

1021- Human Physiology 2014/2015

Course Manager: Dr. John Ciriello
john.ciriello@schulich.uwo.ca

Lecture Time: Physiology 1021 Section 001:
9:30 – 10:20 am Tuesday and Thursday

Room: Natural Sciences Centre Room 145

1. Course Information:

Physiology 1021 Human Physiology 2014-2015

Introduction:

The course, **HUMAN PHYSIOLOGY**, is designed to help you learn the basic facts, concepts and principles that are essential to your understanding of the function of the human body, so that you will be able to use that knowledge to solve physiological problems. Because most of you who are enrolled in this course intend to pursue careers related to health, the course will place some emphasis on clinical correlations with pathophysiology.

Overall Objectives of the Course:

There are a few general objectives that you should always keep in mind as you study. You will be expected to be able to recall or recognize facts, concepts or principles. The ability to recall, however, is of little value unless you can do something with the information that you have learned. Therefore, you should also be able to use your knowledge to explain physiological function. Most important, of course, is your ability to use your knowledge to predict the consequences of alterations to normal physiological function or to predict changes in physiological systems. Not only are these latter objectives the most useful skills you can learn, but also they are the most interesting.

Each section of the course has its own individual objectives that you should be able to answer upon completion of the particular section. In addition to material found within your textbooks, lectures will also include up-to-date information about current health related issues and the physiology associated with these disease processes.

Format of the Course:

The course has five essential parts: lectures, tutorials, a textbook, this study guide and, inevitably, tests. Each of the parts is described on the following pages. Read these pages carefully so that you understand exactly how the course will run. If you have any questions about the course, please ask.

During the course, your instructors may make special announcements from time to time in the lectures. You should make sure that, if you cannot attend a class, one of your colleagues tells you about any such announcements.

All members of the teaching group assigned to this course readily welcome the opportunity to discuss problems or points of interest with any and every student. We are also interested in receiving comments, suggestions or criticisms which you might have in relation to the course.

Lectures:

Section 001: Tuesday and Thursday, 9:30 – 10:20 AM, NS 145

COURSE SCHEDULE

DATE	LECTURER	TOPIC
Sept. 04, 2014	J. Ciriello F. Caetano	Introduction to Physiology /Excitable Cells 1
Sept. 09	F. Caetano	Excitable Cells 2
Sept. 11	F. Caetano	Excitable Cells 3
Sept. 16	F. Caetano	Excitable Cells 4
Sept. 18	F. Caetano	Excitable Cells 5
Sept. 23	S. Lomber	Sensory Neurophysiol 1
Sept. 25	S. Lomber	Sensory Neurophysiol 2
Sept. 30	S. Lomber	Sensory Neurophysiol 3
Oct. 02	S. Lomber	Sensory Neurophysiol 4
Oct. 07	S. Lomber	Sensory Neurophysiol 5
Oct. 09	A. Nissen	Endocrine 1
Oct. 14	A. Nissen	Endocrine 2
Oct. 16	A. Nissen	Endocrine 3
Oct. 21	A. Nissen	Endocrine 4

DATE	LECTURER	TOPIC
Oct. 23	J. Ciriello	Motor Neurophysiol I
Oct. 24	Midterm I (1 hour)	Location: NS 145 and NS 1 7:30 PM
Oct. 27	Make-up exam	Location: SH 2317 6:00 PM
Oct. 28	J. Ciriello	Motor Neurophysiol 2
Oct. 30-31	Fall Break	Fall Break
Nov. 04	J. Ciriello	Motor Neurophysiol 3
Nov. 06	T. Stavraky	Muscle Physiology 1
Nov. 11	T. Stavraky	Muscle Physiology 2
Nov. 13	T. Stavraky	Cardiovascular Physiol 1
Nov. 18	T. Stavraky	Cardiovascular Physiol 2
Nov. 20	T. Stavraky	Cardiovascular Physiol 3
Nov. 25	T. Stavraky	Cardiovascular Physiol 4
Nov. 27	T. Stavraky	Cardiovascular Physiol 5
Dec. 02	T. Stavraky	Cardiovascular Physiol 6
Last day of classes December 04, 2014	Midterm II (1 hour) during Exam Period Dec. 6 - 17	Location and Time: TBA
Jan. 05, 2015	Make-up exam	Make-up exam
Jan. 06	A. Woods	Renal Physiology 1
Jan. 08	A. Woods	Renal Physiology 2
Jan. 13	A. Woods	Renal Physiology 3
Jan. 15	A. Woods	Renal Physiology 4
Jan. 20	A. Woods	Renal Physiology 5
Jan. 22	A. Woods	Renal Physiology 6
Jan. 27	A. Nissen	Respiration 1
Jan. 29	A. Nissen	Respiration 2
Feb. 03	A. Nissen	Respiration 3
Feb. 05	A. Nissen	Respiration 4
Feb. 10	A. Nissen	Respiration 5

