DULWICH COLLEGE | SINGAPORE |

Year 9 End of Year Assessment
Paper 1 – Body Systems
Physical Education: 2022

Name: .....

Teacher: Miss. Dailly, Mr. Hanlon & Mr. Manu

Time allowed: **45 minutes**

- Students are to attempt all questions on the examination paper.
- Additional paper is available upon request.

Students will be assessed on:

AO1: Demonstrate knowledge and understanding of the factors that underpin performance and are involved in physical activity and sport.

AO2: Apply knowledge and understanding of the factors that underpin performance and are involved in physical activity and sport.

AO3: Analyse and evaluate the factors that underpin performance and are involved in physical activity and sport.

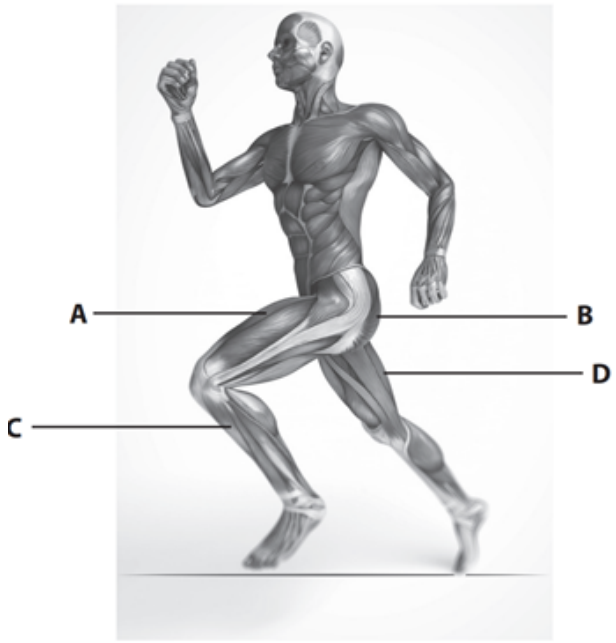
Total Marks available	/ 40	Teacher comment:
	%	
Level/Grade		

Student reflection Time finished the Assessment (If you finish early note down when you finished) -

1. Which **one** of the following bone classifications is **most** suitable for weight bearing activities? (1)

A Long bone
B Flat bone
C Short bone
D Irregular bone

Figure 1 figure shows the muscular system while running.



(Source: © Sebastian Kaulitzki/Shutterstock)

Figure 1

2. Which **one** of the following states the role of muscle D? (1)

A Extension of the leg at the hip
B Extension of the leg at the knee
C Flexion of the leg at the knee
D Plantar flexion of the ankle

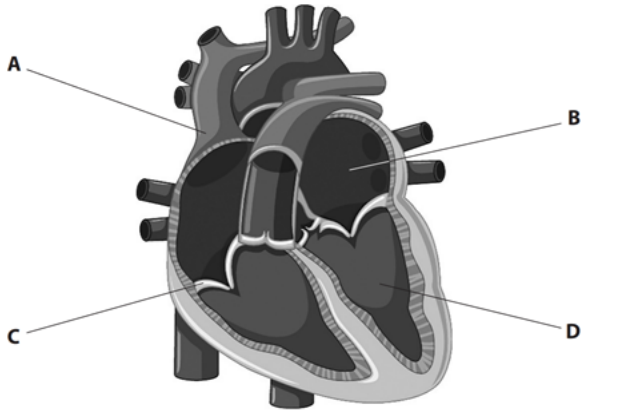
3. Which **one** of the following is a region of the vertebral column? (1)

A Clavicle
B Pelvis
C Cervical
D Sternum

4. Which **one** of the following blood vessels carries oxygenated blood back to the heart? (1)

A Aorta
B Pulmonary artery
C Pulmonary vein
D Vena cava

5. **Figure 2** is a diagram of the heart.



(Source: © GraphicsRF/Shutterstock)

Figure 2

Which **one** of **A, B, C or D** in **Figure 2** is a ventricle? (1)

A
B
C
D

6. Bones form joints to allow different ranges of movement.
Complete **Table 1** by:

a. Stating a range of movement possible at each type of joint. (3)

b. Stating an example of the type of joint in the body. (3)

Type of joint	a. Range of movement possible at each type of joint	b. Example of type of joint in the body
Pivot		
Hinge		
Ball and socket		

Table 1

7. **Figure 3** shows a long jumper.

(Source: Photo by Tobias Heyer/Bongarts/Getty Images)

Figure 3

Examine the antagonistic muscle action taking place at the hip in **Figure 3** that allows the long jumper to achieve this position.

