

CSEC PE and Sport

Paper 02

Question 14

Figure 2a shows an athlete in set position, about to respond to the starter's pistol and Figure 2b shows another athlete powering out of the starting blocks. Candidates were asked to describe ONE function of EACH of the following systems in the actions shown in Figures 2a and 2b.

- (i) Skeletal system
- (ii) Muscular system
- (iii) Nervous system

Comments

For Part (i), this candidate linked the functions of the system with the athlete about to respond to the starter's pistol. Candidate explained why the athlete is able to be in this crouched position which speaks to the skeletal system being made up of bones and joints.

For Part (ii), the candidate was able to show how the muscular system works together with the skeletal system. Candidate explained that for the boy in Figure 2a to crouch, the muscles in his back had to relax and the abdominals had to contract. The candidate further explained that in order for the athlete in Figure 2b to run, the muscles in his legs must contract thus moving his leg bones to push off.

In Part (iii), the candidate showed how the nervous system must work in collaboration with the muscular system and by extension the skeletal system. Candidate confirmed in the discussion that for the muscles to contract they have to be told and it is the nervous system that plays this part. In addition, the candidate also explained that the boy in Figure 2b started running when he heard the starter's pistol. This means that his brain had to send the message to his muscles causing them to contract and relax to produce the motion.

Overall, this was an excellent answer to the question.

CSEC PE and Sport

Question Anatomy and Physiology

Candidate Number

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✓ 14.) (i) The skeletal system supports the entire body, without it the boy in the picture would just be a sack of flesh. It ~~is~~ has mechanisms to allow ^{the} movement in fig. 2b. These mechanisms are joints, and they are the locations where two bones ~~are~~ meet. Joints also allow for the bent-over position in fig. 2a.

(ii) The muscular system works together with the skeletal system. The muscles which ~~is~~ make up the muscular system connect to bones by connective tissues called ligaments. When the a muscle connected to any bone contracts or relaxes that bone moves. For the boy in fig. 2a to bend over the ~~his~~ muscles in his back had to relax and ~~the~~ his abdominals contracted. In order for him to run (fig 2b) the muscles in his legs contracted, moving his leg bones to push off.

(iii) The nervous system works in collaboration with the muscular system, and by extension, the skeletal system. In order for muscles to contract ~~it~~ they have to be told to do so. This is done by the nervous system. For the boy to bend over and get ready to run he had to think about doing it. and the message is sent to ~~the~~ his muscles by the brain through nerves. For the boy to start running when he hears the starter's pistol his brain had to send the message to his muscles, ~~and~~ telling them to contract and relax to produce motion.