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FOR MANIPUR CLASS 11 PREPARATION

Manipur Board Class 11 Syllabus 2027 Geology

EXAM	YEAR	TYPE	SUBJECT
Manipur Class 11	2027	Syllabus	Geology

GEOLOGY

CLASS-XI

THEORY

One Paper **3 Hours** **7O Marks**

Unit	Unitwise Weightage	Marks	Periods
I.	General Geology and Physical Geology	15	40
II.	Crystallography and Mineralogy	20	50
III.	Palaeontology	20	50
IV.	Economic Geology	15	40

Unit I : General Geology and Physical Geology **40 Periods : 15 Marks**

(i) Introduction of Geology, definition, scope of Geology and branches of Geology.

(ii) The Earth as Planet, shape, of the Planet.

(iii) Origin of the Earth–Nabular hypothesis. Planetesimal hypothesis. Double star hypothesis and Recent hypothesis.

(iv) Age of the earth–Concept of determination of the age of the earth by Radioactive method.

(v) Internal constitution and structure of the earth as revealed by Seismic waves.

(vi) Earthquake-definition, causes, effects and types.

(vii) Volcanoes–definition, causes, structure and products.

(viii) Concept of Plate tectonics.

(ix) Definition, agents and processes of weathering, erosion, denudation and deposition.

Unit II : Crystallography and Mineralogy : **50 Periods : 20 Marks**

(i) Crystal-definition, form, face, edge, solid angle, interfacial angle and its measurements, Symmetry elements, intercepts and parameters, indices and axial ratio.

(ii) Crystal systems-Classification of seven crystal systems,
-Study of the Normal Classes of Isometric system, Tetragonal system, Hexagonal system with examples.

(iii) Mineral - definition, types of minerals (amorphous, Crystalline, rock forming minerals, ore forming minerals)

(iv) Physical properties of minerals-form, Colour, streak, lustre, cleavage, fracture, hardness, tenacity, taste, feel, odour etc.

(v) Nicol Prism and its construction, Part of Petrological microscope.

(vi) Moh's scale of Hardness and its uses.

(vii) Study of Physical properties, Chemical composition and uses of the following rock forming minerals-Quartz, Orthoclase, Microcline, Plagioclase, Calcite, Homblende, Olivine, Tourmaline, Muscovite, Biotite, Talc, Gypsum, Garner, Flourite, Apatite, Corundum.

Unit III : Palaeontology : 50 Periods : 20 Marks

(i) Definition and branches of palaeontology

(ii) Definition-fossil, index fossil, Megafossil, Macrofossils, Microfossils.

(iii) Conditions for fossilisation, mode of preservation and uses of fossils

(iv) Classification, Morphological study, time range and distribution of Lamellibranchia, Brachiopoda and Gastropoda.

Unit IV : Economic Geology 40 Periods : 15 Marks

(i) Definition - Ore, Gangue, tenor

(ii) Classification of mineral deposits.

(iii) Formation of mineral deposits-Magnatic and oxidation processes.

(iv) Study of - Origin, mode of occurrence, Geographical distribution and uses of the following ore minerals-Galena, Gold, Heamatite, Megnetite, Chromite, Chalcopyrite, Pyrite, Coal, Petroleum, Bauxite.

(v) Mineral resources of Manipur.

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GEOLOGY

CLASS-XI

PRACTICAL

One Paper **3 Hours** **30 Marks**

Unit	Unitwise Weightage	Marks
I.	Crystallography	06 marks
II.	Mineral Hand Specimens	08 marks
III.	Mineral Slides	04 marks
IV.	Fossils	06 marks
V.	Practical Note Book	04 marks
VI.	Viva-Voce	02 marks

Experiments :

(i)	Study of crystal belonging to the Normal Classes of Isometric, Tetragonal, Hexagonal Systems	4 marks
(ii)	Measurements of Interfacial angles on crystal models with the help of contact Goniometer.	2 marks
(iii)	Determination of specific gravity of minerals with the help of Jolly's spring balance, walker's steelyard balance or Chemical balance.	2 marks
(iv)	Recognition of mineral hand speciments by physical characters and simple chemical tests of the following miners - Quartz, Orthoclase, Microcline, Plagioclase, Muscovite, Biotite, tourmaline, Calcite, Homblende, talc, Gypsum, Beryl, Olivine, Garnet, Chromite, Magnetite, Heamatite, Bauxite Pyrite, Galena, Chalcopyrite, Apatite, Corundum.	6 marks
(v)	Recognition of the following rock forming mineral thinslides under polarising microscope-Garnet, Quartz, Orthoclase, Microcline, Augite, Hornblende, Biotite, Muscovite and Plagioclase.	4 marks
(vi)	Study of the morphological characters, time range of the following fossils - Arca, Spirifer, Productus Terebratula, Atrypa, Unio, Pecten, Cardita, Conus Voluta, Turritella, Mytilus, Physa.	6 marks
(vii)	Practical Note Book.	4
(viii)	Viva-Voce.	2

