



Hale School

Year 12 Semester 2 ATAR examination, 2016

Question/Answer booklet

# MARKING KEY

## Section One: Multiple-Choice

20 Marks

1. An A-league soccer team is winning all their matches, despite players bickering and not getting on with each other. According to Carron's model of group cohesion, which factors are positively influencing group dynamics the most?

- (a) **environment and team factors**
- (b) team and leadership factors
- (c) personal and leadership factors
- (d) environment and personal factors

2. A coach has designed a plan to teach, monitor and evaluate players' responses to the Mental Skills Training (MST) plan they have established. Which of the following is the most appropriate strategy for the coach to implement?

- (a) Players are not encouraged to consider the 4 C's of mental toughness during the off season and they are encouraged to just have a break
- (b) Stick to the original MST plan during the competitive phase regardless of players' performances
- (c) **Presenting the details of the MST plan to all players in the pre-season phase of training and focusing on skills and strategies for the remainder of the competition season**
- (d) Regular discussion and review of the players' statistics on performance and journal with questionnaires

3. A cyclist buys a bicycle which has crank lengths which are 3cm longer than his previous bicycle. What torque do the new cranks have compared to the old ones?

- (a) smaller
- (b) **larger**
- (c) no change
- (d) three times smaller

4. Balance is an important skill in all types of sport. A key factor affecting balance is

- (a) aerobic power.
- (b) the height of the player.
- (c) the position of the centre of gravity.**
- (d) muscular strength.

5. As a major event or tournament approaches a coach will provide a program that is referred to as tapering. During tapering, training typically:

- (a) Increases in volume and decreases intensity.
- (b) Increases in duration and decreases intensity.
- (c) Reduces in volume and increases intensity.**
- (d) Increases in frequency and increases intensity.

6. In relation to coaching a state league netball team in the general preparatory (pre-season) phase which of the following statements is least correct:

- (a) It is used to progressively condition the energy systems most appropriate to netball
- (b) It should involve low volume training sessions and low intensity so as not to cause strain on muscles**
- (c) It should incorporate increases in intensity and duration in a 'step-like' fashion
- (d) It should incorporate high volume training of low to moderate intensity and a mixture of training methods**

7. During the Australian summer, in particular in January, temperatures exceed 40°C and cricket players are susceptible to dehydration. Which of the following may result from a player becoming dehydrated?

- (a) Increased cardiac output and increase in core body temperature
- (b) Vasodilation of peripheral blood vessels near the skin
- (c) Increased electrolyte levels and increased urine production
- (d) Reduced blood volume and increase in core body temperature**

8. Once a diver is airborne off the 10 metre platform, which of the following can they alter to improve their performance?

- (a) Angular momentum & moment of inertia
- (b) Moment of inertia & angular velocity**
- (c) Angular momentum & angular velocity
- (d) None of the above

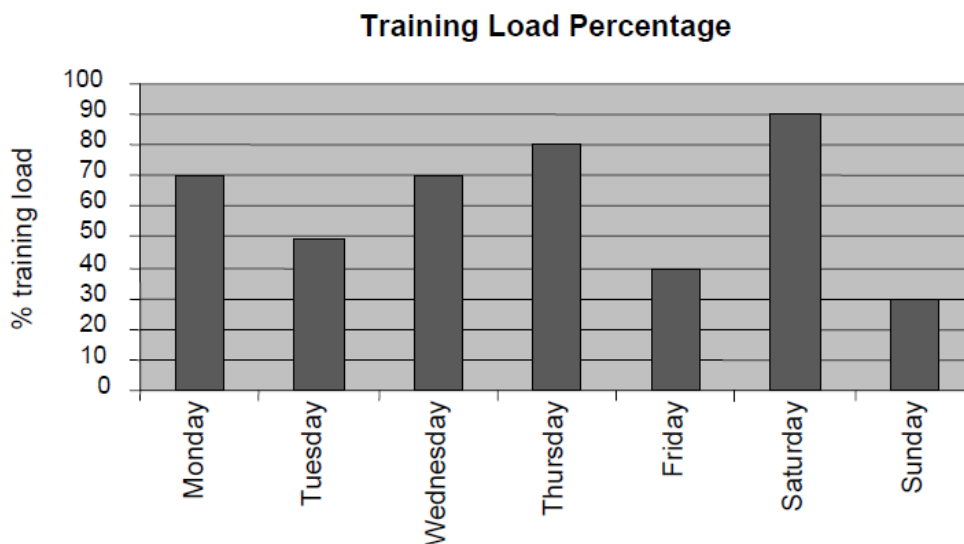
9. An elite athlete's resistance training program consists of exercises with light weights and high repetitions. This athlete is developing:

