

2006

GEOLOGY - I (Optional)

000043

Standard : Degree

Total Marks : 200

Nature : Conventional

Duration : 3 Hours

Note :

- (i) Answers must be written in **English**.
- (ii) Question No. 1 is **Compulsory**. Of the remaining questions, attempt **any four** selecting one question from **each** section.
- (iii) Figures to the **RIGHT** indicate marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Candidate should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he will be penalised.
- (vii) For each slab of 10 and 15 marks, the examinee is expected to write answers in 125 and 200 words respectively.

1. Answer any four of the following questions :

- (a) Draw a diagram of typical volcano. Describe various products of volcanic eruption. 10
- (b) Define Remote Sensing and explain how remote sensing technique is useful for geological studies and for the conservation of natural resources. 10
- (c) Define stratigraphy and describe the principles of stratigraphy in detail. 10
- (d) Discuss the geologic condition, which contributes towards the successful construction and ultimate stability of bridge. 10
- (e) Discuss the internal structure of earth based on seismological evidences. 10

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SECTION - A

2. *Answer the following sub-questions :*

- (a) Describe any three recent theories regarding origin of solar system. 15
- (b) What is continental drift ? Describe the Wegner's concept of continental drift. Add a note on evidences supporting continental drift. 15
- (c) Describe the geological work done by glaciers. 10

3. *Answer the following sub-questions :*

- (a) Describe the various radiometric methods of age determination with their merits and demerits. 15
- (b) Describe the concept of plate tectonics. 15
- (c) Describe the geological work done by rivers. 10

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4. *Answer the following sub-questions :*

- (a) How the drainage patterns are developed ? Describe different drainage patterns with their significance. 15
- (b) Describe in detail the interaction of electromagnetic spectrum with Earth's surface. 10
- (c) Discuss in brief the different types of faults with their significance. 15

5. *Answer the following sub-questions :*

- (a) What is weathering ? Explain in brief different physical and chemical weathering processes. 15
- (b) What is False Colour Composite ? Explain in brief about digital image processing. 10
- (c) Differentiate between foliation and lineation with suitable examples. 15

SECTION - C

6. *Answer the following sub-questions :*

- (a) Describe the stratigraphic succession, lithology and distribution of Cudappa supergroup. 15
- (b) What is a fossil ? Describe the modes of preservation of fossils. 15
- (c) Describe the plant fossils from Gondwana Supergroup. 10

7. *Answer the following sub-questions :*

- (a) Describe the stratigraphic sequence, lithology and distribution of Gondwana Supergroup. 15
- (b) Describe the general morphological characters and geological distribution of Gasteropods. 15
- (c) What are microfossils ? Describe their classification and importance in petroleum exploration. 10

SECTION - D

8. *Answer the following sub-questions :*

- (a) Give an account of the various properties and functions of an aquifer. Classify different rocks as aquifer. 15
- (b) What is a watershed ? Describe the different physical properties of a watershed. 15
- (c) What are natural hazards ? Describe the methods of mitigation of coastal erosion. 10

9. *Answer the following sub-questions :*

- (a) Describe the vertical distribution of subsurface water. 15
- (b) Discuss the conventional and non-conventional methods of rainwater harvesting. 15
- (c) Discuss the landslide hazards. Describe different methods for the prevention of landslides. 10

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