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Courses » Mechanics of Human Movement

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Unit 10 - Week 8

Course outline

How to access the portal

Pre-requisite

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Week 8

- Biomechanics of Balance Part I
- Biomechanics of Balance Part II
- Biomechanics of Balance Part III
- Human Gait
- Week 8 - Lecture Notes.

Assignment 8

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment. **Due on 2018-09-26, 23:59 IST.**

1) When a person is falling in forward direction, what strategies can he/she adopt to avoid the fall? **1 point**

- Flexing of trunk
- Rotation of arms in the direction opposite to the fall
- Rotation of arms in the direction of fall
- Rotation of pelvis

No, the answer is incorrect.
Score: 0

Accepted Answers:
Flexing of trunk
Rotation of arms in the direction of fall

2) One gait cycle in healthy individuals consists of **1 point**

- One single stance phase and one double stance phase
- Two single stance phases and one double stance phase
- One single stance phase and three double stance phases
- Two single stance phases and two double stance phases

No, the answer is incorrect.
Score: 0

Accepted Answers:
Two single stance phases and two double stance phases

3) Balancing whilst doing a handstand is not easy without practice as compared to normal standing because **1 point**

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Week 9

Week 10

Week 11

Week 12

VIDEO
DOWNLOAD**Score: 0****Accepted Answers:***Muscles in the arm are weaker than in the leg**The base of support is smaller in comparison to normal standing*4) Which of the following strategies help improve the stability? **1 point**

- Increasing the base of support
- Increasing height of body Center of Mass w.r.t the ground
- Lowering height of the body Center of Mass w.r.t the ground
- Narrowing base of support

No, the answer is incorrect.**Score: 0****Accepted Answers:***Increasing the base of support**Lowering height of the body Center of Mass w.r.t the ground*5) For a weightlifter doing "Biceps-curl Exercise", which of the following is the best strategy to follow? **1 point**

- Base of support should be wide in the frontal plane alone
- Base of support should be wide in the frontal plane and one foot placed slightly in front of the other to provide directional stability in the sagittal plane
- Base of support should be narrow in both frontal and sagittal planes
- Base of support should be narrow in the frontal plane with one foot slightly in front of the other to provide directional stability in the sagittal plane

No, the answer is incorrect.**Score: 0****Accepted Answers:***Base of support should be wide in the frontal plane and one foot placed slightly in front of the other to provide directional stability in the sagittal plane*6) Sprinters in the starting block seek increased _____ by maintaining relatively _____ base of support. **1 point**

- mobility, wider
- stability, wider
- mobility, smaller
- stability, smaller

No, the answer is incorrect.**Score: 0****Accepted Answers:***mobility, smaller*7) For a two mass system connected by a horizontal spring placed on a frictionless surface, which of the following is true? **1 point**

- The position of centre of mass of the system will not change since the net external force acting on it is zero
- The centre of mass of each mass will not change since internal forces have no effect
- The position of centre of mass of each mass will change since the spring force acts as an external force for each mass
- The centre of mass of the system will change since gravity acts as an external force

No, the answer is incorrect.

Score: 0

Accepted Answers:

*The position of centre of mass of the system will not change since the net external force acting on it is zero.
The position of centre of mass of each mass will change since the spring force acts as an external force on each mass*

8) When an acrobat walks on a tightrope, he/she holds a long pole. Which of the following statements explain the use of long pole? **1 point**

- Long pole decreases the stability making it a challenging and appreciable feat
- Long pole increases the rotational moment of inertia of the system to resist toppling
- Longer the pole, more is the instability
- Longer the pole, the easier it is to transfer the angular momentum to the pole

No, the answer is incorrect.

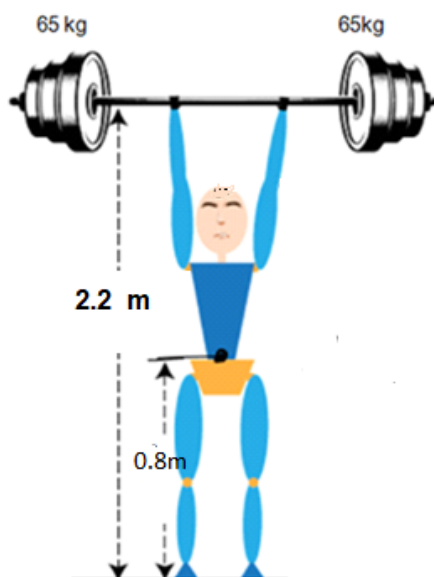
Score: 0

Accepted Answers:

*Long pole increases the rotational moment of inertia of the system to resist toppling
Longer the pole, the easier it is to transfer the angular momentum to the pole*

9) The angle with respect to the vertical axis passing through the centre of mass at which toppling happens in the above figure is _____ **1 point**

Given: Mediolateral length of base of support = 0.2 m; Mass of the person = 75 kg, location of body CoM=0.8 m above the ground as shown in Figure.



- 5.6°
- 6.8°
- 2.5°
- 3.4°

No, the answer is incorrect.

Score: 0

Accepted Answers:

3.4°

10) In the above problem if the weight the person lifts increases, the angle at which toppling happens will **1 point**

- Increase
- Decrease
- Increase and then decrease after a certain weight
- Not change because the base of support is constant

No, the answer is incorrect.

Score: 0

Accepted Answers:

Decrease

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