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DESIGN OF QUESTION PAPER

Subject : **GEOLOGY**
Paper : Theory
Class : XI
Full Mark : 70
Time : 3 Hours

I.	**WEIGHTAGE TO OBJECTIVES :**				
	Objectives			**Marks**	**Percentage**
	Knowledge (K)			10	15
	Understanding (U)			35	50
	Application (A)			21	30
	Skill (S)			04	05
	Total :			**70**	**100**
II.	**WEIGHTAGE TO FORM OF QUESTIONS :**				
	Form of Questions	**No. of Question**	**Time (in minutes)**	**Marks**	**Percentage**
	Essay/Long Answer (E/LA)	3	52	15	21
	Short Answer (SA-I)	6	54	18	26
	Short Answer (SA-II)	10	50	20	29
	Very Short Answer (VSA)	7	14	7	10
	MCQ	10	10	10	14
	Total :	**36**	**180**	**70**	**100**
III.	**WEIGHTAGE TO CONTENTS :**				
	Unit/Content:			**Marks**	**Percentage**
	I. General Geology and Physical Geology			15	21
	II. Crystallography and Mineralogy			20	29
	III. Palaeontology			20	29
	IV. Economic Geology			15	21
	Total :			**70**	**100**
IV.	**SCEHEME OF SECTIONS :** Nil				
V.	**SCHEME OF OPTIONS : 100% in SA-I and Essay**				
VI.	**DIFFICULTY LEVEL :** Difficult : 30% of the total marks Average : 50% of the total marks Easy : 20% of the total marks				

Abbreviation: K(Knowledge), U(Understanding), C(Comprehension), Exp.(Expression), Skill(S), E(Essay Type), SA (Short Answer Type), VSA (Very Short Answer Type), MCQ(Multiple Choice Question)

NOTE- (i) Two questions out of 10 (ten) questions of MCQ will be assertion & reason type question.
(ii) Only one question of SA-I will be Case Study Based question.

DESIGN
QUESTION PAPER/UNIT TEST

Subject : GEOLOGY
Unit/Paper : Practical
Class : XI
Time : 3 Hours
Full Marks : 30

I. WEIGHTAGE TO OBJECTIVES :

Objectives	K	U	A	S	Total
Percentage of Marks	13	20	27	40	100
Marks	04	06	08	12	30

II. WEIGHTAGE TO FORM OF QUESTIONS :

Forms of Questions	E	SA-I	SA-II	VSA	O	Total
No. of Questions	02	08	04	02	-	16
Marks Allotted	08	16	04	02	-	30
Estimated Time (in Minutes)	30	120	20	10	-	**180**

III. WEIGHTAGE TO CONTENT :

	Units/Sub-units	Marks
1.	Study of Crystals	4
2.	Measurement of interfacial angle (s)	2
3.	Determination of Specific Gravity	2
4.	Recognition of Mineral hand Specimens	6
5.	Microscopic study of Minerals	4
6.	Study of Fossils	6
7.	Practical Note book	4
8.	Viva Voce	2
	Total :	**30**

IV. SCHEME OF SECTIONS : Nil

V. SCHEME OF OPTIONS: Nil

VI. DIFFICULTY LEVEL :

Difficult : 30%
Average : 50%
Easy : 20%

Abbreviation : K (Knowledge), U (Understanding), A (Application),S (Skill), E (Essay Type), SA (Short Answer Type), VSA (Very Short Answer Type), O (Objective Type)

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Reference Books for Classes XI & XII :

1. Physical Geology - Dutta A.K.
   (Modern Book Agencies Ptv. Ltd. Calcutta)
2. Economic Geology - Sen and Guha
   (Modern Book Agencies Ptv. Ltd. Calcutta)
3. Principles of petrology - Tyrrel G.W.
   (B.I. Publication Pvt. Ltd. New Delhi)
4. Text Book of Palaeontology-Woods
   (C.B.S. Publisher and Distributor, Delhi)
5. Rutley's Elements of Mineralogy-Read N.H.
   (C.B.S. Publisher and Distributor, Delhi)
6. Structural Geology - M.P. Billings
   (Prentice Hall of India Ltd. New Delhi)

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