

請務必於試卷紙上作答，違者該科不於計分。

I. Vocabulary: Choose the answer that best completes the sentence. (20%)

1. Having beautiful hair is such a sign of health and attractiveness, particularly for white women, because their hair tends to be very _____, and it needs extra care.
a. cybernetic b. wasted c. fragile d. sober
2. Three Americans are among those killed in a deadly _____ last week in Algeria to rescue hostages taken when Islamic militants overtook a gas facility.
a. raid b. inaugural c. coverage d. hug
3. Nehemiah Griego, who is 15, said he had _____ and suicidal thoughts before he grabbed a rifle from his parents' closet and shot his mother in her head.
a. responsible b. surgical c. homewards d. homicidal
4. Priests _____ of abuse were sent away for treatment, but often only after long delays, and many cases slipped under the radar.
a. suspected b. limited c. struck d. permitted
5. The number of kids _____ with attention deficit hyperactivity disorder (ADHD) rose 24 percent between 2001 and 2010.
a. riddled b. diagnosed c. forced d. regarded
6. _____ by the Kaiser Permanente Southern California Institute, the study differs from previous ones in that it offered a comprehensive look at medical records.
a. Caused b. Remained c. tolerated d. Conducted
7. "If there are people trying to do bad stuff to our guys, then we'll take them out of the game, I suppose," he said in one of several interviews _____ to the media.
a. petitioned b. emphasized c. released d. initiated
8. Two additional attackers, armed with automatic rifles, stormed the area and fought with security forces for nearly eight hours. The _____ killed three police officers and all five attackers.
a. election b. assault c. regulation d. display
9. British designer Mary Katrantzou is known for her _____ prints. Now an artist has reimagined them into vivid photographs.
a. reasonable b. merciful c. brutal d. extravagant
10. While many people appeared _____ last week by the news that the Los Angeles Lakers star and his wife had dropped their divorce action, those close to the couple say this was always the inevitable end for the two.
a. stunned b. charged c. instant d. gained

II. Sentence Completion: Choose the word that best completes the sentence (10%)

11. Hard work can make _____ for a lack of intelligence.
a. down b. in c. up d. out
12. A number of questions came _____ at the meeting.
a. of b. X c. for d. up
13. The drowning man called _____ vain for help.
a. in b. X c. at d. for
14. In _____ of his youth, the police have decided not to continue with the case against him.
a. find b. view c. note d. think
15. Guess who I bumped _____ today? It was Michael!
a. on b. into c. at d. for

III. Cloze Test: Choose the best answer for each missing word or phrase in the following passages (20%)

The Holkham Hebrew Bible, in a show of Jewish books and documents from the Bodleian Library in Oxford, now on view at the Jewish Museum in New York. The book was printed in Naples in 1491/2, by one Joshua Solomon Soncino. Not only is it _____ 16 _____, but it's poignant as well. The hand-colored decoration shows how fully its maker _____ 17 _____, and appreciative of, the Christian culture of the Italian Renaissance. (Identical decoration was used on a chivalric romance.) Yet at

this same time, Jews _____18_____ in vast numbers from Spain and were confined to ghettos in Italy. The _____19_____ and segregation made no cultural sense, but that didn't stop it _____20_____.

16. a. gorilline b. gorger c. gorgeously d. gorgeous
17. a. was immersing b. immersing c. was immersed in d. immerse
18. a. were being expelled b. expel c. was expelled d. was expelling
19. a. persecute to b. persecution c. persecute d. persecuting
20. a. from happening b. happen c. happened d. on happening

The foursome _____21_____ a fishing expedition over the holidays and were headed back to Italy to start the new year.

Missoni was expected to attend men's fashion week in Milan this week, but his plane disappeared from radar shortly _____22_____ from the island. At first glance, the _____23_____ seems like a standard air-to-sea accident, but the Missoni family is not yet ready to give up hope. "A plane _____24_____ in this way, on a short route, without leaving any trace," Missoni's 28-year-old son Ottavio told an Italian newspaper last week. "I _____25_____ that the least plausible reason is that they crashed into the water."

