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ANSWER KEY

IMPROVEMENT MARCH/IMP

FIRST YEAR HIGHER SECONDARY EXAMINATION October 2022

PART-III/III

SUBJECT: GEOLOGYCODE NO: FY 829VERSION: B60 SCORES2 HOURS

| Qn. No | Sub Qns | Answer Key/Value Points | Score | Total Score |
|--------|---------|---|-------|-------------|
| 1. | | Oceanography | 1 | 1 |
| 2. | a. | Petrology | 1 | 1 |
| 3. | | Angle of repose | 1 | 1 |
| 4. | | Beaches | 1 | 1 |
| 5. | | Load | 1 | 1 |
| 6. | | Creep | 1 | 1 |
| 7. | | Cryosphere | 1 | 1 |
| 8. | | Mica | 1 | 1 |
| 9. | | Palaeomagnetism | 1 | 1 |
| 10. | | Quartz / Feldspar / mica | 1 | 1 |
| 11. | | Orogeny | 1 | 1 |
| 12. | | Western ghat / Eastern ghat | 1 | 1 |
| 13. | a) | Epeirogeny | 1 | 2 |
| | b) | Gradation | 1 | |
| 14 | | Proposed by Kant & Laplace, solar system evolved from a large cloud-nebula. This underwent gravitational collapse and form a disc shape. Contracted and cooled. Later form sun and planets. | 2 | 2 |
| 15. | | Water table - upper limit of zone of saturation / lower limit of zone of aeration. not static - but fluctuating | 2 | 2 |

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| 16. | | Stream ordering - hierarchy of a stream in the drainage net. That is the type and number of tributaries that make up a channel net work. Strahler method is most common. First order, second order and higher orders. | 2 | 2 |
| 17. | | Isolated rocks in which their basal portions have been partially undercut by <u>abrasion</u> carried out by wind blown sands. | 2 | 2 |
| 18. | | Glaciers transport its materials in 3 ways namely supraglacial, Englacial and sub-glacial moraines. | 2 | 2 |
| 19. | | Salinity is expressed by the total amount of salt found in 1000 grams of water. Average salinity of sea water is 3.5% (35 ppt) | 2 | 2 |
| 20. | | Ocean current is a continuous flow of sea water in a given direction horizontally, vertical or upward or downward to changes in temperature, pressure, salinity, density etc. | 1 | 2 |
| | | Tides are rises or fall of sea water because of the gravitational pull of moon and sun. | 1 | |
| 21. | | Continental drift hypothesis - There were large scale slow horizontal movement of continents during the geologic past changing their positions / All the continents had once joined together into a single proto continent called Pangea and an ocean called Panthalassa. | 2 | 2 |
| 22. | | Sink holes - Depression on ground surface - solvent action. Stalactites - Columns hanging from roof - Deposition in caves. | 1 1 | |

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| 23 | | <p>Siliceous Conter - Formed from precipitation of silica - Deposition from springs.</p> <p>Splash erosion is caused by the impact of rain drops striking the ground. These precipitation on ground fills pores spaces and moving them apart.</p> <p>Sheet erosion is the removal of soil particles as a thin sheet.</p> <p>Gully erosion is applied for erosion caused by flowing water through channels having a depth more than 0.3m</p> | 1 1 1 | 3 3 |
| 24 | | <p>Types of dunes - Barchans - Crescent shaped convex side away from wind direction.</p> <p>Parabolic dunes - U shaped dunes convex side towards wind direction</p> <p>Longitudinal dunes - long straight dunes parallel to wind direction</p> <p>Transverse dunes - form perpendicular to wind direction (3 types)</p> | 3 | 3 |
| 25 | a) b) c) | <p>a) Cirque - half bowl shaped depression is a glacial</p> <p>b) Drumlin - Asymmetrical hills formed by glaciers</p> <p>c) valley glaciers - Small glaciers usually occupy in valleys</p> | 1 1 1 | 3 |
| 26 | | <p>Fold mountains - Produced by folding of strata accompanied by general upliftment and consequent erosion</p> <p>Fault mountains - Formed by faulting and tilting of rock strata.</p> <p>Dome mountains - Formed when large amounts of molten rock push earth's crust under neath.</p> | 1 1 1 | 3 |
| 27 | | <p>Moh's scale - Scale used to express the hardness of minerals. Consist of 10 standard</p> | | |

