The College of Naturopaths of Ontario

REFERENCE GUIDE

ONTARIO BIOMEDICAL EXAMINATION

November 2024

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GENERAL INFORMATION

About This Guide

This Reference Guide has been created to help candidates seeking registration with the College of Naturopaths of Ontario (the College) to prepare to sit the Ontario Biomedical Examination. The Ontario Clinical Sciences and Ontario Biomedical Examinations handbook, which covers examination procedures, such as requesting accommodation, registering for the exam and post-exam processes is available from the Exam Resources and Policies section of the College website.

This Reference Guide includes:
- accepted acronyms and abbreviations.
- the exam blueprint outlining competencies – and weighting – to be tested in each content area (amended March 2022); and
- conditions and testable content.

The Reference Guide does not reflect the structure of the exam. However, individuals should be well-prepared to sit the exam by studying the processes, conditions, systems, and other information it contains.

About the Ontario Biomedical Exam

The goal of the Ontario Biomedical Exam is to test entry-level competencies required of all naturopathic doctors in Canada to practise safely, ethically, and competently, regardless of jurisdiction. The exam is a mix of case-based and stand-alone questions which tests essential foundational medical knowledge of body systems and their interactions, body functions, dysfunctions, and disease states. The exam is **not** testing any one curriculum from a specific CNME-accredited program, as such, all candidates are advised to review the blueprint in full.

About the College

The College of Naturopaths of Ontario is the regulatory authority governing naturopaths in Ontario. Its mandate is to serve the public interest by enhancing safety for patients using naturopaths. The College meets its mandate by ensuring that individuals wishing to be naturopaths in Ontario meet the entry-to-practise requirements, by ensuring practising naturopaths maintain their competency, by establishing and maintaining standards of practice in Ontario and by holding naturopaths accountable through the complaints and disciplinary processes.

About the College's Entry-To-practise Exams

There are four mandatory entry-to-practise exams that a candidate must pass in order to be eligible to be registered to practise as a naturopath in Ontario:

1. Ontario Clinical Sciences Exam
2. Ontario Biomedical Exam
3. Ontario Clinical (Practical) Exams
4. Ontario Jurisprudence Online Learning Module

The Biomedical Exam:

- is computer-based and is primarily administered online (please see the Ontario Clinical Sciences and Ontario Biomedical Exam Handbook for additional information). Allows for three attempts with feedback and remediation after the second failure so candidates know how and where to improve.
- can be completed in less than a day (exam run time is three hours).
- provides exam candidates with verifiable information about exam performance.

- reflects what is taught and being practiced in Ontario and Canada today.
- can be completed in any order post-graduation, within the roster of Ontario entry-to-practise exams, depending on candidate preference.
- meets federal and provincial legal requirements for people with disabilities and people who need accommodations, as well as requirements to offer entry-to-practise and substantial equivalency exams in English as well as in French.

CONO LIST OF ACCEPTED ACRONYMS/ABBREVIATIONS*

AChE: acetylcholinesterase
ACTH: adrenocorticotropic hormone
ADH: anti-diuretic hormone
ADP: adenodiphosphate
AFP: alpha fetoprotein
ALS: amyotrophic lateral sclerosis
AMP: adenosine monophosphate
ANA: anti-nuclear antibody
ANS: autonomic nervous system
ANP: atrial natriuretic peptide
ATP: adenosine triphosphate
AV: atrioventricular
BMR: basal metabolic rate
BPM: beats per minute
BUN: blood urea nitrogen
cAMP: cyclic adenosine monophosphate
CBC: complete blood count
cGMP: guanosine cyclic monophosphate
CIN: cervical intraepithelial neoplasia
CMV: cytomegalovirus
CN: cranial nerve
CNS: central nervous system
CPR: cardiopulmonary resuscitation
CRP: C-reactive protein
CSF: cerebrospinal fluid
DHT: dihydrotestosterone
DNA: deoxynucleic acid
DPT: diphtheria-pertussis-tetanus
DTR: deep tendon reflex
EBV: Epstein-Barr virus
ECG/EKG: electrocardiogram
EEG: electroencephalogram
EMG: electromyogram
EPO: endogenous erythropoietin
FEV: forced expiratory volume
FSH: follicle-stimulating hormone
GABA: gamma-aminobutyric acid
GFR: glomerular filtration rate
GGT: gamma-glutamyl transferase
GMP: guanosine 5'-monophosphate
GnRH: gonadotropin-releasing hormone
Hb: hemoglobin
hCG: human chorionic gonadotropin
Hct: hematocrit
HDL: high density lipoprotein
IL: interleukin
IM: intramuscular
IV: intravenous
LDL: low density lipoprotein
LH: luteinizing hormone
LHRH: luteinizing hormone releasing hormone
LLQ: left lower quadrant
LUQ: left upper quadrant
MAO: monoamine oxidase
MCH: major histocompatibility complex
MRI: magnetic resonance imaging
MVA: motor vehicle accident
NAC: N-acetyl cysteine
NADH: nicotinamide adenine dinucleotide phosphate
NK: natural killer (cells)
NSAID: non-steroidal anti-inflammatory drug

