

**M. SC. APPLIED GEOLOGY EXAMINATION, 2022**

( 2nd Year, 1st Semester )

**FUEL GEOLOGY (COAL AND PETROLEUM)**

**PAPER – CORE/TH/10**

Time : Two hours

Full Marks : 40

(Use a separate Answer script for each Part)

**PART – I (20 Marks)**

1. Define liquefaction of coal. Discuss the main processes of liquefaction. Write down the properties controlling the liquefaction yield from a coal. 1+5+2

Or,

What is coke? Write down the criteria for coking coals. How is the fluidity and swelling of a coal measured? Write a short note on coke oven by-products. 1+1+4+2

2. Differentiate between 'biochemical' and 'geochemical' coalification. Write down the major changes (both physical and chemical) occurring during geochemical coalification. 2+5

Or

Define microscopic constituents of coal. Broadly classify them. What are the microlithotypes? Describe different microlithotypes with respect to their microscopic constituents. 1+1+1+4

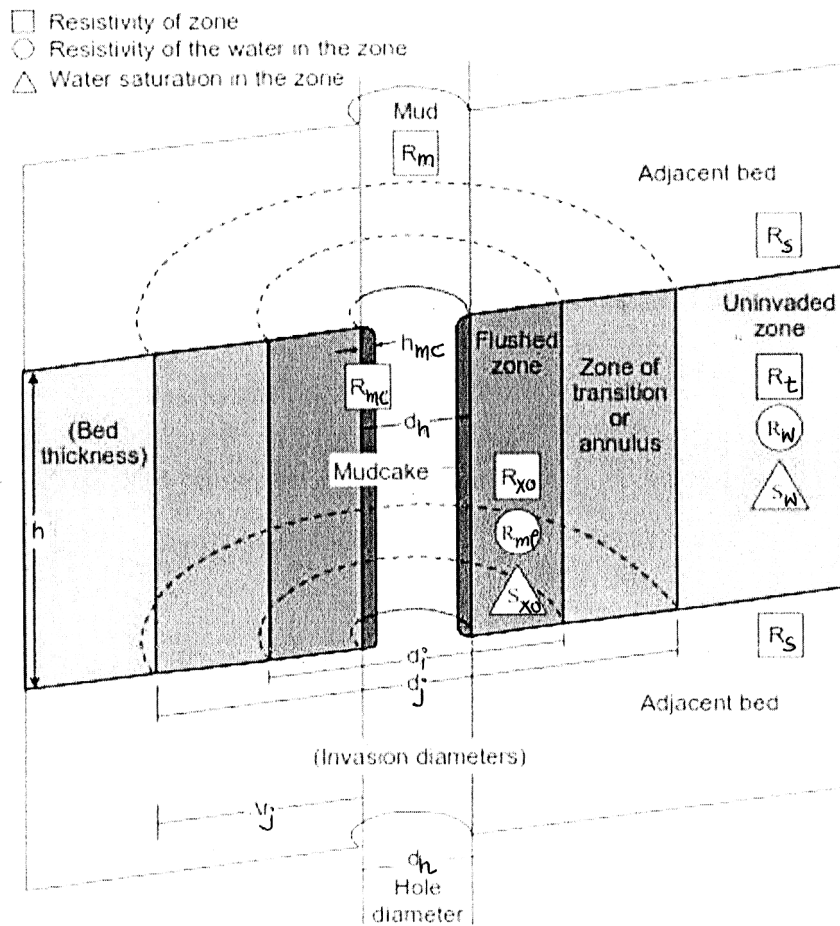
3. Write short note on (any two)
- Determination of total sulfur in coal.
  - Types of boilers used for steam generation in power plant.
  - Coal in dmmf basis.

[ Turn over

**PART – I (20 Marks)**

Answer the following questions briefly (any four)

1. From the figure below, discuss all the symbols and terms involved



From NExT, 1999, after Schlumberger

2. When does a sandstone show high values of gamma-ray counts? How can such a condition be confirmed using well logs?
3. What is the principle of Neutron logging ?
4. Differentiate between the Sonic and Density logging.
5. What is 'Enhanced Oil Recovery (EOR)' ? Discuss briefly the various methods of EOR.