

**MASTER OF SCIENCE EXAMINATION, 2019**

**(2nd Year, 1st Semester)**

**APPLIED GEOLOGY**

**Fuel Geology**

**Paper : - X**

Time : Two hours

Full Marks : 50

Use a separate answer script for each group.

**GROUP - A**

(Petroleum Geology)

Answer *Q.no. 1* and any *two* from the rest.

1. Mark and write the names of Category-I and Category-II sedimentary basins for hydrocarbon resources/reserves in the supplied map of India. 5
2. Write the process of migration of petroleum? Explain the primary and secondary migration of petroleum. 10
3. Explain the important logging methods used for hydrocarbon exploration. 10
4. What are reservoir traps? Name the types of traps. Describe the principal features of structural traps. 10

(Turn over)

( 2 )

5. Write short note (any *two*) : 2x5=10  
(a) Borehole environment  
(b) Primary porosity  
(c) Drilling fluid

**GROUP - B**

(Coal Geology)

Answer *all* questions.

6. Define “liquefaction of coal”. Discuss the major processes of liquefaction. Write down the properties controlling the liquefaction yield from a coal. 1+7+2

**OR**

What are the components of ultimate analysis of coal ? What do you mean by “Coal in dmmf basis” ? Write down the basic principle of “International Coal Classification” and the fundamental classes of coal. 1+3+6

7. Distinguish ‘biochemical’ and ‘geochemical’ coalification. Write down the major changes (both physical and chemical) occurring during geochemical coalification. 3+7

( 3 )

**OR**

What is coke ? Write down the characteristic properties of coking coals. How are the fluidity and swelling of coal measured ? Write a short note on coke oven by-products. 1+2+4+3

8. Write short note on (any *two*) 5  
(a) Determination of total sulfur in coal.  
(b) Types of boilers used for steam generation in power plant.  
(c) Gondwana coals of India.

— X —