SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE

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PART – TWO

Thursday, the 7th June, 2018

NOTIFICATION

No. 38 / 2018 Date: 7 6 /2018

Subject : Introduction of new syllabi for the subject Geology at B.Sc. Part-II (Sem. III & IV) level, which to be implemented from the academic session 2018-19.

It is notified for general information of all concerned that the authorities of the University has introduced new syllabi for the subject Geology at B.Sc. Part-II (Sem. III & IV) level, which to be implemented from the academic session 2018-19. Hence the page Nos. 40 to 44, appearing in prospectus No. 2015122 be substituted respectively by the **"APPENDIX"**, which is appended with this notification.

Sd/-
(Dr.A.P.Deshmukh)
Registrar,
Sant Gadge Baba Amravati University

APPENDIX

SYLLABI PRESCRIBED FOR B.SC.PART-II (Sem. III & IV) TO BE IMPLEMENTED FROM THE ACADEMIC SESSION 2018-19

SEMESTER III
3S: GEOLOGY
STRATIGRAPHY AND PALEONTOLOGY

UNIT I : Stratigraphy – Introduction- principles and importance. Stratigraphic classification: lithostratigraphic, chronostratigraphic and biostratigraphic units. Physiographical division of India, Geological time scale; Classification, geographic distribution, lithological characteristics, fossil content and economic importance of Archaean Supergroup, Dharwar Supergroup, Sausar Group, Sakoli Group. Dongargarh supergroup, Aravali supergroup.

UNIT II : Classification, geographic distribution, lithological characteristics, fossil content and economic importance of Cuddapah Supergroup of Cuddapah basin, Kaladgis, Delhi Supergroup, Vindhyan Supergroup of Vindhyan basin, Kurnool Supergroup, Triassic of Spiti. Pakhals, Penganga Formation, Chhatisgarh supergroup.

UNIT III : Classification, geographic distribution, lithological characteristics, fossil content and economic importance of Gondwana Supergroup; Jurassic of Kutch, Rajasthan and Spiti; Deccan Trap, Lameta Formation, Bagh Beds, Cretaceous of Narmada valley and Trichonopoly,shiwalik supergroup, Stratigraphy of Maharashtra.

UNIT IV : Paleontology: Introduction, branches, importance and scope. Fossils: definition, processes of fossilization, modes of preservation, significance of fossils, types of fossils – body fossils, plant fossils, trace fossils, index and zone fossils. Classification of animal fossils - major phylums and classes. Micropalaeontology – Introduction, types of microfossils, significance.

UNIT V : Phylum Mollusca: characteristic features and classification. Class: Lamellibranchia or Bivalvia: characteristic features, morphology of hard parts, type of hinge lines and dentitions, ornamentation of shell. Tabular and systematic classification, Geological and geographical distributions. Class: Gastorpoda: characteristic features, morphology of hard parts of the shell, orientation of shell, types of shell. Tabular and systematic classification, Geological and geographical distributions. Class Cephalopoda: characteristic features, morphology of hard parts of Nautiloids, Ammonoids and Belemnites; type of suture lines, comparison between Nautiloids and Ammonoids. Tabular and systematic classification, Geological and geographical distributions. Phylum Brachiopoda: characteristic features, morphology of hard parts of class articulate and inarticulate. Types of brachial skeleton. Tabular and systematic Classification, Geological and geographical distributions.

UNIT VI : Phylum Echinodermata: Class Echinodea- characteristic features, morphology of hard parts of regularia and irregularia. Variations in the apical disc in echinoids. Tabular and systematic classification, Geological and geographical distributions. Phylum Arthropoda: Class Trilobita- characteristic features, morphology of hard parts of trilobites, Tabular and systematic Classification, Geological and geographical distributions. Phylum Coelenterate: Class Anthozoa - characteristic features, madreporaria, polyp, medusa, types of septa. Tabular and systematic classification, Geological and geographical distributions, plants of gondwana period

Practical :

I) Physiographic division of India.
II) Exercises showing major stratigraphic divisions of India.
III) Detailed description including classification, characteristic features, age and sketch diagram of important fossils of different phylums and classes (as in theory)

The Practical E□amination will be of □hours duration & carries 50 Mar□s.
The distribution of Mar□s for Practicals will be as *follows.*

1) Physiographic division of India with description	-10 marks
2) Major stratigraphic division with description	-10 marks
3) Identification of fossils	-20 marks
4) Record	- 5 marks
5) Viva –voce	- 5 marks
	50 Marks.

Reference Boo□s:

1. Ravindrakumar: Fundamentals of Historical Geology and Stratigraphy of India.
2. Krishnan: Geology of India and Burma
3. Wadia: Geology of India.
4. Deshpande G.G.: Geology of Maharashtra.
5. Ramkrishnan and Vaidyanadhan: Geology of India, Volume I and II, Geological Society of India, Bangalore.
6. M.A. Koregave (1998) Fundamentals of Invertebrate Palaeontology. Book World Enterprises, Mumbai.
7. Henry Woods (1985) Invertebrate Palaeontoogy. CBSPublishers.
8. R.C. Moore, C.G. Lalic
9. G. G. Deshpande (1998) Geology of Maharashtra Geological Society of India, Bangalore.

