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4th Sem. / Mech. Metallurgy/ Foundry & Forging

Subject : Fuel Refractory & Furnaces

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) Define combustion.

b) What is cobe.

c) Name any two non conventional fuel.

d) Name most frequent method of transporting a fuel

e) What is L.P.G.

f) Give two uses of petroleum.

g) Define Refractory.

h) Name the two most important requirement for combustion.

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 Explain in detail the various safety measures taken for storage of gaseous fuels.

Q.4 What are heat insulating materials. Why are they used.

Q.5 Explain in detail the various desirable properties for an ideal fuel.

Q.6 What is waste heat recovery? Why is it done? State its various advantages.

Q.7 Explain in detail the various methods of providing draft.

i) What is a Mortar.

j) Define Draft.

k) What is Induction furnace.

l) Define waste utilization.

m) Name the most common fuel used in villages.

n) Name any two refractory material.

o) Name any two test performed on refractory.

p) Name any two types of furnaces.

q) Define conduction.

r) Give two properties of an Ideal fuel.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) Explain the process of combustion in short.

ii) Differentiate between conventional and non conventional fuels.

iii) How a petroleum based fuels are stored.

iv) What is the need to test a fuel.

v) Drive an expression to find out the air requirement for a fuel combustion.

vi) Give the various uses of refractory.

vii) What are special refractory?

viii) Explain what are Ramming masses.

ix) Discuss the method of coal handling in a thermal power plant.

x) Explain any one test performed on refractory.

xi) How furnaces are classified.

xii) Why draft is necessary.

xiii) Explain any one method of heat transfer in a furnace.

xiv) Write short note on waste heat utilization.

xv) What is muffle furnace.