Q.20 A ball clay sample of 800 gram have moisture content of 10%. After firing weight is 500. Calculate dry weight of ball clay and % loss on ignition.

Q.21 A brick of size 50*50*50 cm is pressed. It has drying shrinkage of 15% calculate size of brick after drying.

Q.22 A sample of refractory brick is checked for porosity by water displacement method. It has dry weight, suspended weight and saturated weight of 100 gram, 90 gram and 105 gram respectively. Calculate its apparent porosity.

SECTION-D

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

Q.23 A white ware body is made with Ball clay 15 kg, china Clay-10 kg, Potash Feldspar-20 kg, Quartz-10 kg. These material are having loss on ignition of 15%, 10%, 1% and 0%. Calculate fired weight of the batch.

Q.24 A casting slip is to be made by mixing 3 kg of clay (density 2.0 gm/cc) with water. The slurry density is found to be 1.5 gm/cc. Calculate quantity of clay be added to make density of slip 1.6 gram/cc.

Q. 25 Define strength. Explain cold crushing, modulus of rupture and tensile strength.

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4th Semester/ Ceramic
Subject : Ceramic Process Calculations

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 Moisture content determination helps in

a) Deciding allowances to be made in Dimensions

b) Strength of fired product

c) De-Colorisation of glass

d) All of these

Q.2 Loss on ignition is the result of

a) Moisture content b) Organic matter

c) Volatile matter d) All of these

Q.3 Factors affecting drying efficiency is _______.

a) Colour b) Humidity

c) Flow of Air d) Both B & C

Q.4 The weight of 200ml of slip is 400 gram. Calculate density of slip?

a) 1.5 gram/ml b) 1.0 gram/ml

c) 2.5 gram/ml d) 2 gram/ml

Q.5 Unit of specific Gravity is

a) gram/kg b) kg/mm^3

c) gram/ml d) No Unit

Q.6 Density of slurry can be decreased by ________.

a) Adding Water

b) By reducing Body mix

c) Both A & B

d) None of these

SECTION-B

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

Q.7 True porosity include open pores. (True/False)

Q.8 Calculate molecular weight of Soda.

Q.9 Apparent porosity is the volume of open pores. (True/False)

Q.10 The weight of Alumina is 200 gram having LOI 10%. Calculate its weight after firing?

Q.11 The cold crushing strength of ceramic ware is generally greater than tensile strength?

Q.12 The green size of tile is 10cm* 10cm*5cm. If linear shrinkage is 10% what will be the size of ceramic tile having after firing?

SECTION-C

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

Q.13 Calculate the molecular weight of ball clay.

Q.14 Explain significance of moisture determination.

Q.15 How will you reduce density of slip?

Q.16 State the Brongniert's formula. Write its applications in Ceramic Industry.

Q.17 Calculate the density of slip made by :-

Clay 20 kg (Specific Gravity 2.5), Feldspare 15 Kg (Specific Gravity – 2.56), Water 10 liter.

Q.18 Explain drying and firing shrinkage.

Q.19 Calculate average linear drying shrinkage

Plastic Length	Dry Length
10 cm	8.5 cm
10 cm	9.0 cm
10 cm	8.6 cm