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| 28 | | minerals. Tale-1, Gypsum-2, Calcite-3, Fluorite, Apatite-5, Orthoclase-6, Quartz-7, Topaz 8, Corundum-9 and Diamond-10 NESS - Promote modern scientific research EWDM - Groundwater development and management ONGC - Conducts exploration and production activities of crude oil and natural gas GSI - conducting geological studies and researches | 3 1 1 1 1 | 3 4 |
| 29 | | Internal structure of the earth - chemical classification - Crust, mantle and core Crust - outermost part - two types SILICATE SIMA, thickness 5-75 km. mantle - middle portion - extends upto 2900 km - Largest portion by mass and volume - Core - Inner part - 2900 km - 6371 km Composition of IFE. + marked diagram. | 4 | 4 |
| 30 | | Thermal layering of atmosphere - Troposphere - lowest layer, temperature decreases with height, extends upto 20 km. Stratosphere - upto 50 km, temperature decreases with height, ozone present. mesosphere - upto 80 km, temperature increases with height. Thermosphere - Extends upto 700 km temperature increases and reaches upto 2000°C. Contains charged particles called ions. Exosphere - Region beyond 700 km. + Diagram. | 4 | 4 |

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| 31 | | <p>Porosity - The amount of pore spaces present in a rock.</p> <p>Permeability - The ability of a rock to transmit water.</p> <p>Example for porous rocks - Limestone, sandstone</p> <p>Example for permeable rocks - Sandstone, laterite</p> | 1 1 1 1 | 4 |
| 32 | | <p>Deep ocean floor features</p> <p>Oceanic ridge system - continuous submarine mountain chain extends through oceans</p> <p>Deep sea trenches - Large depressions on deep oceans.</p> <p>Island arcs - string of volcanic islands in oceans.</p> <p>Abyssal hills - small hills found on ocean floor. <u>any</u> any 4 features</p> | 4 | 4 |
| 33 | | <p>Habit - External form attained by a mineral or the general appearance of a mineral.</p> <p>Tabular - form of flattened shapes</p> <p>Bladed - flat blade like</p> <p>Foliated - occur as thin sheets</p> <p>Fibrous - composed of easily separable fibers.</p> <p><u>or any forms/habits.</u></p> | 4 | 4 |
| 34 | | <p>weathering - The mechanical disintegration and chemical decomposition of rocks and minerals. Three types</p> <p>Physical - mechanical break down of rocks into small pieces. 3 types</p> <p>thermal expansion and contraction, weathering due to pressure release and Frost wedging - simple explanation</p> <p>Chemical weathering - weathering by chemical processes - decomposition</p> <p>Types - Solution, Oxidation, Hydrolysis,</p> | 1 2 2 | |

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| 35 | | <p>Hydration and carbonation</p> <p>Biological weathering - weathering caused by plants and animals - Biophysical & Biochemical.</p> <p>Erosional and depositional landforms of rivers -</p> <p>Erosional features include stream valleys, pot holes and water falls</p> <p>Stream valleys - elongated depression in the land surface between hills formed by river erosion - deep and narrow - V shaped.</p> <p>Pot holes - circular depressions on stream channels.</p> <p>Water falls - occur when a sudden change in erodability of rocks.</p> <p>Depositional landforms include alluvial fans, meanders, oxbow lakes, and deltas.</p> <p>alluvial fans - fan shaped accumulations of sediments deposited when a stream enters a plain.</p> <p>meanders - Deposits stream found on the zig zag curves a river course.</p> <p>ox bow lakes - are cut off meanders lakes filled by water.</p> <p>Deltas - Roughly triangular deposits deposited when a river enters to a sea.</p> | <p>1</p> <p>3</p> <p>3</p> | <p>6.</p> <p>6.</p> |
| 36 | | <p>Convergent boundaries - when two lithospheric plates move towards each other. Three types - Ocean-ocean, ocean-continent, and continent-continent</p> | | |

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| | | <p>Convergence</p> <p>Divergent boundaries - When two lithospheric plates moves away from each other. Places where seafloor spreading occurs.</p> <p>Shear boundaries - When two plates past each other. A San Andreas fault. 2 zone of earthquakes.</p> <p style="text-align: center;">— x —</p> | <p>2</p> <p>2</p> <p>2</p> | <p>6</p> |