REFERENCES


APPENDIX A

UNL IRB LETTER

November 29, 2004

Ms. Betty Elder
1845 Fairmont, Box 41
Oshkosh, KS 67060

IRB #: 2004-11-075 EX


Dear Ms. Elder:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. This project has been approved by the Unit Review Committee from your college and sent to the IRB. It is the Board’s opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study. Your proposal seems to be in compliance with this institution’s Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46) and has been classified as exempt.

Date of IRB Approval: 11/03/04

You are authorized to implement this study as of the Date of Final Approval: 11/28/04. This approval is Valid Until: 11/28/05.

1. Enclosed is the IRB approved Informed Consent form for this project. Please use this form when making copies to distribute to your participants. If it is necessary to create a new informed consent form, please send us your original so that we may approve and stamp it before it is distributed to participants.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board. For projects which continue beyond one year from the starting date, the IRB will request continuing review and update of the research project. Your study will be due for continuing review as indicated above. The investigator must also advise the Board when this study is finished or discontinued by completing the enclosed Protocol Final Report form and returning it to the Institutional Review Board.

If you have any questions, please contact Shirley Horstman, IRB Administrator, at 472-9417 or email at shhorstman @unl.edu.

Sincerely,

Dan R. Hoyt, Chair
for the IRB

cc: Faculty Advisor
Unit Review Committee

Shirley Horstman
IRB Administrator

Alexander Building West / 312 N. 14th Street / P.O. Box 880408 / Lincoln, NE 68588-0408 / (402) 472-6565 / FAX (402) 472-9323
APPENDIX B

College Degrees Completed (Give date completed):

Describe your home demands:
Children # and ages (no names, please)

Describe your work demands:
Position
Hours working per week
Number of years in position

Describe your school demands:
How many courses are you taking this semester? List courses and hours credit for each course.

Have you taken this class (graduate pathophysiology) before?

How many days/evenings per week are you at school?

How far do you drive to attend school?
- 1-5 miles each way,
- 6 – 10 miles each way,
- 11 – 25 miles each way,
- more than 25 miles each way?

Do you ride with anyone?
Do you have a study partner for this class?

### Rate your confidence about the course content

<table>
<thead>
<tr>
<th>Statement</th>
<th>Most Confident</th>
<th>Least Confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have always performed well in science courses.</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>This course will be easy.</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>This course contains a lot of information that I will need in my practice.</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Rate your confidence with computer skills</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
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<tr>
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</tr>
</tbody>
</table>
# Pathophysiology Objectives

Rate your relevance for the following science concepts to your ability to perform your duties as a nurse. Circle the following as 5 for the most important to nursing knowledge to 1 being the least important to nursing knowledge. If you do not know how to rate or the item is inapplicable, rate the concept as unknown.

