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**A level**

**Revision Guidance**

**CONTENTS PAGE**

|  |  |
| --- | --- |
| The course outline | p.2 |
| Exam dates | p.2 |
| Textbooks and revision guides | p.3 |
| Revision apps and websites | p.4 |
| Key vocabulary | p.5 |
| Exam content paper 1 | p.11 |
| Exam content paper 2 | p.17  |
| Exam content paper 3 | p.18 |
| Revision Plan (Lessons and independent study) | p.20 |

**Course Details.**

**Exam Dates.**

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| --- | --- | --- | --- | --- |
| **Paper Title** | **Length/ Time** | **Marks** | **Worth** | **Date** |
| **Component 1** – Physiological Factors | 2 Hours | 90 | 30% of your final grade | **Thursday 10th June** |
| **Component 2**– Psychological Factors | 1 hour | 60 | 20% of your final grade | **Thursday 17th June** |
| **Component 3** – Socio-cultural issues. | 1 hour | 60 | 20% of your final grade | **Wednesday 23rd June** |

**Textbooks and Revision Guides.**

Revision books are available from store retailers and also from online sources. The recommended revision guides we would suggest for students are shown below. However there may be other resources out there, if you do find some be sure it is suited to OCR specification and that it is the new A-level specification (2016).



Also included is a revision **workbook**, this has been written by one of the chief examiners for GCSE PE and includes sample exam questions and the answers. This is essential for students to self-check their revision by practicing exam questions. It also supports essential exam answering technique.

Additional revision guides from CGP are also advisable or the edexcel GCSE PE textbook:





**Apps and Websites.**

To support your revision you may also wish to use revision websites and/or apps. Below are some suggests for you.

|  |  |
| --- | --- |
| **For revision content:****BBC bitesize:** [**https://www.bbc.com/education/subjects/znyb4wx**](https://www.bbc.com/education/subjects/znyb4wx)**Revision world:** [**https://revisionworld.com/gcse-revision/pe-physical-education**](https://revisionworld.com/gcse-revision/pe-physical-education)**S-cool:** [**https://www.s-cool.co.uk/gcse/pe**](https://www.s-cool.co.uk/gcse/pe)**My PE Exam::** [**http://www.mypeexam.org/**](http://www.mypeexam.org/) |  |
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**For organising your revision:**

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| --- | --- | --- |
| **Get Revising** | **Study Blue** | **Quizlet** |
|  |  |  |
| https://getrevising.co.uk/ | https://www.studyblue.com/ | https://quizlet.com/en-gb |

**Revision App:**



Gojimo is a useful revision app that has been developed by the Telegraph. It has mostly free content but some you do need to pay for.

http://www.gojimo.com/a-level-sociology-revision

**Key Exam Command Words**

**Define/What do you understand by the term?**

 This requires a formal statement. Often the phrase ‘what do you understand by the term…..’ is used instead. Some definitions are easy to recall.

**Define the term stamina (1 mark)**. This is the ability to delay the onset of fatigue.

Other definitions are more complex. Often it is helpful to give an example. Some complex definitions (hard to define) are worth two marks.

**Define the term balance (2 marks)**. This is the idea of remaining stable or in equilibrium. It depends on the ability to keep your centre of gravity over your base of support.

**Explain**

 This command word is used extensively at A-level and can have two different meanings. The word explain may require a reason. The amount of detail needed is shown by the number of marks allocated.

**Explain the causes of the Bohr shift and how it increases oxygen delivery to the working muscles (3 marks)**. The reasons for the Bohr shift are an increase in carbon dioxide levels and an increase in body temperature. These cause the oxyhaemoglobin curve to shift to the right and this results in oxygen dissociating from haemoglobin and entering the muscle.

Another way of using this command word is to ask for extra detail in an answer.

**Explain the roles of tropomyosin and troponin during muscle contraction (4 marks)**. Tropomyosin prevents myosin attaching to actin filaments. When an action potential arrives at the muscle fibre, calcium ions are released from the sarcoplasmic reticulum and attach to troponin on the actin filaments, causing shape of troponin to alter. Tropomyosin then binds to actin, exposing the myosin binding site on the actin filament.

**State/Name/Identify**

This requires a brief answer without any reason.

**State two ways that carbon dioxide is transported in blood (2 marks)**. Carbon dioxide is transported as bicarbonate ions, or dissolved in the plasma.

**List**

This requires a sequence of points with no explanation. The number of points in the list should reflect the mark allocation.

**List the benefits of military drill (2 marks)**. Military drill developed obedience and discipline. It also prepared the children for the army in case of war.

**Describe**

This requires a piece of prose which gives key points. Diagrams should be used where possible.

**Describe how running affects the venous return mechanism (3 marks)**. Running increases the venous return mechanism. The muscles in the legs contract more frequently and they will compress veins and force blood back towards the heart. These veins have valves that prevent the backflow of blood. The breathing rate also increases during running. As the pressure in the chest changes, the veins are compressed and this again forces blood back to the heart.

**Discuss**

This requires points both for and against, together with a criticism of each point. (Compare is a similar command word).

**Discuss the suggestion that the increased media coverage of elite sport has had a positive impact on coaches (4 marks)**. Increased media coverage has given an increased awareness of their role and has probably increased their salary. Use of the media has made it easier to learn from other coaches. However the increased media coverage has also led to greater pressure because of the need to produce results. There is also an expectation to deal with media, and that may mean an invasion of privacy. Greater media attention also makes it easier for coaches to lose their jobs when results don’t go their way.

