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STUDY GUIDE

BCRPA Fitness Theory Exam & FLC Exercise Theory Prerequisite Knowledge Base

Congratulations on your initiative in preparing to write BCRPA's Fitness Theory Exam. The Exam is based on the Exercise Theory Performance Standards as recommended by the Fitness Leadership Canada (FLC), formerly known as National Fitness Leadership Alliance (NFLA).

This Study Guide contains the following valuable information:

The Study Guide will help focus your preparation on the more pertinent areas for the exam and dispel any apprehension you may have regarding the exam.

GOOD LUCK!

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EXAM QUESTION WEIGHTING

Health-Related Benefits of Physical Activity	3.5%
Holistic Approach to Physical Activity and Lifestyle	3.5%
Anatomy	15%
Movement Mechanics	25%
Physiology	21.5%
Principles of Conditioning	10%
Exercise Analysis and Risk Management	8%
Basic Nutrition/Body Composition	7%
Program Planning	5%
Leadership Skills	1.5%
	100%

A. Health-Related Benefits of Physical Activity (3.5%)

- Summarize health-related benefits of physical activity.
- Demonstrate an ability to provide an atmosphere that values individual choices and diversity relating to physical activity.
- Identify lifestyle behaviors that can and cannot be modified and how they increase or decrease health risks.

B. Holistic Approach to Physical Activity and Lifestyle (3.5%)

- Define Active Living
- Describe the features and benefits of holism, give an example of each and how to impart this knowledge in a fitness leadership setting.
- Explain intrinsic and extrinsic factors of motivation for adults in a fitness leadership setting.
- Describe different approaches a leader could take to encourage participants to make a commitment and to take responsibility for their own health and well-being.

C. Anatomy (15%)

- Identify the major bones and joints and describe how bone structure influences joint function.
- List and describe the different types of connective tissue and their role in human movement.
- Locate the major muscle groups on another person or diagram.
- Identify the major antagonist muscle pairs of the major muscle groups.
- Identify and describe the anatomical limitations to joint flexibility.
- Describe the stretch reflex and how it influences range of motion and joint flexibility.

D. Movement Mechanics (25%)

- Demonstrate and define the joint actions at the major joints.
- In a given exercise, discuss the joint action and identify the agonist and the antagonist muscle group.
- Design exercises for the major joints which will provide a balanced conditioning to the muscles surrounding the joint area.
- Describe the various types of muscle contractions.
- In a given exercise, identify the prime mover during the concentric and eccentric phases of the movement.
- Using the principle of levers, explain how to vary the intensity of an exercise.
- Select the most stable and state which of the following three factors has provided the increased stability: a) widening the base of support, b) lowering the centre of gravity, c) moving the centre of gravity over the base of support.

E. Physiology (21.5%)

- Identify the average range for resting heart rate as well as the range for target exercise heart rate for an individual of a stated age and gender.
- List techniques to control and self-monitor pacing to prevent doing too much exercise too soon or too vigorously.
- Describe the acute responses to aerobic/anaerobic exercise for each of the following systems: a) cardiovascular, b) respiratory, c) musculoskeletal.
- Summarize the key elements of the three energy systems and when they are used in the muscle contractions.
- Describe the oxygen transport system and how a trained individual differs from an untrained individual.
- Describe the relative contribution of anaerobic and aerobic energy during the following: warm-up, aerobic workout, muscular strength/endurance, and selected physical activities.

F. Principles of Conditioning (10%)

- Identify the components of physical fitness and describe the importance of each to overall well-being.
- Describe the frequency, intensity, time (duration), and type of exercise (FITT) capable of improving each of the following fitness components: a) flexibility, b) cardiovascular conditioning (aerobic/anaerobic), c) muscular strength, d) muscular endurance.
- Compare and contrast different techniques to improve joint flexibility.
- Describe and demonstrate an exercise that is designed to assist in the performance of daily activities (functional movements).

- Explain the specific order to the performance of the components of fitness and the recommended period of time to be spent on each.
- Compare the training effects of the following: continuous; intermittent; aerobic; anaerobic; isometric; isotonic strength training; static/dynamic stretching; weight-bearing; non-weight bearing; progressive overload ; specific adaptation to imposed demands (SAID).
- Demonstrate a competent use of Canada's Physical Activity Guide.
- Describe techniques to monitor intensity for all components of physical fitness.

G. Exercise Analysis and Risk Management (8%)

- Give precautionary measures for beginning exercise participants that are designed to prevent injury and increase safety for all components of fitness.
- Analyze the suitability of an exercise for general safety, by modifying it, avoiding it or maintaining the exercise.
- Identify potential risky exercises to joint structures.
- Compare and contrast the signs and symptoms of acute and chronic physical distress with respect to overtraining and high intensity exercise.
- Identify and describe three environmental factors that can affect the body's response to sustained physical activity.
- Know the set of emergency procedures for the facility and the employer. (i.e. first aid, support procedures, medical referral procedures and follow- up).
- Explain the RICE principle (i.e.rest, immobilize, cold and elevation).
- Describe responsibilities (i.e.pre-screening methods) and liabilities associated with the instructor and the facility.