DATE	LECTURER	TOPIC
Feb. 12	A. Woods	Digestion 1
February 16-20	Reading Week	Reading week
Feb. 24	A. Woods	Digestion 2
Feb. 26	A. Woods	Digestion 3
Feb. 27	Midterm III (1 hour)	Location: NS 145 and NS 1, 7:30 PM
Mar. 02	Make-up exam	Location: SH 2317, 6:00 PM
Mar. 03	A. Woods	Digestion 4
Mar. 05	A. Woods	Digestion 5
Mar. 10	A. Woods	Digestion 6
Mar. 12	A. Nissen	Reproduction 1
Mar. 17	A. Nissen	Reproduction 2
Mar. 19	A. Nissen	Reproduction 3
Mar. 24	A. Nissen	Reproduction 4
Mar. 26	J. Ciriello	Integrative Neurophysiol 1
April 30	J. Ciriello	Integrative Neurophysiol 2
April 02	J. Ciriello	Integrative Neurophysiol 3
April 07	J. Ciriello	Integrative Neurophysiol 4
April 11-30th	Final Exam (2 hours)	Location and Time TBA- during final exam period

The tutorial schedule and material will closely follow the lecture schedule.

Tutorials:

These periods will consist of discussions designed to help you learn physiology. During these sessions, the tutorial leaders will also review the materials covered in the Study Activities and the Practice Questions at the end of each section in this Study Guide. In addition, they will help you in resolving any problems you may have with the course material. The success of these sessions depends primarily on how you use them.

****Tutorials attendance is mandatory in this course****

You will be assigned a mark based on your attendance and performance on mini-quizzes to be given within the tutorials periods.

These tutorials are not meant to be another lecture!!

Tutorial Schedule:

<i>Section 002:</i>	Tuesday, 3:30 – 4:20 PM	SEB 2202
<i>Section 003:</i>	Tuesday, 4:30 – 5:20 PM	SEB 2202
<i>Section 004:</i>	Thursday, 10:30 – 11:20 AM	UCC 289
<i>Section 005:</i>	Thursday, 11:30 – 12:20 PM	UCC 289
<i>Section 006:</i>	Thursday, 10:30 – 11:20 AM	P&AB 34
<i>Section 007:</i>	Thursday, 11:30 – 12:20 PM	P&AB 34
<i>Section 008:</i>	Thursday, 3:30 – 4:20 PM	HSB 9
<i>Section 009:</i>	Thursday, 4:30 – 5:20 PM	HSB 9

Course Requisites:

Prerequisite(s): Grade 12U Biology or its equivalent, Grade 12U Chemistry is recommended

Antirequisite(s): Physiology 1020, 2130, 3120 (or previous Physiology 021, 130, 312)

Senate regulation regarding the student's responsibility regarding requisites:

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor Information:

Physiology 1021 is a team taught course involving six principal lecturers who will teach certain parts of the course. The lecturers are:

Dr. J. Ciriello is the Course Manager for Physiology 1021.

John Ciriello, Ph.D.

john.ciriello@schulich.uwo.ca

Office: MSB 260

Telephone: 519-661-3484

Feel free to drop by to discuss any aspect of the course, but bear in mind that it is best to make an appointment beforehand. Your input is essential to making this an enjoyable learning experience.

Open office hours are 9:00 am to noon on Mondays, however, other times may be set by appointment.

Fabiana Caetano, Ph. D.

fcaetano@robarts.ca

Office: Robarts Research Inst.