**Suggest**

This means that there is no single correct answer.

**Suggest strategies that a coach could use to develop the assertive behaviour of a performer (7 marks)**. The coach could punish aggressive acts by dropping the player for next match . They could promote fair play and highlight non-aggressive role models. They could reduce the importance of the event or substitute the player.

**Key Vocabulary / Glossary of Terms**

|  |  |
| --- | --- |
| **\*Acclimatisation** | The effects a training system forces upon the body to compensate for the stresses of a new environment; heat and ***altitude training***. |
| **Action potential** | The change in electrical potential associated with the passage of an impulse along the membrane of a muscle cell or nerve cell. |
| **Actin** | The thin protein filament found in the myofibril. |
| **\*ADP (Adensosine Diphosphate)** | The production of energy results in ***ATP*** losing a phosphate which in turn results in the formation of ADP. |
| **Aggression** | Any form of behaviour that is used to harm another individual.  |
| **All or none law** | All muscle fibres will be either be contracting or not activated at all. There is no in between ***action potential***. |
| **Amateurism** | Participating in sport for pleasure, rather than financial gain. |
| **\*Angular momentum** | The amount of motion a body or object has during rotation. Angular velocity x moment of inertia. |
| **\*Angular velocity** | The rate of movement of the body or object in rotation. |
| **Anxiety** | A negative side effect of stress; ***state*** and ***trait*** anxiety. |
| **Arousal** | Arousal is your level of excitement and readiness to perform. Your performance will be best at an optimum level of arousal.  |
| **Athleticism** | Combination of physical endeavour and moral integrity. Mixing honour, truth and sportsmanship. |
| **Atkinson and Shiffren’s multi-store memory model** | Human memory has three separate components: ***sensory register***, ***short-term memory*** and ***long-term memory***. |
| **ATP (Adenosine Triphosphate)** | This is the energy source of the body, as it breaks down energy is released. |
| **Altitude Training** | A performer who exposes their body to high altitude will cause it to ***acclimatise*** to the environment that has a lower level of oxygen available. It results in the production of **EPO** which in turn stimulates the production of more red blood cells which allows the body to deliver more oxygen to the working muscles. |
| **Athleticism** | Physical endeavour (effort) with moral integrity (sportsmanship).  |
| **Attitude** | A stable belief or feeling about something. |
| **Bandura’s theory of social learning** | Learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement. |
| **\*Bandura’s theory of self-efficacy** | The theory of ***self-efficacy*** lies at the centre of ***Bandura’s social cognitive theory***. This emphasises the role of observational learning and social experience in the development of the subjects’ personality. |
| **\*Bernoulli’s principle** | The relationship between velocity and pressure as they act upon an object as it moves through fluid or air. The principle that in a flowing fluid or air, an increase in velocity happens simultaneously with decrease in pressure. |
| **Biofeedback** | A technique that allows performers to control their physiological responses such as heart rate through the use of electrodes. |
| **Borg scale of Perceived Exertion** | A measure of how hard you are exercising. The Borg Scale takes into account your fitness level: It matches how hard you feel you are working with numbers from 6 to 20; thus, it is a “relative” scale and unique to each person using it. |
| **Cardiac cycle** | The order of events that take place during one heart beat. It includes the diastoleand systole phase. |
| **Cardiovascular drift** | The increase in heart rate that occurs during prolonged endurance exercise with little or no change in workload. |
| **Centre of mass** | The point where all of the mass of the object is concentrated. When an object is supported at its centre of mass there is no net torque acting on the body and it will remain in static equilibrium. |
| **\*Chelladurai’s multi-dimensional model of sports leadership** | The model states that the leader will be more effective if the groups’ satisfaction with the leader is high. A team which is not satisfied with its leader will not demonstrate the same level of performance or satisfaction. It takes into account the characteristics of the situation, leader and group members along with the required, preferred and actual behaviour. |
| **Cognitive theory of learning** | Learning by observing and copying others. |
| **Concentric contraction** | During this muscular contraction the muscle will shorten during the movement. |
| **Continuous skills** | This shows movement with no clear start or stop point. The movements blend into each other. |
| **\*Craik and Lockharts levels of processing model** | Memory is just a by-product of the depth of processing of information and there is no clear distinction between ***short term memory*** and ***long term memory***. |
| **Discrete skills** | The movement shows a clear start and end point. |
| **Distributed practice** | Attempts at the skill are divided up with intervals in between to allow for rest, feedback and mental rehearsal. This is best used in difficult, dangerous or fatiguing skills and with young or lowly motivated individuals. |
| **Eccentric contraction** | During this muscular contraction the muscle will lengthen during the movement. |
| **\*Energy continuum** | The interaction of the three energy systems to provide energy to re-synthesise ***ATP***. It shows the predominant system or percentage of each system dependant on the intensity and duration of the activity. |
| **Excess post-exercise oxygen consumption (EPOC)** | Informally called afterburn and is a measurably increased rate of oxygen intake following strenuous activity intended to erase the body’s oxygen deficit. |
| **Ergogenic aid** | A technique or substance used for the purpose of enhancing performance. |
| **Extrinsic motivation** | Performing for rewards that maybe either tangible or intangible. |
| **Fixator** | Muscles that work with the agonist muscle in creating effective movement by stabilising the bones during the movement.  |
| **Fixed practice** | This involves the repeated practise of a skill in order to strengthen the motor programme and create a habitual motor programme. This type of practice is best with ***discrete***, closed skills. |
| **Games ethic** | The belief in games as a vehicle for establishing/developing social control and character. |
| **Globalisation** | The process by which sport has developed international influence and started to operate on an international scale. |
| **\*Glycolysis** | Production of four ***ATP*** molecules through the breakdown of glycogen into pyruvic acid. |
| **Intrinsic motivation** | Performing for the enjoyment and self-satisfaction of challenging oneself. |
| **Isometric contraction** | This contraction occurs without any shortening (***concentric***) or lengthening (***eccentric***) of the muscle. |
| **Isotonic contraction** | This contraction occurs that allows the muscle to change length; ***concentric*** and ***eccentric*** contractions. |
| **Karvonen’s theory** | This uses the heart rate reserve to calculate training zones based on both maximum and resting heart rate. |
| **Lateral rotation** | Turning outwardly or away from the midline of the body. |
| **Learned helplessness** | Negative feelings from a performer who feels they are going to fail at a task due to previous experiences. |
