



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2012

**SPORT AND EXERCISE SCIENCE: PAPER II**

**MARKING GUIDELINES**

Time: 2 hours

150 marks

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**These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.**

**The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.**

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**QUESTION 1**

1.1 Forming storming norming performing

Forming – group meets and 'suss' each other out. Look for potential friend or rival  
 Storming – cliques form. Strong personalities vie to be leaders  
 Norming – all start to conform and identify common goals  
 Performing – as a team they work together to achieve objective  
 Learners must provide an example for each phase (8)

1.2 People centred – focus on developing the person as a whole, e.g. character, values.  
 Emphasise enjoyment, working with others  
 Players most likely to take responsibility, make good decisions and show commitment to the group.  
 Task centred – strives to achieve goals to help the group be successful. Set physical goal for the team. Want to get the job done.  
 Players often think that the coach doesn't care. Not much enjoyment because training revolves around skills all the time. (8)

1.3 Speaking – enthusiasm is projected by tone and volume, use clear & simple language, quality not quantity  
 Posture – stand in front, face them, use arms, etc. to demonstrate  
 Encouragement – give praise and support, learn their names, make them feel valued (3)

1.4

Types of feedback	Positive	Negative		General	Specific
1. <i>You were useless, I want more effort.</i>					
2. <i>Well done, now execute the skill faster.</i>					
3. <i>That was a poor effort. You can do better than that.</i>					
4. <i>You did really well last time, think about what made you successful that time.</i>					
5. <i>Excellent, now try move one foot slightly more forward.</i>					

(7)  
**[26]**

**QUESTION 2**

2.1 Ice, compression, elevation, rest, stop play (2)

2.2 Continue rest, ice, compression, elevation, no massage or heat, no alcohol, see a doctor (3)

2.3 Appropriate training; warm up; check equipment is safe, know the rules, teach skills appropriate to age group, wear protective clothing, have first aid available, Massage, clearing the playing area of obstacles, strapping/braces, proper shoes (4)

2.4 More males participate, more 'aggressive', more competitive, involved in more contact sports (2)

- 2.5 Cramp, nausea, high body temp, lack coordination, increased skill errors, blurred vision, headache, dizzy (2)
- 2.6 No, salt draws water from the blood vessels into the stomach and this actually increases dehydration (3)
- 2.7 motivate, know strategy, communicate with parents, referee/umpire, deal with the media, monitor personal issues, be a role model, first aid  
ACCEPT OTHER FEASIBLE ANSWERS (4)
- [20]**

### QUESTION 3

- 3.1 3.1.1  $A = 640 \text{ kg m/sec}$   
 $B = 360 \text{ kg m/sec}$   
(Momentum = mass x velocity) (2)
- 3.1.2 A (1)
- 3.1.3 It helps to generate as much momentum as possible when trying to break a tackle. This could be done by increasing running speed. Large players will be at an advantage because of their larger mass. (3)
- 3.2 3.2.1 Skill levels; physical size of players; experience; knowledge; fitness levels (2)
- 3.2.2 Modify the rules; play players of appropriate size/skill as opponents; protective clothing; safe playing environment; share time in favoured positions (2)
- [10]**

**QUESTION 4**

Client's Name	BONGIWE DLAMINI		
Physical activity Needs:	Reduce or reverse effects of diabetes & possibly obesity (1)		
Physical activity barriers:	Diet high in sugar and fat; little support from friends and family; classmates teasing; overweight, diagnosed with diabetes (1)		
Suitable physical activity. Choice 1: <b>walking</b> (1)	Frequency: 2 or 3x per week (1)	Intensity: low (1)	Time: 30 – 40 min (1)
Suitable physical activity. Choice 2: <b>Social netball</b> (1)	Frequency: 1 x week (1)	Intensity: medium (1)	Time: 30 min (1)

**[10]**

Could have other activities too, e.g. housework – 6 × per week; low intensity; 60 min

**QUESTION 5**

## 5.1

- Use it to learn from the mistake/s they made
- Try to improve the error
- Use it to motivate themselves
- Use it to identify if the failure was physical or mental and then adjust their training programme or preparation
- Readjust goals
- Mental preparation is important
- Any other feasible reason (3)

## 5.2 ANY FEASIBLE ANSWER IS ACCEPTABLE

- Set reasonable, feasible goals
- Goals could be aimed at sorting her life out, personally
- Select another sport to focus on & set goals for it:  
e.g. get fit, learn new skills or redefine her skills, get selected for a team, try win a certain number of matches or competitions; aim to win a championship, etc.
- Set goals to educate teenagers and others on the danger of drugs and of lying
- set goals to survive her time in jail (4)

## 5.3 5.3.1 ANY REASONABLE AND LOGICAL ANSWER IS ACCEPTABLE.

- Applaud good performance & efforts
- Congratulate all, regardless of result
- Respect the officials' decisions
- Never ridicule a player
- No violence is allowed – this applies to players, spectators, coaches
- Respect opponents
- No foul language

Follow the rules  
No sledging  
Respect all regardless of race, sex, ability, religion (8)

5.3.2 Increased player safety  
Increased self esteem  
More enjoyment  
Receive positive reinforcement  
Sense of achievement (4)  
**[19]**

## QUESTION 6

Any 2 of the following

### **Dietician**

To ensure correct nutrition. Eat correctly prior to a tournament so that energy levels remain constant throughout.

### **Fitness trainer/conditioner**

Keep muscles toned. Train correctly for tennis ensure that they follow the training principles.

### **Sports Psychologist**

Keep motivated. Goal setting. Get through tough times when losing or if personal problems affect concentration.

### **Skill coach**

Improve on stroke/techniques. Analyse matches – opponents. Work out tactics.

