Answers to Test your knowledge questions

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Chapter 10
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multiple choice

1 D
2 A

short answer

3 a This horizontal force can be transferred into vertical force and hence greater time in the air and longer jumping distances.

3 b Lunge backwards with arms and trunk and thus have opposite forward and upwards movements with the legs.

3 c Rotate their arms and trunk forwards and point of contact with the sand.

4 a Creates greater forward momentum and transfer of body weight into arms and direction of throw.

4 b Sequential acceleration occurs when the force produced by larger body parts is built on and increased by smaller body parts along the way. For example, the large shoulder muscles transfer their force into the upper arms, then the forearms and finally the fingers. To ensure maximal speed is retained the bowler must ensure a follow through occurs so no deceleration occurs.

4 c The cricketer must lean backwards to decelerate and then stop. (1 mark) The line of gravity is thus moved backwards and further away from the leading foot. (1 mark) The leading foot thus creates a backward ground reaction force which also contributes to slowing down and stopping rapidly. (1 mark)

5 Answers will vary

6 a

- Velocity of release – increasing the velocity at point of release will increase flight time and result in greater distances – this is important when throwing a baseball from the outfield to home base.
- Angle of projection/release – a low angled club such as a driver should be used when strong wind conditions prevail on a golf course because this will result in a low/flat tee off which
will not see the ball being affected by the wind as much as if a more angled club was chosen to tee off.

- Height of release – in rugby the ball may be kicked with a height of release greater than 45 degrees to give team mates time to run forward and attempt to mark the ball and retain possession. The angle means the ball will stay in the air for longer to allow this to be achieved.

6 b

- Less than 45 degrees used when players need to throw a hard and fast pass in gridiron that cannot afford to be intercepted.
- Greater than 45 degrees used when players need to throw a ball that ‘hangs’ in the air to allow team-mates time to run forward and catch the ball and retain possession.