

- Q.30 Explain importance of phase equilibrium studies in glass.
- Q.31 Explain process of determination of hardness of glass.
- Q.32 Hot temperature of furnace is controlled? Explain.
- Q.33 Discuss chemical composition of window glass or sheet glass.
- Q.34 Name five raw materials of glass.
- Q.35 A batch is made by mixing 100 kg of sand 40 kg of soda feldspar and 20 kg of limestone. Calculate its chemical composition. (Take atomic weight of Si=28, O=16, Ca=40, Na=23, C=12, Al=27).

SECTION-D

Note: Long Answer type question. Attempt any two questions. (2x10=20)

- Q.36 Explain functions of glass making oxides.
- Q.37 Explain construction and working of glass tank furnace.
- Q.38 Explain regenerators and recuperators.

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4th Sem, **Branch :**Cermaic Engineering
Subject : Glass Technology-I

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory. (10x1=10)

- Q.1 Glass is made up of
- a) Inorganic materials b) Organic materials
 - c) Metals d) Organic and metals
- Q.2 Soda results in _____
- a) Fluidity b) High Expansion
 - c) Solubility d) All of the above
- Q.3 Melting of glass is carried out in _____ furnace.
- a) Pot b) Tank
 - c) Both A & B d) None of these
- Q.4 Which of the following is raw material of alumina?
- a) Feldspar b) Clay
 - c) Alumina hydrate d) All of these
- Q.5 Which of the following is network former?
- a) Silica b) Soda
 - c) Alumina d) Lead Oxide

- Q.6 The blow pipe is used to make
 a) Hollow ware b) Flat ware
 c) Both A & B d) None of these
- Q.7 Soda lime glass contains
 a) Soda b) Lime
 c) Silica d) All of these
- Q.8 Pot furnace is
 a) Batch furnace b) Continuous furnace
 c) Lime furnace d) Rotary furnace
- Q.9 Silica increases _____ of molten glass
 a) Fluidity b) Viscosity
 c) Thermal Expansion d) All of these
- Q.10 Which of the following is acidic oxide?
 a) Silica b) Soda
 c) Lithia d) Potash

SECTION-B

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

- Q.11 Glass is a crystalline material. (True/False)
- Q.12 Cullet is the name given to broken glass. (True/False)
- Q.13 In refining process, gas bubbles are removed from glass. (True/False)

- Q.14 Seal test is used to determine coefficient of thermal expansion of glass. (True/ False)
- Q.15 Increase in silica content of glass increases viscosity of glass melt. (True/ False)
- Q.16 Silica is glass former. (True/ False)
- Q.17 Boron oxide is network former. (True/ False)
- Q.18 Continuous tank is a Batch furnace. (True/ False)
- Q.19 A Formula of silica is ____.
- Q.20 Alumina increases devitrification tendency of glass.(True/ False)

SECTION-C

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

- Q.21 Define cullet. Write its role in glass making.
- Q.22 Explain primary melting of glass.
- Q.23 Discuss role of regenerators in glass industry.
- Q.24 Explain importance of density in glass making.
- Q.25 How will you determine hardness of glass?
- Q.26 Explain flue system and chimney draft.
- Q.27 Explain construction and working of pot furnace.
- Q.28 Explain fundamental concept of glassy state?
- Q.29 Discuss storage mixing and conveying of batch materials.