×1	3
15		→ divergent boundary - plates move apart — MOR → convergent boundary - plates move towards each other - mountain chains → Shear boundary - plates slide past each other - San Andreas fault.		3
16		hematite - cherry red streak galena - cubic cleavage quartz - vitreous lustre		3
17		a) fossils b) fold, fault, joint c) landforms		3
18		- the solar system evolved from a cloud of dispersed particles - a large primordial Nebula : - part of an interstellar cloud of dust and gas underwent gravitational collapse - clumps of interstellar matter coalesced to form protoplanets.		3
19		a) slow downslope movement of soil and regolith. - slowest form of mass movement.	1	

(3)/6

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	b)	- particles of earth materials mix with water while undergoing movements and behave partly as a viscous fluid.	1	
	g)	- downward moving mass of material comprises mostly snow and ice.	1	
		- Seen in cold countries and high mountain altitudes. (1+1+1 = 3)		
20		- products of deflation in regions composed of a heterogenous mixture of loose rock materials with varied sizes and shapes. - finer rock particles are selectively removed, leaving behind larger ones.		3
21		- rock material in transit on a glacier is termed moraine. - based on their location in relation to the body of the glacier it can be supraglacial, englacial or subglacial.		3
22		- where two continents meet head-on, in plate interaction neither is subducted. - crust of the zone of convergence buckle and push upwards or sideways. - collision of Indian plate and Eurasian plate resulted in the formation of Himalayas.		3
		SECTION IV (Questions 23 to 28) Attempt any 4 questions. Each question carries 4 score (4x4 = 16).		
23	a)	- the amount of openings present in rocks - it is the ratio of the volume of voids in a rock or soil to the total volume of the rock or soil. - permeability denotes the degree of interconnections between neighbouring pore spaces in a rock.	2	

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	b) → aquifer: porous and permeable rocks - holds and transmits water freely. → aquifuge: a rock formation which neither stores nor transmits water. - non porous and impermeable.		2 (2+2=4)	
24	- proper diagram of the drainage basin - proper labelling of a) b) and c)		1 3	4
25	- external earth processes are restricted to the surface or exterior of the earth. eg:- degradation, aggradation - internal earth processes take place below the earth's surface, beyond our observation. eg:- metamorphism, magmatism			4
26	- proper diagram of soil profile - proper labelling of horizons		1 3	4
27	- aquifers in which pressure of water is always greater than the atmospheric pressure. - groundwater either flows to the surface or gushes out from a well dug in artesian aquifer. - proper figure of artesian condition		1 1 2	4
28	- streams flows through gorges or canyons - very high velocity. - down cutting predominant - form waterfalls, rapids and cascades. - moves in turbulence and torrents often with roaring noise. (any four points).			4

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
		SECTION V		
		(Questions 29 to 31) Attempt any 2 questions. Each question carries 6 Score (2×6=12)		
29	a)	- relatively weak and ductile layer of the mantle beneath the lithosphere. - behaves more plastically than the rigid lithosphere. - asthenosphere is the primary source of most magma.	3	
	b)	- core is mostly iron and nickel. - temperature reaches upto 6000°C - inner core is solid, - outer core is liquid. (3+3=6)	3	
30	a)	- huge limestone structures built by marine organisms called coral polyps. -or- - corals reefs are structures formed by the calcareous skeletons that house the corals.	1	
	b)	- found in clear, shallow ocean waters - require sunlight - require warm water, 17°c – 34°c. - depth limit 30m to 60m. (any two points)	2	
	c)	- fringing reefs – grow close to the shore and extend out into the sea like a submerged platform. - barrier reefs – separated from the land by wide expanses of water and follow the coastline.		

(6/6)

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
		- atolls - a roughly circular ring of reefs encircling a lagoon, a low lying island. (1+2+3=6)		3
31.	a)	- fit of continental margins - similarity of rock sequences and structural features - palaeoclimatic evidences - fossil evidences. (any TWO)	2	
	b)	- the surface of the earth is broken into large plates. - plates are in constant motion relative to each other. - plates meet in various ways along their edges → divergent, convergent, shear. - plate boundaries are sites of intense geologic activity, such as earthquakes, volcanoes and mountain building. - plates have a thickness of approximately 100 - 125 kms. (any FOUR points) (2+4 = 6 score)		4