### **Physiotherapist**

Keep the body free from injury. Massage before and after matches to keep muscles supple. Strap muscles if injured or sore.

(2 × 3 = 6)

**[6]**

**QUESTION 7**

- 7.1 He could reduce the arousal by not placing so much importance on the outcome of the match.  
He can concentrate on technique and on just doing his best  
Could communicate his feelings to the coach and explain that he needs to stay calm  
He must go through his arousal control process before and during practice to see what works best  
He could then make adjustments to improve this process (4)
- 7.2 Some sports need more arousal (e.g. rugby, boxing, weightlifting) because they are intense, aggressive and physical.  
Whereas other sports require a calm mind and intense concentration (e.g. darts, archery, shooting). A steady hand is needed. (4)
- 7.3 Increases heart rate if hyped up.  
Slows heart down if calm (2)
- [10]**

**QUESTION 8**

Newton's 2<sup>nd</sup> law = the acceleration of an object is directly proportional to the force causing it.

When the hand hits the ball, it will accelerate. The amount of acceleration is proportional to the force applied by the hand on the ball. The harder it is hit, the faster it will move. In the spike, the ball is struck with more force than the set, and so the spiked ball will accelerate away with more speed.

3<sup>rd</sup> law = for every action there is an equal and opposite reaction.

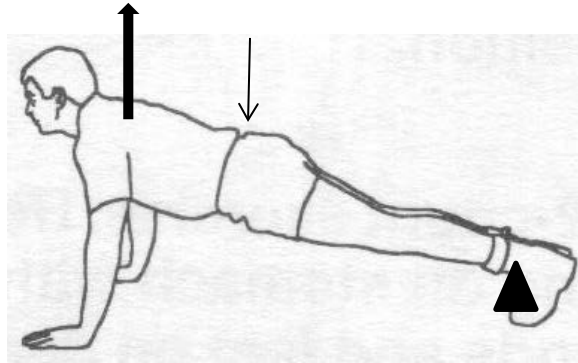
The girls blocking the ball – if the ball is struck with force and connects with the hand of an opponent, it will rebound off the hand with equal force. (6)

**[6]**

**QUESTION 9**

9.1

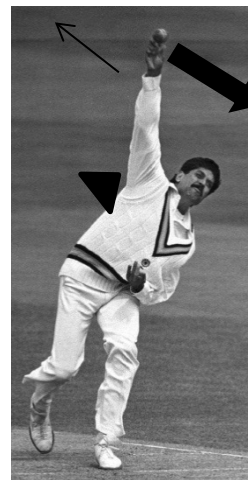
Picture A



Picture B



Picture C



(9)

9.2

Picture	Purpose of lever
A	Used to gain strength to allow body weight to be lifted more easily
B	Used to gain speed for the swing of the stick
C	Used to gain speed to deliver the cricket ball

(3)

9.3

Kicking Action	Explanation
Backswing	If the kicking leg is bent, it creates a short lever to swing towards the ball at speed
Forward swing	Kicking leg straightens, creating a longer lever. This allows the ball to get kicked with more speed
Follow through	Leg follows through to improve accuracy and allow the leg to slow down safely

(3)

9.4 ACTIVITY COULD BE:

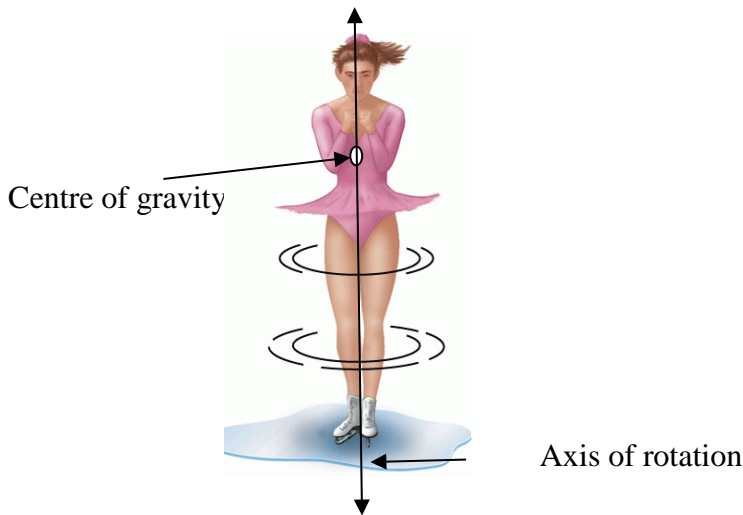
Bowling a cricket ball, driving a golf ball, tennis serve  
 Maximum speed needs to be generated at the end of the lever for a ball to be propelled away at high speed

(4)

**[19]**

**QUESTION 10**

10.1



(2)

- 10.2 Decreasing the moment of inertia will increase rotational speed of an object and vice versa (1)
- 10.3 When an object's mass is moved further away from the axis of rotation, the object's angular velocity will decrease (1)
- 10.4 B – H – E – A – G – D – F – C (8)
- 10.5 The higher the ball is hit from the ground, the sharper the angle of release & this allows the ball to travel a shorter distance to the ground, making it harder for the opponent to get the shot (3)
- 10.6 A long lever is created. This increases hand speed which gets transferred onto the ball as it gets struck and this allows a more forceful shot (2)



- 10.7 When the foot connects with the soccer ball, the foot moves around and to the side of the ball. This causes 1 side of the ball to spin in the opposite direction to the oncoming air flow. High pressure is created on the side. On the other side of the ball a low pressure zone is created when it spins in the same direction zone is created when it spins in the same direction as the oncoming air flow. This means there is an imbalance in air pressure and the ball deviates and moves sideway towards the low pressure zone. This makes the ball curve around the defenders.

(7)

[24]

**Total: 150 marks**