**Senior Secondary Physical Education Elective**

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

**Worksheet 2**

The Annual Inter-school basketball competition game was scheduled three months later. The basketball coach has prepared the following weekly training program for the preparation of the game.

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| Day | Training session (AM) | Training session (PM) |
| Monday | 5000m jogging (30mins) | Basketball training |
| Tuesday |  | Basketball training |
| Wednesday |  |  |
| Thursday | Repeated sprint training 50m (15mins) | Basketball training |
| Friday |  | Basketball training |

Question 1:

Please state the major energy system used in 5000m and sprinting (50m).

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| 5000m: Aerobic system |
| 50m sprinting: Anaerobic system or ATP-PC system |
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Question 2:

What is the target training system on Thursday’s morning training session? For the 15mins of training, what would be the recommended “work : rest” ratio?

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| ATP-PC system |
| Work : rest ratio – 1:3 or above |
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Question 3:

If the distance of sprinting on Thursday’s morning session changed from 50m to 400m, what will be the target training system? Student reported that they felt muscle soreness and reduction of maximum running speed during the repeated sprint (400m) training session. Why?

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| Anaerobic glycolysis system |
| High concentration of lactic acid generated within muscle |
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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