

III/GEOL (iii)

2 0 1 5

(3rd Semester)

GEOLOGY

THIRD PAPER

(Petrology and Economic Geology)

Full Marks : 55

Time : 2½ 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 accounts on any *two* of the following :

$3\frac{1}{2} \times 2 = 7$

- (a) Concordant bodies in unfolded regions
- (b) QAPF classification of igneous rocks
- (c) Petrographic description of granite or diorite

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(Turn Over)

2. Answer/ Write notes on any *two* of the following : $3\frac{1}{2}\times 2=7$

- (a) Mixed crystals and its petrological significance
- (b) Bowen's reaction series.
- (c) Define magma. Also write its composition and types.

UNIT—II

3. Describe in detail the texture of sedimentary rocks. 7

4. Write short notes on the following : $3\frac{1}{2}\times 2=7$

- (a) Denudation
- (b) Petrography of limestone

UNIT—III

5. Discuss the types of metamorphism in detail. 7

6. Give accounts on any *two* of the following : $3\frac{1}{2}\times 2=7$

- (a) Schistose texture
- (b) Load pressure
- (c) Barrovian zone
- (d) Palimpsest texture

UNIT—IV

7. Describe the origin of aluminium and its distribution in India. 7
8. Write a note on the morphology of concordant and discordant ore bodies. 7

UNIT—V

9. Discuss the biogenic origin of petroleum and also write its distribution in India. 4+3=7
10. What is biomass energy? Write the advantages and disadvantages of biomass energy. 1+6=7

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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

SECTION—I

(Marks : 5)

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

(a) The low-temperature secondary structure/ mineral found in the vesicles of some volcanic rocks is called

(i) pumice

(ii) 'aa' structure

(iii) amygdale

(iv) None of the above

[]

(b) Which of the following sedimentary structures indicate palaeo-cement direction?

(i) Cross-bedding

(ii) Flute marks

(iii) Rain prints

(iv) Mud cracks

[]

(c) A schistose rock has

(i) alternating bands

(ii) parallel orientation of minerals

(iii) granular appearance

(iv) spotted appearance

[]

(d) Reserves plus estimated undiscovered deposits is called

(i) tenor

(ii) ore mineral

(iii) resource

(iv) cut-off

[]

(e) Energy is generated with least CO₂ emission in

(i) bagasse (Marks : 15)

(ii) coal

(iii) natural gas

(iv) geothermal energy [each :]

(4)

SECTION—II

(Marks : 15)

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

(a) Porphyritic and poikilitic textures

(b) Ripple marks

(i) bagasse

(ii) coal

(iii) natural gas

(iv) petroleum

(c) Zones of metamorphism

2. Write on the following in about 3 or 4 sentences each.

(i) Porphyritic and pyritic rocks

(d) Metallogenic province (e) Tidal energy

GEOLOGY

TOTAL PAPER

(Petrology and Historical Geol.)

(PART : A—OBJECTIVE)

(Marks : 20)

The figures in the margin indicate full marks for the questions

SECTION - I

(Marks : 5)

1. Choose the correct answer and put its number within the brackets provided. (5=5)

(a) The low-temperature secondary structure/ mineral found in the vesicles of some volcanic rocks is called

- (i) perthite
- (ii) 'aa' structure
- (iii) amygdale
- (iv) None of the above *

(e) Tidal energy

(i) Cross-bedding

(ii) Plane stratification

(iii) Rain marks

(iv) Mud cracks

(f) A schistose rock

(i) Alternating bands

(ii) Parallel orientation of minerals

(iii) Granular appearance

(iv) Spotted appearance

(g) Minerals plus residual unconsolidated deposits is called

(i) Tuff

(ii) Ore mineral

(iii) Resource

(iv) Cut-off
