**Senior Secondary Physical Education Elective**

**Part 5 Physiological Basis for Exercise and Sport Training**

**Worksheet 1**

The Sports Day of xxx school was scheduled three months later. Students would get better preparation for the exercise performance in Sports Day by conducting different type of training program.

Question 1:

Please state any five factors that may impact on the students’ exercise performance in Sports Day.

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| Any five of the following factors: |
| Cardio-respiratory fitness, muscular fitness, flexibility, age, sex, heredity, body |
| composition, doping, environment |
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Question 2:

In 3000m distance running event, please state any two factors that may impact on the exercise performance and explain how they will affect the exercise performance.

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| Any two of the following factors: |
| Cardio-respiratory fitness – higher cardio-respiratory fitness level can achieve better performance in 3000m running |
| Muscular fitness – better muscular strength or power can favor for start and final few hundred meters in 3000m running. Better muscular endurance can favor for overall 3000m performance. |
| Body composition – lower % body fat can achieve more effective energy expenditure in 3000m running |
| Environment – hot, high humidity or high altitude environment may reduce the exercise performance in 3000m running |

Question 3:

In distance running, what will be target heart rate for the following situation?

Intensity: 60% of individual’s maximum heart rate

Age: 25

Resting heart rate: 70

Please calculate the target heart rate using Maximum heart rate and Heart rate reserve methods.

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| Maximum heart rate method: (220-25) × 0.7 = 136.5 |
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| Heart rate reserve method: [(220-25-70) × 0.7] + 70 = 157.5 |
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References:

McArdle, W.D., Katch, F.I., & Katch, V.L. (2000). Essentials of exercise physiology (2nd ed.). Philadelphia: Lippincott Williams & Wilkins.

Åstrand, P.O., et al. (2003). Textbook of work physiology: Physiological bases of exercise. Champaign, IL: Human Kinetics

https://www.researchgate.net/publication/8474348\_Factors\_Affecting\_Running\_Economy\_in\_Trained\_Distance\_Runners