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(3rd Semester)

GEOLOGY

THIRD PAPER

(Petrology and Economic Geology)

(PART : A—OBJECTIVE)

(*Marks* : 20)

The figures in the margin indicate full marks for the questions

Answer **all** questions

SECTION—I

(*Marks* : 5)

1. Choose the correct answer and put its number within the brackets provided :   1×5=5

   (a) In the crystallization of unicomponent magma, the temperature region in which the generation of crystal is slow, is called

      (i) labile region

      (ii) metastable region

      (iii) eutectic temperature

      (iv) None of the above   [   ]

(b) The degree of removal of edges and corners of grains in sedimentary rocks is referred to as

   (i)   roundness

   (ii) roughness

   (iii) smoothness

   (iv) sphericity   [   ]

(c) 'Jhava' (pumice stone) is a product of

   (i)   load metamorphism

   (ii) regional metamorphism

   (iii) thermal metamorphism

   (iv) None of the above   [   ]

(d) Mineral having economic value is called

   (i)   ore

   (ii) tenor

   (iii) gangue

   (iv) metal   [   ]

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(e) Which of the following is not a station of nuclear power in India?

    (i) Kalpakkam

    (ii) Tehri

    (iii) Tarapur

    (iv) Kudankulam   [   ]

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SECTION—II

(*Marks* : 15)

2. Write on the following in about *3* or *4* sentences each : 3×5=15

   (a) Laccolith and Batholith

(b) Graded Bedding

(c) Granoblastic Texture

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(d) Morphology of Syngenetic Ore Deposits

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(e) Solar Energy

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(3rd Semester)

GEOLOGY

THIRD PAPER

(Petrology and Economic Geology)

Full Marks : 55

Time : 2 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 35)

*The figures in the margin indicate full marks
for the questions*

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

UNIT—I

1. Give a brief account on any *two* of the
   following :   3½×2=7

   (a) CIPW classification of igneous rocks

   (b) Petrographic description of Gabbro or
   Basalt

   (c) Texture of igneous rocks based on its
   fabric

(*Turn Over*)

2. Write notes on any *two* of the following :

$3\frac{1}{2}×2=7$

(a) Bowen's reaction series

(b) Composition and types of magma

(c) Solid solution

UNIT—II

3. Write the descriptive petrography of the following : $3\frac{1}{2}+3\frac{1}{2}=7$

(a) Conglomerate

(b) Sandstone

4. Write a descriptive note on genesis of clastic and non-clastic sedimentary rocks. 7

UNIT—III

5. Define metamorphism. Describe the types of metamorphism. 1+6=7

6. Write notes on any *two* of the following :

$3\frac{1}{2}×2=7$

(a) Quartzite

(b) Slate

(c) Marble

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UNIT—IV

7. Write a note on the occurrence, origin and distribution of copper in India.   7

8. Describe different factors that control mineral availability.   7

UNIT—V

9. What is geothermal energy? Write a brief note on the working principle of geothermal energy.   2+5=7

10. Describe the origin of coal.   7

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