

SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2018

SUBJECT: GEOLOGY

CODE. NO: 9022

Section: I

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1		(Any best 8 answers from Qn. 1-10) Heat, Pressure, chemically active fluids. (Any two points)	1 1	2
2		Source rock, Reservoir rock, Oil trap, Migration, accumulation (Any two points)	1 1	2
3		Ductile deformation → Permanent change in shape or volume of the material without rupture (fracture) Brittle deformation → As the applied force increases the material undergoes no further change and it suddenly breaks.	1 1	2
4		Sand stone → Sedimentary rock, Entirely made up of sand sized quartz grains, soft and porous rock. Quartzite → Metamorphic rock, Formed by metamorphism of sand-stone, Hard rock, free from pores, smooth fracture. (Any one point each)	1 1	2
5	a	ore / Tenor / Grade	1	2
	b	Gangue	1	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
6		Seismograph, Seismogram	1+1	2
7		Vulnerability → The extent to which a community, structure, services or geographic area is likely to be damaged or disrupted by the impact of a particular hazard, on account of their nature, construction and proximity to hazardous terrain or a disaster prone area.	2	2
8		Principle of Uniformitarianism' 1. Any relevant explanation of the Principle. OR Explanation in two points	1 2	2 2
9		Hydrosphere → a) Water pollution b) Acid mine drainage c) Lowering of Ground water table Lithosphere → a) Deforestation b) Land degradation and Land pollution c) Land Subsidence d) Land Slide e) Accumulation of Quarry waste. (Any two points)	2	2

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
14		<p><u>Primary effect</u> → Occur as the a result of the process itself.</p> <p><u>Secondary effect</u> → Occur because primary effect has caused them.</p> <p>Eg:- Fire, Power failure etc.</p> <p><u>Tertiary effect</u> → Long term effect due to Primary effect</p> <p>Eg:- Loss of habitat, diseases, etc.</p>	<p>1</p> <p>1</p> <p>1</p>	<p>3</p>
15		<p><u>P-waves</u> → compressional waves/ Push pull / Longitudinal/ Similar to sound waves/ Fastest waves / can pass through all medium.</p> <p><u>S-waves</u> → shear waves/ transverse waves / Speed less than P-waves / Pass through Solid medium only.</p> <p align="center">OR</p> <p>If drawn figure only of P & S waves.</p>	<p>1½</p> <p>1½</p>	<p>3</p> <p>2</p>

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total												
16		Replacement of a scarce mineral with a more abundant one. Eg: - Replacement of Copper by Aluminium OR Any relevant explanation	1½ 1½ 3	3 3												
17		Principle of Superposition Relevant explanation	1 } 2 }	3												
18		<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">A</td> <td style="width: 33%; text-align: center;">B</td> <td style="width: 33%; text-align: center;">C</td> </tr> <tr> <td>Fold</td> <td>- Compression</td> <td>- Symmetrical</td> </tr> <tr> <td>Fault</td> <td>- Tension/ shear</td> <td>- Normal</td> </tr> <tr> <td>Joints</td> <td>- Shear/ Tension</td> <td>- Mud cracks</td> </tr> </table> <p>(Any two column match) A → B, A → C, or B → C</p>	A	B	C	Fold	- Compression	- Symmetrical	Fault	- Tension/ shear	- Normal	Joints	- Shear/ Tension	- Mud cracks		3
A	B	C														
Fold	- Compression	- Symmetrical														
Fault	- Tension/ shear	- Normal														
Joints	- Shear/ Tension	- Mud cracks														
19		(i) Establishing geological time. (ii) Identification of chrono-stratigraphic units. (iii) Correlation of rock sequences (Any three relevant points)	1 } 1 } 1 }	3												

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
20		organic matter mixed with mud - burial under ^{layers of} sediments - Influence of pressure & temperature - Kerogen forms and found in oil shales - with time and more heat & pressure liquid and gaseous hydrocarbons forms - migrates into reservoir rocks - accumulates under traps. (Any relevant explanation)	3	3
Section- 21		III (Any best 5 answers from Qn. 21-27) Land Slide → The down slope movement of large scale earth materials due to gravity. It accounts for considerable loss of life, damages to human settlement, agricultural fields, forest lands etc. <u>causes</u> : Heavy rainfall, Removal of vegetation, Slope modification etc. <u>Mitigation</u> → Proper land use practice, Afforestation, proper drainage facility etc. OR Any four relevant points	1 1 2	27 4 4

Q.No	Sub Ques.	Answer key	Score	Total
24		<p>Angular unconformity / Non conformity</p> <p>Relevant explanation of any one type of ^{above} unconformity</p> <p><u>Angular unconformity</u> → It is a contact that separates a younger gently dipping or horizontal rock unit and an older set of underlying rocks that are tilted or deformed.</p> <p><u>Non conformity</u> → Younger sedimentary rocks separated by older igneous intrusive rocks or metamorphic rocks.</p>	1 3	4
25		<p>Definition of Rank or Grade of coal.</p> <p>→ Type of coal according to variation in amounts of Carbon, Oxygen, Nitrogen, water and Volatile matter.</p> <p>Relevant explanation of types of coal ^{such as} Peat, Lignite, Bituminous coal and Anthracite.</p> <p>OR</p> <p>Any four relevant points about coal</p>	1 3 4	4 4

Q.No. Sub. Ruli.

Answer key

Score Total.

26	<p>Human causes of pollution → chemical fertilizers, Pesticides, Septic tank system, Landfills, Atmospheric contaminants, waste dumping etc. (Any 2 points)</p> <p>Dangers of contaminated Ground water → a) Diseases like hepatitis, dysentery, cholera etc.</p> <p>b) Health Damage to liver, kidney etc.</p> <p>c) Harmful to wild life</p> <p>d) Poisoning by toxins (Any 2 points)</p> <p>OR</p> <p>(Any relevant 4 points on Ground water pollution)</p>	2 4	4
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27	<p>i) felsic / Acidic</p> <p>ii) Intermediate</p> <p>iii) mafic / basic</p> <p>iv) Ultramafic / Ultrabasic</p> <p>OR</p> <p>Explanation of any 2 types</p> <p>OR</p> <p>Any other relevant classification of Igneous rocks. (4 points)</p>	1 1 1 1 4 4	4 4 4
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94460628-74 1. Balakrishnan.K.
GHS Megvalputhur.
Kasaragod.

9495062469 2. Sajeew A rikkat
GHS Meladur, Mal
Thirissur Dist.

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