2017

(CBCS)

(2nd Semester)

GEOLOGY

SECOND PAPER

(Petrology and Geochemistry)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. Write detailed notes on any *two* of the following : 5×2=10

(a) Composition and types of magma

(b) Texture of igneous rocks based on their granularity

(c) IUGS classification of plutonic igneous rocks

2. Write a detailed note on 'Bowen's reaction series'; also add notes on any *two* of the following : 4+3+3=10

(a) Petrographic description of granite

(b) Petrographic description of diorite

(c) Petrographic description of basalt

UNIT—II

3. Give an account of the sedimentary structures. 10

4. Write the petrography of the following : 5+5=10

(a) Sandstone

(b) Conglomerate

UNIT—III

5. Write detailed notes on the following : 6+4=10

(a) Types of metamorphism

(b) Agents of metamorphism

6. Write a note on metamorphic facies. 10

UNIT—IV

7. Write a note on geochemical classification of elements. 10

8. Write notes on the following : 5+5=10

(a) Cosmic abundance of elements

(b) Principles of diadochy replacement

UNIT—V

9. *(a)* Write a brief note on SEM. 3

(b) Write the principle, sample preparation and applications of XRF. 2+3+2=7

10. *(a)* Write the principle of XRD. 3

(b) Write the principle, sample preparation and applications of ICP-MS. 3+2+2=7

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Subject Code :
GEOL/II/EC/03 (CBCS)

Booklet No. A

Date Stamp .....

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To be filled in by the Candidate

CBCS
DEGREE 2nd Semester
(Arts / Science / Commerce / .....) Exam., **2017**
Subject .....
Paper .....

To be filled in by the Candidate

CBCS
DEGREE 2nd Semester
(Arts / Science / Commerce / .....) Exam., **2017**
Roll No. .....
Regn. No. .....
Subject .....
Paper .....
Descriptive Type
Booklet No. B .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

Signature of Scrutiniser(s) *Signature of Examiner(s)* *Signature of Invigilator(s)*

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(CBCS)

(2nd Semester)

GEOLOGY

SECOND PAPER

(Petrology and Geochemistry)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 10)

1. Choose the correct answer and put its number within the brackets provided : 1×10=10

(a) Igneous rock formed deep beneath the earth's surface is called

(i) volcanic

(ii) plutonic

(iii) hypabyssal

(iv) sedimentary [ ]

(b) A branch of petrology that deals with the description and classification of igneous rocks is called

(i) petrogenesis

(ii) lithology

(iii) petrography

(iv) pedology [ ]

(c) Exfoliation occurs due to

(i) frost action

(ii) biological activities

(iii) release of stress upon a rock

(iv) contraction and expansion due to temperature change [ ]

(d) Which of the following is accessory mineral in sandstone?

(i) Heavy minerals

(ii) Quartz

(iii) Feldspar

(iv) Lithic fragments [ ]

(e) Metamorphic texture in which large crystals occur in fine groundmass is called

(i) crystalloblastic texture

(ii) porphyroblastic texture

(iii) palimpsest texture

(iv) lepidoblastic texture [ ]

(f) Cataclastic structure is due to

(i) contact metamorphism

(ii) thermal metamorphism

(iii) intense shear

(iv) active fluids [ ]

(g) For vein-type Au deposits, pathfinder element is

(i) As

(ii) Fe

(iii) Mo

(iv) Hg [ ]

(h) Concentration of a particular element that separates high and low data values of fundamentally different characters is called

(i) background value

(ii) standard value

(iii) threshold value

(iv) clarke value [ ]

(i) An instrument that is widely used for the study of clay minerals is

(i) EPMA

(ii) XRF

(iii) SEM

(iv) XRD [ ]

(j) An instrument which can analyze 1 to 5 microns in width is

(i) XRD

(ii) SEM

(iii) ICP-MS

(iv) EPMA [ ]

SECTION—B

(*Marks* : 15)

2. Write on *one* from each Unit : 3×5=15

UNIT—I

(a) Pahoehoe and ââ structure

(b) Batholith and dyke

UNIT—II

(c) Waddell's roundness

(d) Cross stratification

UNIT—III

(e) Gneiss

(f) Schist

UNIT—IV

(g) Trace elements

(h) Types of meteorites

UNIT—V

(i) Electron microprobe analysis

(j) Principle of SEM

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