| **\*Linear motion** | Movement that occurs along a straight line once a force has been applied. |
| **Long-term memory** | The place where information which has been rehearsed in the ***short-term memory*** is held indefinitely. |
| **\*Magnus effect/force** | This is the commonly observed effect in which a spinning ball (or cylinder) curves away from its principal flight path. It is important and used in many ball sports. |
| **Massed practice** | This is a continuous form of practice which is best for simple skills. This causes fatigue and therefore simulates the late stages of a game. |
| **Mastery Orientation** | Performers who believe they will succeed and who are motivated to improve even when faced with failure. |
| **Medial rotation** | Movement of the limbs around their long axis. |
| **Moment of inertia** | The torque needed for a desired angular acceleration about a rotational axis. |
| **Motivation** | Desire and determination to achieve and succeed; ***intrinsic*** and ***extrinsic***. |
| **Motor neurones** | Carry signals from the central nervous system to effectors. |
| **otor unit** | Consists of one ***motor neurone*** and the muscle fibres it stimulates. |
| **Myofibril** | One of the slender threads of a muscle fibre, composed of numerous myofilaments. |
| **Myoglobin** | An iron-containing protein in muscle, similar to haemoglobin, that receives oxygen from the red blood cells. |
| **Myosin** | One of the two main proteins of muscle. |
| **National institutes** | The network of centres that provide practical support to elite performers. They also identify, confirm and develop talented athletes. |
| **Neurotransmitter** | A chemical that is released from a nerve cell which thereby transmits an impulse from a nerve cell to another nerve, muscle, organ, or other tissue. |
| **Newtons 1st law** | Law of inertia.  |
| **Newtons 2nd law** | Law of acceleration. |
| **Newtons 3rd law** | Law of motion. |
| **\*Non-parabolic flight path** | An object which air resistance affects, reducing the horizontal motion and making it drop soon, like a shuttle cock. |
| **Operant conditioning** | A process of shaping behaviour using reinforcement. |
| **Part practice** | Breaking down the skill into its constituent sub-routines, forms a stage of the ***whole-part-whole practice***. |
| **\*Parabolic flight path** | The flight path of a projectile without aerodynamic properties or without spin will fly in a parabolic manner. This means that when drawing the flight path it will look like a curve where the left and right sides match or mirror each other similar to a symmetrical inverted U shape. |
| **Personality** | The characterisation of individual differences. |
| **\*Phosphocreatine (PC)** | This is a substance that, in its chemical partnership with ***ATP***, is fundamental to the ability of the body to produce muscular energy. |
| **PO2** | Partial pressure of O2 in blood, expressed in kilopascals. |
| **Progressive muscular relaxation (PMR)** | A relaxation technique used to monitor and control muscle tension and involves the tensing and relaxing of muscles. |
| **Pre-capilliary sphincters** | Located at the start of a capilliary network and regulates the blood flow in the capilliary. |
| **Prime mover** | Antagonistic pairs of muscles create movement when one (the prime mover) contracts and the other relaxes. |
| **Professionalism** | Being paid to do a job. Initially associated with working class sport as they could not afford time off to play. |
| **Progressive-part practice** | Also known as the chaining method, as the parts of a skill are practised individually, in order, before being linked together and expanded. For example in the triple jump, the hop will be practised and learnt, before the skip is then practised and learnt. The two are then linked together. Finally the jump will be learnt individually and then tagged on the end of the skip.Learn part **A**, then learn part **B** and link these together **A+B = AB.** Learn part **C** & add this to what has already been learnt **AB + C = ABC**. |
| **Ringelmann effect** | The tendency for individual members of a group to become increasingly less productive as the size of their group increases. |
| **\*Self-efficacy** | An individual’s personal estimate of specific confidence in their capability to perform to a certain level. |
| **Sensory register** | The place where information from the senses enters the memory store. |
| **Serial skills** | A series of ***discrete*** skills joined together one after each other. |
| **Short-term memory** | Also referred to as working memory and is responsible for receiving and holding input from both the sensory register and the ***long-term memory***. |
| **Social and cultural factors** | Features of life and society such as transport, population, literacy, free time, class or technology which affect sport in society. |
| **Social facilitation** | An improvement in performance produced simply through others/audience being present. |
| **Social inhibition** | A restraint on person’s feelings and expressions in the belief that others may disapprove of their behaviour. |
| **Spectatorism** | A feature of sports such as football where a larger volume of people watch, rather than participate. |
| **State anxiety** | This is transient and specific only to the particular situation. |
| **Steiner’s model of group effectiveness** | Actual productivity = potential productivity − faulty group processes. |
| **Stress** | A stimulus resulting in arousal or a response to a specific situation. |
| **Sub-routines** | The different parts of the skill that when put together in order create the complete motor programme/movement pattern. |
| **Synergist** | A muscle which aids the action of a prime mover. |
| **Trait anxiety** | This is a general feeling of anxiety that is part of the individuals personality rather than a feeling of anxiety relating to a specific situation (***state*** anxiety). |
| **Trompomyosin** | A muscle protein of the I band that inhibits contraction by blocking the interaction of actin and myosin, except when influenced by troponin. |
| **Tromponin** | A protein of muscle tissue that binds calcium ions and is involved in contraction. |
| **UK Sport** | Responsible for promoting and supporting sport across the UK. Provides information on sporting activities and initiatives being undertaken by the agency. |
| **Varied practice** | This is used best for open skills and involves repeating a skill in differing situations. This helps to build up schema to use in game situations. |
| **Vascular shunt mechanism** | Redistribution of blood during exercise. |
| **Vasomotor centre** | Found within the medulla oblongata and responsible for monitoring and causing cardiovascular responses of vasodilation and vasoconstriction. |
| **\*Vealey’s model of sports confidence** | The belief or degree of certainty individuals possess about their ability to be successful in sport. |
| **Venous return** | Blood returning to the right hand side of the heart from the veins.  |
| **VO2 max** | Maximal oxygen uptake or the maximum volume of oxygen that can be utilized in one minute. |
| **\*Weiner’s model of attribution** | Reason for success and failure. How individuals interpret events and how this relates to their thinking and behaviour. Consists of luck, effort, task difficulty and ability. |
| **Whole practice** | Teaching the skill as a complete action. |
| **Whole-part-whole practice** | You teach the entire skill, practice areas of the skill that is usually the weakest, and then recombine this back into the complete skill.  |
| **Zone of optimal functioning** | The optimum level of arousal that is unique to all individual sports performers. |