21. a. have b. had been on c. had been d. have been on
22. a. of taking b. after taking c. after take off d. after taking off
23. a. disappeared b. disappears c. disappearance d. disappear
24. a. cannot vanish b. is to vanish c. should vanish d. could be vanished
25. a. remain convinced b. convinced c. cannot convince d. am convince

IV. Written Expression: Identify the underlined word or phrase that must be changed in order for the sentence to be correct (14%).

26. a) The Los Angeles City Council voted b) unanimous last fall to c) build a new football stadium d) in the heart of downtown.
27. Experts say a) sports teams rarely b) regulate cities the economic growth c) that is initially d) expected.
28. 2012 has been a) an 'awful' year b) for c) major Wall Street companies, so what should we d) impact in 2013?
29. a) Bonus and salaries b) have been cut at c) all of the big Wall Street d) firms.
30. a) Instead just b) searching for content that already has its own page c) on Facebook—think fan pages, groups, or events—Graph Search will d) allow users to make much more specific searches.
31. Google's a) big shift in search has been to move away from b) display links and letting users c) go on their way and answer more questions d) directly through information in the Google universe.
32. a) It was an b) audaciously political speech, a statement of personal and c) partisan principle, d) rather the expected broad bipartisan outreach.

V. Reading Comprehension: Choose the best answers to the following questions (36%)

The word *euthanasia* is of Greek origin and literally means "a good death." The American Heritage Dictionary defines it as "the act of killing a person painlessly for reasons of mercy." Such killing can be done through active means, such as administering a lethal injection, or by passive means, such as withholding medical care or food and water.

In recent years in the United States, there have been numerous cases of active euthanasia in the news. They usually involve the deliberate killing of ill or incapacitated persons by relatives or friends who plead that they can no longer bear to see their loved ones suffer. Although such killings are a crime, the perpetrators are often dealt with leniently by our legal system, and the media usually portrays them as compassionate heroes who take personal risks to save another from unbearable suffering.

The seeming acceptance of active forms of euthanasia is alarming, but we face a bigger, more insidious threat from passive forms of euthanasia. Every year, in hospitals and nursing homes around the country, there are growing numbers of documented deaths caused by caregivers withholding life-sustaining care, including food and water, from vulnerable patients who cannot speak for themselves.

While it is illegal to kill someone directly, for example with a gun or knife, in many cases the law has put its stamp of approval on causing death by omitting needed care. Further, many states have "living will" laws designed to protect those who withhold treatment, and there have been numerous court rulings which have approved of patients being denied care and even starved and dehydrated to death.

Because such deaths occur quietly within the confines of hospitals and nursing homes, they can be kept hidden from the public. Most euthanasia victims are old or very ill, so their deaths might be attributed to a cause other than the denial of care that really killed them. Further, it is often relatives of the patient who request that care be withheld. In one court case, the court held that decisions to withhold life-sustaining care may be made not only by close family members but also by a number of

third parties, and that such decisions need not be reviewed by the judicial system if there is no disagreement between decision makers and medical staff. The court rules that a nursing home may not refuse to participate in the fatal withdrawal of food and water from an incompetent patient.

33. As used in paragraph 1, which is the best definition of “lethal”?

- a. proceeding in a gradual, subtle way
- b. referring to the effect or influence of one person, thing, or action
- c. sufficient to cause death
- d. referring to promptness or speed in doing something

34. As mentioned in paragraph 2, “the perpetrators are often dealt with leniently by our legal system” because

- a. the perpetrators are committing a crime
- b. the perpetrators are willing to stop their loved ones’ pain and bear the risk of being charged with killing
- c. the perpetrators are heroes who are filled with compassion and portrayed by the media
- d. the perpetrators involve the deliberate killing of ill or incapacitated persons

35. In paragraph 3, one faces “a bigger, more insidious threat from passive forms of euthanasia” since

- a. caregivers use active forms of euthanasia
- b. that caregivers withholding life-sustaining care is easier than using active forms of euthanasia
- c. food and water can involve in the deliberate killing of ill
- d. vulnerable patients accepts passive forms of euthanasia