Hip (3)

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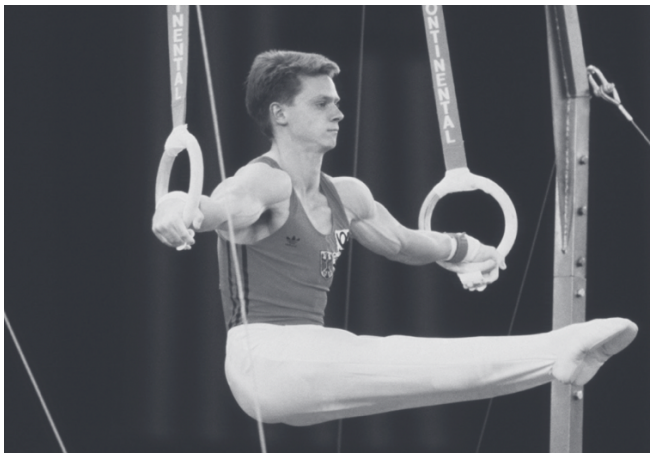
8. Complete the statements below by identifying which muscles are contracting to allow the gymnast in **Figure 4** to achieve the described actions.

Figure 4



(Source: © OtmarW/Shutterstock)

a. Keeping the arm straight at the elbow (1)

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b. Keeping the leg straight at the knee (1)

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c. Moving the arms away from the mid-line of the body (1)

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..... d. Pointing the toes

(1)

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9. The graphs in **Figures 5 and 6** show the runner's depth and rate of breathing at rest and during exercise.

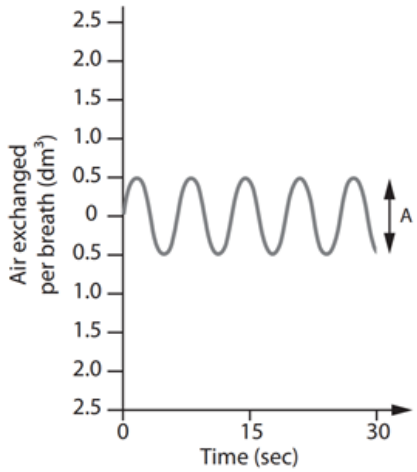

Figure 5 – At rest

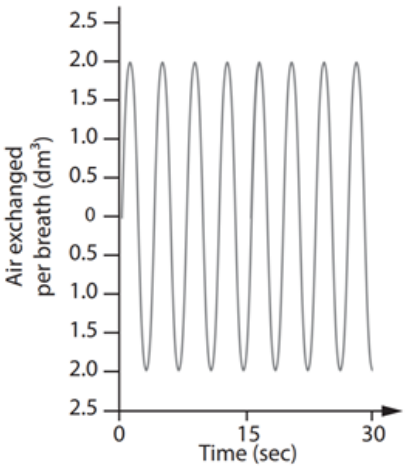

Figure 6 – During exercise

a. Identify, using the data in **Figure 5**, the name of the lung volume labelled A. (1)

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b. Explain **two** reasons why **Figure 6** represents the runner's breathing during exercise.

Reason 1 (2)

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Reason 2 (2)

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10. Statements A and B in **Table 2** show how energy is released aerobically and anaerobically.

Statement	Energy release		
A	Glucose + oxygen	→	carbon dioxide + water + energy
B	Glucose	→	lactic acid + energy

Table 2

Justify why **Statement A** in **Table 2** shows aerobic energy release. (2)

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11. Two functions of the cardiovascular system are to clot open wounds and carry oxygen.

a. State **one other** function of the cardiovascular system (1)

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Vascular shunting occurs during exercise.

b. Explain how vascular shunting makes it possible for an athlete to meet the demands of exercise. (3)

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Table 3 shows blood flow in three different types of blood vessels

Blood vessel	Blood pressure	Thickness of blood vessel wall (micrometres)
A	High	750
B	Low	10
C	Very low	20

Table 3

c. Justify why Blood vessel B in **Table 3** must be a capillary. (2)

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12. Dan trains regularly to improve his shot put performance and his general fitness.

Figure 7 shows Dan during a shot put competition.

Table 4 shows some of the long-term training effects on his body systems.

(Source: © Jim Parkin/Shutterstock)

Figure 7

Long-term training effects
Increased bone density
Decreased resting heart rate
Muscle hypertrophy

Table 4

Evaluate the training methods causing these long-term effects and their impact on Dan's shot put performance. (9)

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