

- Q.23 Write properties and uses of producer gas.
- Q.24 Tell the meaning of pulverized coal and list its uses.
- Q.25 Explain working of orsat apparatus.
- Q.26 Write the classification of coal.
- Q.27 Explain working of shuttle kiln.
- Q.28 List example of solid, liquid and gaseous fuels.
- Q.29 Tell the meaning of theoretical and excess air.
- Q.30 Define calorific value. State its units. Name the apparatus used to determine calorific value.
- Q.31 Explain mechanism of draft.
- Q.32 Discuss burners of gaseous fuels.
- Q.33 Explain the use of box and damper in kiln.
- Q.34 Differentiate between Solid and Liquid fuels.
- Q.35 Define flash & fire point.

#### SECTION-D

**Note: Long answer questions. Attempt any two questions out of three Questions. (2x10=20)**

- Q.36 How will you determine calorific value of a coal with the help of bomb calorimeter? Explain.
- Q.37 Explain the manufacturing process of water gas and list its properties and uses.
- Q.38 Describe the proximate analysis of a coal.

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**3rd Sem.**  
**Branch : Ceramic**  
**Sub: Fuels & Furnaces**

Time : 3 Hrs.

M.M. : 100

#### SECTION-A

**Note: Multiple type Questions. All Questions are compulsory.**

- Q.1 \_\_\_\_ is used to find calorific value of coal .  
a) Abels Apparatus      b) Pensky Martin Apparatus  
c) Bomb calorimeter      d) Thermometer
- Q.2 Working of Thermocouple is based on \_\_\_\_ effect  
a) Seeback      b) Tyndal  
c) Brownian      d) Optical
- Q.3 CO stands for  
a) carbon pentaoxide      b) carbon dioxide  
c) carbon mono oxide      d) carbon trioxide
- Q.4 Which of the following can be transported through pipes?  
a) Lump coal  
b) Pulverised or powdered coal  
c) Lump coke      d) Wood

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- Q.5 \_\_\_\_\_ draft is used in kilns  
 a) Natural                              b) Balanced  
 c) Mechanical                        d) All of these
- Q.6 The \_\_\_\_\_ is the measure of heat or energy.  
 a) Pressure value                      b) Viscosity value  
 c) Density value                        d) Calorific value
- Q.7 The \_\_\_\_\_ is defined as the percentage by volume of isooctane present in a mixture of n-heptane and iso-octane.  
 a) Calorific Number                  b) Octane number  
 c) Viscosity Number                  d) Density Number
- Q.8 Which of the following indicate burning of vapour for momentarily?  
 a) Fire Point                              b) Flash Point  
 c) Ignition temperature              d) None of the above
- Q.9 \_\_\_\_\_ is NOT type of coal  
 a) Peat                                      b) Lignite  
 c) Anthracite                              d) None of the above
- Q.10 \_\_\_\_\_ is used for find the flash point of liquid fuels.  
 a) Bomb Calorimeter  
 b) Pensky Martin's Apparatus  
 c) Abbel's Apparatus  
 d) Both 'C' & 'D'

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## SECTION-B

**Note: Objective type questions. All questions are compulsory. (10x1=10)**

- Q.11 \_\_\_\_\_ is used to analyse flue gas. (Orsat apparatus, Bomb calorimeter)
- Q.12 \_\_\_\_\_ viscometer is used to determine viscosity of oil. (Redwood, Vicat)
- Q.13 Rotary kiln is type of batch kiln. (True/False)
- Q.14 Seger cones are used to measure temperature. (True/False)
- Q.15 Coke is produced from coal. (True/False)
- Q.16 Combustion is an \_\_\_\_\_ reaction. (Electrical / Chemical)
- Q.17 Same burner can be used for liquid and gaseous fuel. (True/False)
- Q.18 Air contains 78% of oxygen by volume. (True/False)
- Q.19 Chimney gas is also known as flue gas. (True/False)
- Q.20 The function of draft in a combustion system is to exhaust the products of combustion into the atmosphere. (True/False)

## SECTION-C

**Note: Short answer type Questions. Attempt any twelve questions out of fifteen Questions. (12x5=60)**

- Q.21 List the advantages of solid fuels over liquid fuels.
- Q.22 Tell difference between flash and fire point.

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