**What do I need to revise for Paper 1?**

**Physiological Factors**

|  |  |
| --- | --- |
| Joints, movements and muscles  | shoulder: flexion, extension, abduction, adduction, horizontal flexion/ extension, medial and lateral rotation, circumduction * deltoid, latissimus dorsi, pectoralis major, trapezius, teres minor

elbow: flexion, extension * biceps brachii, triceps brachii

wrist: flexion, extension * wrist flexors, wrist extensors

hip: flexion, extension, abduction, adduction, medial and lateral rotation * Iliopsoas, gluteus maximus, medius and minimus, adductor longus, brevis and magnus

 knee: flexion, extension * hamstring group: biceps femoris, semi-membranosus , semi-tendinosus ⃝
* quadriceps group: rectus femoris, vastus lateralis, vastus intermedius and vastus medialis

ankle: dorsi flexion, plantar flexion * tibialis anterior, soleus, gastrocnemius

planes of movement: ⃝* frontal
* transverse
* sagittal.
 |
| Functional roles of muscles and types of contraction  | roles of muscles: Agonist, antagonist and fixator types of contraction: isotonic concentric/eccentric and isometric.  |
| Analysis of movement  | analyse movement with reference to: ⃝ joint type ⃝ movement produced ⃝ agonist and antagonist muscles involved ⃝ type of muscle contraction taking place.  |
| Skeletal muscle contraction  | structure and role of motor units in skeletal muscle contraction nervous stimulation of the motor unit: ⃝ motor neuron ⃝ action potential ⃝ neurotransmitter ⃝ ‘all or none’ law.  |
| Muscle contraction during exercise of differing intensities and during recovery  | muscle fibre types: ⃝ slow oxidative ⃝ fast oxidative glycolytic ⃝ fast glycolytic recruitment of different fibre types  |
| Cardiovascular system at rest  | • the relationship between, and resting values for: ⃝ heart rate ⃝ stroke volume ⃝ cardiac output ⃝ methods of calculating the above • cardiac cycle: ⃝ diastole ⃝ systole • conduction system of the heart linked to the cardiac cycle.  |
| Cardiovascular system during exercise of differing intensities and during recovery  | effects of different exercise intensisties and recovery on: ⃝ heart rate ⃝ stroke volume ⃝ cardiac output ⃝ methods of calculating the above redistribution of cardiac output during exercise of differing intensities and during recovery: ⃝ vascular shunt mechanism ⃝ role of the vasomotor centre ⃝ role of arterioles ⃝ role of pre-capillary sphincters mechanisms of venous return during exercise of differing intensities and during recovery regulation of heart rate during exercise: ⃝ neural factors ⃝ hormonal factors ⃝ intrinsic factors.  |
| Respiratory system at rest  | relationship between resting values for: ⃝ breathing frequency ⃝ tidal volume ⃝ minute ventilation ⃝ methods of calculating the above mechanics of breathing at rest and the muscles involved: ⃝ diaphragm ⃝ external intercostals ⃝ at the alveoli ⃝ at the muscles.  |
| Respiratory system during exercise of differing intensities and during recovery  | effects of differing intensities of exercise and recovery on: ⃝ breathing frequency ⃝ tidal volume ⃝ minute ventilation mechanics of breathing during exercise of differing intensities and during recovery, including additional muscles involved: ⃝ inspiration – sternocleidomastoid, pectoralis minor ⃝ expiration – internal intercostals, rectus abdominis. regulation of breathing during exercise of different intensities and during recovery ⃝ neural control ⃝ chemical control effect of differing intensities of exercise and recovery on gas exchange at the alveoli and at the muscles ⃝ changes in pressure gradient ⃝ changes in dissociation of oxyhaemoglobin.  |