36. In paragraph 4, “put its stamp of approval on” can be rewritten as

- a. have or express an unfavorable opinion about something
- b. have the same characteristics or qualities as
- c. be grateful for something
- d. officially agree to or accept as satisfactory

37. The author maintains that death by withholding care is

- A. largely confined to hospitals
- B. difficult to prove if prosecuted
- C. often requested by family members
- D. approved by living wills

38. The attitude of the author can best be described as

- a. objective
- b. partial
- c. passionate
- d. macaber

39. To conclude, euthanasia is a kind of

- a. Greek death
- b. dehydrated death
- c. merciful death
- d. unbearable suffering

In his thought-provoking work, *Philosophical Investigations*, Ludwig Wittgenstein uses an easily conceptualized scenario in an attempt to clarify some of the problems involved in thinking about the mind as something over and above the behaviors that it produces. Imagine, he says, that everyone has a small box in which they keep a beetle. No one is allowed to look in anyone else’s box, only in their own. Over time, people talk about what is in their boxes and the word “beetle” comes to stand for what is in everyone’s box.

Through this curious example, Wittgenstein attempts to point out that the beetle is very much like an individual’s mind; no one can know exactly what it is like to be another person or experience things from another’s perspective—look in someone else’s “box”—but it is generally assumed that the mental workings of other people’s minds are very similar to that of our own (everyone has a “beetle” which is more or less similar to everyone else’s). However, it does not really matter—he argues—what is in the box or whether everyone indeed has a beetle, since there is no way of checking or comparing. In a sense, the word “beetle”—if it is to have any sense or meaning—simply means “what is in the box”. From this point of view, the mind is simply “what is in the box”, or rather “what is in your head”.

Wittgenstein argues that although we cannot know what it is like to be someone else, to say that there must be a special mental entity called a mind that makes our experiences private, is wrong. His rationale is that he considers language to have meaning because of public usage. In other words, when we talk of having a mind—or a beetle—we are using a term that we have learned through conversation and public discourse (rooted in natural language). The word might be perceived differently in each of our minds, but we all agree that it signifies something; this allows us to develop language for talking about conceptualizations like color, mood, size and shape. Therefore, the word “mind” cannot be used to refer specifically to some entity outside of our individualized conception, since we cannot see into other people’s boxes.

40. According to the last paragraph, “the word “mind” cannot be used to refer specifically to some entity outside of our individualized conception” because

- a. there is no way of checking or comparing what is going on in another person’s mind
- b. Wittgenstein’s rationale is that a mind makes our experiences private
- c. one often looks in someone else’s “box”

- d. the word “mind” is an easily conceptualized scenario
41. Wittgenstein would most likely disagree with which of the following statements?
- A. It is impossible to know another person’s thoughts.
 B. The mind is a special mental substance.
 C. The color green may actually look different to everybody.
 D. Words do not always accurately represent the things they symbolize.
42. As used in paragraph 3, which is the best definition or synonym for **discourse**?
- A. information given via the senses of sight or hearing
 B. engagement
 C. announcement
 D. written or spoken communication
43. In paragraph 3, since a “word might be perceived differently in each of our minds”
- a. it is impossible for us to communicate
 b. one develops conceptualizations of various objects
 c. one has to study philosophy
 d. imagination is important in regard to thinking
44. In the first paragraph, “thought-provoking” means
- a. inspiring b. frustrating c. puzzling d. applicable
45. “Beetle” refers to
- a. things that are put in boxes
 b. everyone indeed has an insect in his head
 c. the mind that is comparable to a box
 d. Wittgenstein’s attempt to communication

SOME sage once quipped that writing about music is about as edifying—and evocative—as dancing about architecture. Certainly most music criticism has a lifeless quality, packed with adjectives yet tuneless on the page. Yet Alex Ross, a music critic for the *New Yorker*, manages to stand out. His gifts as a writer are all the more impressive given that his subject tends to be the most difficult music composed in the last century, from Gustav Mahler to Steve Reich.

“The Rest is Noise”, his best-selling 2007 book on the history of the 20th century through its music, is now being re-worked as a year-long music festival at the Southbank centre in London. Although Mr Ross was not involved in organising the festival, he will be giving four lectures on the history of 20th-century music.

