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**Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019**  
**Fuel Technology and Coal Preparation**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. What are the various energy resources? Explain the sequence of  $u^{235}$  reaction in Nuclear Reactor with diagram. (08 Marks)
- b. Classify with examples fuels based on its occurrences. (04 Marks)
- c. Explain Liquefaction and Gasification of solid fuels. (08 Marks)
- 2 a. What are the classification of coal on occurrence, rank and grade? (08 Marks)
- b. Write a note on origin and composition of coal. (06 Marks)
- c. Mention physical properties of coal. Write brief note on moisture and air and ash. (06 Marks)
- 3 a. Explain the mechanism of coal combustion. (05 Marks)
- b. Write brief note on low temperature and high temperature carbonization. (08 Marks)
- c. Write the process of Coal Tar preparation. Mention its uses. (07 Marks)
- 4 a. Explain the origin of petroleum and mention the classification. (06 Marks)
- b. Explain three stages of distillation of crude oil. (07 Marks)
- c. Name the types of Gaseous fuels. Explain Natural gas. (07 Marks)

**PART – B**

- 5 a. Explain the method of coal preparation. (06 Marks)
- b. What are the scope and need for coal beneficiation? (07 Marks)
- c. What are the criteria to define workability character of coal? (07 Marks)
- 6 a. What is float-and-Sink test of a coal sample? (08 Marks)
- b. Mention method of constructing workability curves in coal cleaning process. (06 Marks)
- c. Explain yield gravity curve and its characters. (06 Marks)
- 7 a. Write the characteristics of Tramp curve. What does the Tramp curve indicate? (10 Marks)
- b. Write short notes on :
  - (i) Specific Gravity criteria in coal washing (05 Marks)
  - (ii) Classification of coal cleaning process. (05 Marks)
- 8 a. Explain cyclone washer with a neat sketch. (06 Marks)
- b. What are the advantages of heavy medium separators? (07 Marks)
- c. How does hydrocarbon oil help in oil agglomeration process? (07 Marks)

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