**Energy for Exercise**

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| \*Adenosine Triphosphate (ATP) and energy transfer  | ATP as ‘energy currency’ principle of energetically coupled reactions: ⃝ breakdown of ATP to ADP (Adensosine Diphosphate) + P (phosphate) ⃝ resynthesis of ATP from ADP + P.  |
| \*Energy systems and ATP resynthesis  | energy systems: ⃝ ATP-PC (Phosphocreatine) system ⃝ glycolytic system ⃝ aerobic system for each system: ⃝ type of reaction (aerobic or anaerobic) ⃝ chemical or food fuel used ⃝ specific site of the reaction ⃝ controlling enzyme ⃝ ATP yield ⃝ specific stages within the system ⃝ by-products.  |
| \*ATP resynthesis during exercise of differing intensities and durations  | the energy continuum predominant energy system used during exercise: ⃝ how intensity and duration of exercise influence which energy system is predominantly used to resynthesise ATP ⃝ interpretation of figures relating to the contribution of the three energy systems to exercise of different intensities and durations interplay of energy systems during intermittent exercise and factors that affect this interplay ⃝ intensity of exercise ⃝ duration of exercise ⃝ recovery periods ⃝ fitness levels.  |
| The recovery process  | • how the body returns to its pre-exercise state: Excess Post exercise Oxygen Consumption (EPOC) • fast components of EPOC, the processes that occur and the duration: replenishment of blood and muscle oxygen stores re-synthesis of ATP and PC • slow components of EPOC, the processes that occur and the duration: elevated circulation elevated ventilation elevated body temperature lactate removal and conversion to glycogen • effect of exercise intensity on EPOC and implications of the recovery process for planning exercise or training sessions.  |

**Environmental effects on body systems**

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| \*Exercise at altitude  | effect of altitude on the cardiovascular and respiratory systems: ⃝ reduced arterial PO2 (partial pressure of oxygen) leading to impaired muscle O2 delivery ⃝ elevated heart rate and ventilation acclimatisation, including the importance of timing arrival, at altitude (above 2400m).  |
| \*Exercise in the heat  | effect of heat on the cardiovascular and respiratory systems: ⃝ temperature regulation ⃝ cardiovascular drift.  |

**Diet and nutrition and their effect on physical activity and performance**

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| Diet and nutrition  | function and importance of the components of a healthy, balanced diet: ⃝ carbohydrates ⃝ proteins ⃝ fats ⃝ minerals ⃝ vitamins ⃝ fibre ⃝ water energy intake and expenditure and energy balance in physical activity and performance.  |
| Ergogenic aids  | use of ergogenic aids; potential benefits and risks: ⃝ pharmacological aids: – anabolic steroids – erythropoietin (EPO) – human growth hormone (HGH) ⃝ physiological aids: – blood doping, – intermittent hypoxic training (IHT) – cooling aids nutritional aids: – amount of food – composition of meals – timing of meals – hydration – glycogen/carbohydrate loading – creatine – caffeine – bicarbonate – nitrate. |

**Preparation and training methods in relation to improving and maintaining physical activity and performance**

|  |  |
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| Aerobic training  | • aerobic capacity and maximal oxygen uptake (VO2max) • how VO2max is affected by: ⃝ individual physiological make-up ⃝ training ⃝ age ⃝ gender • methods of evaluating aerobic capacity: ⃝ laboratory test of VO2max using direct gas analysis ⃝ NCF multi-stage fitness test ⃝ Queen’s College step test ⃝ Cooper 12 minute run • intensity and duration of training used to develop aerobic capacity: ⃝ continuous training ⃝ high intensity interval training (HIIT) • the use of target heart rates as an intensity guide physiological adaptations from aerobic training: ⃝ cardiovascular ⃝ respiratory ⃝ muscular ⃝ metabolic activities and sports in which aerobic capacity is a key fitness component.  |
| Strength training  | types of strength: ⃝ strength endurance ⃝ maximum strength ⃝ explosive/elastic strength ⃝ static and dynamic strength factors that affect strength: ⃝ fibre type ⃝ cross sectional area of the muscle methods of evaluating each type of strength: ⃝ grip strength dynamometer ⃝ 1 Repetition Maximum(1RM) ⃝ press up or sit-up test ⃝ vertical jump test training to develop strength: ⃝ repetitions ⃝ sets ⃝ resistance guidelines used to improve each type of strength ⃝ use of multi-gym ⃝ weights ⃝ plyometrics ⃝ circuit/interval training: – work intensity – work duration – relief interval – number of work/relief intervals physiological adaptations from strength training: ⃝ muscle and connective tissues ⃝ neural ⃝ metabolic activities and sports in which strength is a key fitness component.  |
| Flexibility training  | types of flexibility: ⃝ static flexibility (active and passive) ⃝ dynamic flexibility factors that affect flexibility: ⃝ type of joint ⃝ length of surrounding connective tissue ⃝ age ⃝ gender methods of evaluating flexibility: ⃝ sit and reach test ⃝ goniometer training used to develop flexibility: ⃝ passive stretching ⃝ proprioceptive neuromuscular facilitation (PNF) ⃝ static stretching ⃝ dynamic stretching ⃝ ballistic stretching ⃝ isometric stretching physiological adaptations from flexibility training: ⃝ muscle and connective tissues activities and sports in which flexibility is a key fitness component.  |
| Periodisation of training  | periodisation cycles: ⃝ macrocycle ⃝ mesocycle ⃝ microcycle phases of training: ⃝ preparatory ⃝ competitive ⃝ transition tapering to optimise performance how to plan personal health and fitness programmes for aerobic, strength and flexibility training.  |
| Impact of training on lifestyle diseases  | the effect of training on lifestyle diseases: ⃝ cardiovascular system : – coronary heart disease (CHD) – stroke – atherosclerosis – heart attack ⃝ respiratory system – asthma – chronic obstructive pulmonary disease (COPD).  |