Mr Ross spoke to *The Economist* about why he wrote this book in the first place, and why it is particularly hard to get contemporary audiences excited about modern music.

“It took you ten years to write “The Rest is Noise”. What was your motivation?”

“It emerged really from an obsession that I had with 20th-century music going back to my teenage years. At university I immersed myself in it very heavily with a radio show that I had. I was also studying literature and history—especially late-19th century and early-20th century period—so it all coalesced.”

“I grew up listening to classical music in the traditional sense, from Bach to Brahms. That was the world I was completely absorbed in. I really didn’t listen to any other kind of music aside from this repertory. So it was something of a shock to slowly realise that there was more to the story, and I was shocked and fascinated when my piano teacher in high school played works by Schoenberg, Berg and Bartok. I started making my way through them at the piano, and after an initial struggle, I really fell in love with the music. I was fascinated by the music itself, by the surrounding cultural and historical context, and wanted to figure out how it all fit together. So it seemed inevitable that this would be the subject.”

46. In the last paragraph, “coalesced” means
- a. merge b. distribute c. confuse d. discriminate
47. Most people think that music criticism is
- a. contributive b. useless c. harmful d. vivid
48. Alex Ross
- a. stands out playing music in a year-long music festival
 b. organize music festival related to Mahler and Reich
 c. gives lectures concerning the history of a certain period of music

d. studies literature and becomes a writer of novels

49. The **best** synonym for “immersed” is

a. fascinated b. persuaded c. extended d. absorbed

50. According to Ross, music

a. is an independent subject that does not involve its context

b. usually has a great story

c. always brings one struggle when one tries to play the piano

d. is deeply related to culture and history

高雄醫學大學 102 學年度 研究所碩士班 招生考試 系所：運動醫學系碩士班
科目：人體生理學

請務必於試卷紙上作答，違者該科不予計分。

一、名詞解釋：請解釋以下的名詞，敘述力求精簡扼要（每題 4%）

1. 初級主動運輸 (primary active transport)
2. 運動終板 (motor end plate)
3. 紅血球生成素 (erythropoietin)
4. 解剖無效腔 (anatomic dead space)
5. 團塊運動 (mass movement)

二、問答題：請詳答以下的問題，必要時可用圖或表輔助說明（每題 10%）

1. 粒線體 (mitochondria) 在細胞代謝 (metabolism) 中扮演何種角色，以提供細胞所需能量？
2. 運動神經元 (motor neuron) 分為體運動神經元 (somatic motor neuron) 與自主運動神經元 (automatic motor neuron)，試比較其異同。
3. 聲波傳入內耳 (inner ear) 之耳蝸 (cochlea) 後，如何轉變為神經訊號？請說明其機轉。
4. 心動週期 (cardiac cycle) 分為哪四個階段？各階段心房 (atrium)、心室 (ventricle) 與各瓣膜 (valve) 發生甚麼變化？
5. 從開始運動到結束後休息，呼吸之每分鐘通氣量 (minute ventilation) 有何變化？請繪圖說明，並解釋其原因。
6. 試述腎元 (nephron) 對葡萄糖 (glucose) 的再吸收作用 (reabsorption) 之機轉。
7. 甲狀腺素 (thyroid hormone) 如何被製造與分泌？功能為何？
8. 職業女運動員在長期訓練下，年輕時即可能發生停經 (exercise-induced amenorrhea)，為什麼？