SEMESTER-IV
□S : GEOLOGY
STRUCTURAL GEOLOGY, TECTONICS AND GEOMORPHOLOGY

UNIT I : Attitude of bed. Clinometer and Brunton compass and its use, Outcrop in relation to topography and structure. Erosional structures – Unconformity: formation, types and recognition. Recognition of unconformities in field and map; Outlier-inlier, onlap, offlap, windows and klippe. Nappe.

UNIT II : Stress and strain: definition and types; Interrelationship of Types of deformation plastics, elastic, brittle stress-strain and time, Mohr□s Circle, Determination of strain by using initial spherical objects, Deformed conglomerate and bilateral symmetrical fossils.

UNIT III : Fold: Definition and terminology; classification – genetic and geometric; recognition of fold in field and map, causes of folding.. Faults: definition and terminology; classification of faults; causes of faulting, recognition of fault in field and map. Foliation and lineation – kinds and origin. Joints : definition and terminology; classification of joints; significance of joints

UNIT IV : Isostacy,Geosyncline - Definition, classification and evolution of mountains. Continental drift - evidences of drift. Plate tectonics - types of plate margins, causes of plate movement, evidences of plate tectonics. Sea floor spreading, Palaeomagnetism. Types of mountain and their process of formation.

UNIT V : Scope and aim of geomorphology. Fundamental concepts, Exogenic and endogenic processes, Fluvial cycle. Drainage patterns and their significance. Morphometric analysis of drainage basin and their significance.

UNIT VI : Soil formation and soil profile ,Concept of morphometric regions, karst topography, fluvial landforms, aeolian landforms, glacial landforms; Brief idea about applied geomorphology.Tools of geomorphologist.

PRACTICALS:

1. Use of Clinometer and Brunton compass
2. Outcrop- its true and apparent thickness, width of outcrop; problems on dip, strike, thickness of beds and width of outcrop (at least 30 problems).
3. Completion of outcrop - problems for conformable series and its structures (at least 10 maps).
4. Section drawing- Identification and interpretation of various landforms, geological successions, structures and geological history. Geological section drawing and interpretation for conformable series (at least 20 maps with different structures).
5. Geomorphology: Computation of gradient of a stream. Morphometric Analysis from topographic maps - determination of linear, aerial and relief aspects

PRACTICAL EXAMINATION:

The Practical Examination will be four hour duration and carries 50 marks. The distribution of marks will be as follows-

I.	Problems on Dip, Strike, Thickness of Beds and width of outcrop maps (One problem)	06 Marks
II.	Completion of outcrop maps (One map)	06 Marks
III	Section drawing and interpretation. (One section)	10 Marks
IV.	Morphometric Analysis	08 Marks
V.	Field Work	10Marks
VI.	Viva Voce	05Marks
VII.	Practical Record.	05 Marks
		50 Marks.

Field wor□ : Field work is an Integral part of Geology Syllabus. Every student should attend field work for a short duration and submit field diary, geological specimen collected and a report.

Reference Boo□s:

Structural Geology:

1. Bilings, M.P. (1997) Structural Geology. Prentice-Hall of India Pvt. Ltd., New Delhi.
2. Park, R.G. (1989) Foundations of Structural Geology. Blackie, New □ork.
3. Gokhale, N.W.(2001) Theory of Structural Geology. Blackie, New □ork.
4. Gokhale, N.W.(1991) A Manual of Problems of Structural Geology. CBS Publishers.
5. Lahi, F.H. (1987) Field Geology, CBS Publishers.
6. Gokhale, N.W. (2001) A Guide to Field Geology. CBS Publishers.
7. Chiplonkar G.W: Geological Maps, Dastane Ramchandra Publication, Pune

Tectonics:

1. Dynamic Earth - Skinner Potter - Pub.John, Wiley.
2. Dynamic Earth – Patwardhan A.M., E E.E Publications, New Delhi.
3. Dynamic Earth- Whiley, John Wiley and Sons, New □ork.
4. General Geology, Radhakrishnan N. ,V.V.P Pub, Vellore.

Geomorphology:

1. Savindrasingh (1998): Geomorphology, Prayag Pushpak Bhavan, Allahabad.
2. Thornbury William D.: Principles of Geomorphology, Wiley Eastern, Pune.
3. Negi B.S.: Geomorphology, Kedernath Ramnath, Meerut.
4. Sharma V.K.: Geomorphology, Earth processes and forms, Tata McGraw Hill Publishing Co., New Delhi.
5. Worcester P.G.: Text book of Geomorphology. Allied Publ.N.Delhi.

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