应用运动机能学基础 Applied Kinesiology

单选题 Single Answer ( 共8题)

第1题 (分值：10分)

静态平衡运动项目通常涉及\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Static balance exercises often involve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A：增加支撑面的宽度 Widening the base of support

B：减少支撑面的宽度 Narrowing the base of support

C：将重心线移出支撑面的范围外 Shifting the line of gravity outside the base of support

D：在旋转运动中移动重心线 Shifting the line of gravity through rotary motion

第2题 (分值：10分)

假定提起的物体重量相同，客户将重物靠近身体会增加工作关节的阻力。

Assuming a client is lifting the same amount of weight, he or she can create more resistance by moving the weight closer to the working joint.

A：正确 True

B：错误 False

第3题 (分值：10分)

客户练习侧卧抬腿动作时，下侧腿得到强化的肌肉或肌群是？

What muscles are strengthened when a client performs side-lying leg lifts with the lower leg?

A：内收肌群 Adductors

B：外展肌群 Abductors

C：内旋肌群 Internal rotators

D：外旋肌群 External rotators

第4题 (分值：10分)

从解剖姿势的角度来讲，下列属于多运动面动作的例子是哪一项？

Which of the following is an example of a multiplanar movement from the anatomical position?

A：肩胛骨下抑 Depression of the scapulae

B：前臂旋前（即内旋） Pronation of the forearm

C：踝关节背屈 Dorsiflexion of the ankle

D：拇指对掌 Opposition of the thumb

第5题 (分值：10分)

在肢体活动破坏脊柱稳定性之前，下列哪一项肌肉（与多裂肌共同）就脊椎关节位置的信息向中枢神经系统进行反馈过程中发挥重要作用？

Which of the following muscles plays a vital role (with the mulitfidi) in providing feedback to the central nervous system about spinal joint position before dynamic forces in the extremities destabilize the spine?

A：腹横肌 Transverse abdominis

B：腹直肌 Rectus abdominis

C：腹内斜肌 Internal obliques

D：腹外斜肌 External obliques

第6题 (分值：10分)

“肩胛带” 是\_\_\_\_\_\_\_的非正式术语。

“Shoulder girdle” is the informal term for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A：胸锁关节 S/C joint

B：肩锁关节 A/C joint

C：肩甲胸壁关节 S/T articulation

D：盂肱关节 G/H joint

第7题 (分值：10分)

下列哪种排列形状的肌肉发力水平最低，但收缩速度最快？

A muscle with which of the following muscle arrangements has the LOWEST force production, but the HIGHEST speed of contraction?

A：单羽肌 Unipennate

B：双羽肌 Bipennate

C：多羽肌 Multipennate

D：纵肌 Longitudinal

第8题 (分值：10分)

牛顿运动定律的哪一条定律描述如下？静止物体总保持静止状态，运动的物体总保持运动（方向和速率维持不变）状态，除非有外力施加。

Which of Newton’s laws of motion is described as follows? A body at rest will stay at rest and a body in motion will stay in motion (with the same direction and velocity) unless acted upon by an external force.

A：万有引力定律 Law of gravity

B：作用力与反作用力定律 Law of reaction

C：惯性定律 Law of inertia

D：加速度定律 Law of acceleration

1 试题解析： 正确答案 B.减少支撑面的宽度 Check Your Answer B. Narrowing the base of support 对客户或课程学员进行静态平衡训练时，教练可以减少其支撑面的面积来刺激客户对施加的平衡能力需求产生适应；而增加支撑面的面积反而降低了平衡难度。 To work on static balance with a client or class participant, the fitness professional can make the individual’s base of support narrower to stimulate adaptation to the imposed demand. Widening the base of support lessens the balance challenge.

2试题解析： 正确答案B.错误 Check Your Answer B. False 在物体重量不变的情况下，要增加运动阻力，需要将重物移离工作关节。运动疲劳时，为了减轻阻力，可以将重物靠近工作关节。 To create more resistance with the same amount of weight, move the weight farther from the working joint. To lessen the resistance as fatigue occurs, move the weight closer to the working joint.

3试题解析： 正确答案 A.内收肌群 Check Your Answer A. Adductors 外侧卧抬腿动作过程中，下侧腿的内收肌群在抬腿期进行向心收缩，在下放过程中做离心收缩。 During side-lying leg lifts (lower leg), the adductors work concentrically in the upward phase and eccentrically in the downward phase.

4试题解析： 正确答案D.拇指对掌 Check Your Answer D. Opposition of the thumb 拇指对掌是灵长目和人类特有的动作功能，拇指与小指形成半圆。其他选项均属于单运动面动作。 Opposition of the thumb is a movement unique to primates and humans that follows a semicircle toward the little finger. Each of the other movements is uniplanar.

5试题解析： 正确答案 A.腹横肌 Check Your Answer A. Transverse abdominis 在任何肢体动作发生之前，腹横肌与多裂肌便共同激活，并且在肩关节和腿部产生任何动作前的30和110毫秒便分别被激活。这种躯干肌肉募集的时序模式的重要性是什么呢？一般认为，腹横肌与多裂肌在反馈脊椎关节位置过程中发挥着重要的作用，因此能够提前向中枢神经系统发出信息，预警肢体即将产生可能会破坏脊柱稳定性的动力。 Coactivation of the transverse abdominis and multifidi muscles occurs before any movements of the limbs. Specifically, these two muscles are activated an average of 30 milliseconds before shoulder movement and 110 milliseconds before leg movement. What is the importance of this temporal pattern of trunk muscle recruitment? The transverse abdominis and multifidi muscles are thought to play a vital role in providing feedback about spinal joint position, and thus forewarn the central nervous system about impending dynamic forces to be created in the extremities that may destabilize the spine.

6试题解析： 正确答案 C.肩甲胸壁关节 Check Your Answer C. S/T articulation 肩胛带是肩甲胸壁关节的非正式称呼，肩甲胸壁关节由肌肉和筋膜将肩胛骨与胸廓连接起来。 Shoulder girdle is the informal term for scapulothoracic (S/T) articulation, which consists of the muscles and fascia connecting the scapula to the thorax.

7试题解析： 正确答案 D.纵肌 Check Your Answer D. Longitudinal 羽状肌包括单羽肌、双羽肌或多羽肌，这些结构形状与纵向结构相比，能产生更大的力量。纵肌与羽状肌相比更长更薄，肌纤维与拉伸线平行，这种形状的肌肉收缩速度更快但产生的力较小。 Penniform muscles, which include unipennate, bipennate, and multipennate muscles, are designed for higher force production than longitudinal muscles. Longitudinal muscles are long and thin and have parallel fibers that run in the same direction as the length of the muscle. This type of fiber arrangement allows for speed of contraction.

8试题解析： 正确答案 C.惯性定律 Check Your Answer C. Law of inertia 牛顿第一定律又叫做惯性定律，定义为：静止物体总保持静止状态，运动的物体总保持运动（方向和速率维持不变）状态，除非有外力施加。另外，物体的惯性与其质量成正比关系，启动（或停止）重物比轻物更困难，就是因为这个原因。 Newton’s first law of motion, known as the law of inertia, states that a body at rest will stay at rest and that a body in motion will stay in motion (with the same direction and velocity) unless acted upon by an external force. In addition, a body’s inertial characteristics are proportional to its mass, which is why it is harder to start (or stop) moving a heavy object than a lighter one.