OTC: over the counter

PG: progesterone

PMN: polymorphonuclear neutrophil

PNS: peripheral nervous system

PTH: parathyroid hormone

RBC: red blood cells

RF: rheumatoid factor

Rh: rhesus factor

RLQ: right lower quadrant

RNA: ribonucleic acid

RSV: respiratory syncytial virus

SOD: superoxide dismutase PABA: para-amino benzoic acid

TIBC: total iron-binding capacity

TNF: tumor necrosis factor

TRH: thyrotropin-releasing hormone

TSH: thyroid stimulating hormone

URI: upper respiratory infection

UTI: urinary tract infection

VLDL: very low-density lipoprotein

VMA: vanillylmandelic acid

WBC: white blood cell

WHO: World Health Organization

**Terms with acronyms not appearing on this list will be spelt out in full on the exam form.*

CONO BIOMEDICAL SCIENCES EXAMINATION BLUEPRINT

Competencies	% of Exam
1. CARDIOVASCULAR SYSTEM	**10-12%**
1.01 Embryology	
1.01.01 Embryological development of the cardiovascular system, including the valves and chambers of the heart and the blood vessels.	
1.02 Histology	
1.02.01 Microscopic anatomy of the heart and blood vessels.	
1.03 Anatomy	
1.03.01 Location and structure of the heart, major vessels, and pericardium.	
1.03.02 Location and structure of the heart valves.	
1.03.03 Location and branching patterns of coronary arteries.	
1.03.04 Anatomical patterns of the peripheral vascular system.	
1.03.05 Location and structure of microcirculation.	
1.04 Physiology	
1.04.01 Function of the heart valves and their associated sounds in relation to the cardiac cycle.	
1.04.02 Pressure, flow and resistance as it relates to the cardiovascular system.	
1.04.03 Regulation of ventilation, gas exchange and tissue perfusion.	
1.04.04 Autonomic regulation and electrical conduction of the cardiac muscle.	
1.04.05 Electrical measurement of the heart.	
1.04.06 Forces involved in the circulation of blood and lymph, and the regulation of blood flow.	
1.04.07 Physiological adaptive changes related to exercise.	
1.05 Biochemistry	
1.05.01 Metabolic pathways of the heart.	
1.06 Genetics	
1.06.01 Gene expression and consequences of the genetic abnormalities that underlie cardiovascular disease processes.	
1.07 Microbiology	
1.07.01 Role of infectious agents involved in cardiovascular disease.	
1.08 Pathology	
1.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the cardiovascular system.	
2. ENDOCRINE SYSTEM	**9-11%**
2.01 Embryology	
2.01.01 Embryological development of the organs of the endocrine system.	
2.02 Histology	
2.02.01 Microscopic anatomy of the endocrine system.	
2.03 Anatomy	
2.03.01 Location and structure of the endocrine organs.	
2.03.02 Location and structure of the circulatory pathways of blood related to the endocrine organs.	
2.04 Physiology	

Competencies	% of Exam
2.04.01 Mechanisms and functions of endocrine organs.	
2.04.02 Hormonal functions, synthesis, release, transport and feedback.	
2.04.03 Hormonal changes occurring during puberty.	
2.04.04 Hormonal changes occurring during aging.	
2.04.05 Physiological adaptive changes related to stress.	
2.05 Biochemistry	
2.05.01 Metabolic pathways related to the endocrine system.	
2.05.02 Synthesis of hormones.	
2.06 Genetics	
2.06.01 Gene expression and consequences of the genetic abnormalities that underlie endocrine disorders.	
2.07 Microbiology	
2.07.01 Role of infectious agents involved in endocrine disorders.	
2.08 Pathology	
2.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the endocrine system.	
3. GASTROINTESTINAL SYSTEM	**10-12%**
3.01 Embryology	
3.01.01 Embryological development of the gastrointestinal tract and glands.	
3.02 Histology	
3.02.01 Microscopic anatomy of the gastrointestinal tract and related organs.	
3.03 Anatomy	
3.03.01 Location and structure of the organs and glands of the gastrointestinal system.	
3.03.02 Location and structure of the circulatory pathways of blood related to the gastrointestinal system.	
3.04 Physiology	
3.04.01 Mechanisms and functions of the gastrointestinal organs and glands.	
3.04.02 Processes and regulation of digestion, absorption, and elimination.	
3.04.03 Immune functions of the gastrointestinal system.	
3.05 Biochemistry	
3.05.01 Structure, absorption, transport, mechanism of action, and function of vitamins and minerals.	
3.05.02 Metabolism of carbohydrates, fats, proteins.	
3.05.03 Metabolism of essential and non-essential nutrients (fatty acids and amino acids).	
3.05.04 Bilirubin metabolism and detoxification pathways.	
3.06 Genetics	
3.06.01 Gene expression and consequences of the genetic abnormalities that underlie gastrointestinal disease processes.	
3.07 Microbiology	
3.07.01 Role of the microbiome in the processes of digestion, nutrient production, absorption, and elimination.	
3.07.02 Role of infectious agents in the gastrointestinal system.	
3.08 Pathology	

Competencies	% of Exam
3.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the gastrointestinal system.	
4. HEMATOPOIETIC SYSTEM	**6-8%**
4.01 Embryology	
4.01.01 Role of stem cells in hematopoiesis.	
4.02 Histology	
4.02.01 Microscopic anatomy and origins of blood cells.	
4.03 Anatomy	
4.03.01 Location and structure of the hematopoietic system.	
4.04 Physiology	
4.04.01 Composition and function of blood cells and plasma.	
4.04.02 Synthesis and degradation of blood cells.	
4.04.03 Maturation of blood cells.	
4.04.04 Mechanisms and regulation of hematopoiesis and hemostasis.	
4.05 Biochemistry	
4.05.01 Metabolic pathways related to the hematopoietic system.	
4.06 Genetics	
4.06.01 Gene expression and consequences of the genetic abnormalities that underlie hematopoietic disease processes.	
4.07 Microbiology	
4.07.01 Role of infectious agents involved in the hematopoietic system.	
4.08 Pathology	
4.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the hematopoietic system.	
5. IMMUNE SYSTEM	**10-12%**
5.01 Embryology	
5.01.01 Embryological development of the immune system.	
5.02 Histology	
5.02.01 Microscopic anatomy of the lymphoid organs.	
5.03 Anatomy	
5.03.01 Location and structure of the lymphatic system.	
5.03.02 Location and structure of the lymphoid organs.	
5.04 Physiology	
5.04.01 Processes involved in innate immunity.	
5.04.02 Processes involved in adaptive immunity.	
5.04.03 Functions of cells, antibodies, and cytokines in humoral and cell-mediated immunity.	
5.04.04 Structure and function of histocompatibility antigens and their associated diseases.	
5.04.05 Pathways of cellular and cytokine signaling in response to injury, infection, and foreign bodies.	
5.04.06 Structure, function, and pathways of complement compounds.	
5.04.07 Functions and regulation of lymphatic fluid and lymphoid organs.	
5.05 Biochemistry	

Competencies	% of Exam
5.05.01 Metabolic pathways related to the immune system.	
5.05.02 Biochemistry of synthesis and degradation of lymphatic fluid and its components.	
5.06 Genetics	
5.06.01 Gene expression and consequences of the genetic abnormalities that underlie immunological disease processes.	
5.07 Microbiology	
5.07.01 Classification of viruses, bacteria, fungi, protozoa, and helminths based on structural and biological characteristics.	
5.08 Pathology	
5.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the immune system.	
6. INTEGUMENTARY SYSTEM	**6-8%**
6.01 Embryology	
6.01.01 Embryological development of the ectoderm.	
6.02 Histology	
6.02.01 Microscopic anatomy of the layers of the skin and dermal-epidermal junction and normal pigmentation.	
6.02.02 Microscopic anatomy of nails, hair follicles, and associated structures.	
6.02.03 Microscopic anatomy of glands associated with the integumentary system.	
6.03 Anatomy	
--No competency for this category--	
6.04 Physiology	
6.04.01 Physiological processes related to injury, including cellular injury and adaptive change.	
6.04.02 Temperature regulation and sensory reception.	
6.04.03 Absorption and elimination functions of the integumentary system.	
6.04.04 Protective functions of the integumentary system.	
6.05 Biochemistry	
6.05.01 Synthesis of vitamin D in skin.	
6.05.02 The role of essential and non-essential nutrients associated with the structure and function of the integumentary system.	
6.06 Genetics	
6.06.01 Gene expression and consequences of the genetic abnormalities that underlie integumentary disease processes.	
6.07 Microbiology	
6.07.01 Characteristics and role of normal flora and role of infectious agents in dermatological conditions.	
6.08 Pathology	
6.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the integumentary system.	
7. MUSCULOSKELETAL SYSTEM	**7-9%**
7.01 Embryology	

