Q.25 Define screw and edge dislocations.

Q.26 Explain elasticity and plasticity properties of materials.

Q.27 Write short note on ionic bond with example.

Q.28 Explain the process of martensitic transformation.

Q.29 Explain magnetizing force.

Q.30 Write about nucleation and growth.

Q.31 Differentiate hard and soft magnetic materials.

Q.32 Differentiate creep and fatigue.

Q.33 List electrical and properties of materials.

Q.34 Explain di-electric behavior of materials.

Q.35 Explain the procedure of using X-ray for determination for cell structure.

SECTION-D

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

Q.36 Explain AI_2O_3-SiO_2 phase diagram and write its importance in ceramic industry

Q.37 Draw and explain B-H loop curve.

Q.38 Explain unit cell crystal system and indice with diagram.

Roll No. .....

3rd Sem / Ceramic Engg
Subject:- Materials Science

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The S-orbital contains maximum _____ no. of electrons

a) 4 b) 3
c) 2 d) 1

Q.2 In_____ crystal system atoms occupies corner.

a) Simple Cubic b) Body Centered
c) Hexagonal d) Face Centered

Q.3 In phase diagrams we can study_____

a) Mixing behavior b) Firing behavior
c) Drying behavior d) None of these

Q.4 Which is not type of bond in atoms.

a) Ionic b) Covalent bond
c) Coordinate bond d) Ceramic bond

Q.5 Number of components in binary phase diagram are

a) 1 b) 2

c) 3 d) 4

Q.6 Crystal structure of any materials can be determined by_____.

a) Conductance b) X-Ray

c) Resistance d) permeability

Q.7 Vacancy is a type of_____defect

a) Point b) Line

c) Corner d) Center

Q.8 The failure of material due to reversed/cyclic loading is called_____

a) Brittle failure b) Fatigue

c) Creep d) Crushing

Q.9 Which is more ductile?

a) Steel b) Rubber

c) Plastic d) Cermic

Q.10 The material which regains its shape after removal of load is called_____

a) Plastic b) Rubber

c) Spring d) Elastic

SECTION-B

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

Q.11 Example of binary phase diagram is alumina and silica phase diagram. (T/F)

Q.12 Brittle fracture involves fracture of materials after considerable plastic deformation. (T/F)

Q.13 Ionic bond is formed by transfer of electrons between two atoms. (T/F)

Q.14 Hard magnetic materials can be easily demagnetized. (T/F)

Q.15 In simple cubic crystal system atoms occupies corner position of unit cell. (T/F)

Q.16 Coordinate bond is formed by sharing of electrons between two atoms. (T/F)

Q.17 In body centered cell, there are two atoms per unit cell. (T/F)

Q.18 Hard magnetic materials can be easily demagnetized. (T/F)

Q.19 A phase diagram is used to decide behaviour of a material during heating. (T/F)

Q.20 Bragg's law can be used to determine solubility of NaCI in water. (T/F)

SECTION-C

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

Q.21 Enlist different types of bonds. Explain any one.

Q.22 List the thermal properties of materials.

Q.23 Differentiate ductile and brittle fracture.

Q.24 Draw soda-lime silica phase diagram.