<table>
<thead>
<tr>
<th>Importance</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most (5)</td>
<td>Least (1)</td>
</tr>
<tr>
<td>Most (5)</td>
<td>Least (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduate or Undergraduate</th>
<th>Paired Objective</th>
<th>Based upon your past nursing role.</th>
<th>Based upon your future role as an advanced practice nurse.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>14</td>
<td>1. List the functions of cell organelles such as Golgi apparatus, nucleus, and endoplasmic reticulum.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>6</td>
<td>2. Discuss the roles of procoagulant activation, fibrinolytic activation and inhibitor consumption in development of disseminated intravascular coagulation.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>16</td>
<td>3. Outline the function of the mononuclear phagocyte system and the effects of colony-stimulating factors in cell-to-cell communication.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>24</td>
<td>4. Identify the genetic mechanisms that cause Down’s, Kleinfelter’s, and Cri Du Chat Syndromes.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>21</td>
<td>5. Describe the chemical pathways such as Citric Acid Cycle (Kreb’s cycle), Electron transport system (Oxidative phosphorylation), and Anaerobic glycolysis.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>2</td>
<td>6. Recognize the role of sepsis, hypoxia and low blood flow in the activation of the clotting cascade, depletion of clotting factors and resultant hemorrhage in disseminated intravascular coagulation.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>Graduate or Undergraduate</td>
<td>Paired Objective</td>
<td>Importance Most (5)</td>
<td>Least (1)</td>
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<tr>
<td>U</td>
<td>28</td>
<td>7. Review the role of tissue compatibility in determining tissue grafts and organ transplants.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>29</td>
<td>8. Describe the role of penetrance and delayed onset in expression of autosomal dominant genes.</td>
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</tr>
<tr>
<td>G</td>
<td>31</td>
<td>9. Describe the differences between coagulative, liquefactive, gangrenous, caseous and fat necrosis.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>12</td>
<td>10. Relate the Frank-Starling law of the heart to the end diastolic volume.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>32</td>
<td>11. Explain the role of cellular communication, including intracellular and extracellular messengers.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
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<td>12. Summarize the role of preload and afterload in cardiac performance.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
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<td>13. Describe the clinical manifestations of cancer.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
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<td>1</td>
<td>14. Describe the processes of how proteins are made, cells replicate, and how cells communicate with one another.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>26</td>
<td>15. Relate abnormal cellular growth patterns such as dysplasia, hyperplasia, and metaplasia to patient outcomes.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>3</td>
<td>16. Discuss the role of macrophages in the process of phagocytosis.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>Graduate or Undergraduate</td>
<td>Paired Objective</td>
<td>Importance Most (5)</td>
<td>Least (1)</td>
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<tr>
<td>U</td>
<td>30</td>
<td>17. Distinguish between syndrome of inappropriate antidiuretic hormone and diabetes insipidus.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>25</td>
<td>18. Describe the role of electrolytes such as calcium, potassium, and magnesium in skeletal and cardiac muscle contraction.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>23</td>
<td>19. Outline the chemical reactions involved in carbonic acid – bicarbonate buffering.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>13</td>
<td>20. Discuss the role of tumor suppressor gene mutations in human neoplasms.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>5</td>
<td>21. Relate the process of catabolism of proteins, lipids and polysaccharides to the conversion of these molecules to energy.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>27</td>
<td>22. Describe how ribosomes function in the conversion of the DNA template to protein.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>19</td>
<td>23. Distinguish between acidosis and alkalosis.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>4</td>
<td>24. List the disease processes resulting from chromosomal abnormalities of translocations, aneuploidy, and inversions.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>18</td>
<td>25. List the signs and symptoms of electrolyte imbalances for calcium, potassium, and magnesium.</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>Graduate or Undergraduate</td>
<td>Paired Objective</td>
<td>Importance</td>
<td>Importance</td>
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<td>Most (5)</td>
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<tr>
<td>U</td>
<td>15</td>
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<tr>
<td></td>
<td>26. Outline the processes involved in development of skin tumors, abnormal vaginal cell development, and ability to interpret lab results for patients.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>22</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>27. Discuss the importance of the process of transcription where RNA is synthesized from a DNA template.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>7</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>28. Explain the role of major histocompatibility complex in determining haplotypes.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>8</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>29. Describe the difference in the inheritance patterns of autosomal dominant and recessive traits.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>G</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30. List the four osmoregulatory defects most generally associated with syndrome of inappropriate antidiuretic hormone.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>9</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>31. List the major types of cellular necrosis.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
<tr>
<td>U</td>
<td>11</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>32. Describe the role of neurotransmitters such as epinephrine, norepinephrine, and acetylcholine in nerve cell communication.</td>
<td>5 4 3 2 1 unknown</td>
<td>5 4 3 2 1 unknown</td>
</tr>
</tbody>
</table>
APPENDIX C

Immune Tutorial Example

**Question** The immune system hypersensitivity reactions that occur are classed according to the type of response that occurs within the body to that particular antigen. These four classes are:

Type I: allergic response
Type II: reactions against cells or tissues
Type III: immune complex deposition
Type IV: delayed hypersensitivity cell mediated reactions

Which of the above mentioned types of reactions would be involved in an immediate rash from a bee sting for a person allergic to bee stings?

