

Personal Development, Health
and Physical Education

Section I – Part B (continued)

In your answers you will be assessed on how well you:

- demonstrate an understanding of health and physical activity concepts
- apply the skills of critical thinking and analysis
- illustrate your answer with relevant examples
- present ideas in a clear and logical way

Marks

Question 22 — Factors Affecting Performance (20 marks)

- (a) Describe how an athlete's level of arousal affects performance.

4

Arousal and performance have a very important relationship. As described in the "inverted U hypothesis" too much or too little arousal ^(anxiety or over excitement) will decrease performance, therefore optimal arousal needs to be found somewhere in between. Athletes who use fine motor skills need lower arousal levels than athletes who use majority gross motor skills need slightly more arousal. There is a very fine line between too much and too little arousal, however it depends upon the individual athlete and will vary from one to the other.

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Question 22 (continued)

- (b) Discuss how prescribed judging criteria are used to measure the quality of a performance. 6

Prescribed judging criteria are used in judging sports such as dancing. The judges have a list of different elements of a performance which they either tick off as it occurs or make a reliable judgement of the performance. Say giving a mark from ~~10~~ a range of poor to excellent. This form of judging is objective and there is not personal opinion or biased involved in the judging. For this reason quality of performance is accurately measured and no discrepancies may occur. It is also very reliable form of judging. Prescribed judging criteria may also be in the form of electric time keeping devices in swimming or running events. There is a definite result. There is a definite winner.

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Question 22 (continued)

- (c) Analyse the physiological adaptations that occur when an untrained individual undertakes a 20-week aerobic training program.

10

When an untrained individual initially takes part in aerobic training they will experience an increased heart rate, increased stroke volume and Cardiac output and ventilation rate (breathing in and out) increases.

Over the period of the 20 week aerobic training program there will be many other physiological adaptations that will start occur. These include; lower resting heart rate, lower sub maximal heart rate, increased VO_2 Max as the lungs become more efficient and larger in size due to the aerobic training. Increased oxidation of glycogen to produce the extra energy required for endurance work, increased oxidation of fats also to provide extra energy, extra red blood cells and haemoglobin levels, to carry extra oxygen needed around the body. hypertrophy of type I (slow twitch) muscle fibres as they are the predominant muscle fibres used in aerobic exercise but also type II (fast twitch) muscle fibres.

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Question 22 (continued)

are increased in efficiency. The body becomes more efficient at carrying oxygen around working muscles. The body also becomes more tolerant to lactic acid and the lactate threshold, mainly the aerobic threshold is increased so the athlete can produce an aerobic training effect each time he trains and can train for longer periods before building up lactic acid. The body also becomes more efficient in storing muscle glycogen, which is used in quick start bursts of exercise.

End of Question 22