- (a) the aerobic system and white muscle fibres.
- (b) the ATP-PC system and red muscle fibres.
- (c) the aerobic system and red muscle fibres.**
- (d) the lactic acid system and white muscle fibres.

10. Junior coaches are required to teach their players a whole range of simple and complex skills. Teaching a complex skill is best achieved by the following methods:

- (a) imitation and practice
- (b) shaping and chaining**
- (c) demonstration and explanation
- (d) massed and fixed practice

11. This graph illustrates variations in training load percentage for an athlete. This is referred to as a;



- (a) meta cycle
- (b) micro cycle**
- (c) macro cycle
- (d) meso cycle

12. Different sporting activities require an athlete to produce varying amounts for force from the same muscle. A muscle develops the greatest amount of force when the muscle:

- (a) shortens with a high velocity
- (b) shortens with a low velocity
- (c) does not shorten during contraction**
- (d) is fully extended

13. Which of the statements below is most correct?

- (a) laminar flow is uniform and runs perpendicular to the fluid flow
- (b) turbulent flow is uniform and runs parallel with the fluid flow
- (c) a turbulent boundary layer runs parallel to the fluid flow
- (d) a tapered shapes allows a laminar boundary layer to separate later on the object**

14. Elite sporting teams employ dieticians to plan meals and to ensure that athletes recover from exercise quickly and maximise their performance. Low GI food is recommended prior to competition. Which one of the following examples include only low GI foods?

- (a) watermelon, honey, jelly babies
- (b) apples, pasta, baked beans**
- (c) fruit bars, rice cakes, sports drinks
- (d) wholemeal bread, bananas, rice bubbles

15. Which example below most correctly describes how the impulse-momentum relationship can be applied to improve performance?

- (a) a netballer applies a small force over a large time to change direction quickly
- (b) a baseballer limits the range of motion of his shoulder to increase the time component of the impulse equation
- (c) a cricket player ensures that he decreases the time with which he catches the ball to decrease peak force
- (d) a thrower increases the number of segments involved in sequential force summation**

16. Which of the following selections appropriately describes the pathway a nervous system impulse takes to innervate muscle contraction?

- (a) dendrite, cell body, axon, motor end plate, muscle fibre**
- (b) axon, cell body, motor end plate, fascicle
- (c) dendrite, cell body, axon, motor end plate, epimysium
- (d) axon, dendrites, motor end plate, cell body

17. Which of the statements below does not support the information provided in the diagram?

- (a) a decrease in the effectiveness of contraction is seen when the muscle is stretched beyond resting length
- (b) the highest force is produced near the middle of the range of motion
- (c) crossbridge formation is impaired as the muscle nears full flexion
- (d) full extension maximises force production as it allows more time for crossbridges to attach**

18. The experience that a person has in one sport will often have an effect on their learning of a new sport. Which type of transfer is most likely to occur when skills have some similarities but significant differences?

- (a) Positive.
- (b) Skill to skill.
- (c) Negative.**
- (d) Theory to practice.

19. There are many successful styles of leadership. Different teams and situations are more suited to particular styles. An autocratic style is best suited when:

- (a) it is an individual sport.
- (b) the team is more social than competitive.
- (c) team building is the key.
- (d) there is a crisis.**

20. Which one of the following combinations of strategies would be most appropriate for an athlete who wants to improve their motivation?

- (a) Self talk and relaxation.
- (b) Performance routines and thought stopping.
- (c) Goal setting and self talk.**
- (d) Imagery and relaxation.