Competencies	% of Exam
7.01.01 Embryological development of the musculoskeletal system including muscle, bone, connective tissue, and joints.	
7.02 Histology	
7.02.01 Microscopic anatomy of the musculoskeletal system including muscles, bones, and joints.	
7.03 Anatomy	
7.03.01 Classification, location and structure of the different types of joints in the body.	
7.03.02 Origin, insertion, main action, and innervation of the muscles and ligaments of the body.	
7.03.03 Classification, location and structure of the bones of the body.	
7.04 Physiology	
7.04.01 Mechanisms and factors affecting contraction of skeletal, smooth, and cardiac muscle.	
7.04.02 Function of connective tissues of the musculoskeletal system.	
7.04.03 Physiological adaptive changes to the musculoskeletal system in response to fasting and exercise.	
7.04.04 Remodeling and repair of osseous and cartilaginous structures and the nutrients affecting it.	
7.04.05 Integrative functions of the musculoskeletal system related to proprioception, posture, venous return, and lymphatic flow.	
7.05 Biochemistry	
7.05.01 Metabolic pathways of the musculoskeletal system.	
7.06 Genetics	
7.06.01 Gene expression and consequences of the genetic abnormalities that underlie musculoskeletal disease processes.	
7.07 Microbiology	
--No competency for this category--	
7.08 Pathology	
7.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the musculoskeletal system.	
8. NEUROLOGICAL SYSTEM	**10-12%**
8.01 Embryology	
8.01.01 Embryological development of the neural tube and its derivatives.	
8.02 Histology	
8.02.01 Microscopic anatomy of neurons and neuroglia.	
8.03 Anatomy	
8.03.01 Location and structure of the central nervous system and cranial nerves.	
8.03.02 Location and structure of the peripheral nervous system and spinal nerves.	
8.03.03 Structures involved in special senses.	
8.03.04 Pathways of the cerebral blood supply and flow of cerebrospinal fluid.	
8.04 Physiology	
8.04.01 Functions and components of the brain and spinal cord.	
8.04.02 Functions and pathways of the cranial nerves.	
8.04.03 Function of the peripheral nervous system.	

Competencies	% of Exam
8.04.04 Pathways and functions of the autonomic nervous system.	
8.04.05 Pathways and functions of the somatic nervous system.	
8.04.06 Pathways and functions of the special senses and associated structures.	
8.04.07 Regulation of synaptic transmission, graded potentials, action potential, and axon conduction.	
8.05 Biochemistry	
8.05.01 Metabolic pathways of the neurological system.	
8.05.02 Neurotransmitter synthesis, function, and degradation.	
8.06 Genetics	
8.06.01 Gene expression and consequences of the genetic abnormalities that underlie neurological disease processes.	
8.07 Microbiology	
8.07.01 Infectious agents of the neurological system.	
8.08 Pathology	
8.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the nervous system.	
9. PULMONARY SYSTEM	**7-9%**
9.01 Embryology	
9.01.01 Embryological development of the respiratory tract.	
9.02 Histology	
9.02.01 Microscopic anatomy of the respiratory tract.	
9.03 Anatomy	
9.03.01 Location and structure of the upper respiratory tract.	
9.03.02 Location and structure of the thorax in relation to the pleura, lungs, heart, mediastinum, and diaphragm.	
9.04 Physiology	
9.04.01 Circulation of blood and the flow of air in the lungs.	
9.04.02 Regulation of ventilation.	
9.04.03 Regulation of gas exchange and tissue perfusion.	
9.04.04 Physiological adaptive changes related to exercise and environmental factors.	
9.04.05 Non-respiratory functions of the pulmonary system.	
9.05 Biochemistry	
9.05.01 Metabolic pathways of the pulmonary system.	
9.06 Genetics	
9.06.01 Gene expression and consequences of the genetic abnormalities that underlie pulmonary disease processes.	
9.07 Microbiology	
9.07.01 Infectious agents of the pulmonary system.	
9.08 Pathology	
9.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the pulmonary system.	
10. SEXUAL HEALTH	**8-10%**
10.01 Embryology	

Competencies	% of Exam
10.01.01 Embryological development of the sexual organs, the placenta, and the breast.	
10.01.02 Developmental processes related to gametogenesis, implantation, and embryogenesis.	
10.02 Histology	
10.02.01 Microscopic anatomy of the sexual organs and the breast.	
10.03 Anatomy	
10.03.01 Location and structure of the sexual organs and breast.	
10.04 Physiology	
10.04.01 Mechanisms of sexual arousal and response.	
10.04.02 Regulation of hormones related to sexual functions.	
10.04.03 Regulation of menstruation.	
10.04.04 Regulation of oogenesis and spermatogenesis.	
10.04.05 Physiological adaptations related to pregnancy.	
10.04.06 Regulation of lactation.	
10.05 Biochemistry	
10.05.01 Biochemistry of hormone synthesis and degradation related to sexual functions.	
10.05.02 Metabolic pathways of the reproductive system.	
10.06 Genetics	
10.06.01 Gene expression and consequences of the genetic abnormalities that underlie reproductive disease processes.	
10.07 Microbiology	
10.07.01 Characteristics of infectious agents involved in sexually transmitted infections.	
10.08 Pathology	
10.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the reproductive system.	
11. URINARY SYSTEM	**6-8%**
11.01 Embryology	
11.01.01 Embryological development of the urinary system.	
11.02 Histology	
11.02.01 Microscopic anatomy of the urinary system.	
11.03 Anatomy	
11.03.01 Location and structure of the urinary system.	
11.04 Physiology	
11.04.01 Circulation of blood in the urinary system.	
11.04.02 Regulation of urinary filtration, re-absorption, and secretion.	
11.04.03 Regulation of blood pressure and red blood cell production.	
11.04.04 Regulation of fluids, osmolality, electrolytes, vitamins, minerals, and pH.	
11.05 Biochemistry	
11.05.01 Metabolic pathways of the urinary system.	
11.06 Genetics	
11.06.01 Gene expression and consequences of the genetic abnormalities that underlie urinary disease processes.	

