Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: BMC603 and Course Name: Biological modelling Simulation

Time: 1-hour   Max. Marks: 50

==

Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	_____ is the thick filament seen in Sarcomere
Option A:	Actin
Option B:	Myosin
Option C:	Troponin
Option D:	Tropomyosin
Q2.	Find the event that could have a negative impact on the quality of eye movement.
Option A:	Good Sleep and Rest
Option B:	Eye Relaxing Postures
Option C:	Drugs and Disease
Option D:	Vitamins
Q3.	What type of B cell remains dormant in the body, but can respond rapidly if the same antigen appears again?
Option A:	T cells
Option B:	Memory cells
Option C:	Plasma cells
Option D:	Macrophages
Q4.	Ion pumps are involved in
Option A:	Active transport mechanisms
Option B:	Passive transport mechanisms
Option C:	Diffusion
Option D:	Drift
Q5.	The main function of insulin is to:
Option A:	Break down protein
Option B:	Speed up the contractions of the stomach
Option C:	Allow the absorption of nutrients through the small intestine
Option D:	Enable glucose to enter body cells
Q6.	Which of the following protects our body against disease-causing pathogens?
Option A:	Respiratory system
Option B:	Immune system

Option C:	Digestive system
Option D:	Respiratory system
Q7.	The Goldman equation is called as the
Option A:	Constant field equation
Option B:	Nernst's equation
Option C:	Ionic equilibrium
Option D:	Donnan's equilibrium
Q8.	What is the central portion of Retina called?
Option A:	Macula
Option B:	Cornea
Option C:	Sclera
Option D:	Fovea
Q9.	How do the muscles affect regulation of body temperature?
Option A:	Erector pili muscles make hair stand up
Option B:	Shivering increases heat
Option C:	Muscles do not help regulate body temperature
Option D:	Shivering decreases heat
Q10.	Depolarization is a/an _____ potential
Option A:	decreasing
Option B:	increasing
Option C:	neutral
Option D:	equilibrium potential
Q11.	_____ decides the shape of the eye
Option A:	Iris
Option B:	Cornea
Option C:	Sclera
Option D:	Retina
Q12.	_____law describes the drift of charged particle
Option A:	Fick's
Option B:	Ohm's
Option C:	Einstein's
Option D:	Euler's
Q13.	Fick's law of diffusion is obeyed by
Option A:	charged particles
Option B:	uncharged particles
Option C:	Only positive ions
Option D:	Only negative ions
Q14.	Name the receptor that is sensitive to stretch of muscle

Option A:	Golgi Tendon Organ
Option B:	Spindle Receptor
Option C:	Thermoreceptors
Option D:	Mechanoreceptors
Q15.	In Parkinsonism, deficiency of _____ leads to poor Neuromuscular coordination
Option A:	Glutamate
Option B:	Acetyl Choline
Option C:	Dopamine
Option D:	Histamine
Q16.	Which is NOT a part of Neuromuscular System
Option A:	Golgi Tendon Organ
Option B:	Biceps Muscle
Option C:	Bone Marrow
Option D:	Triceps Muscle
Q17.	The potential at which drift and diffusion become equal is called as the
Option A:	Action potential
Option B:	Donnan's equilibrium
Option C:	Nernst's potential
Option D:	Zero potential
Q18.	Reciprocal Innervation takes place with those muscle which appear in _____
Option A:	Single
Option B:	Pair
Option C:	Group
Option D:	Single and Pair
Q19.	For a Na+ ion with inside concentration of 50 mM and outside concentration of 337 mM the Nernst's potential in mV will be
Option A:	49.62
Option B:	-49.62
Option C:	-99.22
Option D:	99.22
Q20.	Behavior of sarcomere when the filament slide over each other can be studied using_____
Option A:	Force-Velocity graph
Option B:	Tension-Time graph
Option C:	Length-Time graph
Option D:	Length-Tension graph
Q21.	Slow gliding eye movement often happening at the end of normal human saccadic eye movement is called as___

Option A:	Ocular movement
Option B:	Vergence movement
Option C:	Saccade
Option D:	Glissades
Q22.	Linear and nonlinear systems are examples of _____model
Option A:	Graphical
Option B:	Mathematical
Option C:	Verbal
Option D:	Symbolic
Q23.	Potassium channel has _____ gating variable/variables
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q24.	Example of a distributed parameter model is _____
Option A:	R, L, C circuit
Option B:	Lossless transmission line
Option C:	Only resistive elements
Option D:	Only capacitive elements
Q25.	_____is an example of physical homolog model.
Option A	Analog computer
Option B:	Clock
Option C:	DNA double helix
Option D:	Speedometer