**End of Section One**

**Section Two: Short Answer**

**78 marks**

**Question 21**

**7 marks**

In the rowing drive phase the point where the legs can generate the most force is when the knees are at an angle of 90 degrees as seen below (second picture from the left).



State the functional anatomy principle behind this theory and using this principle explain how the amount of force will change with different knee joint angles.

1 mark stating the principle of force-length relationship.

In a shortened state force is low because the actin and myosin filaments are maximally overlapped which reduces cross-bridge activation...2 marks

At a certain length (generally slightly greater than resting length) there is a maximum number of cross-bridges able to be used...2 marks

When a muscle is lengthened too much there is slippage of cross-bridges and so fewer able to contract...2 marks

(Each statement can be supported by a diagram of a sarcomere reflecting the relative length.)

## Question 22

8 marks

Competing in extremely cold conditions can be dangerous to the well-being of an athlete unless training modifications are made to the athlete's training program.

a. During a long distance running event, describe the main ways the body exchanges heat with the environment. (3marks)

**1 mark for each correct description...**

- Radiation – The transfer of heat through magnetic waves. The body can only lose heat if the outside temperature is less than that of the body
- Convection – The body loses or gains heat by the motion of a moving substance e.g. cool breeze
- Evaporation – Evaporation of sweat on the skin transfers heat by cooling the skin as the sweat evaporates

b. Identify the key physiological responses of the athlete when exercising in extreme cold. (2 marks)

**1 mark for each, total 2 marks**

- Body's extremities will experience peripheral vasoconstriction
- Prolonged exposure may lead to Frostbite
- Prolonged exposure may lead to hypothermia
- Generally cold conditions are dry, increasing the risk of dehydration
- Piloerection – goosebumps/hairs stand on end
- Shivering – involuntary repeated contractions of skeletal muscle to generate heat

c. Discuss three practices that could be used during training to limit the negative effect of these environmental extremes on the athlete. (3 marks)

**1 mark for each practice, total 3 marks**

- Increase the amount of clothing worn
- Increase the duration of the warm up
- Have reminders to drink regularly
- Wear wetsuits if exercising in cold water
- Wear gloves and headgear to keep extremities warm
- Allow for evaporation of sweat as damp clothing may increase heat loss (wind chill)
- Have prior exposure to cold environment to replicate competitive conditions