Competencies	% of Exam
11.07 Microbiology	
11.07.01 Infectious agents of the urinary system.	
11.08 Pathology	
11.08.01 Pathogenesis and etiology, risk factors, complications, and clinical characteristics of common conditions related to the urinary system.	

Other Blueprint Parameters

Patient Population	% of Exam
Pediatric (0-14)	10-20%
Adult (15-49)	30-40%
Older Adult (50-65)	30-40%
Geriatric (over 65)	10-20%

Item Type	% of Exam
Independent	100%

Taxonomy (Cognitive Level)	% of Exam
Knowledge/Comprehension	91-95%
Application	5-9%

CONDITIONS TESTED ON THE BIOMEDICAL SCIENCES EXAMINATION**

1. CARDIOVASCULAR SYSTEM

A. **Circulatory flow:** aortic aneurysm; aortic dissection; arteriosclerosis and atherosclerosis; chronic venous insufficiency; lymphedema; peripheral arterial disease (PAD); familial hypercholesterolemia; giant cell arteritis (temporal arteritis); deep vein thrombosis (DVT); varicose veins; Raynaud's disease (primary Raynaud's phenomenon).
B. **Ischemic conditions:** angina pectoris; coronary artery disease; myocardial infarction; chronic ischemic heart disease.
C. **Blood pressure:** hypertensive crisis; hypotension; hypotensive shock; primary hypertension; secondary hypertension pulmonary hypertension.
D. **Arrhythmias:** atrial and ventricular premature beats; atrial fibrillation; heart block; cardiac arrest; premature ventricular contractions/ventricular ectopic beats; sick sinus syndrome; sinus bradycardia; sinus tachycardia; supraventricular tachyarrhythmia; ventricular fibrillation; ventricular tachycardia; Wolff-Parkinson-White (WPW) syndrome.
E. **Infectious/Inflammatory/Immunologic:** Chagas disease; viral hemorrhagic fever (Yellow fever, Dengue fever, filoviruses); viral myocarditis; bacterial endocarditis; pericarditis (primary and secondary); Raynaud's syndrome (secondary Raynaud's phenomenon); rheumatic fever; Rocky Mountain spotted fever; thromboangiitis obliterans; thrombophlebitis; vasculitis.
F. **Neoplastic:** hemangiomas; Kaposi sarcoma.
G. **Degenerative:** cardiomyopathies (dilated, restrictive, hypertrophic); insufficiency of aortic, mitral, pulmonic, and tricuspid valves; mitral valve prolapse; right-sided and left-sided congestive heart failure; stenosis of aortic, mitral, pulmonary, and tricuspid valves.
H. **Genetic, developmental:** arteriovenous malformations; coarctation of the aorta; patent ductus arteriosus; septal defect (atrial, ventricular); Tetralogy of Fallot.
I. **Traumatic:** chest injury with cardiovascular implications; hypovolemic shock.

2. ENDOCRINE SYSTEM

A. **Hypothalamic and pituitary hormone disorders:** acromegaly; central diabetes insipidus; gigantism; hypersecretion; hypogonadism; hyposecretion; nephrogenic diabetes insipidus; pituitary tumours; prolactinoma; Sheehan’s disease (post-partum pituitary necrosis).
B. **Parathyroid disorders:** (hyperparathyroidism; hypoparathyroidism (primary and secondary); parthyroid tumour).
C. **Thyroid and adrenal disorders:** Addison's disease; adrenal tumours; congenital adrenal hyperplasia (CAH); congenital hypothyroidism; Conn’s syndrome; Cushing's disease; Graves’ disease; Hashimoto’s thyroiditis; hyperaldosteronism; hypercorticism; hyperthyroidism; hypoaldosteronism; hypocorticism; hypothyroidism (clinical, subclinical); iodine deficiency goitre; mineral toxicity (iodine); multinodular goitre (MNG); post-partum thyroiditis; subacute thyroiditis (De Quervain's thyroiditis); thyroid tumour; toxic and non-toxic goitre.
D. **Pancreatic disorders:** diabetes mellitus (DM) type I and II; dysinsulinism/insulin resistance; hypoglycemia; insulinoma; metabolic syndrome; pancreatic tumours.
E. **Gastrointestinal:** gastrinoma; multiple endocrine neoplasia (MEN type 1 and 2).
F. **Breast:** galactorrhea, gynecomastia.

3. GASTROINTESTINAL SYSTEM

A. **Vascular:** abdominal tract ischemia; ascites; bowel infarction; bowel ischemia; esophageal varices; hemorrhoids; portal hypertension.
B. **Infectious:** appendicitis; ascaris; bacillus anthracis; bacillus cereus; bacterial gastroenteritis/bacterial dysentery/bacterial enterocolitis; campylobacter; cholera; corynebacterium diphtheriae; dental abscess; escherichia coli (*E. coli*); entamoeba histolytica (amoebic dysentery); enterotoxigenic gastroenteritis; foodborne illness; GI abscess; giardia; gingivitis; helminths (flat worms, flukes); hepatitis (A, B and C); intestinal dysbiosis; Norwalk virus; oral thrush; parotitis; periodontitis/gingivitis; peritonitis; pinworms; post-antibiotic clostridium colitis (*C. difficile*); proctocolitis; rotavirus; round worms; salmonella; shigella; schistosomiasis; stomatitis; Taenia solium (tapeworm); viral gastroenteritis.
C. **Neoplastic:** carcinoid; colon cancer; colorectal cancer; esophageal cancer; gallbladder cancer; gastric cancer; gingival cancer; hepatic cancer; intestinal cancer (gastrinoma); laryngeal cancer; oral leukoplakia; pancreatic cancer; tonsillar cancer.
D. **Degenerative:** achalasia; adynamic ileus; cirrhosis; diverticulosis; fistula; gastroesophageal reflux disease (GERD); hiatal hernia; hypochlorhydria; inguinal hernia; intestinal polyps; rectal prolapse; umbilical hernia.
E. **Inflammatory, immunologic:** anal fissures; anorectal strictures; Barrett's esophagitis; celiac disease (gluten-sensitive enteropathy); cholecystitis; Crohn’s Disease; cryptitis; diverticulitis; duodenal ulcer; eosinophilic esophagitis; esophageal strictures; esophageal ulcer; gastric ulcer/peptic ulcer disease (PUD); gastritis; irritable bowel syndrome (IBS); pancreatitis; proctitis; splenomegaly; ulcerative colitis.
F. **Genetic, developmental:** anal stenosis; digestive enzyme deficiencies; failure to thrive; familial polyposis coli; galactosemia; Gilbert’s syndrome; glycogen storage disease; Hirschsprung's disease; infantile colic; intussusception/volvulus; lactase deficiency; Meckel's diverticulum; meconium ileus; omphalocele; pyloric stenosis.
G. **Toxic, environmental:** poisoning; toxic megacolon.
H. **Traumatic: paralytic** ileus; injuries involving the abdominal cavity; intestinal obstruction.
I. **Metabolic:** alcoholic hepatitis; cholelithiasis; cholestasis; kwashiorkor; marasmus; metabolic syndrome; non-alcoholic steatohepatitis (NASH)/fatty liver disease: obesity; protein-energy malnutrition (PEM); sialolithiasis.