Telephone: 519-663-5777, Ext. 24151

Stephen Lomber, Ph. D.

steve.lomber@uwo.ca

Office: Social Science Centre 9232

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Angela Nissen, Ph.D.

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Office: Medical Sciences Bldg., MSB 207

Telephone: 519-661-3543

Tom Stavraky, M. Sc.

tom.stavraky@schulich.uwo.ca .

Office: Medical Sciences Building, MSB 206

Telephone: 519-661-3474

Anita Woods, Ph. D.

anita.woods@schulich.uwo.ca .

Office: Medical Science Building, MSB 208

Telephone: 519-661-4007

Teaching Assistance (TAs):

There will be a teaching assistance for each of the tutorial sections. Each TA is a graduate student in physiology who has completed at least one year of their graduate program. At the time of printing of this study guide, the TAs had not yet been selected. They will be introduced to you on the first day of the course. We recommend that you get to know your TA well and establish a good working relationship with him or her. They are an excellent source of information. If you have problems with the course or particular section of the material, you may wish to contact them first prior to going to the faculty member who may be harder to reach.

If you have a problem with a particular TA, please let the course manager Dr. Ciriello (john.ciriello@schulich.uwo.ca) know as soon as possible.

Course Website:

<https://owl.uwo.ca/portal>

**Log onto OWL using your UWO username and password.
Select Human Physiology 1021 to get to the course website.**

All announcements of importance, such as changes in exam room numbers or exam times and dates, exam results and all lecture notes will be posted on Web-CT under **Announcements**. Bookmark the website and access it on a regular basis to stay up-to-date as to periodic announcements.

OWL is **NOT** a forum in which professors will answer student questions concerning the lecture material. You must contact the Professor in question directly with any questions concerning the course or course material.

You may also want to download the additional Power Point Notes from the OWL site and bring them to the lectures for some of the lectures. Ideally, if you print the Power Point Notes in a 3 panels per page format, this will leave room for your hand-written notes on one side of the page in class. These additional Power Point notes may present the same information as the Study Guide you purchase. However, they include more detailed coloured diagrams and contain additional images that may not be included in the Study Guide, but may be useful for you to understand specific physiological concepts.

Note that: Not all lecturers may post their notes on the OWL site.

If you have any questions or experience any issues, please email owl@uwo.ca.

3. Course Syllabus:

Listed Under Lectures.

4. Course Materials:

Textbooks:

The textbooks will be used primarily for reference material to help you answer questions in the study guide or to help you clarify a particular physiological concept.

On some rare occasions, you may be responsible for some material in the text. In such cases, you will be informed of which material it is.

The **RECOMMENDED** textbook is “**Human Physiology: An Integrated Approach**” by **D. U. Silverthorn, (6th ed. 2006, by Prentice Hall)**. However, “**Vanders Human Physiology: The Mechanism of Body Function**” by Widmaier, Raff and Strang (10th edition, 2001, by McGraw Hill) and, “**Human Physiology: from cells to systems**” by Sherwood and Kell (1st Canadian Edition, 2010, by Nelson) can also be used as an appropriate text for this course. All are available in the University bookstores or libraries.

Please Note: *The mechanisms of physiology are not different between textbooks. The heart still beats the same way regardless of what textbook you read. Also, the immediate previous editions of either text are suitable as well and these may be found in The Used Bookstore or obtained from students that have taken this course in previous years.*

Study Guide:

You should bring your Study Guide to lectures and tutorials. In many cases, the diagrams shown in the lectures are included in the Lecture Notes so you will not have to re-draw them during each lecture.

This Study Guide is designed to help you follow the lectures and to assist you in learning the material for which you are responsible. The completion of the week's study guide questions before the Tutorial sessions will increase the value of the sessions for you.

The Study Guide is intended as a supplement to the lecture material, NOT as a replacement for lecture material. Note that lectures may not follow exactly as shown in the Study Guide.

The Study Guide consists of this introduction, a schedule of class activities, a schedule of examinations, a series of learning exercises to assist you in practising using your knowledge and a copy of a previous year's final examination. Follow the Study Guide assiduously; make sure that you understand the objectives, and complete the practice questions at the end of each section to confirm that you have learned the material. In addition, review the questions from the final examination.

