SECTION-C

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

Q.21 Explain theory of valence.

Q.22 Differentiate amorphous and crystalline materials.

Q.23 Explain elasticity and plasticity properties of materials.

Q.24 Define unit cell and space lattice.

Q.25 Discuss atomic structure of sodium.

Q.26 Enlist thermal properties of materials.

Q.27 Explain physical properties of clays.

Q.28 Define magnetic flux and flux density.

Q.29 Explain Gibbs Phase Rule.

Q.30 Draw Na_2O-SiO_2 phase diagram.

Q.31 Enlist applications of phase diagrams.

Q.32 Differentiate ionic and covalent bonding.

Q.33 Explain water system.

Q.34 Discuss components and degree of freedom in relation to phase diagram.

Q.35 List mechanical properties of materials.

SECTION-D

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

Q.36 Explain alumina silica phase diagram.

Q.37 Explain magnetic properties of materials.

Q.38 Explain different types of chemical bonding.

No. of Printed Pages : 4 180431

Roll No. .....

3rd Sem / Ceramic
Subject:- Ceramic Science

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 _____ is the formula of Kaolin.

a) $AI_2O_3SiO_2$ b) $AI_2O_32SiO_2.2H_2O$

c) $AI_2O_32SiO_2$ d) $AI_2O_3.2SiO_2H_2O$

Q.2 In face centered cubic crystal system number of atoms per unit cell is _____.

a) 1 b) 2

c) 3 d) 4

Q.3 Example of Binary phase diagram is_____.

a) Water system b) Alumina- Silica

c) Carbon-lime -silica d) Oxygen system

Q.4 Phase diagram help to predict_____ of body.

a) Firing behavior b) Mixing behavior

c) Cooling d) None of the above

Q.5 Maximum number of electrons in d-orbital is _____.

a) 2 b) 6

c) 8 d) 10

Q6 In crystalline materials, atoms arrangement is_____

a) Random b) Regular

c) Circular d) None of the above

Q.7 The insulator have high _____ than insulator.

a) Conductance b) Resistance

c) Both a and b d) None of the above

Q8 Coercive force value is greater for

a) Hard magnets b) Soft magnets

c) Both a and b d) None of the above

Q.9 In _____ crystal system atoms occupies corner positions only in unit cell.

a) Simple Cubic b) Octagonal

c) Face Centered d) Hexagonal

Q.10 The order of filling orbitals is_____

a) 1s, 2s, 2p, 3s, 3p, 3d, 4s

b) 1s, 2s, 2p, 3s, 3p, 3d, 4d

c) 1s, 2s, 2p, 3s, 3p, 4s, 3d

d) 4p, 4s, 3d, 3p, 3s, 2p, 4d

SECTION-B

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

Q.11 Ionic bond is formed by _____ of electrons between two atoms. (sharing/ Transfer)

Q.12 The montmorillonite clay mineral is highly plastic . (True/False)

Q.13 In crystalline solids atoms are arranged in regular fashion. (True/False)

Q.14 In simple cubic crystal system all sides are same. (True/False)

Q.15 Resistance is the opposing force offered by a material to flow of electric current. (True/False)

Q.16 Maximum number of electrons in p-orbital is _____.

Q.17 X-ray can be used to determine crystal structure of materials,. (True/False)

Q.18 The stress experienced by thermal contraction or expansion is called thermal stress (True/False)

Q.19 Vacancy is a type of_____ defect. (Point, line)

Q.20 Brittle fracture involves fracture of materials without apparent plastic deformation. (True/False)