**Injury prevention and the rehabilitation of injury**

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| Acute and chronic injuries  | acute injuries resulting from a sudden stress to the body: ⃝ hard tissue injuries ⃝ soft tissue injuries ⃝ concussion chronic injuries resulting from continuous stress to the body: ⃝ soft tissue injuries ⃝ hard tissue injuries.  |
| \*Injury prevention  | intrinsic risk factors: ⃝ individual variables ⃝ training effects extrinsic risk factors: ⃝ poor technique/training ⃝ incorrect equipment/clothing ⃝ inappropriate intensity, duration or frequency of activity debate surrounding effective warm up and cool down.  |
| \*Responding to injuries and medical conditions in a sporting context  | assessing sporting injuries using ‘SALTAPS’ ⃝ See ⃝ Ask ⃝ Look ⃝ Touch ⃝ Active ⃝ Passive ⃝ Strength acute management of soft tissue injuries using ‘PRICE’ ⃝ Protection ⃝ Rest ⃝ Ice ⃝ Compression ⃝ Elevation recognising concussion: IRB’s ‘Recognise and Remove’ 6 R’s ⃝ Recognise ⃝ Remove ⃝ Refer ⃝ Rest ⃝ Recover ⃝ Return.  |
| \*Rehabilitation of injury  | treatment of common sporting injuries: ⃝ injuries: – fractures – simple, stress – joint injuries – dislocation, sprain, torn cartilage – exercise-induced muscle damage ⃝ treatments: – stretching – massage – heat, cold and contrast therapies – anti-inflammatory drugs – physiotherapy – surgery.  |

**Biomechanical principles, levers and the use of technology**

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| Biomechanical principles  | Define and apply Newton’s laws of motion: ⃝ Newton’s first law: inertia ⃝ Newton’s second law: acceleration ⃝ Newton’s third law: reaction Force: ⃝ net force ⃝ balanced and unbalanced force ⃝ weight ⃝ reaction ⃝ friction ⃝ air resistance ⃝ factors affecting friction and air resistance and their manipulation in sporting performance ⃝ free body diagrams showing vertical and horizontal forces acting on a body at an instant in time and the resulting motion ⃝ calculations of force, momentum, acceleration and weight ⃝ definition of centre of mass ⃝ factors affecting the position of the centre of mass ⃝ the relationship between centre of mass and stability.  |
| Levers  | components of a lever system: ⃝ load ⃝ effort ⃝ fulcrum ⃝ effort arm ⃝ load arm 1st class lever 2nd class lever 3rd class lever mechanical advantage of a 2nd class lever.  |
| Analysing movement through the use of technology  | definitions and uses of: ⃝ limb kinematics ⃝ force plates ⃝ wind tunnels how each type of technology may be used to optimise performance in sport.  |

**Linear motion, angular motion, fluid mechanics and projectile motion**

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| \*Linear motion  | • definition of linear motion. • creation of linear motion by the application of a direct force through the centre of mass • definitions, calculations and units of measurement for each of the following quantities of linear motion: ⃝ distance ⃝ displacement ⃝ speed ⃝ velocity ⃝ acceleration/deceleration • plot and interpret graphs of linear motion: ⃝ distance/time graphs ⃝ speed/time graphs ⃝ velocity/time graphs.  |
| \*Angular motion  | • definition of angular motion • creation of angular motion through the application of an eccentric force about one (or more) of the three axes of rotation: ⃝ longitudinal ⃝ frontal ⃝ transverse • definitions, calculations and units of measurement for each quantity of angular motion: ⃝ moment of inertia ⃝ angular velocity ⃝ angular momentum • factors affecting the size of the moment of inertia of a rotating body: ⃝ mass of the body (or body part) ⃝ distribution of the mass from the axis of rotation • the relationship between moment of inertia and angular velocity the conservation of angular momentum during flight in relation to the angular analogue of Newton’s first law of motion • interpret graphs of angular velocity, moment of inertia and angular momentum.  |
| Fluid mechanics  | • factors that impact the magnitude of air resistance (on land) or drag (in water) on a body or object: velocity / mass / frontal cross-sectional area / streamlining and shape /surface characteristics.  |
| \*Projectile motion  | • factors affecting the horizontal distance travelled by a projectile: ⃝ height of release ⃝ speed of release ⃝ angle of release • free body diagrams showing the forces acting on a projectile once in flight: ⃝ weight ⃝ air resistance • resolution of forces acting on a projectile in flight using the parallelogram of forces • patterns of flight paths as a consequence of the relative size of air resistance and weight ⃝ parabolic (symmetrical) flight path – shot put ⃝ non-parabolic (asymmetric) flight path – badminton shuttle • The addition of lift to a projectile through the application of Bernoulli’s principle: ⃝ angle of attack to create an upwards lift force on a projectile: – discus – javelin – ski jumper • design of equipment to create a downwards lift force: ⃝ F1 racing cars ⃝ track cycling • use of spin in sport to create a Magnus force, causing deviations to expected flight paths: imparting spin to a projectile through the application of an eccentric force types of spin: – top spin, side spin and back spin in tennis and table tennis – side spin in football – hook and slice in golf.  |

