

SEMESTER VII
MAJOR COURSE – MJ 16
FOSSIL FUEL GEOLOGY
Full Marks: 75 Time: 3 Hours

GROUP – A

Q1. Choose the correct answer:

1. The study of coal under a microscope is mainly related to:
(a) Coal petrology (b) Hydrology (c) Seismology (d) Geomorphology **(1 mark)**
2. CBM stands for:
(a) Coal Bed Methane (b) Carbon Bed Mineral (c) Coal Bitumen Matter (d) Coal Basin Methanation **(1 mark)**
3. The main hydrocarbon component of natural gas is:
(a) Methane (b) Benzene (c) Ethane only (d) Propane only **(1 mark)**
4. A porous and permeable rock capable of storing hydrocarbons is called:
(a) Reservoir rock (b) Cap rock (c) Source rock only (d) Seal mineral **(1 mark)**
5. Jharia coalfield is located in:
(a) Jharkhand (b) Rajasthan (c) Assam (d) Tamil Nadu **(1 mark)**

Q2. Define coal and explain its origin. Give a brief account of the basic classification of coal. (5 marks)

Q3. What is Coal Bed Methane (CBM)? Discuss its significance and occurrence in India. (5 marks)

GROUP – B

Answer any four questions. (4 × 15 = 60)

Q4. Describe the fundamentals of coal petrology. Discuss macroscopic and microscopic characteristics of coal and the major constituents of coal. **(15 marks)**

Q5. Explain Coal Bed Methane. Discuss the global and Indian scenario of CBM, methods of underground coal gasification and coal liquefaction. **(15 marks)**

Q6. Describe the chemical composition and physical properties of crude petroleum. Explain the origin and formation of petroleum. **(15 marks)**

Q7. Explain petroleum reservoirs and reservoir rocks. Discuss porosity, permeability, reservoir fluids and the classification and general properties of reservoir rocks. **(15 marks)**

Q8. Discuss petroleum traps in detail. Explain structural, stratigraphic and combination traps, along with the role and properties of cap rocks. **(15 marks)**

Q9. Give an account of the occurrence and distribution of coal and petroleum in India, with special reference to the major coalfields of Jharkhand. **(15 marks)**