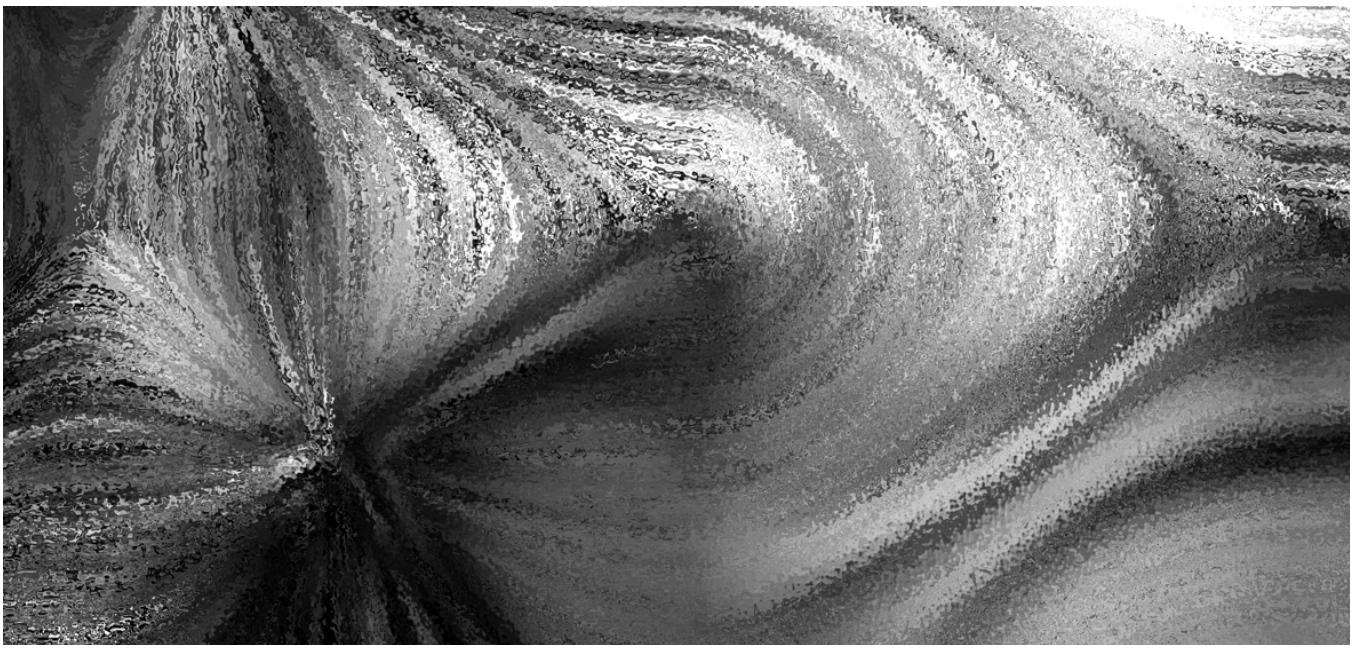
Exercise Physiology Assignments & Solutions