5. Evaluation:

Tests and Examinations:

There will be three one-hour Midterm Exams during the course, plus a final 2 hour final examination at the end of the year. Each Exam counts for 20% toward your final grade. The final examination will contribute 30% to your final grade. The remaining 10% will come from your tutorials (attendance and in-tutorial minitests). **You can expect to find approximately 30-35 multiple choice questions for each hour of examination.**

Note: there are no make-ups for in-tutorial minitests (ie if you miss one you are assigned a "0" for that minitest unless you have submitted a valid reason to the course manager.

Exam results are not given out by phone or e-mail

Exam results will appear on Web-CT when all make up candidates have written it, and only after all Course Instructors have checked their questions and answers for possible errors

Exam booklets can be picked up in tutorial after the marks have been posted. If you do not pick up your exam in tutorials, it may no longer be available to you at a later date.

The dates, times, duration, and content for which you are responsible are as follows:

MIDTERM EXAM I:

This test will be on **Friday, October 24th, 2014 at 7:30 PM**. It will be 1 hour long, 30-35 questions, and will cover the material from the beginning of the course to and including October 21st. The exam will be held in Natural Sciences Rooms 145 and 1 (found next door to each other).

You will be assigned to a specific room in the week prior to the exam.

The ONLY make-up exam is scheduled for Monday, October 27, 2014, at 6:00 PM, SH 2317.

MIDTERM EXAM II:

This test will be held during the **December exam period**. It will be one hour long, 30-35 questions, and will cover the material from Oct 23rd to and including December 2nd. The date and time of this test will be announced well before the end of classes.

Do not plan your winter holidays before finding out the exact date of this exam!!!

The ONLY make-up exam is scheduled for the first Monday in the New Year- Additional information will be provided on web-ct for course information. Tentative time is Monday, January 5th, 2015, 6:00 PM, SH 2317.

MIDTERM EXAM III:

This test will be on **Friday, February 27th, 2015**. It will be one hour long, 30-35 questions, and will cover the material from first class in January 6th to and including February 24th. The exam will be held in Natural Sciences Rooms 145 and 1 (found next door to each other).

You will be assigned to a specific room in the week prior to the exam.

The ONLY make-up exam is scheduled for Monday, March 2nd, 2015, at 6:00 PM. Room SH 2317.

FINAL EXAM:

This two hour exam will contain approximately 75-80 questions covering the entire year's work. About 50-60% of the questions will be on material covered between February 26 and April 7, 2015. The remaining approximately 30-40% will be divided amongst the previous material already covered by Midterm exams I, II and III.

The date and time of this exam will be announced well before the end of classes by the Registrars Office.

MAKE-UP EXAMS:

There may be situations such as illness, or scheduled class conflicts that may prevent you from writing the exams on their scheduled date. You may be eligible to write a make-up exam. **These will be held as indicated on the course schedule.**

NOTE: No other make-up exams will be scheduled. Therefore, if you miss both the scheduled exam and the scheduled make-up exam, and have no valid reasons for doing so or have done so without obtaining permission from the Dean of your Faculty or the Course Manager, you will forfeit the marks.

Important! Please Read and Note the Following:

You must write at least two of the three Midterm exams on their scheduled dates (or corresponding make-up exams) to be allowed to sit for the Final Examination in April.

Under no circumstances will a student be allowed to take the Final Examination in Physiology 1021 without having met this criterion.

Also, please read the Academic Policies/Regulations concerning Examinations in the Academic Calendar for Academic Rights and Responsibilities.

In the event of your missing an exam:

- Students do miss exams due to illnesses and for other compassionate reasons. In the case of a missed exam, **it is the student's responsibility to acquire appropriate documentation** (Doctors note in the case of an illness, death certificate or letter from pastor etc. in the case of a death) in such cases.
- **This documentation should then be taken to the Office of the Dean of your faculty and given to the academic councillors.** They will then keep the documentation on file and inform the course manager to verify the situation.
- **You are also responsible to contact the course manager to arrange for the makeup exam. A single makeup exam will be scheduled.**
- **In order to write any makeup exam the student must notify the course manager prior to the original exam and have supporting documentation.**
- **To have your final mark calculated from only 3 exams (2 midterms and the final). You must have a valid, documented reason for having missed both the regularly scheduled exam and its makeup (medical reasons or otherwise) or have obtained prior permission from the course manager to miss the exam in the first place (varsity sports, out-of-town conference, etc). Otherwise, your final mark will be calculated on the basis of all 4 exams, in which case you will receive a zero for the missed exam.**

