

**2010**  
**GEOLOGY I (Optional)**

100053

**Standard : Degree**  
**Nature : Conventional**

**Total Marks : 200**  
**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/she 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) Give the anatomy of the Earth ? Discuss the data source used to understand the anatomy of earth. 10
  - (b) What is Mid Oceanic Ridge ? Explain the composition and structure of the Oceanic Crust. 10
  - (c) Define the term 'Remote Sensing', give its utility in Earth science studies. 10
  - (d) What is Stratigraphy ? Enlist different elements of stratigraphy, write in brief about stratigraphic correlation. 10
  - (e) What is mass wasting ? Enumerate different types of landslides with diagram. 10

**SECTION - A**

2. Answer the following sub-question :
  - (a) Describe the merits and demerits of the Kant and Laplace nebular hypothesis. 15
  - (b) Explain the continental drift theory with evidences. 15
  - (c) What are glaciers ? Enumerate the characteristics of glaciers and their deposits. 10
3. Answer the following sub-questions.
  - (a) What are Earthquakes ? Explain their origin and occurrence. 15
  - (b) What is Hot spot ? Discuss its role in the flood basaltic eruptions giving suitable examples. 15
  - (c) Describe the various types of sand dunes. 10

**P.T.O.**

**SECTION - B**

4. Answer the following sub-questions
- (a) Define Drainage patterns, describe the factors that control the drainage pattern. 15
- (b) Describe the use of aerial photographs in ground water prospecting. 10
- (c) What are faults? Enlist its different types and give the criteria for their recognition in the field. 15
5. Answer the following sub-questions
- (a) Draw a neat diagram of a soil profile and describe the various horizons and describe the soil forming processes. 15
- (b) Describe the different photo recognition elements used in interpretation of 'Panchromatic B' and W aerial photographs. 10
- (c) Describe the structural elements associated with folds. 15

**SECTION - C**

6. Answer the following sub-questions
- (a) Give the Lithostratigraphic classification for 'Dharwar Supergroup'. 15
- (b) Describe the morphology, types and forms of Gastropods. 15
- (c) What is micropaleontology? What are foraminifera? Discuss the importance of foraminifera in petroleum exploration. 10
7. Answer the following sub-questions.
- (a) Give the age, distribution and origin of Deccan Trap. 15
- (b) Discuss the evolution of horse. 15
- (c) Discuss the different modes of preservation of fossils. 10

**SECTION - D**

8. Answer the following sub-questions.
- (a) Define aquifer? State different types of aquifer and comment on aquifer parameters. 15
- (b) What is watershed? Classify the watersheds, explain drainage line treatment methods in Water shed developments. 15
- (c) Describe the various engineering methods used in slope stabilization. 10
9. Answer the following sub-questions. 15
- (a) Enumerate the vertical distribution of Ground water. 15
- (b) Explain the Electrical Resistivity methods of ground water prospecting. 10
- (c) What is 'Tsunami' Give the origin and means of mitigation of 'Tsunami' related hazards.

- o O o -