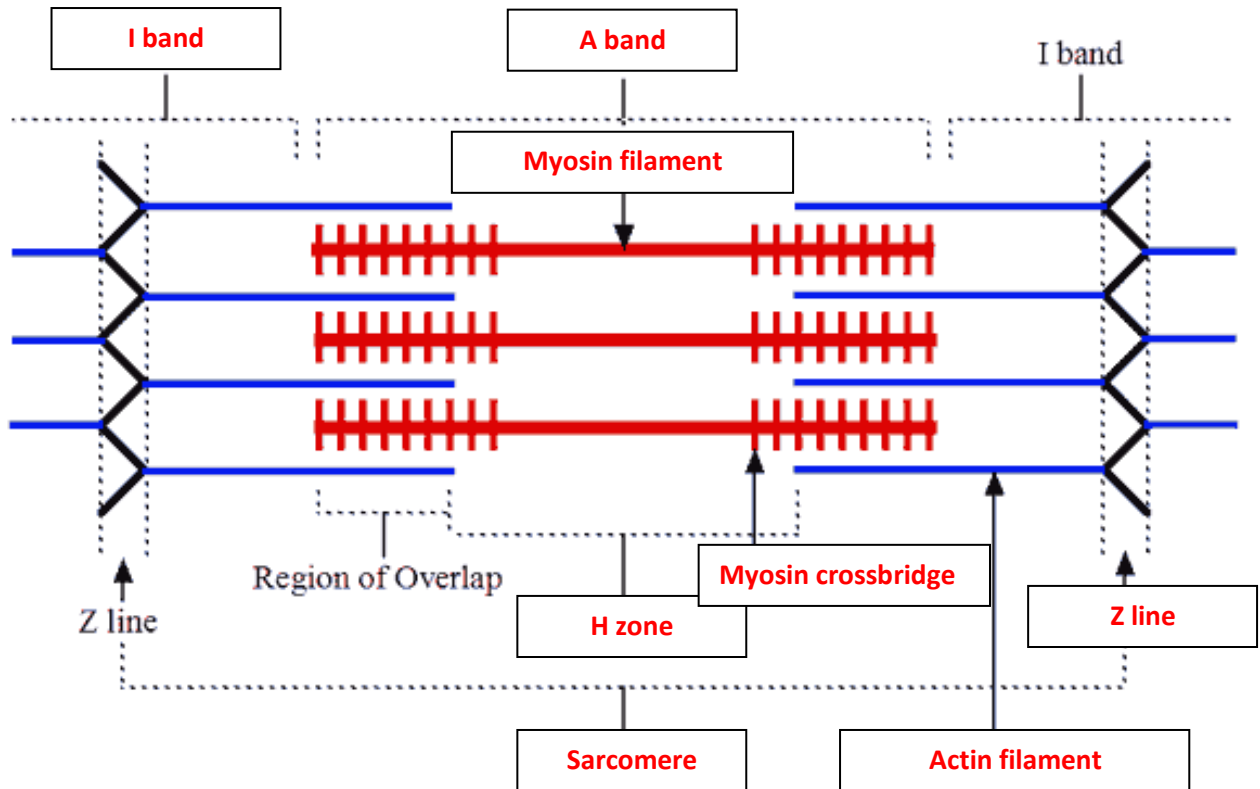
Question 23

13 marks

a. Label the following diagram of the microstructure of skeletal muscle.

(8 marks)

1 mark for each correct label



b. Describe the sliding filament theory as it relates to muscle contraction.

(5 marks)

1 mark for each correct point relating to sliding filament theory...

- Calcium released into sarcomere from sarcoplasmic reticulum
- Binding sites on actin filament are exposed
- Myosin crossbridges bind to actin filament and contract (use of ATP)
- Filaments slide across each other
- Sarcomere shortens/H zones and I band get smaller/disappear



**Question 24**

**6 marks**

Define the **three (3)** categories of transfer of learning and explain how a coach could use each principle to teach the skill of shooting to a basketball player.

**1 mark definition and 1 mark application to basketball shooting**

**Skill to skill** - occurs when previous experience or practice of a skill impacts on the execution of the skill in a new context or performance of another skill. An athlete who has learnt the skill of netball shooting will be encouraged by coach to use that technique when learning the skill of basketball shooting.

**Theory to practice** - refers to transferring knowledge of sport or skill into the actual performance. Coach may show athlete a video of correct shooting technique, outlining main teaching points, and then get the athlete to physically practice what they have learned.

**Training to Competition** - the practice should imitate the competitive situation, by incorporating into the training session time pressure/multiple ques/defensive pressure. Once the athlete has learned to skill of shooting, the coach would then put this skill under pressure by incorporating a defender who the athlete must shoot over.

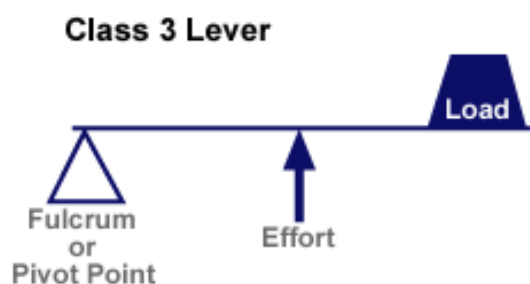
**Question 25**

**7 marks**

a. In freestyle swimming, what type of lever is the arm action at the shoulder joint? Draw a diagram of this type of lever and label the force arm and the resistance arm. (3 marks)

**1 mark for naming 3<sup>rd</sup> class lever**

**1 mark each for labelling correctly the force arm (axis to point of force application) an the resistance arm (axis to point of resistance)**



b. What is the mechanical advantage of this type of lever? (1 mark)

**1 mark for describing advantage of a third class lever as being speed**

c. Explain how a swimmer manipulates the length of the resistance arm to make the recovery phase more efficient. (3 marks)