**Answer**

- Hypersensitivity Type I
- Hypersensitivity Type II
- Hypersensitivity Type III
- Hypersensitivity Type IV

**Correct Feedback**

Correct, the bee sting reaction is a Type I allergic reaction

**Incorrect Feedback**

Incorrect, the bee sting reaction is a Type I allergic reaction.
**Fluid & Electrolyte Tutorial Example**

**Question** Movement of water across membranes in the body is passive. No energy is used in the passage. However, the amount of lipid in that membrane does control the rate at which water moves. Therefore, some membranes have special water channels to increase membrane water transport. These aquaporins are often under control of hormones. For example, in the kidney, the major control of water resorption in the proximal tubule is arginine-vasopressin. The net water movement is from high to low concentration of water.

What term is used to describe movement of water across a semi-permeable membrane?

**Answer**
- Filtration
- Active transport
  - Osmosis
  - Hydrostatic pressure

**Correct Feedback**
Osmosis is always the movement of water across a semi-permeable membrane such as the cell membrane.

**Incorrect Feedback**
Osmosis is always the movement of water across a semi-permeable membrane such as the cell membrane.
Renal Tutorial Example

**Question** Renal failure can be both acute and chronic. The types of diseases are classified according to where the disease process occurs: prerenal, intrarenal, and postrenal. Which of the following is prerenal?

**Answer**

- Renal failure from blocked renal artery.
- Renal failure from glomerulonephritis.
- Renal failure from kidney stones.
- Renal failure from chronic cystitis.

**Correct Feedback**

Prerenal is considered to be decreased blood flow to the kidney or a toxic substance administered elsewhere that must be excreted in the kidney.

**Incorrect Feedback**

Prerenal is considered to be decreased blood flow to the kidney or a toxic substance administered elsewhere that must be excreted in the kidney.
Endocrine Tutorial Example

**Question** The pituitary gland is considered to be the master gland because its hormones control so many other glands. The pituitary will produce stimulating hormone, the gland will produce its hormone. That hormone then provides feedback to the pituitary to turn off. If a gland is not working, the pituitary will increase its production of the stimulating hormone because the feedback mechanism is not working.

For example, if ACTH (adrenocorticotropic hormone) is produced, a normal adrenal gland will produce cortisol. If the adrenal fails to respond, the pituitary will increase its production of ACTH. This would indicate primary adrenal insufficiency.

If the pituitary fails, one of the glands that would not function would be the adrenal gland. This would be considered secondary adrenal insufficiency.

If the pituitary fails, which of the following would be true about the levels of thyroid hormone in the blood?

**Answer**

- TSH high, T3 and T4 low
- TSH high, T3 and T4 high
- TSH low, T3 and T4 low
- TSH low, T3 and T4 high

**Correct Feedback**

If the pituitary fails, the TSH (thyroid stimulating hormone) would be low and subsequent T3 and T4 would be low.

**Incorrect Feedback**

If the pituitary fails, the TSH (thyroid stimulating hormone) would be low and subsequent T3 and T4 would be low.
DATE: August 27, 2003
NAME: Betty Elder
DEPARTMENT: Nursing

The University Institutional Review Board (IRB) has reviewed your research project application entitled:

Impact of Computer Assisted Self-Regulated Learning Techniques on Science Teaching for Nursing Students

and approved the project as provided in the Federal Policy for the Protection of Human Subjects. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

1. Any significant change in the experimental procedure as described should be reviewed by the IRB prior to altering the project.
2. When signed consent documents are required, the principal investigator must retain the signed consent documents for at least three years past completion of the research activity.
3. At the completion of the project, the principal investigator is expected to submit a final report; the form is attached.

Thank you for your cooperation. If you have any questions, please contact me (ext. 5635).

Sincerely,

Kenneth H. Pitetti, Ph.D.
Chairperson, IRB

attachment