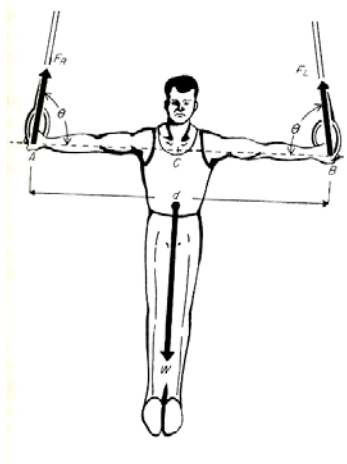
請務必於試卷紙上作答，違者該科不於計分。

1. 有關肌腱及韌帶的生物力學特性中，下列哪項敘述是錯誤的？(A) 兩者都具黏彈特性 (B) 兩者在快速變形下，勁度(stiffness)會變大 (C) 在慢速負荷下，組織中間最容易斷裂 (D) 快速負荷下，組織中間最容易斷裂
2. 當骨頭平放承受向下的 bending force 時，下列者正確？(A) 骨頭內同時發生張力和壓力；骨頭下方承受壓力 (B) 骨頭中心軸的應變最大 (C) 骨頭中心軸的應力最大 (D) 應力大小與軸心距離成正比
3. 人類正常行走時，下列那一個關節有最大的前進產生功率(generation power)？(A) trunk (B) hip (C) knee (D) ankle
4. 步態分析結果，何者可以幫你判斷走路時下肢各關節作用肌群，功能為向心或離心收縮型態？(A) temporal-spatial parameter (B) joint angle (C) joint moment (D) joint power
5. 在 Gait cycles 中的那一個時期，tibialis anterior 作 eccentric contraction (A) loading response (B) mid stance (C) pre-swing (D) initial swing
6. 在田徑場賽跑比賽時，在跑到彎道時，在同樣的速度下，請問哪個跑道的選手所受到的離心力最大？(A) 內側跑道 (B) 外側跑道 (C) 中間跑道 (D) 沒有差別
7. 分析運動體而言，如果合力為零，但合力矩不為零，請問此物體會呈現何種運動？(A) 等速度運動 (B) 等加速度運動 (C) 等角速度運動 (D) 等角加速度運動
8. 某彈性物質原長 20mm，在負荷 2N 下，長度變為 20.1mm，請問該彈性物質剛性(stiffness)為多少(單位為 N/mm)？(A) 2 (B) 20 (C) 200 (D) 40
9. 某黏彈(viscoelastic)物質原長為 10mm，在彈性區間(elastic region)的剛性(stiffness) 40 N/mm，當長度超過 11mm 時改為塑性變形，長度超過 30mm 時斷裂。請問屈服點(yield point)時，該物質負荷為多少(單位為 N)？(A) 20 (B) 40 (C) 300 (D) 800
10. 黏彈(viscoelastic)特性是指：(A) 應力應變曲線(stress-strain curve)呈線性關係 (B) 組織特性與牽張速度成正比 (C) 組織特性與形變距離成正比 (D) 形變距離與牽張力成正比
11. 有關緻密骨(cortical bone)與海綿骨(cancellous bone)的差異，以下敘述何者為非？(A) cortical bone is stiffer (B) cortical bone withstand greater stress (C) cancellous bone withstand less strain (D) cortical bone has higher yielding stress
12. 骨頭最能負荷那一種應力？(A) 張力(tension) (B) 壓迫力(compression) (C) 剪力(shear) (D) 扭力
13. 正常行走時，knee flexor 在 terminal swing 時期作用為(A)向心收縮 (B)離心收縮 (C)等長收縮 (D)以上皆非
14. 在 tendon or ligament 的構造中，纖維排列呈現幾乎平行排列，請問這種構造有助於對抗何種形式的外力？(A) 壓應力 (B) 扭力 (C) 張力 (D) 剪力