**1 mark for each point mentioned...**

- Bending of the elbow (reducing the resistance arm) brings more mass closer to the axis of rotation.
- This decreases the moment of inertia
- A decrease in Mol allows for higher angular velocity, so arm can recover quicker

### Question 26

**6 marks**

a. Define social loafing. (1 mark)

**Social loafing is the tendency of individuals to lessen their effort when they are part of a group.**

b. Provide three reasons why social loafing may occur. (3 marks)

**1 mark for each reason...**

- An individual athlete perceives other athletes to be working at a lower intensity which in turn gives them an excuse to put in less effort themselves.
- A belief that their efforts won't make a difference to the team and little if any effect on the outcome and the desired outcome will still be reached.
- Avoiding hard work and assuming no one will notice in a large group – easier to hide in the pack

c. Discuss **two (2)** strategies the coach could apply to reduce the effect of social loafing and enhance the success and performance of their team. (2 marks)

**1 mark for each strategy...**

- Write a team contract which states (Group expectations, Individual responsibilities, Forms of communication, Methods of discipline)
- Develop rules of conduct (Establish rules of expected behaviour which will help the team achieve goals and objectives)

- Create appropriate group sizes (Assigning too many members to an easy task encourages loafing)
- Evaluate all members of a group individually (Members will be more productive if they know that their individual contribution will be evaluated)

**Question 27**

**10 marks**

Anabolic steroids and stimulants are perceived as performance enhancing substances.

- (a) Outline 3 perceived benefits of anabolic steroids. (3 marks)

**1 mark for each perceived benefit...**

- Increased muscle size through increased microtrauma and regeneration of muscle fibres
- Increased strength through having larger and more muscle fibres
- Decreased recovery time/enable athlete to work harder/higher intensity

- (b) Outline four possible side effects. (4 marks)

**1 mark for each correct side effect...**

- Acne, mainly on face and/or upper torso
- Liver damage through the organ being stressed as it attempts to remove toxins
- Depression - intense feelings of sadness over an extended amount of time
- Aggression - feelings of anger resulting in hostile or violent behaviour; readiness to attack or confront.
- Hypertension – sustained high blood pressure
- Infertility – testicles reduce their production of testosterone, shrinking their size and reducing the production of sperm

- (c) Choose one stimulant you have studied which is taken by an athlete to enhance performance. Explain three perceived performance benefits of the use of this supplement. (3 marks)

**Caffeine –**

- Acts as analgesic, masks pain/reduces perception of pain
- Stimulates the CNS/increase alertness or concentration/better reaction time/
- Helps mobilization of fats/burn more fat
- Glycogen sparing for long events
- Decreases the perception of effort needed

**Question 28**

**9 marks**



Eddie Betts is an Australian Rules Football player who plays for the Adelaide Crows. For the 2016 Premiership season he has averaged 3.1 goals per game. Typically after each goal he scores Eddie celebrates with a fist pump either to the Adelaide supporters or his team mates.

a. What is the term used in sport psychology to best describe this action? (1 mark)

**Self Confidence**

b. Explain two benefits Eddie would gain by performing this action. (2 marks)

**1 mark for each point mentioned...**

- Will enable Eddie to stay in his optimal arousal zone
- Will have positive effect on Eddie's motivation for the remainder of the game
- Eddie's immediate opponent will probably feel less confident in his role which will ultimately help Eddie in the next passage of play

Many times during Eddie's career he has had to kick goals from the boundary line. In doing this, he kicked the ball to make it curve around the goalpost to score.

c. Explain the biomechanical principle which makes the ball curve in the air. Include a fully labelled diagram in your answer. (6 marks)

**3 marks for the diagram...**

- 1 mark for having a ball, arrows of direction the ball spins and airflow lines
- 1 mark for correctly labelling areas of high velocity/low pressure and low velocity/high pressure
- 1 mark for drawing in and labelling movement of ball towards area of low pressure

**3 marks for explanation...**

- As a spinning ball moves through the air, one side of the ball will have the (boundary) layer of air colliding with the oncoming air. This collision causes the air to decelerate, creating a high pressure area on this side of the ball.
- On the opposing side, the (boundary) layer of air is moving in the same direction as the air passing by, so there is no collision and the air collectively moves faster. This creates a low pressure area on the side of the ball
- The pressure differential, high on one side and low on the other, creates a lift force (the Magnus force) that causes the ball to move in the direction from high to low pressure.

