

TABLE OF CONTENTS

TRANSPORT PROCESSES

5

PASSIVE, ACTIVE, AND CARRIER MEDIATED TRANSPORT	5
Passive transport	5
Active transport	6
Carrier mediated transport	6
Learning Outcomes Review Questions	6
Practice Test 1 - Terminology of Transport Processes	6
ANATOMICAL FLUID COMPARTMENTS	7
Intracellular Fluid Compartment	7
Extracellular Fluid Compartment	8
Interstitial Compartment	8
Intravascular Compartment	9
Learning Outcomes Review Questions	11
Practice Test 2 - Anatomical Fluid Compartments	12
Practice Test 3 - Terminology - Body Fluids	12
MIXTURES	13
Solution	13
Colloid	14
Suspension	15
Learning Outcomes Review Questions	15
Practice Test 4 - Mixtures	16
Lab Activity 1 - Molecular and Particle Movement	17
Learning Outcomes Review Questions	18
Practice Test 5 - Video and Exam Molecular and Particle Movement	18
PASSIVE MOVEMENT ACROSS THE PLASMA MEMBRANE	19
Diffusion	19
Learning Outcomes Review Questions	20
Practice Test 6 - Diffusion	20
Lab Activity 2 - Molecular Motion and Weight	21
Learning Outcomes Review Questions	23
Practice Test 7 - Molecular Motion and Weight	23
SIMPLE DIFFUSION ACROSS THE PLASMA MEMBRANE	24
Simple Diffusion	24
Facilitated diffusion	25
Learning Outcomes Review Questions	26
Practice Test 8 - Simple Diffusion Across the Plasma Membrane	26
HYDROSTATIC (WATER) PRESSURE	27
Learning Outcomes Review Questions	27
Practice Test 9 - Hydrostatic Pressure and Water Movement	27
Filtration	28
Lab Activity 3 - Filtration	29
Learning Outcomes Review Questions	32
Practice Test 10 - Hydrostatic Pressure, Water Movement, Filtration	33
MOVEMENT OF WATER BY OSMOSIS	34
Osmosis	34
Learning Outcomes Review Questions	35
Practice Test 11 - Osmosis	36
Effects of Osmotic Solutions - Osmolality and Tonicity	37
Learning Outcomes Review Questions	38
Practice Test 12 - Osmolarity and Tonicity	39
Osmotic Pressure	40
Learning Outcomes Review Questions	41
Practice Test 13 - Osmotic Pressure	41