15. 投擲動作中，關節肌肉會先作一離心收縮接著再作向心收縮以作加速，在離心收縮過程中可以比擬當我們壓縮一彈簧時，讓它增加能量而能作反彈，請問這些能量是以什麼方式儲存？(A) 動能(kinetic energy) (B) 重力位能(gravitational energy) (C) 變形位能 (strain energy) (D) 轉動動能 (rotational kinetic energy)
16. 體操選手在側翻的過程中，請問是繞著身體的哪一個軸做旋轉運動？(A) longitudinal axis (B) mediolateral axis (C) anteriorposterior axis (D) diagonal axis
17. 在一些持拍的運動當中，有些選手偏愛持較長的球拍，藉以增加擊球時的速度，請問他們改變了哪一項的物理量？(A) 有效旋轉半徑 (B) 切線速度 (C) 慣性矩(moment of inertia) (D) 皆改變
18. 下列各項田徑比賽中，選手所產生的功率最小？(A) 100 公尺短跑 (B) 800 公尺中長跑 (C) 5000 公尺長跑 (D) 馬拉松
19. 以下何者對人體重心(COG)的描述是不正確的？(A) COG 位置會隨著人體姿勢而改變 (B) COG 位置一定落在體內 (C) 一般而言女性的 COG 位置較低 (D) 當手臂上舉時 COG 位置也會提高
20. 下列哪一個關節屬於 2 個自由度的關節？(A) interphalangeal joint (B) radio-ulnar joint (C) hip joint (D) radial-carpal joint
21. 三角肌(deltoid muscle)執行手臂外展動作屬第幾類槓桿原理？(A) First-Class Levers (B) Second-Class Levers (C) Third-Class Levers (D) Fourth-Class Levers
22. 手臂上抬時，humeral 和 scapular 動作有一比例關係稱之為 scapulohumeral rhythm。請問這個比例是多少？(A) 3:1 (B) 2:1 (C) 1:2 (D) 1:3
23. 在作伏地挺身(push-up)時，將身體撐起時，其主動肌(agonist)為何，並作何種 contraction？(A) biceps, concentric (B) biceps, eccentric (C) triceps, concentric (D) triceps, eccentric
24. 雙腳支撐(double support)約佔正常步態週期(gait cycle)多少？(A) 5% (B) 10% (C) 15% (D) 20%
25. 在平地行走的步態週期(Gait cycle)中，膝蓋約需彎曲多少角度？(A) 30 度 (B) 50 度 (C) 70 度 (D) 90 度

二. 問答題 (50%)

1. 體操選手在吊環上維持 equilibrium 狀態時，求左右手作用力大小？已知條件為選手體重 600N，左右手間的距離 1.8m， $\theta=75^\circ$ ， $\sin 75^\circ=0.966(10\%)$



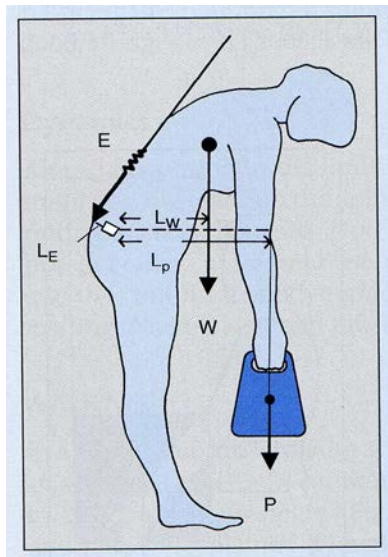
2. 一棒球投手在投出 0.150 kg 的球之前，先放鬆他的手臂，只使用他的前臂來使球加速。若前臂質量 1.50 kg 且長 0.350 m。當球由靜止開始投出，並在 0.300 sec 內達到 30.0 m/s 之速率。



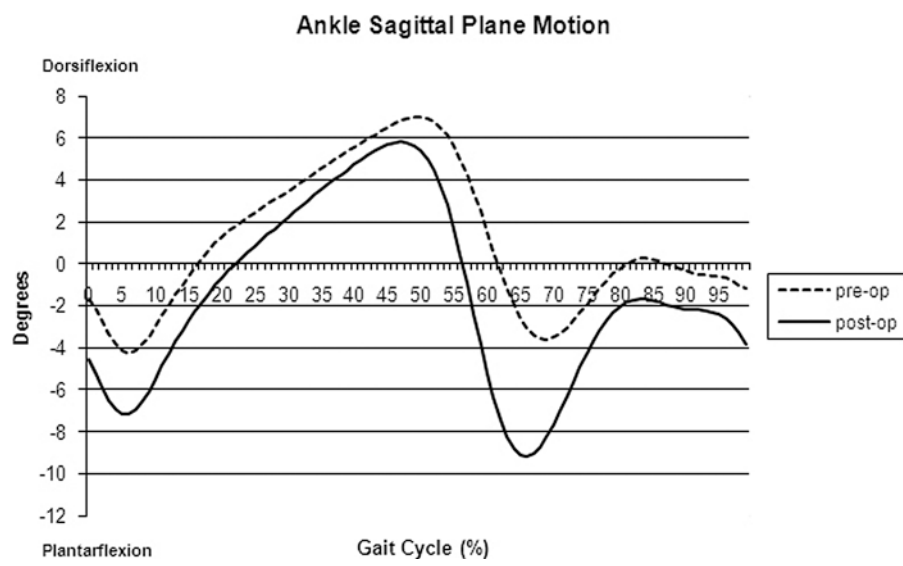
- (a) 球前臂與球之系統轉動慣量
(圓球： $I=mr^2$ ；圓柱： $I=1/3mL^2$)。
(b) 求臂與球的角加速度？
(c) 求出作用在球的力矩。(15%)

