1.2 Synovial Joints: Ligaments, Tendons and Cartilage: 10-minute Pack

AQA 8582 · Calculators not allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A synovial joint, such as the knee or shoulder, is a freely movable joint made up of several different structures.

- ☐ A) Articular cartilage
- ☐ B) Synovial membrane
- ☐ C) Ligament
- ☐ D) Bursa

(Total for Question 1 is 1 mark)

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2 A weightlifter's hip, a ball and socket joint, allows a wide range of movement during a deep squat.

(a) Name the movement occurring at the hip as the weightlifter lowers into the squat. **(1)**

(b) Explain why the shape of the hip joint allows this wide range of movement. **(1)**

(Total for Question 2 is 2 marks)

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3 A sprinter suffers a hamstring strain during pre-season training. Explain one way this injury could affect their ability to train effectively over the following weeks.

(Total for Question 3 is 2 marks)

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4 Table 1 gives descriptions of different structures found at a synovial joint, with the structure name missing.

Table 1

Part	Description of structure
(a)	Connects bone to bone and prevents/limits excessive movement at a joint
(b)	Connects muscle to bone and transmits the force of a muscle contraction to move a bone
(c)	Covers the ends of the bones at a joint, absorbing shock and reducing friction
(d)	A thick liquid that lubricates the joint and reduces friction between the moving bones
(e)	The layer of tissue that lines the inside of the joint capsule and produces synovial fluid
(f)	The tough, fibrous sleeve that encloses and encases the whole joint, containing the synovial fluid
(g)	A small fluid-filled sac that reduces friction between a tendon and a bone, or between skin and bone

(a) Name the structure described in row (a) of Table 1. **(1)**

(b) Name the structure described in row (b) of Table 1. **(1)**

(c) Name the structure described in row (c) of Table 1. **(1)**

(d) Name the structure described in row (d) of Table 1. **(1)**

(e) Name the structure described in row (e) of Table 1. **(1)**

(f) Name the structure described in row (f) of Table 1. **(1)**

(g) Name the structure described in row (g) of Table 1. **(1)**

(Total for Question 4 is 7 marks)

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Mark scheme · 1.2 Synovial Joints: Ligaments, Tendons and Cartilage: 10-minute Pack

Question 1

B (synovial membrane) **B1**

Answer: B (synovial membrane)

Question 2

(a) flexion **B1**

(a) Answer: Flexion

(b) the rounded head of the femur sits inside a deep, cup-shaped socket in the pelvis, allowing movement in multiple directions (flexion, extension, abduction, adduction and rotation), oe **B1**

(b) Answer: The rounded head of the femur fits inside a deep, cup-shaped socket in the pelvis, which allows movement in many directions, giving the hip a wide range of movement.

Question 3

a strained hamstring reduces the muscle's ability to contract powerfully/pain-free, oe **B1**

so the sprinter may need to reduce training intensity/volume or rest completely to allow it to heal, reducing their overall training load and potentially their fitness, oe **B1**

Answer: A strained hamstring reduces the muscle's ability to contract powerfully and pain-free, so the sprinter will likely need to reduce their training intensity or rest to allow it to heal, lowering their overall training load in the following weeks.

Question 4

(a) ligament **B1**

(a) Answer: Ligament

(b) tendon **B1**

(b) Answer: Tendon

(c) cartilage **B1**

(c) Answer: Cartilage

(d) synovial fluid **B1**

(d) Answer: Synovial fluid

(e) synovial membrane **B1**

(e) Answer: Synovial membrane

(f) joint capsule **B1**

(f) Answer: Joint capsule

(g) bursa **B1**

(g) Answer: Bursa

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