

EX/SC/GEOL/PG/CORE/TH/10/2025

M. SC. APPLIED GEOLOGY EXAMINATION, 2025

(2nd Year, 1st Semester)

FUEL GEOLOGY

PAPER : CORE/TH/10

Time : 2 Hours

Full Marks : 40

(Use separate Answer-Scripts for each Part)

Part-I (20 marks)

- 1.** Answer the following questions (*any three*) : 5×3=15

CO 1

- (a) What are the favorable environmental conditions of coal formation? Give brief descriptions.

CO 2

- (b) Provide a graphical representation of the formation of gas at different stages during coalification.

CO 3

- (c) Describe a method of coal cleaning.

CO 5

- (d) Why is coal mineral study important in coal-bed methane exploration? Give a brief description of coal-bed methane resources in India. 2+3

- 2.** Write short notes (*any two*) : 2½×2=5

CO 3

- (a) Grading of coking coal in India

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[Turn Over]

(2)

CO 5

(b) Benefits of coal beneficiation process

CO 4

(c) Compositional changes of organic matter during coalification

Part–II (20 marks)

Answer *any ten* questions in brief : 2×10=20

1. What is well logging? What is the difference between ‘wireline logging’ and ‘logging while drilling’? **C8**
2. What are porosity logs? How is porosity of a medium calculated? **C8**
3. What does a gamma ray log record? What are the main sources of gamma radiation in rocks? **C8**
4. What do the SP deflections on a log represent? What is the diffusion potential? **C8**
5. What can resistivity logs be used for? What is the scale of a resistivity log? **C8**
6. How does a sonic log work? How do you correct tool tilting effects in a sonic log? **C8**

(3)

7. What are drilling fluids used for? **C8**
8. What is CBL and VDL? What is a cement bond log used for? **C8**
9. Explain stratigraphic traps related to unconformity? **C7**
10. Write a short note on ‘Rock-Eval Pyrolysis’. **C7**
11. List the types of source rocks of petroleum. **C7**

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