3. 陳先生體重為 70 公斤，彎腰 35 度，雙手提 20 公斤重物，請計算陳先生腰椎間盤大約承受了多少壓力？

(腰椎以上的體重佔率約 65%，陳先生彎腰 35 度時身體重心軸線與腰椎距離(LW)為 25 公分，重物重心軸線與腰椎距離(LP)為 40 公分，椎間盤與背腰距離(LE)為 5 公分， $\cos 35^\circ = 0.819$)(15%)



4. 下圖為步態週期(gait cycle)中足踝(Ankle)活動之 Kinematic graph, 請在圖中標示 swing, pre-swing, loading response, heel strike, toe off, mid-stance, mid-swing 所發生的位置。(10%)



請務必於試卷紙上作答，違者該科不於計分。

一、問答題(每題 15 分，共 75 分)

1. 請描述前十字韌帶(Anterior Cruciate Ligament, ACL)損傷和後十字韌帶(Posterior Cruciate Ligament, PCL)損傷，接受重建手術(Reconstruction)後，在不同時期，其復健內容的相同和不同處。(15%)
2. 請描述鼠蹊部拉傷(Groin Pull)的成因、症狀和不同時期的復健內容。(15%)
3. 肩峰鎖骨關節扭傷(Acromioclavicular Joint Sprain)的急救處理和臨床分類方式為何?(15%)
4. 請描述下列特殊檢查的目的和注意事項；(A)O'Brien test (B)McMurray test (C)Allen test。(15%)
5. 請描述拉筋(Stretching)的方式有那幾種? 其內涵和特色各為何?(15%)

二、名詞解釋(每題 5 分，共 25 分)

1. Bankart Lesion
2. Exertional Heat Stroke
3. Plantar Fasciitis
4. Patellofemoral Pain Syndrome
5. Piriformis Syndrome

請務必於試卷紙上作答，違者該科不於計分。

問答題(共 5 題，每題 20 分)

一、近年來科技的發展常被用來促進體能活動，以及改變運動行為，例如計步器的發展即為有效增進運動動機的例子，以下請：

- (1) 針對計步器的佩戴方式給予建議
- (2) 針對減重個案建議有效的計步器閾值
- (3) 除計步器外，試舉例說明其他使用科技產品促進體力活動的例子

二、身為運動指導專家，您如何利用一些運動計畫的修飾方法與動機策略，增進客戶的運動計畫長期的堅持性？

三、當您要評估兒童及老年人的心肺適能時，您可能需要考慮到發育、成熟及老化情形，以下請您針對這兩個族群在實驗室環境中，利用原地跑步機或是腳踏車測功計測試下，在選擇運動測試和流程方面所需調整的方面進行說明。

四、個案陳先生是位 30 歲的男性，目前身體組成情況如下：

體重：80 公斤

體脂肪百分比(body fat percentage, %BF)：30% BF

個案預期的目標為 25%BF

- (1) 請介紹任何一種身體組成方法，可用以判定個案目前現階段的體脂肪百分比。
- (2) 計算個案現階段的去脂體重(Fat Free Mass, FFM)。
- (3) 依個案設訂的身體組成目標，計算目標體重。
- (4) 假設去脂體重(FFM)不變的狀態下應減去多少脂肪量？

五、解釋名詞：

- (1) active stretching
- (2) android obesity
- (3) delay-onset muscle soreness
- (4) graded exercise test
- (5) P wave (electrocardiography)