

FIRST YEAR HIGHER SECONDARY EXAMINATION —ARCH 2017

SUBJECT : GEOLOGY

CODE. NO: 622

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1	i) & ii) a/b	Conducts geological surveys and studies - provides earth science information - development of mineral resources - protection of environment in mines - any two points	1+1	2
2	i)	Permeability - ability of rocks to transmit water through it All permeable rocks are porous / All porous rocks may not be permeable / water moves only if pore spaces are interconnected (Any one point)	1 1	2
3	a) b) c)	Geomorphology Petrology Hydrogeology / Hydrology	1 1 1	3
4	a) b) c)	Volcanic mountains Fold mountains Western Ghats / Eastern Ghats / Satpuras / Aravallis / Vindhya	1 1 1	3
5		Hydration, Hydrolysis, Oxidation, Carbonation, Solution, Spheroidal weathering (Any three names OR	1+1+1	

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		Explanation of any two means of chemical weathering-	$1\frac{1}{2}+1\frac{1}{2}$	3
6		Diagram of soil profile OR Explanation of A, B, C Horizons	1+1+1	3
7	a) ii) Diamond b) Moh's hardness scale/scratching the given mineral/Degree of resistance to scratching - (Any one point)	1 2	3	
8		Any three examples of minerals and use in daily lives in any three fields	1+1+1	3
9		Delta - Roughly triangular - Deposition at the river mouth Pot holes - Cylindrical/circular - Depression in stream channel Oxbow lake - Crescent shape - Detached meander loop A to B / B to C / A to C - Matching	1+1+1	3
10	(a) iii) Nebular hypothesis - Chamberlin and Moulton (b) Proposed by Chamberlin and Moulton - Passing of a larger star nearby	1		

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		the primordial sun - Creation of large tidal waves by the near approach of the larger star - pull out of solar mass - chilling - formation of planetesimals - mutually collision - combined to form planets (<u>Any two points</u>)	2	3
11	a) True b) False c) True		1 1 1	3
12	A	Glaciers - large mass of moving ice Explanation <u>OR</u> Examples of mountain glaciers and continental glaciers	1 1+1	3
	B	<u>OR</u> a) Glacial trough:- mountain valley reshaped by glacial action b) Hanging valleys:- Tributary glacial valleys that hang above the floor of the main valley c) Cirque:- Semi circular depression present at the valley head	1+1+1	3
13	a) b)	Salinity:- amount of salts dissolved in 1000 gms of water Rainfall, evaporation, river run off, ice formation, glacial melting, (Any two factors)	1 1+1	3

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14		waves interaction with the shore/feels bottom/can't move further forward (Any one point) Coastal Cliff/Sea stack/ Arches/ Wave cut benches/Spits /Bars/Beaches/ Tombolo, etc. Names of any two coastal land forms OR Explanation of any two coastal land forms	1 2 OR 1½+1½	3
15		Fit of continents, fossil evidence, paleoclimatic evidence, similarity of rock types, (Any two evidences) Driving force or mechanism of movement could not be explained OR Any three evidence for continental drift hypothesis	2 1 1½+1½	3
16	b) c) d)	Plates move away from each other Mariana Trench /Trench/ Himalayas Subduction zone Transform fault /shear boundary/ Conservative boundary	1 1 1	3

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17	a) iii) Saltation b)	Removal of fine sized particles / ground surface lowers / Coarser sand remains / topography changes / any <u>one</u> relevant point	1 2	3
18	A	Downslope movement of rock / soil Names of any two types of mass movement (Creep, fall, slide, topples, flow, avalanches, subsidence, solifluction, sheet or gully erosion, etc.) OR Explanation of any one type OR	1 1 + 1 OR 2	3
	B	Angle of repose:- natural angle at which rock material will rest without slipping - maximum slope angle that unconsolidated material can maintain - Diagram showing angle of repose (Any one point or diagram) Force of gravity and ^{friction} angle of repose are in balance at the angle of repose OR Any two points related with the angle of repose.	2 1 OR 1 1/2 + 1 1/2	3

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19	A	Diagram or explanation of any four layers (Crust, Mantle, Outer core, Inner core)	4	4
	B	OR Explanation of any four layers (Lithosphere, Asthenosphere, Mesosphere, Outer core, Inner core) or <u>diagram</u>	4	
20		Confined aquifer:- aquifers that are bound above and below by impermeable layers Unconfined:- aquifers that are open to the atmosphere. Diagram representing artesian well and confined aquifer OR: Explanation of artesian well (Condition of artesian well formation/ aquifer under hydrostatic pressure/ free or self flowing well - any one point) - (two marks)	1 1 2	4