4. HEMATOPOIETIC SYSTEM

A. **Infectious:** babesiosis; cytomegalovirus; disseminated candidiasis; disseminated intravascular coagulation (DIC); lymphadenitis; mononucleosis/Epstein–Barr virus (EBV); Lyme disease; lymphangitis; malaria; phlebitis; schistosomiasis; sepsis; septicemia; systemic candidiasis.
B. **Neoplastic:** Hodgkin's and non-Hodgkin' s lymphoma; leukemias; multiple myeloma.
C. **Genetic, developmental:** acute intermittent porphyria; erythroblastosis fetalis; erythropoietic protoporphyria; familial hypercholesterolemia; familial mediterranean fever (FMF); glucose-6-phosphate dehydrogenase deficiency (G6PD deficiency); hemochromatosis; hemophilia; hereditary spherocytosis; porphyria cutanea tarda; sickle cell disease; thalassemia (alpha, beta); von Willebrand's disease.
D. **Toxic, environmental:** manifestations of mineral toxicity (iron, copper, selenium, arsenic, lead [plumbism], mercury); vitamin K deficiency; vitamin toxicity (A, D, E, K, pyridoxine).
E. **Blood composition:** anemia of chronic disease; anemias (aplastic, macrocytic, microcytic); basophilia; eosinophilia; hemolytic anemia; Henoch-Schonlein purpura; leukocytosis; leukopenia;

neutropenia; normocytic anemia; polycythemia vera; secondary polycythemia; thrombocytopenia.

5. IMMUNE SYSTEM

A. **Vascular:** temporal arteritis/giant cell arteritis.
B. **Infectious:** coxsackievirus; human immunodeficiency virus (HIV/AIDS); mumps; pseudomonas aeruginosa; streptococcus (agalactiae, mutans, pneumoniae, pyogenes, viridans).
C. **Neoplastic:** monoclonal gammopathies (MGUS); plasma cell dyscrasia; plasmacytoma.
D. **Inflammatory:** anaphylaxis; angioedema; autoimmune hemolytic anemia; autoimmune hepatitis; Bruton's agammaglobulinemia; Chediak-Higashi syndrome; chronic granulomatous disease; Goodpasture syndrome; hypersensitivity reactions (type I, II, III, IV), non-celiac gluten sensitivity; primary biliary cholangitis; reactive arthritis.
E. **Generalized autoimmune disorders:** amyloidosis (primary, secondary); ankylosing spondylitis; granulomatosis with polyangiitis (GPA); myasthenia gravis; myositis (polymyositis, dermatomyositis); necrotizing vasculitis; pernicious anemia; polyarteritis nodosa; poststreptococcal glomerulonephritis; progressive systemic sclerosis (scleroderma); rheumatic fever; Sjogren's syndrome; systemic lupus erythematosus (SLE).
F. **Genetic, developmental:** common variable immune deficiency; Di George syndrome; hereditary angioedema; IGA deficiency; primary immune deficiency; severe combined immunodeficiency; x-linked agammaglobulinemia.

6. INTEGUMENTARY SYSTEM

A. **Vascular:** pressure ulcers; stasis dermatitis.
B. **Infectious:** blepharitis; carbuncle; cellulitis; chicken pox; conjunctivitis (viral, bacterial); erysipelas; erythema infectiosum (fifth disease); erythema nodosum; folliculitis; furuncles; hand-foot-mouth disease; herpangina; herpes simplex virus (HSV1, HSV2); hordeolum; impetigo; measles; methicillin resistant staphylococcus aureus (MRSA); molluscum contagiosum; mucocutaneous candidiasis; necrotizing fasciitis; onychomycosis; orbital cellulitis; paronychia; pediculosis; pityriasis alba and rosea; roseola; rubella; scabies; scarlet fever; tinea (capitis, versicolour, corporis); varicella zoster virus (VZV); verruca vulgaris (common wart).
C. **Neoplastic:** actinic keratosis; basal cell carcinoma; dysplastic nevi; melanoma; Merkel cell cancer; squamous cell carcinoma.
D. **Benign skin lesions:** acrochordon; benign melanocytic nevus (nevocellular nevus); lichenification; lipoma; sebaceous cyst; seborrheic keratosis; xanthelasma.
E. **Inflammatory, immunologic:** acanthosis nigricans; acne rosacea; acne vulgaris; atopic dermatitis (eczema); chalazion; conjunctivitis (allergic, chemical); contact dermatitis; dacryocystitis; dermatitis herpetiformis; dyshidrotic eczema; erythema multiforme; iritis/keratitis; nummular eczema; pterygium; seborrheic dermatitis; toxic epidermal necrolysis (ten); urticaria.
F. **Genetic, developmental:** albinism; Ehlers–Danlos syndrome (EDS); epidermolysis bullosa; Malassezia furfur (dandruff).
G. **Autoimmune:** alopecia areata; bullous pemphigoid; lichen planus; lichen sclerosus; pemphigus; psoriasis; vitiligo.
H. **Traumatic:** animal bites; bedbug bites; scorpion bites; skin trauma (wounds, bites, burns, foreign bodies); snake bites; spider bites.