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| **What do I need to revise for Paper 2?****Psychological factors affecting performance****Skill Acquisition** |

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| Classification of skills  | justification of placement of skills on continua: ⃝ difficulty (simple/complex) ⃝ environmental influence (open/closed) ⃝ pacing (self-paced/externally paced) ⃝ muscular involvement (gross/fine) ⃝ continuity (discrete/serial/continuous) ⃝ organisation (low/high).  |
| Types and methods of practice  | characteristics and uses of each: ⃝ part practice ⃝ whole practice ⃝ whole/part-whole practice ⃝ progressive/part practice ⃝ massed practice ⃝ distributed practice ⃝ fixed practice ⃝ varied practice.  |
| Transfer of skills  | types of transfer: ⃝ positive ⃝ negative ⃝ proactive ⃝ retroactive ⃝ bilateral know and understand the ways of optimising the effect of positive transfer know and understand the ways of limiting the effect of negative transfer.  |
| Principles and theories  | •  | theories of learning:  |
| of learning movement  | ⃝ operant conditioning  |
| skills  | ⃝ cognitive theory of learning ⃝ Bandura’s theory of social/observational learning.  |
| Stages of learning  | characteristics of the stages of learning: ⃝ cognitive ⃝ associative ⃝ autonomous.  |
| Guidance  | types and uses of guidance: ⃝ verbal guidance ⃝ visual guidance ⃝ manual guidance ⃝ mechanical guidance advantages and disadvantages of using each type of guidance.  |
| Feedback  | types and uses of feedback: ⃝ intrinsic ⃝ extrinsic ⃝ positive ⃝ negative ⃝ knowledge of performance ⃝ knowledge of results advantages and disadvantages of using each type of feedback.  |
| \*Memory models  | Atkinson and Shiffren’s multi-store memory model ⃝ use of selective attention Craik and Lockhart’s levels of processing model relate both models to learning and performing physical activity skills.  |

**Sports psychology**

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| Individual differences  | • personality ⃝ definition of personality ⃝ theories of personality: – trait – extroversion/introversion, stable/unstable, type a/type b – social learning – interactionist • attitudes ⃝ definition of attitude ⃝ factors affecting attitude formation ⃝ components of attitude: – cognitive – affective – behavioural methods of attitude change: – persuasive communication – cognitive dissonance motivation ⃝ defintions of: – intrinsic motivation – extrinsic motivation ⃝ uses and effects of: – intrinsic motivation – extrinsic motivation arousal ⃝ definition of arousal ⃝ effects of arousal: – drive theory – inverted U theory – catastrophe theory anxiety ⃝ definition of anxiety ⃝ types of anxiety: – state and trait ⃝ response to anxiety: – somatic and cognitive – zone of optimal functioning. aggression ⃝ definition of aggression ⃝ theories of aggression: – instinct – social learning – frustration-aggression hypothesis – aggressive cue hypothesis social facilitation ⃝ definition of social facilitation and social inhibition ⃝ the effect of an audience on: – introverts/extroverts – beginners/experts – simple/complex skills – gross/fine skills ⃝ evaluative apprehension ⃝ strategies to minimise social inhibition.  |

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| Group and team dynamics in sport  | definition of a group the formation of groups and sports teams using stages of group development ⃝ forming ⃝ storming ⃝ norming ⃝ performing Steiner’s model of group effectiveness Ringelmann effect and social loafing.  |
| Goal setting in sports performance  | importance and effectiveness of goal setting ⃝ for attentional focus ⃝ persistence on tasks ⃝ raising confidence and self-efficacy ⃝ control of arousal and anxiety ⃝ to monitor performance ⃝ the SMART principle (Specific, Measurable, Achievable, Recorded, Time phased).  |
| \*Attribution  | Weiner’s model of attribution ⃝ stability dimension (unstable and stable) ⃝ locus of control dimension (internal and external) ⃝ controllability dimension learned helplessness as a barrier to sports performance mastery orientation to optimise sports performance  |
| \*Confidence and self-efficacy in sports performance.  | definitions of sports confidence and self-efficacy the impact of sports confidence on: ⃝ performance ⃝ participation ⃝ self-esteem Vealey’s model of sports confidence: ⃝ trait sports confidence ⃝ competitive orientation ⃝ state sports confidence ⃝ subjective perceptions of outcome Bandura’s theory of self efficacy: ⃝ performance accomplishments ⃝ vicarious experiences ⃝ verbal persuasion ⃝ emotional arousal.  |
| \*Leadership in sport  | characteristics of effective leaders emergent or prescribed leaders leadership styles ⃝ autocratic ⃝ democratic ⃝ laissez-faire theories of leadership ⃝ trait perspective ⃝ social learning ⃝ interactionist Chelladurai’s multi-dimensional model of sports leadership.  |
| \*Stress management to optimise performance  | • definition and causes of stress • use of cognitive stress management techniques: ⃝ positive thinking/self-talk ⃝ negative thought stopping ⃝ rational thinking ⃝ mental rehearsal ⃝ imagery ⃝ goal setting ⃝ mindfulness • use of somatic stress management techniques: ⃝ progressive muscular relaxation ⃝ biofeedback ⃝ centring technique ⃝ breathing control.  |