**Question 29****6 marks**

The physical characteristics of balls vary greatly from sport to sport. For example, sports that require players to catch tend to use balls that reduce their velocity in motion. Another interesting fact about ball velocity is that after impact it is higher in warm environments than in cold environments.

a. Complete the table below by placing the following balls in order from highest to lowest coefficient of restitution: golf ball, warm tennis ball, baseball. (3 marks)

**1 mark for each correct ball**

Ball	Coefficient of restitution when dropped from 1.83 metres onto a steel floor
<b>Golf Ball</b>	0.80
<b>Warm Tennis Ball</b>	0.72
Tennis ball	0.67
<b>Baseball</b>	0.50
Cricket ball	0.31

b. Explain the relationship between the coefficient of restitution and conservation of momentum of the ball and its velocity. (3 marks)

**1 mark for each point mentioned...**

- Coefficient of Restitution (CoR) determines how much velocity a ball returns after a collision/ a measure of the bounciness of a ball or surface/ a measure of the elasticity of a ball/ the ability of an object to regain its original form.
- A CoR of 1.0 (perfectly elastic) would mean that the velocity after impact is the same as before impact and so momentum would be conserved.
- A CoR of less than 1.0 (imperfectly elastic or perfectly inelastic) means that the velocity after impact is reduced/height of bounce is lowered and so momentum is NOT conserved.

**Question 30**

**6 marks**

a. Describe the two main macrostructure muscle fibre alignments.

(2 marks)

**1 marks for each appropriate description of...**

- Fusiform – muscle fibres run parallel to each other and the to the central tendon
- Penniform/Pennate – Muscle fibres align themselves at an oblique angle to the central tendon

b. Justify the difference in range of motion and force production between these two alignments.

(4 marks)

Range of motion...

- **1 mark** for stating that fusiform has greater range of motion than penniform
- **1 mark** for stating that penniform muscle fibres are short than fusiform muscle fibres

Force production...

- **1 mark** for stating that penniform generates greater force than fusiform
- **1 mark** for stating that penniform muscle fibres are larger in number than fusiform

**End of Section Two**

### Section Three: Extended Answer

30 marks

#### Question 31

15 marks

A novice triathlete has come to you for advice on nutrition. They are planning on competing in an Olympic distance triathlon (1.5km swim, 40km bike, 10km run) and wants to know what to eat, when and why.

a. With reference to the glycaemic index, give this novice athlete detailed information so they can perform to the best of their ability. (8 marks)

2 marks for describing glycaemic index

Definition of glycaemic index...the speed in which glucose enters the blood stream after being ingested. High GI is quick to enter the blood stream, Low GI is slow to enter the blood stream.

3 marks for pre-event nutrition relating to glycaemic index

**3 DAY METHOD** (must give detail)

- Consume approximately **7-8g/kg bodyweight of low GI carbohydrates for 3 days leading up to competition** (approx 700g stored in the muscle and liver)

**1 DAY METHOD** (must give detail)

- Consume approximately **8-10g/kg bodyweight of Low GI carbohydrates the day before competition**

Pre-event meal (1-4 hours before)...

- low GI meal, example is porridge, whole grain cereal, pasta. Allows for gradual addition of glucose into the blood stream and prevents rebound hypoglycaemia/insulin secretion.

15 minutes to immediately before...

- high GI intake (soft lollies, sports drink). Will allow a 'topping up' of blood glucose and so will save glycogen stores for later.

3 marks for during event

- During event nutrition (on bike and when running)...high GI foods, example is jelly snakes, sports gels/bars, peeled fruit, sports drinks. Allows for blood glucose to be topped up quickly and so leaving glycogen for later in the event.