7. MUSCULOSKELETAL SYSTEM

A. **Vascular:** avascular necrosis of the femoral head; gangrene.
B. **Infectious:** genu valgum; osteomyelitis; septic arthritis.
C. **Neoplastic:** Chondroma; chondrosarcoma; Ewing's sarcoma; osteochondroma; osteoid osteoma; osteoma; osteosarcoma; rhabdomyosarcma; sarcoma.
D. **Degenerative:** discopathy (cervical, thoracic, lumbar); facet syndrome; ganglion cyst; hallux malleus/hammer toes; hyporeflexia/areflexia; kyphosis; lordosis; osteoarthritis (OA); osteomalacia; spinal stenosis; spondylolisthesis; spondylosis.
E. **Inflammatory, immunologic:** adhesive capsulitis; amyotrophic lateral sclerosis (ALS); bursitis; chondromalacia patella; chronic fatigue syndrome; costochondritis; de Quervain's tenosynovitis; epicondylitis; fibromyalgia; polymyalgia rheumatica (PMR); radiculitis; reactive arthritis (Reiter's syndrome); tendonitis; trigger finger.
F. **Genetic, developmental:** achondroplasia; cleft lip/palate; congenital hip dislocation; Duchenne muscular dystrophy; Dupuytren's contracture; femoral anteversion; genu valgum; internal tibial torsion; juvenile rheumatoid arthritis; Legg-Calve-Perthes disease; Marfan syndrome; methylenetetrahydrofolate reductase (MTHFR) gene defect; muscular dystrophy; Osgood-Schlatter disease; osteitis deformans/Paget's disease of bone; osteochondrosis; osteogenesis imperfecta; scoliosis; subluxation of radial head/nursemaid's elbow.
G. **Autoimmune:** psoriatic arthritis; rheumatoid arthritis.
H. **Toxic, environmental:** mineral toxicity (fluorine).
I. **Traumatic:** Baker's cyst; bunion; carpal tunnel syndrome; disc herniation; disc rupture; dislocation; fracture; genu valgum; iliotibial band syndrome; medial tibial syndrome; meniscal and ligament disorders; nerve root entrapment; patellofemoral disorders; plantar fasciitis; post-calcaneal neuroma; rotator cuff injury; sciatica; separation (diastasis); sprains/strains; tears; tendon rupture; thoracic outlet syndrome (TOS); ulnar nerve entrapment; whiplash.
J. **Metabolic:** Gout; osteopenia; osteoporosis; pseudogout; rickets; scurvy.

8. NEUROLOGICAL SYSTEM

A. **Vascular:** cerebral aneurysm; cerebral edema; cerebrovascular accident (CVA) (ischemic, hemorrhagic); cluster headache; embolism; encephalopathy (ischemic, hypoxic); hydrocephalus; intracranial hemorrhage (cerebral, subarachnoid, epidural/subdural); migraine headache; cerebral infarction (thrombosis, embolism, common obstructions); tension headache; transient ischemic attack (TIA); vascular lesions of the spinal cord.
B. **Infectious:** arbovirus; botulism; brain abscess; encephalitis; leprosy; meningitis (viral/bacterial); neuritis; neurosyphilis; poliomyelitis; prion disease; progressive multifocal leukoencephalopathy (PML); rabies; shingles/postherpetic neuralgia; subacute sclerosing panencephalitis (SSPE); tetanus; vertigo caused by inner ear infections.
C. **Neoplastic:** astrocytoma/oligodendroglioma; glioma; medulloblastoma; meningiomas; neuroblastoma; neurofibromatosis; neuroma; retinoblastoma; schwannoma; tumour related seizure.
D. **Degenerative:** acute disseminated encephalomyelitis; amyotrophic lateral sclerosis (ALS); cataract; dementia (Alzheimer's, senile, multi-infarct); depression; dysthymia; generalized anxiety disorder; glaucoma; hypertensive retinopathy; macular degeneration; mild cognitive impairment; mood disorders; neuralgia; otosclerosis; Parkinson's disease; peripheral neuropathy; presbycusis; presbyopia; schizophrenia; social phobia.

E. **Inflammatory, immunologic:** acute inflammatory demyelinating neuropathy/Guillain-Barré syndrome; Bell's palsy; encephalopathy (hepatic, renal); labyrinthitis; Ménière's disease (MD); multiple sclerosis (MS); post-polio syndrome; uveitis; vestibular neuronitis; vestibulitis.
F. **Genetic, developmental:**
attention deficit disorder/attention deficit hyperactivity disorder; autism spectrum disorders; Down's syndrome; Huntington's disease; leukodystrophies; neurofibromatosis; personality disorders; pervasive developmental disorders; phenylketonuria (PKU); seizure disorders (epileptic, focal, generalized); spina bifida; Tourette syndrome; tuberous sclerosis; Wilson's disease.
G. **Toxic, environmental:** delirium; pseudo dementia; vitamin deficiency (A, B1, B12, D, K); vitamin toxicity (A, D); Wernicke-Korsakoff syndrome.
H. **Traumatic:** anorexia nervosa; benign paroxysmal positional vertigo; bulimia; diabetic retinopathy; metabolic syndrome; retinal detachment; ruptured tympanic membrane; spinal cord compression/transection; substance abuse (alcohol, prescription and street drugs); temporomandibular joint disorder; traumatic brain injury (concussion, contusion, hemorrhage, hematoma); trigeminal neuralgia; upper motor neuron lesion.

9. PULMONARY SYSTEM

A. **Vascular:** chylothorax; hemothorax; pulmonary edema; pulmonary embolism; pulmonary hypertension; pulmonary infarction.
B. **Infectious:** atypical pneumonia; bacterial pharyngitis; blastomycosis; bronchiectasis; bronchiolitis; bronchitis; bronchopneumonia; coccidioidomycosis; croup; diphtheria; epiglottitis; fungal pneumonia; Haemophilus influenza; histoplasmosis; influenza; laryngeal polyp; laryngitis; lobar pneumonia; lung abscess; mastoiditis; otitis externa; otitis media; peritonsillar abscess; pertussis; pleural empyema (pyothorax); pneumococcal infection; pneumocystis pneumonia (PCP); respiratory syncytial virus (RSV); retropharyngeal abscess; streptococcal pharyngitis (GBHS); tonsillitis; tuberculosis (TB); viral pharyngitis.
C. **Neoplastic:** bronchial carcinoid; lung adenocarcinoma; mesothelioma; non-small cell carcinoma; Pancoast tumor; small/oat cell carcinoma.
D. **Degenerative:** chronic bronchitis, emphysema.
E. **Inflammatory, immunologic:**
allergic rhinitis; asthma; chronic obstructive pulmonary disease (COPD); idiopathic pulmonary fibrosis; nasal polyps; pleural effusion; pleuritis; sinusitis.
F. **Genetic, developmental:** cystic fibrosis (CF); tracheoesophageal fistula.
G. **Toxic, environmental:** asbestosis (pleural fibrosis); pneumoconiosis; psittacosis; sarcoidosis; silicosis.
H. **Traumatic:** acute respiratory distress syndrome; airway obstruction; atelectasis; infant respiratory distress syndrome; pneumothorax; thoracic injuries with pulmonary implications.