6. Additional Information/Statements:

Accommodations for Religious Holidays

Canada is a pluralistic society. Therefore, accommodations for religious holidays will be made in the event that such a holiday coincides with an exam. However, it is the student's responsibility to inform the course manager well in advance. For details on the procedures for religious accommodations, please refer to the *Academic Calendar*. **These procedures must be followed.** Students seeking accommodation are expected to write the scheduled make-up exam.

Appealing Exam Marks

Appeals must be made **no more than 6 weeks** after receiving the mark for each midterm exam, quiz or final grade and must be accompanied by a written letter and supporting documentation. See *Academic Rights and Responsibilities, Academic Calendar*. You should also be aware that your attendance at tutorials could have a significant bearing on the appeal process.

Rules for Exam Conduct by the Student (Candidate)

1. Candidates are responsible for arriving at the examination room on time with adequate supplies (pens, pencils, erasers, calculator and current ID card) and may be admitted five minutes before the beginning of the examination. Upon entering the examination room, candidates will refrain from talking to or communicating with other candidates. Candidates will read any posted Instructions concerning seating and other arrangements within the examination room. Candidates must place their ID card on the left corner of the desk.
2. No candidate may leave the examination room during the first thirty minutes of the examination.
3. Candidates must sign the nominal roll which will be circulated by the proctor during the first thirty minutes of the examination.
4. Candidates arriving later than thirty minutes after the commencement of the examination will not be allowed to write the examination. Under such circumstances candidates should proceed to the Dean of their Faculty for instructions. In the case of evening or Saturday examinations, candidates should proceed to the Department of Admissions and Academic Records for instructions.
5. Candidates prevented from writing an examination by circumstances such as illness, or death in the family shall submit a written petition to the Dean of their faculty. A petition made because of illness should be accompanied by a medical certificate stating the time and duration of the illness, a petition for other reasons should be supported by evidence from a responsible person acquainted with the circumstances.
6. Candidates are forbidden to give information or to receive it from any other candidate during the examination.
7. Candidates will not make use of any books, notes, diagrams or other aids, unless authorized by the examiner, such authorization being clearly stated on the question paper. Candidates who bring any unauthorized notes, books or other aids into the examination room must leave them in an area designated by the Chief Proctor.
8. Smoking is not permitted in the examination room.
9. In the case of an emergency, candidates will be permitted to leave and re-enter the examination room only if accompanied by a proctor. Candidates may be granted permission to move to another available seat if they can provide a legitimate reason.
10. Candidates are responsible for ensuring that they receive the proper question paper.
11. Candidates will use only the approved answer form supplied (question paper, markex card, or answer booklet). When answer booklets are employed, candidates will use them even for rough work and will not write on any other paper. Pages will not be removed from answer books. Candidates must keep all papers on their desk.

12. Candidates who require additional answer books during the examination will not leave their seat but will attract the attention of the proctor by raising a hand.
13. Any suspected irregularities in the question paper or any unusual distractions in the vicinity of the candidates should be brought to the attention of the proctor (Senate, May 23 2958).
14. Upon completion of the examination, candidates will ensure that their student number, name, course number, book number and total number of books, and the name of the instructor are lettered legibly on all answer books. If more than one book has been used they should be numbered consecutively and placed inside Book 1. No answer books or parts of answer books will be taken from the examination room.
15. Candidates will not be allowed to leave the examination room during the last fifteen minutes. Under no circumstances including late arrival, will the time beyond the designated period be extended.
16. At the conclusion of the examination, candidates will remain seated until a proctor has collected their completed examination booklets. **CANDIDATES WHO LEAVE THE ROOM AND NEGLECT TO SIGN THEIR NAME AND SUBMIT THEIR COMPLETED BOOKLETS TO THE PROCTOR WILL BE CONSIDERED AS NOT HAVING WRITTEN THE EXAMINATION.**

PLEASE NOTE:

All exam answer sheets are subject to a common data analysis which identifies anomalies of statistical significance in the selection of right and wrong answers by pairs of students. The course instructor is required to report all statistically significant results which suggest that cheating may have occurred. All such incidents will be subject to further investigation. All proven cases of cheating will be subject to severe academic penalties. If you are seated near someone with whom you studied, and you think you may choose many of the same answers as that person, please raise your hand and ask a proctor to reseat you for the exam.

