Q.23 Write short note on clay chemistry.

Q.24 Explain electronic configuration of 'Na' atom with its diagram.

Q.25 Explain space lattice and unit cell.

Q.26 Write a short note on edge dislocation.

Q.27 Write the applications of phase rule.

Q.28 Write short note on ionic bond with example.

Q.29 Explain if there is any relation between hardness and brittleness.

Q.30 Write short note on binary phase diagrams.

Q.31 Draw the diagram of water system.

Q.32 Explain the structure of Silica.

Q.33 Explain Theory of Valency.

Q.34 Explain any two of : Permeability, coercive force, retentivity

Q.35 Explain any two physical characteristics of clay.

SECTION-D

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

Q.36 Explain Gibb's phase rule for phase, components and degree of freedom with example.

Q.37 Write short notes of following:

i) point defects ii) amorphous materials

Q.38 Explain theory of valence, with examples

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3rd Sem / Ceramic Engineering
Subject:- Ceramic Science

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Kaoline is represented by chemical formula _____

a) $Al_2O_3SiO_2$ b) $Al_2O_32SiO_2.2H_2O$

c) $Al_2O_3.2SiO_2$ d) $Al_2O_3.2SiO_2H_2O$

Q.2 The atoms are arranged in_____manner, in crystalline materials.

a) Randomly b) Regular

c) Haphazardly d) None of the above

Q.3 The number of magnetic lines of force set up in a magnetic circuit is called _____.

a) Magnetic flux b) flux density

c) Tesla d) All of the above

Q.4 The montmorillonite clay mineral is highly _____

a) elastic b) plastic

c) hard d) tough

Q.5 An electric insulator is one which _____electric current.

a) conduct b) resist

c) both a & b d) none of these

Q.6 Hard magnetic materials are _____ to magnetize.

a) easy b) difficult

c) both a & b d) none of these

Q.7 The failure of a material due to cyclic or reversing loads is called_____

a) creep b) fatigue

c) brittle failure d) ductile failure

Q.8 If a mild steel rod is heated to 100 degree C and is allowed to expand, which stress will be produced?

a) Thermal stress b) Shear stress

c) Tensile Stress d) No stress

Q.9 _____bond is formed by sharing of electrons between two atoms.

a) Ionic Bonding b) Hydrogen Bonding

c) Covalent Bonding d) All of the above

Q.10 The property by which a material can be pressed into thinnest sheet, is called _____

a) ductility b) malleability

c) toughness d) resilience

SECTION-B

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

Q.11 The opposing magnetic intensity that must be applied to a magnetized material to remove the residual magnetism is called coercive force. (True/False)

Q.12 Which crystal structure has one atom occupied at each corner position of a unit cell? (SCC/BCC)

Q.13 Sharing of electrons between two atoms creates a _____bond.(ionic/covalent)

Q.14 The p-orbital contains maximum _____no. of electrons. (2/6)

Q.15 Normally the colour of Kaolinite is _____. (white / yellow)

Q.16 The diagrams which show the constitution of alloys as a function of temperature are known as Phase diagram. (True/False)

Q.17 The degree of the system refer to the number of conditions or variables that can be altered, independent of each other.(True/False)

Q.18 Which magnets have higher coercive force value ? (Soft/hard)

Q.19 The material which regains its shape after removal of load is called plastic. (T/F)

Q.20 Example of 1 component phase diagram is water system. (True/False)

SECTION-C

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

Q.21 Explain any two line defects with the help of diagrams.

Q.22 Discuss thermal properties of material.