TONICITIES OF SOLUTIONS	42
Isotonic Solution	42
Hypotonic solution	42
Hypertonic solution	43
Learning Outcomes Review Questions	44
Practice Test 14 - Osmolarity and Tonicity of Solutions	44
Lab Activity 4 - Osmometer	45
Learning Outcomes Review Questions	47
Practice Test 15 - osmometer	48
Lab Activity 5 - Osmosis and Red Blood Cells	49
Isotonic Solution	50
Practice Test 16 - Video and Review, Blood (Red Blood Cells) Isotonic Solution	51
Hypertonic Solution	52
Practice Test 17 - Video and Review Blood (Red Blood Cells) Hypertonic Solution	53
Hypotonic Solution	54
Practice Test 18 - Video and Test, Blood (Red Blood Cells) Hypotonic Solution	55
Learning Outcomes Review Questions	56
Practice Test 19 - Osmotic Effects on Red Blood Cells	56
OSMOSIS LABORATORY ACTIVITIES WITH PLANT CELLS	57
Osmosis and Plant Cells	57
Lab Activity 6 -Osmosis and Potato Cells	58
Learning Outcomes Review Questions	60
Practice Test 20 - Osmotic Effects on Potato Cells/Slices	60
Lab Activity 7 - Osmosis and Elodea (<i>Egeria densa</i>)	61
Elodea in Hypotonic Solution	62
Practice Test 21A - Video and Test Elodea Subjected to a Hypotonic Solution	62
Practice Test 21B - Video and Test Elodea Subjected to a Hypertonic Solution	64
Learning Outcomes Review Questions	64
Practice Test 22 - Elodea in Osmotic Solutions	64
Lab Activity 7 - Osmosis and Red (purple) Onion Cells	65
Practice Test 23 - Red Onion subjected to Hypertonic and Hypotonic Solutions	70
Practice Test 24 - Red Onion in Osmotic Solutions	70
Lab activity 8 - Osmosis and Paramecium	71
Practice Test 25 - Paramecium, Observation of Contractile Vacuole	72
Learning Outcomes Review Questions	73
Practice Test 26 - Paramecium Osmoregulation - Contractile Vacuole	73
DIALYSIS	74
Learning Outcomes Review Questions	75
Practice Test 27 - Dialysis	75
OSMOSIS AND DIALYSIS	76
Lab Activity 9 - Osmosis and Dialysis using Dialysis Membrane	76
Learning Outcomes Review Questions	78
Practice Test 28 - Osmosis with Dialysis Tubing	78
Practice Test 29 - Dialysis with Dialysis Tubing	81
Lab Activity 10 - Osmosis and Dialysis using Membranous Egg	82
OSMOSIS	83
Learning Outcomes Review Questions	85
Practice Test 30 - Osmosis Using Membranous Egg	85
Learning Outcomes Review Questions	95
Practice Test 31 - dialysis using membranous egg	95
FLUID MOVEMENT ACROSS THE CAPILLARY	96
Capillaries	96
Hydrostatic pressure	96
Osmotic pressure	96
Learning Outcomes Review Questions	97
Practice Test 32 - Fluid Movement Across the Capillary	97

FLUID MOVEMENT AT THE ARTERIAL END OF CAPILLARY	98
Hydrostatic Pressure at Arterial End of Capillary	98
Osmotic Pressure at Arterial End of Capillary	98
Net Filtration Pressure at the Arterial End of Capillary	99
Learning Outcomes Review Questions	100
Practice Test 33 - Fluid Movement at the Arterial End of the Capillary	100
FLUID MOVEMENT AT THE VENOUS END OF CAPILLARY	101
Hydrostatic Pressure at Venous End of Capillary	101
Osmotic Pressure at Venous End of Capillary	101
Net Filtration Pressure at the Venous End of Capillary	102
Summary of Fluid Movements	103
Learning Outcomes Review Questions	104
Practice Test 34 - Fluid Movement at the Venous End of the Capillary	104
Practice Test 35 - Terminology Exam - Diffusion, Osmosis, and Pressures	104
ACTIVE PROCESSES ACROSS THE PLASMA MEMBRANE	105
Active Transport	105
Learning Outcomes Review Questions	105
Practice Test 36 - Active Transport Processes	105
Active Processes: Membrane Potentials	106
Learning Outcomes Review Questions	108
Practice Test 37 - Active Transport Processes, Membrane Potentials	108
Active Processes: Membrane Transport	109
Lab Activity 11 - Active Transport in Yeast	109
Practice Test 38 - Yeast Active Transport	110
ACTIVE PROCESSES: VESICULAR TRANSPORT	111
EXOCYTOSIS	111
Secretion	111
Excretion	112
ENDOCYTOSIS	112
Phagocytosis	112
Practice Test 39 - VESICULAR TRANSPORT	113
Lab Activity 12 - Macrophages of the Liver, Kupffer's cells	113
Practice Test 40 - Phagocytosis - Kupffer Cells	113
Lab Activity 13 - Microscope observation of a Living Amoeba for Phagocytosis and Amoeboid Movement	114
Practice Test 41 - Phagocytosis, Amoeba	115
Lab Activity 14 - Microscope observation of Paramecia for Endocytosis (Phagocytosis)	116
Practice Test 42 - Phagocytosis - Paramecium	117
COPYRIGHT AND PRODUCT DETAILS	118