

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
<u>SECTION I</u>				
(Questions 1 to 5) Attempt any 4 questions. Each question carries 1 score. (4x1=4)				
1.		ONGC 2. Streak. 3. Graphite		
4.		Waterfalls/rapids/cascades (5), siliceous sinter/travertine/stalactite/stalagmite. (Any four.)	4x1	4
<u>SECTION II</u>				
(Questions 6 to 13) Attempt any 5 questions. Each question carries 2 score. (5x2=10)				
6	a) ventifact b) water table		2x1	2
7	a) diamond b) corundum		2x1	2
8	-exporation of coal, petroleum, natural gas -new ore deposits, -location of tunnels, highways, dams (any two points)		2x1	2
9	-greenhouse gases such as CO ₂ , CH ₄ and N ₂ 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 _____ - diagram of graben _____	1 1	2
13		- the tendency of a mineral to break along certain definite directions yielding more or less smooth, planar surfaces.		2
<u>SECTION III</u>				
(Questions 14 to 22) Attempt any 6 questions. Each question carries 3 score. (6 x 3 = 18)				
14		a) exfoliation b) barchan c) island arc.	3 x 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	

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	b)	<ul style="list-style-type: none"> - particles of earth material mix with water while undergoing movements and behave partly as a viscous fluid. 	1	1
	c)	<ul style="list-style-type: none"> - downward moving mass of material comprises mostly snow and ice - seen in cold countries and high mountain altitudes. 	1	
		(1+1+1 = 3)	3	
20		<ul style="list-style-type: none"> - 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		<ul style="list-style-type: none"> - 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 superglacial, englacial or subglacial. 	3	
22		<ul style="list-style-type: none"> - 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	
<p><u>SECTION IV</u></p> <p>(Questions 23 to 28) Attempt any 4 questions. Each question carries 4 score (4x4 = 16).</p>				
23	a)	<ul style="list-style-type: none"> - 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. 	2	
		<ul style="list-style-type: none"> - permeability denotes the degree of interconnections between neighbouring pore spaces in a rock. 		

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

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
<u>SECTION V</u>				
<p>(Questions 29 to 31) Attempt any 2 questions. Each question carries 6 Score (2x6=12)</p>				
29		<p>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.</p> <p>b) - Core is mostly iron and nickel. - temperature reaches up to 6000°C - inner core is solid, - outer core is liquid.</p>	<p>3</p> <p>3</p> <p>(3+3=6)</p>	
30		<p>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.</p> <p>b) - found in clear, shallow ocean waters - require sunlight - require warm water, 17°C - 34°C. - depth limit 30m to 60m. (any two points)</p> <p>c) - <u>fringing reefs</u> - grow close to the shore and extend out into the sea like a submerged platform. - <u>barrier reefs</u> - separated from the land by wide expanses of water and follow the coastline.</p>	<p>1</p> <p>2</p>	