The sport of triathlon has strict drafting rules. Drafting is the act of riding behind another cyclist, where the following cyclist uses less energy to maintain the same speed that they are trailing. This creates an unfair advantage.

b. Using Bernoulli's principle, explain in detail why drafting behind another cyclist gives an athlete this advantage. You may use a diagram to assist your explanation. (7 marks)

**2 marks defining Bernoulli's Principle...**

As the speed of a moving fluid increases, the pressure within the fluid decreases

**2 marks explaining how Bernoulli's principle relates to the front cyclist...**

- As the front cyclist moves through the air, there is a suction force/form drag that is applied to him/her.
- The air in front of the cyclist is low velocity/high pressure compared to the air behind which is higher velocity/lower pressure.

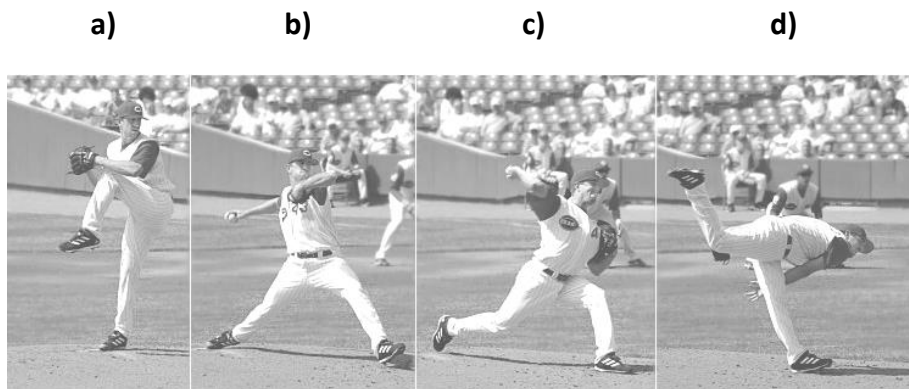
**3 marks explaining how Bernoulli's principle relates to the drafting cyclist and his/her...**

- As the second cyclist follows the first he/she moves into air that is already moving/lower pressure.
- The air behind the second cyclist is high velocity/low pressure, but the difference between the pressures in front of and behind is smaller than the first cyclist.
- There is less suction force/form drag for the second cyclist.

**Question 32**

**15 marks**

An integral aspect of a training program is the analysis of skills and the selection of appropriate skill improvement strategies. Consider the images of a baseball pitch (overarm throw) shown below.



a) With examples related to throwing, outline the key tasks in qualitative analysis that a pitching coach should undertake to evaluate this throwing action. (8 marks)

Description	Marks
<p>1 mark for naming and outlining each stage</p> <p>1 mark for application of each stage to throw</p>	
<p><b>1. Preparation/Pre Observation;</b> here the coach is concerned with the process of developing a prerequisite knowledge base (1)</p> <p>about pitching/throwing - the particular movement features; criteria for successful performance e.g. Sequential motion (not simultaneous); Goal of the pitch/throw – accuracy and speed; difficult ball to hit, strike out, tactical advantage (1)</p>	1–2
<p><b>2. Observation;</b> this involves systematically gathering appropriate information about the performance of the pitching skill; optimal observation position is side on for throwing actions</p>	1–2
<p><b>3. Evaluation/ diagnosis;</b> this involves the identification of the desirable (strengths) and undesirable (weaknesses) aspects of the movement, as well as the identification of possible ways of improving the performance (interventions)</p>	1–2
<p><b>4. Intervention/Remediation;</b> this involves providing feedback (e.g. show errors by video) and corrections, usually under practice conditions, that will lead to improved performance</p>	1-2
	<b>Total 8</b>

b) Identify the muscle fibre type that you would expect to find as the dominant one in the muscles responsible for pitching a baseball and outline characteristics of this fibre type.

