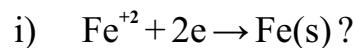Q.24 (a) What are the differences between Heat and Temperature?

(b) What are the different scale of temperature? Explain them. (CO5)

Q.25 a) Explain Faraday's first law of electrolysis.

b) What amount of electricity is required in the deposition of metal for these reaction

i) $Fe^{+2} + 2e \rightarrow Fe(s)$?

ii) $Cu^+ + e \rightarrow Cu(s)$? (CO10)

1st Year Annual Pattern / Textile Design

Subject : Applied Sciences

Time : 3 Hrs.   M.M. : 60

SECTION-A

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

Q.1 The SI unit of power is   (CO3)
a) Joule   b) Newton
c) Watt   d) None of them

Q.2 Modulus of elasticity is given by   (CO4)
a) Stress/Strain   b) Stress x Strain
c) Strain / Stress   d) None of them

Q.3 Which is not a mode of transfer of heat   (CO6)
a) Conduction   b) Convection
c) Radiation   d) Transformation

Q.4 If the pH of a solution 7 at 25 ^{0}Celsuis then solution is
a) Acidic   b) Neural
c) Basic   d) Super acid

Q.5 Which of the following among them is strong base.   (CO9)

a) NaOH   b) HCI
c) CH_3COOH d) NH_4OH

Q.6 According to Faraday's first law of electrolysis mass of metal deposited is directly proportional to: (CO10)

a) Molarity   b) Molality

c) Normality   d) Equivalent weight

SECTION-B

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

Q.7 Give any one example of transformation of energy. (CO3)

Q.8 Define work. (CO3)

Q.9 Strain has no unit.(True or False) (CO4)

Q.10 $(pH + pOH)$ at $25\,^0C$ is equal to ? (CO10)

Q.11 What is the relation between Normality and Molarity? (CO9)

Q.12 $NaOH + HCI \rightarrow A \rightarrow B$ Identify A and B ? (CO9)

SECTION-C

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

Q.13 What is Energy? Explain its types with examples. (CO3)

Q.14 What is the difference between Gauge pressure and Absolute pressure? (CO4)

Q.15 If power of a bulb is 10 W then find energy (in Joules) consumed by it in 5 sec. (CO3)

Q.16 Write any four application of surface tension. (CO4)

Q.17 Explain conduction and convection modes of transfer of heat with suitable examples. (CO6)

Q.18 What are the industrial applications of pH ? (CO9)

Q.19 Calculate the pH of 0.01M HNO_3 (aq) at 25 °C. (CO9)

Q.20 What are non electrolytes. Give an example of non electrolyte (CO10)

Q.21 Calculate molality of 120g CH_3COOH in 500g water. What are units of molality? (CO9)

Q.22 Define the following terms (CO9)

i) Acid   ii) Base

SECTION-D

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

Q.23 Explain the conservation of machanical energy for freely falling bodies. (CO3)