**PHED 3 Revision paper D mark scheme**

**Qu 1**

1. ***Oxidation/aerobic;***
2. ***Carbohydrates/glycogen/glucose broken down into pyruvate;***
3. ***Anaerobic/glycolysis;***
4. ***Some ATP produced;***
5. ***Fats/triglycerides/fatty acids/glycerol broken down into variety if compounds;***
6. ***Beta oxidation;***
7. ***Acetyl Co-enzyme A;***
8. ***Into mitochondria;***
9. ***Krebs cycle;***
10. ***Electron transport chain;***
11. ***Large quantities of ATP produced;***
12. ***Reduced pO2 at altitude/less oxygen in air/available/lower O2 concentration;***
13. ***Body produces erythroprotein/EPO;***
14. ***More red blood cells/haemoglobin;***
15. ***Greater oxygen transport capacity/carry more oxygen;***
16. ***Greater stamina/cardio-respiratory endurance/aerobic capacity/increased VO2 max/aerobic respiration;***
17. ***Reduced pO2 – unable to train as hard as previously/at sea level;***
18. ***Altitude sickness/ quicker to exhaustion /dehydration;***
19. ***Loss of fitness while at altitude;***
20. ***Therefore aerobic performance deteriorates;***
21. ***No benefit to anaerobic performance;***
22. ***Requires several weeks/months to be effective.***

**Qu 2**

***(a)***

1. ***LT – lactate/lactic acid begins appearing in blood/OBLA;***
2. ***Lactic/lactate anaerobic pathway;***
3. ***Carbohydrates/glycogen/glucose broken down;***
4. ***Anaerobic glycolysis;***
5. ***To pyruvate;***
6. ***ATP produced;***
7. ***Conversion to Lactate/lactic acid;***
8. ***Lactate dehydrogenase; Max 4***

***(b)***

1. ***Insufficient/not enough time for recovery;***
2. ***Lactate removed during recovery time;***
3. ***E.P.O.C.;***
4. ***Using oxygen/aerobic systems;***
5. ***Lactate builds up;***
6. ***Causes fatigue;***
7. ***Acidity inhibits muscle contraction; Max 3***

**Qu 3**

***(a)***

1. ***First Law – force required to change state of motion of ball;***
2. ***Second law – magnitude/size of force governs change in momentum;***
3. ***Mass remains constant;***
4. ***Force governs magnitude of acceleration given to ball;***
5. ***And direction;***
6. ***Third Law – equal and opposite reaction force;***
7. ***Performer applies force to ball through muscle contractions; 4 marks***

***(b)***

1. ***Gravity and air resistance affect projectiles;***
2. ***Gravity reduces height achieved/brings projectile back to earth;***
3. ***Affects vertical component;***
4. ***Air resistance has no/negligible effects on horizontal components of most sports projectiles;***
5. ***Some projectiles affected by air resistance – golf ball dimples; Max 3***

**Qu 4**

***(a)***

1. ***Store more glycogen than normal - lack of glycogen to last race;***
2. ***Aerobic energy source;***
3. ***Affects metabolism/digestion;***
4. ***Problem of water retention;***
5. ***Alterations to training programme/tapering/too much exercise; Max 3***

***(b)***

1. ***Exercise/muscle contraction generates heat;***
2. ***High core temperature – reduced blood viscosity;***
3. ***Metabolic processes slow;***
4. ***Reduced blood flow to muscles;***
5. ***Denaturation of enzymes;***
6. ***Training – adaptations to losses of electrolytes; sub max 3***

 ***Max 4***

**Qu 5**

***(a)***

1. ***Traits – innate/inherited/stable/enduring factors;***
2. ***Same personality in all situations;***
3. ***Interactionist theory - concerned with traits;***
4. ***And interaction with the situation;***
5. ***B = f (P.E);***
6. ***Achievement motivation;***
7. ***Naf/nach***
8. ***Nach - Seek out challenging situations/naf = opposite;***
9. ***Concerned with high standards of performance/naf = opposite;***
10. ***Task persistenc/naf = opposite e;***
11. ***Approach behaviours/not afraid of competitive situations/naf = opposite;***
12. ***Enjoy evaluative situations/naf = opposite;***
13. ***Not afraid of failure/naf = opposite;***
14. ***Value feedback from others/coach/naf = opposite;***
15. ***Attribute performance to internal factors/effort/ability/naf = opposite;***
16. ***Trait anxiety;***
17. ***Anxious in wide variety of situations;***
18. ***Increases state anxiety;***

**Qu 6**

 ***(a)***

1. ***Task persistence;***
2. ***Focuses learning/directs attention to certain skill;***
3. ***Motivates performer /mobilises effort through feedback;***
4. ***Reduces stress/increases self-efficacy/confidence; Max 2***

***(b)***

1. ***Use of appropriate mnemonic - SMARTER,SCAMP,SMART;***
2. ***Specific not generalised – so that the athlete knows what they are working towards and when they have reached the goal;***
3. ***Controllable – within the athlete’s control and not influenced by the performance of others;***
4. ***Challenging/Exciting to provide an incentive and the satisfaction of achievement;***
5. ***Attainable/Realistic – within the athletes capabilities so that the performer does not become disheartened by being unable to reach the goal;***
6. ***Measurable and recordable – use times/distances;***
7. ***Personal/Agreed – set jointly between athlete and coach;***
8. ***Written down and available to performer;***
9. ***Short and long-term/Timed so that feedback on progress can be provided and adjustments made;***
10. ***Set goals for both practice and competition;***
11. ***Performance/individual goals used;***
12. ***Outcome/team goals more effective; Max 5***

**Qu 7**

***(a)***

1. ***Task-orientated/autocratic;***
2. ***Relationship/person-orientated/democratic;***
3. ***Task-orientated best in very favourable or very unfavourable situations;***
4. ***Relation-orientated best in moderately favourable situations; max 2***

***(b)***

1. ***Larger group – autocratic***
2. ***Smaller group - democratic***
3. ***Younger teams – relation-orientated preferred;***
4. ***Older teams – autocratic/task-orientated;***
5. ***Female teams – democratic style;***
6. ***Males – autocratic style;***
7. ***Highly skilled prefer relationship-orientated;***
8. ***Weaker players prefer task-orientated; Max 5***

**Qu 8**

***(a)***

1. ***Thoughts/cognitive***
2. ***Emotional response/feelings/affective;***
3. ***Producing behaviour;***
4. ***To a specific object/situation;***
5. ***Not global;***
6. ***Learned;***
7. ***From experiences;***
8. ***Significant others/parents/peers/role models; Max 4***

***(b)***

1. ***No - Behaviour doesn’t always follow thinking/feelings;***
2. ***Other factors/conflicts/available time/social interactions affect behaviour;***
3. ***Yes - Specific attitudes predict specific behaviours;***
4. ***Best predictor of behaviour is behavioural intention;***
5. ***Especially if situational factors are also favourable; Max 3***