H. Basic Nutrition/Body Composition (7%)

- Using Canada's Guide to Healthy Eating, identify the food groups, describe the guiding principles of the guide, and state for adults the recommended number of servings per day from each food group.
- Identify the recommended daily percentage of calories required and metabolic breakdown from carbohydrates, fat and protein for healthy living.
- Explain the concept of energy balance as it relates to healthy body composition including reference to energy-in and energy-out. Describe one limitation to the energy balance concept.
- Explain how changes in body composition influence basal metabolic rate and subsequent energy balance.
- Demonstrate an awareness of Body Mass Index (BMI).

I. Program Planning (5%)

- Within a program plan, demonstrate pre-screening methods, progressive overload by indicating when adjustments in activity intensity variations can be made.
- Describe ways to evaluate the effectiveness of a physical activity program.
- Describe different methods which will create or sustain a positive exercise climate for participants.
- Apply the principles in Canada's Physical Activity Guide to program planning.

J. Leadership Skills (1.5%)

- Describe the principles of adult learning and how they relate to the exercise environment.
- Demonstrate effective communication skills in working with a variety of participants.
- Describe and apply the principles of effective leadership.
- Describe a variety of intrinsic and extrinsic motivational factors relating to exercise adherence.

Answer the questions below on this form to take our Practice Exam.

SAMPLE EXAM QUESTIONS

1. A benefit of regular participation in physical activity is:

    a) Increases the rate of physiological aging
    b) Guarantees that you never gain excess body weight
    c) Strengthens your bones and muscles
    d) Increases calcium absorption in your teeth

2. Which of the following is not an agonist/antagonist muscle pair?

    a) Subscapularis/Infraspinatus
    b) Rectus Abdominus/Erector Spinae
    c) Gastrocnemius/Soleus
    d) Gluteus Maximus/Iliopsoas

3. The primary muscle or muscle group responsible for extension of the hip joint is the:

    a) Sartorius
    b) Gluteus Maximus
    c) Gluteus Medius
    d) Iliopsoas

4. Which of the following is not considered a fundamental movement of the hip joint?
    a. Flexion
    b. Circumduction
    c. Extension
    d. Adduction

5. The normal physiological response to an aerobic exercise session is:

    a) An increase in heart rate and decrease in stroke volume
    b) An increase in o2 consumption and ventilation
    c) A decrease in cardiac output
    d) A decrease in blood flow to the working muscles

6. Fitness components to consider when planning a fitness program are:

    a) Muscular strength and endurance, flexibility, power, and body composition
    b) Aerobic and anaerobic capacity, muscular strength and endurance, and body composition
    c) Body composition, aerobic and anaerobic capacity, power, and

flexibility

d) flexibility, cardiovascular endurance, muscle strength and muscular endurance

7. Based on Canada's food guide to healthy eating, an eating plan for an average active healthy adult should include:

a) Increasing the amount of protein in his/her diet
b) Eating a balanced diet consisting of all food groups
c) Increasing the amount of vitamin c in the diet
d) Eating 1900 kilocalories per day.

8. Two individuals who weigh the same and follow an identical exercise program will:

a) Lose the same amount of weight in a 4-week period
b) Respond differently to the program
c) Probably eat the same number of calories per day
d) Gain the same amount of muscle mass

9. Which of the following shoulder girdle actions is performed by the pectoralis major?

a) Upward rotation
b) Adduction
c) Elevation
d) None

10. Muscle strength specifically is:

a) The ability of the muscle to contract repeatedly
b) Likely to develop when training with heavier weights and fewer reps
c) Unlikely to develop when training at 80-90%1rm
d) an increase in muscle fiber size

Answer Key: 1 - (c); 2 - (c); 3 - (b); 4 - (b); 5 - (b); 6 - (d); 7 - (b); 8 – (b) 9-(d) 10- (b)

RESOURCES AND SUGGESTED READING

Your Fitness Theory Course and Manual will prepare you for the exam. Nevertheless, you may wish to supplement or update your knowledge by accessing several of these resources:

1) National Fitness Leadership Association Exercise Theory Prerequisite Knowledge Base, Performance Standards
2) Physical Activity and Health Human Kinetics 2nd Edition
3) Behnke, Robert S. Kinetic Anatomy, 4th Edition
4) Sports Nutrition Guidebook Human Kinetics 6th Edition
5) Fitness Professional Handbook Human Kinetics 7th edition
6) Health Canada, Canada's Food Guide to Healthy Eating. Food Guide
7) Sharkey, B. Fitness and Health (7th Edition) Champagne, Illinois: Human Kinetics, 2002.

Fitness Theory Course Manuals

Body Blueprint Fitness Theory Manual; Truscott, C.

CFES Fitness Knowledge Course Manual, 11th edition

Infofit Fitness Career College, Fitness Theory Study Guide

Kinesiologists.ca Fitness Theory Manual; Tews, A