STUDENTS MAY OBTAIN A COPY OF THESE REGULATIONS AT THE DEPARTMENT OF ADMISSIONS AND ACADEMIC RECORDS.

Senate, April 1984

7. Statement on Academic Offences:

“Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf”

8. Absence from Course Commitments:

Absence for medical illness:

Students must familiarize themselves with the Policy on Accommodation for Medical Illness: <https://studentservices.uwo.ca/secure/index.cfm>

Statement from the Dean’s Office, Faculty of Science

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services.

The form can be found at:

https://studentservices.uwo.ca/secure/medical_document.pdf

Absence for non-medical reasons:

If you are unable to meet a course requirement due to non-medical circumstances, you must provide supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It will subsequently be the Dean’s Office that will determine if accommodation is warranted. It is also the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed.

Special Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents.

A Special Examination must be written at the University or an Affiliated University College no later than 30 days after the end of the examination period involved. To accommodate unusual circumstances, a date later than this may be arranged at the time permission is first given by the Dean of the Faculty. The Dean will consult with the instructor and Department Chair and, if a later date is arranged, will communicate this to Registrarial Services. If a student fails to write a scheduled Special Examination, permission to write another Special Examination will be granted only with the permission of the Dean in exceptional circumstances and with appropriate supporting documents. In such a case, the date of this Special Examination normally will be the scheduled date for the final exam the next time the course is offered.

9. Support Services:

Registrarial Services: <http://www3.registrar.uwo.ca/index.cfm>

Academic Counselling (Science and Basic Medical Sciences):
<http://www.uwo.ca/sci/counselling/index.html>

Student Development Services: <http://www.sds.uwo.ca>

Student Health Services: <http://www.shs.uwo.ca/>

10. Examples of Questions:

All tests will be multiple-choice in format and will conform to the following general types:

1. Five Choice Completion

DIRECTIONS: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the ONE that is BEST in each case.

Example: Diabetes mellitus is most likely to result from a deficiency of the secretion of

- (A) insulin
- (B) parathormone
- (C) epinephrine
- (D) cortisol

Answer: A

2. Multiple Completion

DIRECTIONS: For each of the questions or incomplete statements below, One or More of the answers or completions given is correct.

- (A) if only 1, 2 and 3 are correct
- (B) if only 1 and 3 are correct
- (C) if only 2 and 4 are correct
- (D) if only 4 is correct
- (E) if ALL are correct

Example: During exercise you would expect to find increases in

- (1) heart rate
- (2) gastric secretion of hydrochloric acid
- (3) cardiac output
- (4) parasympathetic nerve stimulation to the heart

Answer: B

3. Quantitative Relationships

DIRECTIONS: The following paired statements describe two entities which are to be compared in a quantitative sense. Answer

- (A) if (a) is greater than (b)
- (B) if (b) is greater than (a)
- (C) if the two are equal or very nearly equal

Example: (A) Heart rate at rest
(B) Heart rate during exercise

Answer: B

DIRECTIONS: Each of the following pairs of phrases describes conditions or quantities that may or may not be related. Answer

- (A) if INCREASE in the first results in an INCREASE in the second or is DECREASE in the first results in a DECREASE in the second
- (B) if INCREASE in the first results in a DECREASE in the second or if DECREASE in the first results in an INCREASE in the second
- (C) if changes in the first are NOT NECESSARILY accompanied by changes in the second

Example: (1) Heart Rate

(2) Cardiac Output

Answer: A

Grading

Grades will be assigned on the basis of the percentage of questions answered correctly **(after questions deemed to have been inappropriate by the Course Manager have been discarded from each exam)**. The department reserves the right to make adjustments to the grading scheme on the basis of the relative difficulty of the examination. In such cases, any adjustments made will be applied to ALL student grades in that examination.

GOOD LUCK AND ENJOY THE COURSE!