Q1. Define anaemia. Describe the morphological classification of anaemia. Add a note on Erythroblastosis foetalis. (3+ 12 + 5 = 20 marks)

Q2. Write short notes on : (5 marks each = 20)

a. Muscle proteins
b. Functions of plasma proteins
c. Role of helper T- cells in immunity
d. Neuromuscular junction

Q3. Multiple choice questions (Each question caries 1 mark: Total 10 marks)

a. Most abundant substance in a cell, next to water is:
A) Glucose
B) Phospholipids
C) Protein
D) Cholesterol

b. Maximum active tension in muscle is when muscle:
A) Length increases
B) Length Decreases
C) Not associated with length
D) At optimum length

c. Which ion is required in exocytosis?
A) Ca2+ B) K+ C) Na+. D) Mg+

d. The major lipoprotein source of the cholesterol used in cells is:
A) Intermediate-density lipoproteins (IDL)
B) Albumin-bound free fatty acids
C) Low-density lipoproteins (LDL)
D) High-density lipoproteins (HDL)

e. Resting membrane potential is also referred as:
A) Steady potential
B) Generator potential
C) Equilibrium potential
D) Spike potential

f. Transcription refers to:
A) The process where an mRNA is used as a template for protein production
B) The process where a DNA sequence is copied into RNA for the purpose of gene expression
C) The process where a DNA sequence is copied into RNA for the purpose of gene expression
D) The process of replication of DNA prior to cell division

g. Fill in the blanks: Glycogen is a storage form of glucose. _____ refers to the process of making glycogen and _____ refers to the process of breakdown of glycogen.
A) Glycogenolysis, glycogenesis
B) Glycolysis, glycogenolysis
C) Gycolysis, glycogenolysis
D) Glycogenolysis, glycolysis

h. Which of the following is not a glial cell:
A) Microglia
B) Schwann cell
C) Astrocyte
D) Oligodendroglia

i. Presence of Calcium on nerve membrane may play a significant role in:
A) Keeping Sodium gates closed
B) Regulation of potassium out flow
C) Operation of sodium pump
D) Preventing Protein anions from going out

All or none response in a nerve is present in:
A) Mixed nerve
B) Only in a sensory nerve
C) Only in a motor nerves
D) A single nerve fibre

Q 1: Explain the composition, functions and regulation of secretion of pancreatic juice. Add a note on Pancreatic insufficiency. (15 + 5 = 20 marks)

Q 2: Write short notes on- (5 marks each = 20 marks)

A) Digestion and absorption of fat
B) Hypoxia
C) Juxta Glomerular Apparatus (JGA)
D) Pulmonary Function Test (PFT)

Q 3: Multiple Choice Questions: (Each question carries 1 mark: total 10 marks)

a. Respiratory minute volume of lung is:
A) 6 liters B) 4 liters
C) 1 liter D) 0.5 liter

b. Fructose is absorbed from small intestine:
A) Simple diffusion B) Facilitated diffusion
C) Na+ dependent secondary active transport D) Through carrier proteins

c. Which of the following statement regarding gas solubility in plasma is correct:
A) CO2 is more soluble than O2 B) O2 is more soluble than CO2
C) N2 is more soluble than O2 D) CO is more soluble than O2

d. Delta cells in stomach secrete:
A) CCK B) Somatostatin
C) Motilin D) Secretin

e. Bile acids are synthesized from:
A) Cholesterol B) amino acids
C) bilirubin D) protein

f. Active reabsorption of glucose occurs in the:
A) Proximal tubule B) Distal tubule
C) Loop of Henle C) Collecting ducts

g. In upper airway obstruction all of the following changes are seen, EXCEPT.
A) Decreased maximum breathing capacity B) RV decreased
C) Decreased FEV D) Decreased vital capacity

h. Principal site of absorption of Sodium is:
A) Loop of Henle (thick portion) B) Distal convoluted tubule
C) Proximal convoluted tubule D) Pelvi-calyceal junction

i. By spirometry one CANNOT measure:
A) Tidal volume
B) Residual volume
C) Vital capacity
D) Inspiratory reserve capacity

j. Glucose symport occurs with:
A) Ca++ B) Na+
C) K+ D) Cl-