

## Physical Education Grade 12 Tutorial1

1. Fig 1. shows a person using a resistance machine to increase leg strength.

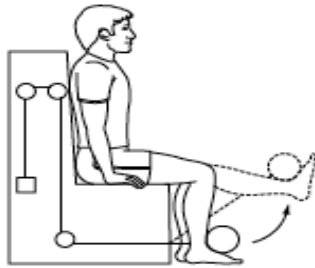


Fig. 1

Complete the table below for the knee joint moving in the direction of the arrow.

Joint	Synovial Joint Type	Movement at Agonist	Agonist	Antagonist
Knee				

2. Using the table below, name the main agonist muscle creating movement, the plane of movement and give a practical example for the following joint movements:

- Hip abduction
- Wrist flexion

Joint Movement	Main agonist muscle	Practical example
Hip Abduction		
Wrist flexion		

2. Define the following movements:

circumduction

plantar flexion

3. Using a sporting example, describe the term isometric contraction.

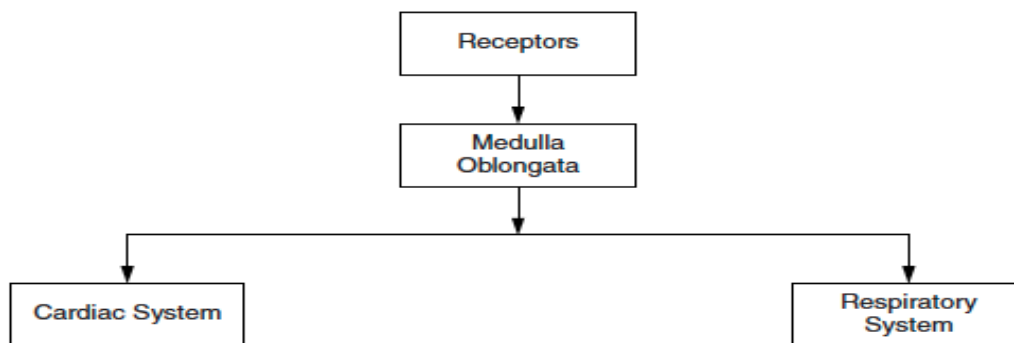
4. A performer's mix of fast and slow twitch muscle fibres is genetically determined. Identify two functional characteristics of slow twitch (slow oxidative) muscle fibres.

5. Explain how a performer's mix of muscle fibre types might influence their reasons for choosing to take part in particular types of physical activity.

6. Describe how the conduction system of the heart controls the systolic phase of the cardiac cycle.

7. Describe neural factors which regulate the cardiac and respiratory systems using the diagram below during exercise.

Using the diagram, explain how these systems would affect an endurance performer.



8. Describe the mechanisms of venous return that ensure enough blood is returned to the heart during a training run.

9. Explain how oxygen is transported in the blood to the working muscle tissues.

10. Describe the mechanics of breathing for inspiration at rest.