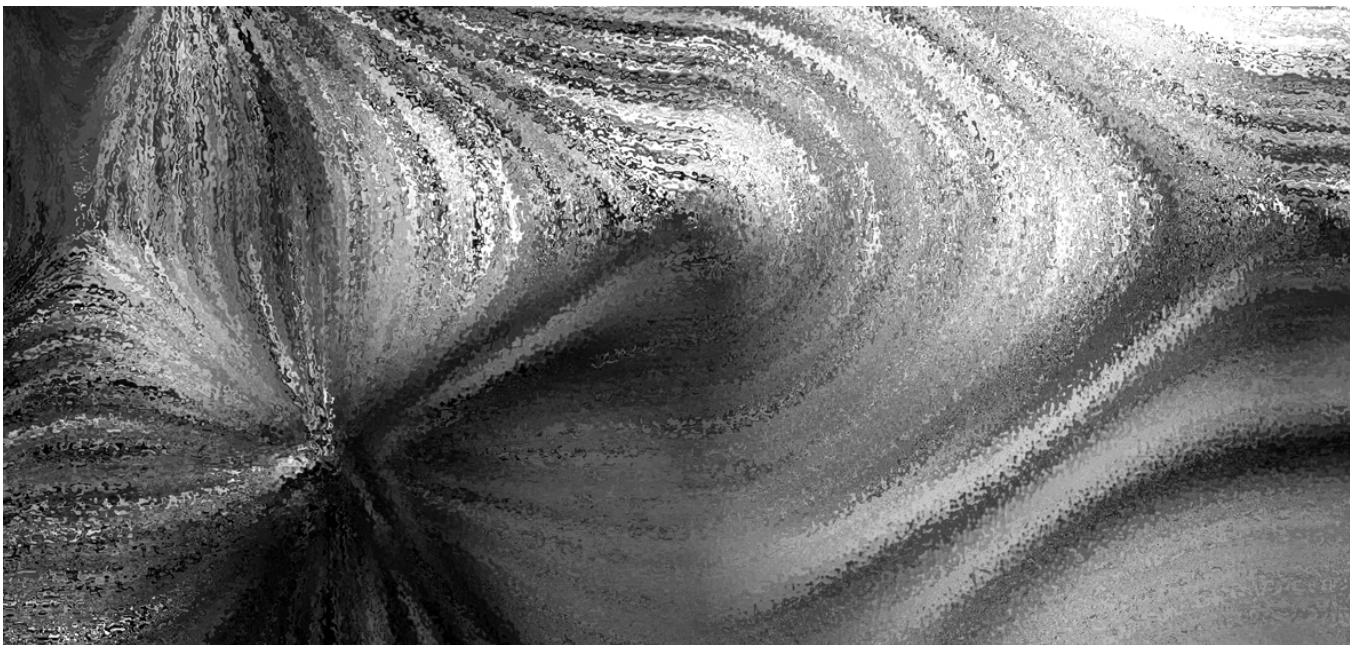
General Introduction

These questions are specifically designed to help provide you with a measure of your understanding of the subject.

A wide variety of styles of question are used; for example multiple choice, matching pairs, multiple completion, structured and essay; each designed to assess different levels of understanding, and to maintain interest. Some will also provide experience of the types of question found in most examinations.

Contents

Questions



Muscles & Bones in Action Questions

Multiple Choice Questions

For each of the following questions, choose the **ONE** response which best answers the question.

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1 **Which one of the following is the basic unit of the sliding filament mechanism?**

A Sarcomere.

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B Myofibril.

C Sarcoplasm.

D Muscle fibre.

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2 **Which one of the statements below, referring to the sliding filament mechanism, is NOT correct?**

A A single cross bridge may undergo many reconnections per second with the actin filament during a muscle contraction.

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B In isometric contractions where the contracting muscle is prevented from shortening, the cross bridges do not operate.

C The coupling and uncoupling of the cross bridges continues if sufficient calcium ions are present.

D In the absence of free calcium ions, tropomyosin and troponin prevent the connection of cross bridges between myosin and actin.

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3 **Which one of the following features is NOT characteristic of typical slow twitch (Type I) muscle fibres, when compared to fast twitch (Type II) muscle fibres?**

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A More myoglobin.

B More and larger mitochondria.

C Same amount of actin.

D More myosin.

Reset

E Better blood supply.

Multiple Choice Questions

For each of the following questions, choose the **ONE** response which best answers the question.

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4 **Considering the training of muscle fibres, which one of the following statements is NOT correct?**

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A Endurance training has no effect on the amount or activity of the enzymes in the mitochondria.

B Any increase in muscle size as a result of training is due more to the thickening (hypertrophy) of fibres already present, rather than to the increase in the number of fibres by the splitting of fibres.

C The proportion of different fibre types is not significantly altered by training.

D The oxidative potential of all fibres is improved by endurance training.

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5 **With regard to a motor neurone stimulating a voluntary muscle, which of the following is NOT correct?**

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A A motor neurone releases the neurotransmitter substance acetylcholine.

B If the excitatory post synaptic potential (EPSP) exceeds a certain threshold it will initiate a motor unit contraction.

C Successive discharges from the motor neurone may summate to increase the EPSP.

D The neurotransmitter substance acetylcholine, once released continues to stimulate the muscle for a long period, eventually resulting in fatigue of the muscle.

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6 **With regard to types of muscle contraction which of the following is NOT correct?**

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A Muscles shorten as they develop tension in isotonic contractions.

B Muscles do not shorten as they develop tension in isometric contractions.

C As the muscle contracts in an isokinetic contraction it exerts maximum tension over the full range of movement at all joint angles.

D Concentric contraction occurs at the front of the thigh when running down hill.