

**3rd Sem. / Ceramic Engg**  
**Subject : Fuels and Furnaces**

Time : 3 Hrs.

M.M. : 60

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1 The minimum amount of air which supplies the required amount of oxygen for complete combustion of a fuel is called \_\_\_\_\_.  
a) Theoretical Air      b) Actual Air  
c) Excess Air      d) All of the above
- Q.2 \_\_\_\_\_ is also known as black gold.  
a) Petrol      b) Coal  
c) Wood      d) Ash
- Q.3 Furnace pressure is control by  
a) Damper      b) Fuel pressure  
c) air pressure      d) all of these
- Q.4 Thermocouple is used to measure the  
a) Pressure      b) Temperature  
c) Density      d) Calorific value

Q.5 The \_\_\_\_\_ value is the measurement of heat or energy produced when a unit mass of fuel is burnt.

- a) Calorific
- b) Viscosity
- c) Density
- d) Specific gravity

Q.6 Which kiln is Batch Kiln?

- a) Rotary Kiln
- b) Shuttle Kiln
- c) Tunnel Kiln
- d) Natural draft furnace

### **SECTION-B**

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Combustion is an chemical reaction. (True/False)

Q.8 Powdered coal is known as Pulverized coal. (True/False)

Q.9 Moisture is determined by heating coal sample at 105°-110°C. (True/False)

Q.10 Bomb calorimeter is used to determine \_\_\_\_\_ the value of fuel. (Viscosity, Calorific)

Q.11 Thermocouple is used to measure temperature. (True/False)

Q.12 Shuttle kiln is a batch type of kiln. (True/False)

### **SECTION-C**

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Define theoretical and excess air.

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Q.14 List advantages liquid fuels.

Q.15 Explain the mechanism of draft.

Q.16 Define octane and cetane number

Q.17 Explain the orsat apparatus.

Q.18 Explain muffle furnace.

Q.19 Explain proximate analysis of coal.

Q.20 Explain the thermocouple pyrometer.

Q.21 Explain the term fire box and damper of kiln.

Q.22 Write the examples of the solid, liquid and gaseous fuels.

### **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain in brief working of downdraft kiln with diagram.

Q.24 Explain the determination of viscosity with the help of redwood viscometer.

Q.25 Explain the working of infrared pyrometer with neat sketch.

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