(7 marks)

1 mark for naming the dominant fibre type as Type IIb

1 mark for each characteristic of Type IIb muscle fibres (max. 6 marks)

Characteristics of muscle fibres	Fast Twitch Type IIb
Colour	White
Contraction time	Fast
Resistance to fatigue	Low
Amount of force exerted	High
Motor Neuron size	Large
Recruitment frequency	High
Aerobic/Anaerobic	Anaerobic
Endurance	Low
Capillary density	Low
Mitochondrial density	Low
Myoglobin content	Low
Oxidative enzyme concentration	Low
Glycolytic enzyme concentration	High
Glycogen content	High
Triglyceride content	Low
PCr content	High

**Question 33****15 marks**

In 1968 the Summer Olympic Games was held in Mexico, the first time the games were staged in Latin America. The high elevation of Mexico City, at 2,240 m (7,350 ft) above sea level, influenced many of the events, particularly in track and field. No other Summer Olympic Games before or since have been held at high elevation. Although a performance reducer for endurance athletes, many records were set in jumps, leaps, vaults, and throws, as well as all of the men's track events of 400 meters and less. It was also the first games at which there was a significant African presence in men's distance running. Africans won at least one medal in all running events from 800 meters to the marathon, and in so doing they set a trend for future games. Most of these runners came from high-altitude areas of countries like Kenya and Ethiopia, and they were well-prepared for the 2240 m elevation of Mexico City.

a) Explain why the altitude of Mexico City was an advantage for explosive events but a disadvantage for endurance events. (7 marks)

**2 marks for identifying environmental factors at altitude...**

- Lower atmospheric pressure
- Lower partial pressure of oxygen
- Lower humidity at altitude
- Lower gravitational pull as altitude increases

**3 marks for the advantage to explosive events...**

- Less gravitational pull allows bodies/objects to travel further and higher for any given force
- Less drag on a body due to thinner air causing less resistance
- Energy systems required for explosive events are anaerobic, so lower oxygen would not effect performance.

**2 marks for the disadvantage to endurance events...**

- Low humidity at altitude means there is a greater risk of dehydration (cardiac drift)
- Less oxygen uptake means a reduced ability of the body to provide oxygen to the muscles via the aerobic pathway.
- Aerobic metabolism is affected.
- More energy coming from the anaerobic systems which will increase lactic acid and therefore localised fatigue.

b) Identify four physiological adaptations of athletes acclimatised to altitude and explain how the physiological adaptations would be an advantage to their performance. (8 marks)

**1 mark for each correct physiological response and 1 mark for an explanation of how this response helps the acclimatised athlete...**

- Increased capillarisation – increased ability to supply oxygen/increased blood to the muscles
- Increased haemoglobin volume and concentration – increases the amount of oxygen carried by the blood
- Increased red blood cell/erythrocyte volume – more red blood cells to carry oxygen
- Increased blood viscosity – more nutrients and oxygen in the body's blood
- Increased aerobic enzymes – allows the use of oxygen to produce energy/ATP faster
- Increased mitochondria – allows higher intensity aerobic respiration

### Question 34

15 marks

You are the coach of a sporting team that has recently concluded its competitive season. The team had an unsuccessful campaign and many players complained about feeling 'flat' physically and psychologically during the finals series. What's more, as the season went on there seemed to be growing instances of player conflict.

a) Divide the twenty four week competitive phase into three mesocycles. Explain why and how training would be modified in each mesocycle to improve performance next season.

(6 marks)

2 marks for each description for the three mesocycles

**1<sup>st</sup> mesocycle:** first third of the competitive season used to develop specific skills and team structures/tactics. Individual and team goals are set for the competitive season. Highest intensity and volume of the three mesocycles as players still try to build on fitness components developed in the preparation phase. Important to monitor training levels to avoid overtraining. Mental skills developing, especially ones associated with mental toughness. Also, start developing mental skills associated with recovery.

**2<sup>nd</sup> mesocycle:** Use of cross-training as a training tool for recovery as well as shifting focus away from the monotony of regular training. Continue to develop team tactics and strategies. Lower volume of training than first mesocycle but maintain intensity. Specificity of training important to simulate match environment. Players carrying injuries will have modified programs. As this mesocycle progresses, coaches/team realise which teams are stronger and will alter slightly the weekly training schedule accordingly.

**3<sup>rd</sup> mesocycle:** If team is in contention for finals it is common to increase volume of work approximately 4 weeks before finals and then undertake a tapering period. Intensity of training is maintained but volume is decreased dramatically. Mental skills focus on keeping players focused and fresh.

b) Discuss a method of measuring group cohesion and describe strategies for developing a more cohesive team. (9 marks)

**End of Section Three**

**End of Paper**