10. SEXUAL HEALTH

A. **Infectious:** balanitis; candida albicans; cervicitis; chancroid; chlamydia trachomatis; condyloma latum; condylomata acuminate; endometritis; epididymitis; genital wart; gonorrhea; herpes genitalis; human papilloma virus (HPV); lymphogranuloma venereum; mastitis; orchitis; pelvic inflammatory disease; salpingitis; syphilis; toxic shock syndrome; trichomoniasis; vaginitis/bacterial vaginosis (BV); vaginal candidiasis; trichomoniasis.

B. **Neoplastic:** benign prostatic hyperplasia; breast cancer - ductal carcinoma in situ (DCIS), lobular carcinoma in situ (LCIS), inflammatory, invasive; breast cancer tumour suppressor (BRCA1, BRCA2) gene defect; breast fibroadenoma; cervical cancer; cervical intraepithelial neoplasia (CIN); cervical polyps; diffuse cystic mastopathy (fibrocystic breast disease); endometrial cancer; endometrial hyperplasia; galactocele; hematocele; hydrocele; leiomyoma (fibroids); leiomyosarcoma; ovarian cancer; mammary duct ectasia; Paget's disease of the breast; prostate cancer; spermatocele; squamous cell carcinoma of the penis; teratoma; testicular tumors; uterine adenocarcinoma; uterine polyps; vaginal carcinoma; varicocele; vulvar carcinoma.
C. **Inflammatory, immunologic:** adenomyosis; Bartholin's cyst; endometriosis; Nabothian cysts; prostatitis; Peyronie's disease.
D. **Genetic, developmental:** cryptorchidism; epispadias; fragile X syndrome; hypospadias; imperforate hymen; Klinefelter syndrome; paraphimosis; phimosis; pseudohermaphroditism; septate vagina and uterus; Turner's syndrome.
E. **Traumatic:** cystocele; dyspareunia; mastalgia; rectocele; testicular torsion; trauma to genitourinary tract (foreign bodies, injuries); urethrocele.
F. **Psychiatric, psychosomatic:** ejaculation disorders; erectile dysfunction; orgasm disorders; vaginismus.
G. **Menstrual and ovarian conditions:** amenorrhea; anovulation; dysfunctional uterine bleeding; dysmenorrhea; menopause; menorrhagia; oligomenorrhea; ovarian cysts; paraovarian cysts; polycystic ovarian syndrome (PCOS); pre-menstrual disorder; premature ovarian failure; ruptured ovarian cyst.
H. **Conditions critical in pregnancy:** choriocarcinoma; gestational diabetes; gestational hypertension; gestational trophoblastic disease/hydatidiform mole; group B streptococcus; hyperemesis gravidarum; invasive mole; polyhydramnios/oligohydramnios; postpartum depression; pre-eclampsia; toxoplasmosis.
I. **Obstetric emergencies:** abruptio placenta; eclampsia; ectopic pregnancy; placenta previa; post-partum hemorrhage; pre-term labor; prolapsed cord; RH factor incompatibility; threatened and spontaneous abortion.

11. URINARY SYSTEM

A. **Vascular:** hemolytic uremic syndrome (HUS); hypertensive kidney disease (nephrosclerosis); renal artery stenosis; renal infarction.
B. **Infectious:** acute pyelonephritis; chronic pyelonephritis; cystitis; proteus mirabilis; urethritis (gonococcal and nongonococcal).
C. **Neoplastic:** renal cell carcinoma; urinary tract cancer (bladder cancer); Wilms' tumor
D. **Degenerative:** glomerulosclerosis; hydronephrosis; nephropathy; renal failure (acute and chronic); secondary vesicoureteral reflux (VUR); tubular necrosis.
E. **Inflammatory, immunologic:** glomerulonephritis; interstitial cystitis; nephritis; nephritic syndrome; nephrosis; nephrotic syndrome.
F. **Genetic, developmental:** 21-hydroxylase deficiency; Alport's syndrome; Fanconi's syndrome; polycystic kidney disease (PKD); primary vesicoureteral reflux (VUR); renal agenesis; renal glucosuria.
G. **Metabolic:** nephrolithiasis (renal calculi).

*** This condition classification system is by predominant function/pathophysiological process underlying the observable phenomenon. The level of manifestation of the dysfunction can be universal, limited to a few body systems, confined to one system or particular type of tissue. It is understood that many conditions can be classified under more than one category; a judgment is made as to which category fits with the predominant dysfunction.*

SAMPLE (STAND ALONE) QUESTIONS

Question 1
A 28-year-old female presents with flank pain, nausea, and dysuria. Microscopic analysis of the urine indicates E. coli infection and leukocyte casts. These observations are indicative of which condition?

A) Acute pyelonephritis.
B) Interstitial cystitis.
C) Acute cystitis.
D) Non-gonococcal urethritis.

Question 2
What is the most common cause of a third heart sound in older adults?

A) Angina pectoris.
B) Cardiac arrhythmia.
C) Congestive heart failure.
D) Coronary artery disease.

Answer Key
1. A 2.B

TIPS FOR ANSWERING MULTIPLE CHOICE QUESTIONS

Tip #1: Read Each Question Carefully

- When you're reading a question, stop and make note of the most important details (e.g., patient symptoms, patient history, etc.). Reread the question if necessary, to ensure that you have all the relevant information before you select an answer.
- Make sure that you have access to all of the details. Some questions may be part of a longer "case". These case-based questions also include a passage with additional details. When you get one of these, the information you need could be in the case passage, in the question itself, or in both. So make sure to read both parts before selecting an answer.
- Watch out for key words in the question like "**not**", or "**except**"; as well as nuances like "what is the **best** response?" or "what is the **priority** action?" These could change the meaning of the question (as well as the correct answer).
- If you're having trouble understanding the question, try rephrasing it in your own words. This is especially helpful when dealing with questions that include negative phrasing (for example "not"), or other tricky language.

Tip #2: Try to Answer Each Question before Looking at the Answer Options

- Remember that a well-written multiple-choice question is something that you should be able to answer without seeing the options. In fact, many of the answer options are there to tempt and distract you. Try reading the entire question to see if you know the answer **before** you look at the answer options.
- One useful strategy is the 'hand cover' approach. To do this, cover the answer options and then read the question. Doing this can help you avoid getting confused by distractor options (remember that they're meant to tempt you); and will encourage you to focus on what the question is actually asking.

