

GCSE PE PLCs 1.2.2 A healthy active lifestyle and your cardio vascular system End of Unit Exam

1 (g) If an individual had high levels of low density lipoprotein (LDL 'bad' cholesterol), which of the following should he/she avoid in order to improve his/her health? (1)

- A** Foods high in unsaturated fats (e.g. sunflower oil, nuts)
- B** Foods high in soluble fibre
- C** **Foods high in saturated fat (e.g. butter, crisps)**
- D** Moderate exercise

2 (g) Which **one** of the following statements correctly defines the term cardiac output? (1)

- A** Heart rate ÷ stroke volume = cardiac output
- B** Cardiac output = heart rate – stroke volume
- C** **Cardiac output = heart rate x stroke volume**
- D** Stroke volume x vital capacity = cardiac output

3 (a) Diet and rest are two important factors to consider when planning for a healthy, active lifestyle. **How** may **diet** and **rest influence personal health**?

(i) **Diet** (1)

A diet with lots of high density lipoproteins will influence physical health by decreasing blood pressure

(ii) **Rest** (1)

Rest will influence your cardio vascular health by increasing white blood cells which will strengthen the immune system

(b) **Why** do you need to **consider** what you **eat** if you **exercise regularly**? (1)

When exercising regularly you will need to consider energy so your diet should contain 60% carbohydrate

4 If an individual had high levels of low density lipoprotein (LDL 'bad' cholesterol), which of the following should he/she avoid in order to improve his/her health?

- a) Foods high in unsaturated fats (eg sunflower oil, nuts)
 - b) Foods high in soluble fibre
 - c) Foods high in saturated fat (eg butter, crisps)**
 - d) Moderate exercise
- (1)

5 Rob and Imran regularly participate in physical activity.

(a) Rob takes part in cross-country runs on a regular basis. **State a possible physical benefit of taking part in cross country.**

(1)

One physical benefit of taking part in cross country is hypertrophy of the heart

6 Diet and rest need to be considered when planning a healthy, active lifestyle.

Describe the impact of diet and rest on the cardiovascular system.

(i) **Impact of diet on the cardiovascular system.** (3)

The **impact of a diet with lots of high density lipoproteins is decreased blood pressure.** The **impact of a diet with lots of low density lipoproteins is increased blood pressure.** The **impact of a diet with lots of sugar, salt and fat will increase the risk of cardiovascular disease.**

(ii) **Impact of rest on the cardiovascular system.** (2)

The **impact of rest is increased number of white blood cells which will fight disease.** A second **impact of rest is that it will allow the heart muscle to adapt through hypertrophy**

7 The following statements are effects of participation in exercise and physical activity on the cardiovascular system. State whether the effect is immediate or long term. (3)

Immediate or long term effect?

Increased heart rate
Increased cardiac output
Increased maximum cardiac output

8. **Describe the impact of alcohol and smoking cigarettes on the cardiovascular system** (4)

One **impact of alcohol on the cardiovascular system is decreased blood pressure.** A second **impact is that it causes the blood cells to clump together which reduces blood flow.**

One **impact of smoking cigarettes on the cardiovascular system is decreased oxygen transport.** A second **impact is that it increases the risk of heart disease**

10.

The equation in the box below is incomplete.

Complete the equation that is used to calculate the amount of blood ejected from the heart per minute.

(1)

$$\text{.....} = \text{Heart Rate} \times \text{.....}$$

11.

Blood pressure can be used to help monitor the health of an individual.

(i) A **normal** blood pressure reading would be **120/80**. The **120** represents **systolic** blood pressure. **Name** the other **blood pressure** represented in this reading.

(1)

Diastolic

(ii) **Explain** the **immediate effect** of **exercise** on **blood pressure**.

(2)

The **immediate effect** of **exercise** is that it **increases because more oxygenated blood** is required by the **working muscles** so **energy** can be **released**

9* A healthy, active lifestyle will have an impact on the body systems. **Describe** some of the **effects** of **participation** on the body's **cardiovascular system**. In your answer you may consider:

- the **immediate** and **short-term effects** of **participation**
- the **effects** of **regular participation** and **long-term effects** (6)

Knowledge list – Plan;

Immediate; heart rate, cardiac output, blood pressure (systolic and diastolic)

Long term; resting heart rate, heart hypertrophy, stroke volume, cardiac output, resting blood pressure, increased red blood cells, increased capillaries

1. One **immediate effect** of **participation** on the **cardiovascular system** is to the **heart**.
2. This is

through **increased heart rate** (the amount of **beats per minute BPM**) and **increased cardiac output** (**amount of blood pumped out of the heart in one minute L/min**). 3. This happens because more **oxygen** is needed in the **working muscles** which is carried in the **red blood cells**. This is **important** because a **marathon runner** would need **additional oxygen** to **react** with **glucose** in the muscles to release **energy** and to maintain **performance**.

Total marks; 27 marks