

運動生物力學

- ※注意：1、答案一律寫在答案卷上，否則不予計分。
2、請核對試卷、准考證號碼與座位號碼三者是否相符。
3、試卷「彌封處」不得汙損、破壞。
4、行動電話或呼叫器等通訊器材不得隨身攜帶，並且關機。

(100 points)

1. What are the center of gravity (COG), center of force (COF), center of pressure (COP), center of plantar foot pressure(CPFP)? How do they contribute to motion research? How do we measure those parameters? Please explain with a running example. (20 points)
2. Please explain what is the Rate of Force Development (RFD) and Explosive Strength and Speed Strength Index (SSI)? (20points)
3. How do you derive the COG or the parameters related to COG from force plate in standing? (10 points)
4. What are Inverse Dynamic and Forward Simulation? How can we apply them to improve the sport skill and performance? (10 points)
5. Describe two methods of smoothing digitized data and explain the benefits and rationale. (10points).
6. What are impulse and momentum, and how are they related.(10 points)
7. How are EMG frequency and amplitude related to muscle activity? (10 points)
8. How can reflexes be utilized to improve performance? Explain two examples. (10 points)