BPT

Reg. No.										

MANIPAL UNIVERSITY

FIRST SEMESTER M.Sc. EXERCISE AND SPORTS SCIENCE DEGREE EXAMINATION – JANUARY 2015

SUBJECT: INTRODUCTION TO EXERCISE, SPORTS AND MOVEMENT SCIENCE

Saturday, January 03, 2015

Time: 10:00 – 11:30 Hrs. Max. Marks: 50

✍ **Answer ALL the questions.**

PART – I

1. **Essay questions:**

1A. Write an essay on the importance of a sports psychologist in enhancing sport performance.

1B. Explain in detail the fundamental skills in volleyball.

1C. Explain in detail the accessory gears used during strength training.

(10 marks × 3 = 30 marks)

PART – II

2. **Short notes:**

2A. Discuss about the technology adopted for temperature and moisture management in sports apparels.

2B. Discuss about the characteristics of badminton shoe.

2C. Discuss about the characteristic features of helmets used in cycling.

2D. Discuss about the characteristic features of a sprint running spikes.

(5 marks × 4 = 20 marks)

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MANIPAL UNIVERSITY

FIRST SEMESTER M.Sc. EXERCISE AND SPORTS SCIENCE DEGREE EXAMINATION – JANUARY 2015

SUBJECT: EXERCISE PHYSIOLOGY I

Monday, January 05, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

✍ **Answer ALL the questions.**

PART – I

1. **Essay questions:**

1A. Discuss neuromuscular fatigue

1B. Hormonal responses to resistance exercise

1C. Explain in detail the metabolic adaptations to exercise

1D. Ventilatory responses to exercises

1E. Acute responses of the immune system to exercise

1F. Explain in detail the acute cardiovascular response to aerobic exercise

1G. Explain in detail the metabolic dynamics of steady state exercise

(10 marks × 7 = 70 marks)

PART – II

2. **Short notes:**

2A. Renal hemodynamics during exercise

2B. Acute gastro intestinal responses to exercise

2C. Discuss exercise hematuria and Proteinuria

2D. Excitation contraction coupling

2E. Oxidative Phosphorylation

2F. Discuss lactate threshold and onset of blood lactate accumulation

(5 marks × 6 = 30 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST SEMESTER M.Sc. EXERCISE AND SPORTS SCIENCE DEGREE EXAMINATION – JANUARY 2015

SUBJECT: HUMAN MOVEMENT STUDIES I

Wednesday, January 07, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

✍ **Answer ALL the questions.**

PART – I

1. **Essay questions:**

1A. Discuss the supraspinal control of human movements.

1B. Explain the principles of Stretch reflex and their application in sports.

1C. Explain Length-tension relationship and force-velocity relationship.

1D. Draw a Free body diagram of the leg of a person performing leg extension exercises.

1E. Calculate the JRF at hip in unilateral stance for a person who weighs 60 kgs.

1F. Describe in detail the reciprocal inhibition reflex and hoffman's reflex.

1G. Discuss the generation and propagation of an action potential.

(10 marks × 7 = 70 marks)

PART – II

2. **Short notes:**

2A. Components of Ground reaction force

2B. Hill's model of a single muscle fiber

2C. Angular Momentum

2D. Stress-strain curve

2E. Cytoskeletons

2F. Types of muscle fibres

(5 marks × 6 = 30 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST SEMESTER M.Sc. EXERCISE AND SPORTS SCIENCE DEGREE EXAMINATION – JANUARY 2015

SUBJECT: NUTRITION AND HUMAN PERFORMANCE

Friday, January 09, 2015

Time: 10:00 – 11:30 Hrs. Max. Marks: 50

✍ **Answer ALL the questions.**

PART – I

1. **Essay questions:**

1A. Mr. Jeeva 19 year old boy is a college student who is into college basketball team does practice with the team thrice in a week and other days works out in gym both strength and endurance exercise. In a week there is inter-collegiate tournament for that do not have any idea how the diet has to be taken. As you being a dietician guide him about the diet.

i) Calculate his energy requirement with suggested carbohydrates (both the methods), protein, Fat required.

ii) Plan a mid-day snack and evening snack which is energy dense which carries 20g protein, and 350kcal.

(5+5 = 10 marks)

1B. i) What is anaerobic energy system? Which are two types? Give two examples of sports which use this energy system.

ii) Discuss the recommendations for muscular endurance training.

(5+5 = 10 marks)

1C. i) Explain the Diet protocol for Glycogen loading for 7 Day training.

ii) Discuss the nutrients of concern for vegetarian athletes.

(5+5 = 10 marks)

PART – II

2. **Short notes:**

2A. Write a short note on two theories of obesity.

2B. What is Doping? Briefly discuss why they are banned in the sports industry?

2C. Discuss in detail the benefits of exercise under the following headings:

i) Activity and Discretionary kcalories allowance

ii) Activity and metabolism

2D. How does overload adaptation and interval training affects adaptations.

(5 marks × 4 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST SEMESTER MASTER OF PHYSIOTHERAPY (MPT) IN SPORTS AND CLINICAL BIOMECHANICS DEGREE EXAMINATION – JANUARY 2015

SUBJECT: FUNDAMENTALS OF BIOMECHANICS AND KINESIOLOGY (NEW REGULATION)

Thursday, January 15, 2015

Time: 10:00 – 13:00 Hrs. Maximum Marks: 80

Answer ALL questions.

1. Write about the force couples involved in the dynamic stability of scapulothoracic articulation and illustrate the scapular dyskinesis in the following:
   i) Serratus anterior weakness
   ii) Lower trapezius weakness
   iii) Overactive levator scapulae

   (15+5 = 20 marks)

2. Write about the open and closed kinetic chain movements of subtalar joint and discuss about the pathomechanics of subtalar joint.

   (20 marks)

3. Discuss the various gait patterns associated with cerebral palsy.

   (20 marks)

4. **Describe:**

4A. Types of muscle contraction
4B. Ranges of muscle work
4C. Differences between strength and power
4D. Components of Ground Reaction Force

(5 marks × 4 = 20 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST SEMESTER MASTER OF PHYSIOTHERAPY (MPT) IN SPORTS AND CLINICAL BIOMECHANICS DEGREE EXAMINATION – JANUARY 2015

SUBJECT: EXERCISE AND SPORTS PHYSIOLOGY
(NEW REGULATION)

Saturday, January 17, 2015

Time: 10:00 – 13:00 Hrs. Maximum Marks: 80

Answer ALL questions.

1. Explain the cardiovascular and respiratory responses and adaptations to aerobic and resistance exercises.

2. Hydration in sport.

3. Acute hormonal responses to aerobic and resistance exercise.

4. Measures of aerobic fitness.

(20 marks × 4 = 80 marks)