

238412(38)

Dip. in Engg. (Fourth Semester) Examination,
April-May 2018

(Mett. Engg. Branch)

FUEL, FURNACE and REFRACTORY (F.F.R.)

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Explain manufacturing of coke by By Product method with neat & clean diagram. 10
- (b) Explain proximate analysis of coal & origin of coal. 10

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PTO

2. (a) Explain origin of Petroleum and explain advantages & disadvantages of liquid fuels. 10
- (b) Explain Refining of Petroleum Fraction. Obtain during refining process. 10
3. Explain following with composition & uses : 4×5=20
- (i) Producer Gas
- (ii) Carbureted water gas
- (iii) Blast furnace gas
- (iv) Natural gas
4. (a) Explain PCE & spalling resistance test. 10
- (b) Explain modes of heat transformation. Explain thermocouples with their working principle. 4+6
5. (a) Explain working principle of Resistance Thermometer. 10
- (b) Define Refractory & write the properties of refractory. Explain manufacturing process of Silica Refractory. 2+3+5=10
6. Write short notes on : 4×5=20
- (i) Carbonisation process

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- (ii) Bituminous coal
- (iii) Peltier & Thomson effect
- (iv) Properties of metallurgical coal