**What do I need to revise for Paper 3?**

**Socio-cultural issues in physical activity and sport**

**Sport and society**

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| Emergence and evolution of modern sport  | • how social and cultural factors shaped the characteristics of, and participation in, sports and pastimes in pre-industrial Britain: ⃝ social class ⃝ gender ⃝ law and order ⃝ education/literacy ⃝ availability of time ⃝ availability of money ⃝ type and availability of transport • how social and cultural factors shaped the characteristics of, and participation in, sport in post 1850 industrial Britain: ⃝ social class – amateurism and professionalism ⃝ gender/changing status of women ⃝ law and order ⃝ education/literacy ⃝ availability of time/changing work conditions ⃝ availability of money ⃝ transport notably the railways ⃝ influence of public schools: – on the promotion and organisation of sports and games – on the promotion of ethics through sports and games – the ‘cult’ of athleticism – meaning, nature and impact – on the spread and export of games and the games ethic how social factors shaped the characteristics of, and participation in, sport in 20th century Britain: ⃝ class – amateurism and professionalism ⃝ gender/changing role and status of women ⃝ law and order ⃝ education ⃝ availability of time ⃝ availability of money ⃝ transport how contemporary factors are shaping the characteristics of, and participation in, sport in the 21st century: ⃝ class – amateurism and professionalism ⃝ gender/changing role and status of women ⃝ law and order ⃝ education ⃝ availability of time ⃝ availability of money ⃝ transport ⃝ globalisation of sport – media coverage – freedom of movement for performers – greater exposure of people to sport.  |
| Global sporting events  | the modern Olympic Games ⃝ background and aims (1896) ⃝ political exploitation of the Olympic Games – Berlin 1936, Third Reich Ideology – Mexico City 1968 ‘Black Power’ demonstration – Munich 1972 Palestinian terrorism – Moscow 1980 boycott lead by USA – Los Angeles 1984 boycott by Soviet Union hosting global sporting events ⃝ positive and negative impacts on the host country/city of hosting a global sporting event (such as the Olympic Games or FIFA World Cup) – sporting – social – economic – political.  |

**Contemporary issues in physical activity and sport**

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| \*Ethics and deviance in sport  | • drugs and doping in sport ⃝ legal supplements versus illegal drugs and doping ⃝ reasons why elite performers use illegal drugs/doping ⃝ consequences/implications to: – society – sport – performers ⃝ strategies to stop the use of illegal drugs and doping • violence in sport ⃝ causes in relation to players and spectators ⃝ implications to: – society – sport – performers ⃝ strategies to prevent violence in relation to players and spectators • gambling in sport ⃝ match fixing/bribery ⃝ illegal sports betting.  |
| \*Commercialisation and media  | factors leading to the commercialisation of contemporary physical activity and sport: ⃝ growing public interest and spectatorship ⃝ more media interest ⃝ professionalism ⃝ advertising ⃝ sponsorship positive and negative impacts of the commercialisation of physical activity and sport on ⃝ society ⃝ individual sports ⃝ performers ⃝ spectators coverage of sport by the media today and reasons for changes since the 1980s ⃝ television – terrestrial – free-to-air – satellite – subscription – pay-per-view ⃝ radio – dedicated sports stations – local and national radio ⃝ written press – newspapers – magazines ⃝ internet positive and negative effects of the media on sport ⃝ individual sports ⃝ performers ⃝ spectators relationship between sport and the media ⃝ sport as a commodity ⃝ links with advertising and sponsorship (‘golden triangle’).  |
| \*Routes to sporting excellence in the UK  | development routes from talent identification through to elite performance the role of school, clubs, universities in contributing to elite sporting success the role of UK Sport and National Institutes in developing sporting excellence/high performance sport strategies to address drop-out/failure rates from elite development programmes/at elite level.  |
| \*Modern technology in Sport – its impact on Elite level sport, participation, fair outcomes and entertainment  | Elite performance: ⃝ the extent to which modern technology has affected elite level sport including increased/improved: – access – facilities – equipment – monitoring of exercise – safety General participation: ⃝ the extent to which modern technology has increased participation including increased/improved: – access – facilities – equipment – monitoring of exercise – safety ⃝ the extent to which modern technology has limited or reduced participation including: – cost – the range of alternatives to physical activity and sport Fair outcomes: ⃝ the extent to which modern technology has increased fair outcomes including: – better timing devices – increased accountability of officials – more accurate decision making – improved detection of foul play – improved detection of doping ⃝ the extent to which modern technology has limited or decreased fair outcomes including: – access to modern technology can be limited – performance enhancing drug testing technology cannot keep up with new drug development – pressure on officials due to the exposure and scrutiny of their decisions Entertainment: ⃝ the extent to which modern technology has increased entertainment including: – action replays – multiple camera angles – slow motion technology – improved analysis – punditry ⃝ the extent to which modern technology has reduced or limited entertainment including: – interruption and delay – reduced live attendances.  |