Tip #3: Focus on Answering One Question at a Time

- The questions on the exam are designed to be independent of one another. This means knowing the answer to one question should not help you answer a different question (similarly, getting the answer wrong to one question won't force you to answer other questions incorrectly). Focus on one question at a time (and try not to let a difficult question make you anxious when you read the next one).
- The order of correct answers will be random. So don't try to look for patterns in your answers. For example, don't worry if you've answered "C" four times in a row. Just focus on answering each individual question without thinking about how you answered the other questions.
- Focus on one question at a time; but remember that you do have a limited time to finish the entire exam. Consider setting a time limit for answering each question; or skipping and then coming back to any questions you can't answer (remember that every question is independent of one another).

Tip #4: Don't Get Fooled by the Distractor Options

- On the examination, each question will have four possible answers. Your task is to select the option that you think is the correct (or the best possible) answer out of the four alternatives that are provided.
- Remember that, of these four options, a question will only have **one** correct (or clearly best) option. However, the wrong answer options will be designed to look plausible. Therefore, it's important to select the best answer to the question being asked; not just an answer that *seems* correct (as often, many answers will seem correct).
- Beware of answer options that include unqualified absolutes such as "**never**", "**always**", and "**ensures**". These statements are very restrictive and are very difficult to defend. Therefore, they are rarely correct.

Tip #5: Remember What You're Being Tested On

- Although the exam may ask you to apply your knowledge to situations that you have not experienced, you should be able to answer them if you apply the specialized knowledge and skills that you acquired in your education program. Remember that every question will relate to specific competencies (identified on

the examination blueprint); and will test your knowledge, skills, and judgments related to these areas of naturopathic clinical practice specifically.
- There are several cognitive levels that multiple-choice questions can assess you on. Be prepared for questions that: 1) test your ability to recall information and facts; 2) test your ability to apply principles and procedures to patient situations; and, 3) test your ability to apply your best critical judgment to naturopathic practice.
- Remember that some questions may refer to an image (e.g., an x-ray or photograph).

Tip #6: When in Doubt…Guess (But Do So Strategically)
- You don't lose points for incorrect answers (you just don't get the point for being correct). This means that if you guess and get a question wrong, your score will be the same as it would be if you didn't answer that question at all. Therefore, there's no harm in guessing if you really don't know the answer.
- If and when you need to make a guess, try to do so methodically. For example, try to eliminate any answer options that you know are incorrect, so that you can narrow down your choices. Then, relate each remaining answer option back to the question to see if it fits. Compare these options and identify how they differ. Then, make an informed guess.

Other Tips
Make sure to get a good night's rest before the exam!

REFERENCE BOOK LIST

Anatomy

- Clinical Oriented Anatomy 7th Ed. (Moore and Dalley) ISBN 13: 978-1-4511-1945-9
- Clinical Anatomy by Regions 9th Ed. (Snell) ISBN 13: 9788184736588
- Clinical Neuroanatomy and Related Neuroscience 4th Ed. (Fitzgerald and Folan-Curran) ISBN 13: 9780702025587
- Fundamental Neuroscience for Basic and Clinical Applications 4th Ed. (Haines) ISBN 13: 9781437702941

Histology

- Junqueira's Basic Histology: Text and Atlas 14th Ed. (Meshcher) ISBN 13: 9780071842709

Biochemistry

- Lippincott Illustrated Reviews: Biochemistry (Ferrier) ISBN 13: 9781496344496 or ISBN - 13: 9781496344496
- Lehninger Principles of Biochemistry 7th Ed. (Nelson and Cox) ISBN-10: 1464126119 or ISBN-13: 9781464126116
- Biochemistry 4th Ed. (Matthews and Holde) ISBN-1-: 0138004641 or ISBN-13: 9780138004644

Embryology

- The Developing Human: Clinically- Oriented Embryology 10th Ed. (Moore, Persaud and Torchia) ISBN-10: 0323313388 or ISBN-13: 9780323313384
- Netter's Atlas of Human Embryology Revised (Cochard) ISBN-10: 1455739774 or ISBN-13: 9781455739776
- Langman's Medical Embryology 13th Ed. (Sadler) ISBN-10:1451191642 or ISBN-13:9781451191646

Physiology

- Hole's Human Anatomy and Physiology 14th Ed. (Shier, Butler and Lewis) ISBN-10: 0078024293. ISBN-13: 9780078024290
- Guyton and Hall Textbook of Medical Physiology 13th Ed. (Hall) ISBN-10: 1455770051 or ISBN-13: 978-1455770052
- Textbook of Medical Physiology 3rd Ed. (Boron and Boulpaep) ISBN-10: 1455743771 or ISBN-13: 9781455743773
- Principles of Anatomy and Physiology 14th Ed. (Tortora and Derrickson) ISBN-10: 1118345002 or ISBN-13: 9781118345009

Immunology

- Cellular and Molecular Immunology 9th Ed. (Abbas, Lichtman and Pillai) ISBN-10: 0323479782 or ISBN-13: 978-0323479783
- Janeway's Immunobiology 8th Ed. (Murphy) ISBN-10: 0815344457 or ISBN-13: 9780815344452
- Medical Immunology (Parslow, Stites, Terr and Imboden)

Microbiology

- Mims' Pathogenesis of Infectious Disease 6th Ed. (Nash, Dalziel and Fitzgerald) ISBN-10: 0123971888 or ISBN-13: 9780123971883
- Microbiology: A Human Perspective 7th Ed. (Nester, Anderson and Roberts) ISBN-10: 0073375314 or ISBN-13: 9780073375311
- Medical Microbiology 8th Ed. (Murray, Rosenthal, Pfaller) ISBN-10: 0323299563 or ISBN-13: 9780323299565

Pathology

- Robbins Basic Pathology 10th Ed. (Kumar, Abbas and Aster) ISBN-10: 0323353177. ISBN-13: 9780323353175
- Rubin's Pathology 6th Ed. (Rubin and Strayer) ISBN-10:1605479683 or ISBN-13: 9781605479682

General Clinic

- Bates' Guide to Physical Examination and History Taking 10 Ed. (Bickley) ISBN-10:1605478032 or ISBN-13:9781605478036
- DeGowin's Diagnostic Examination 10 Ed. (LeBlond, Brown and Manish) ISBN-10: 0071814477 or ISBN-13: 978-0071814478

**** Later editions of texts are accepted as suitable reference material to help guide candidates in their preparations for the Ontario Biomedical Exam.*