



**General Certificate of Secondary Education  
June 2011**

**Physical Education**

**48903**

**(Specification 4890)**

**Unit 3: Knowledge and Understanding for the  
Active Participant (Full Course and Double  
Award)**

**Final**

***Mark Scheme***

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**Section A – Part 1 Multiple Choice**

Award **one** mark for each correct answer.

**1** Which **one** of these will **not** improve an individual's health? (1 mark)

Lack of sleep

**2** All of the following are active leisure activities **except**: (1 mark)

Playing chess

**3** Which **one** of these is **not** a disability category? (1 mark)

Social

**4** The most important factor for a fast start in a 100m sprint is: (1 mark)

Reaction time

**5** Before any physical activity, it is important to identify potential hazards. This is called: (1 mark)

Risk assessment

**6** Which **one** of these helps the digestive system to work efficiently? (1 mark)

Fibre

**7** Which **one** of the following is **not** a core theme of the Healthy Schools Programme? (1 mark)

Every Child Matters

**8** Which activity is most likely to use aerobic respiration for energy? (1 mark)

10km cross country run

**9** Which **one** of the following is **not** a precaution taken to avoid injury? (1 mark)

Wearing jewellery

**10** All of the following are functions of the blood **except**: (1 mark)

Energy production

**Section A – Part 2 Short answer questions**

**11** Regular exercise is important to help maintain a healthy lifestyle.

**11 (a)** State **two** reasons why taking part in regular exercise can improve your health.  
(2 marks)

Award up to **one** mark for each reason, identifying why taking part in regular exercise can improve your health up to a maximum of **two** marks. Two creditworthy points can be made in point one.

- Reduces stress or tension/ feel good factor or mental wellbeing.
- Improves fitness levels or physical wellbeing.
- Improves basic levels of strength or flexibility or endurance.
- Reduces the chances of illness or injury.
- Allows you to mix with other people or social wellbeing.
- Helps keep weight down/ look good.

Accept any other suitable response.

**11 (b)** Explain how individual differences can affect the amount of exercise that a person may participate in.  
(2 marks)

Award up to **two** marks for explaining why the amount of exercise might vary between different people.

- The ability of the performer/ higher ability performers will need to train more.
- The age/ gender of the individual/ will demand different energy levels.
- The physical condition of the individual eg illness or injury/ which would mean less exercise.
- Somatotypes/ valid descriptions of differences, eg endomorph less likely to do as much exercise.
- Level of motivation/ less motivated performers will do less exercise.
- Time/ less exercise due to other commitments like work or family.
- Higher metabolism/ so they would burn fat quicker so they don't need to exercise as much.
- Cost/ less exercise as they cannot afford to take part.
- Environment/ there are no facilities or open space to enable them to take part.

Accept any other suitable response.

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|-----------|---|
| <b>12</b> | Physical Education is an important part of the school curriculum.<br><br>Identify and explain how <b>one</b> other curriculum subject can contribute in a positive way to Physical Education. <span style="float: right;"><i>(3 marks)</i></span> |
|-----------|---|

Award **one** mark for the subject identified and **two** further marks for explaining the positive contribution it makes to PE.

- **English or other languages/** speaking and listening are important when working with other performers and coaches and following or issuing instructions encourages good communication/ good written English is important for exam answers.
- **Science/** links with the theory on the PE course with human biology/ and how the body works.
- **Mathematics/** practical skills such as measuring and timing in athletics or keeping score in cricket/ ensure accuracy of results.
- **Food Technology/** information on diet and nutrition essential for sports performers/ to ensure improved performance.
- **Music/** links with dance being able to count to the beat of the music/ to choreograph routines effectively.
- **Geography/** links with outdoor activities that take place in environment, eg sailing/ knowing about wind and tides or mapwork with orienteering.
- **PSHE or Citizenship/** themes such as trust, responsibility or inclusion/ linked to fair play or teamwork.
- **ICT/** to provide information or help with revision/ which may help with theory or performance in exams.
- **ICT/** which might help with information collection/ when teaching fitness.

Accept any other suitable response.

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|-----------|---|
| <b>13</b> | The GCSE Physical Education course allows students to adopt different roles within their activities.<br><br>Identify <b>two</b> roles and explain how a pupil might gain <b>different</b> benefits from adopting each of these roles. <span style="float: right;"><i>(4 marks)</i></span> |
|-----------|---|

A maximum of **four** marks are available. Award **one** mark for identifying a role and **one** further mark for explaining the benefit to the individual (NB benefits must be different to gain full marks).

- **Player or performer/** learn the skills and techniques/ to improve your performance or be an effective performer.
- **Official/** can be part of the activity even if injured/ gives a different view of the game/ so broadens knowledge of the activity/ maintains or improves fitness levels in an appropriate sport.
- **Organiser/** can have a part to play even if injured/ can develop skills such as time management that could be used outside of sport.
- **Leader or coach/** can have an influence over others to help them improve/ so they can achieve a feel good factor or sense of achievement.
- **Choreographer/** can have a part to play even if injured/ can develop skills such as communication which can transfer to everyday life.

**14** The Physical Education and Sport Strategy for Young People (PESSYP) has had a big influence on Physical Education and sport in schools.

**14 (a)** What are the key aims of the PESSYP? (2 marks)

Award up to **two** marks for a full explanation of the aims of the PESSYP initiative.

- 5 hour offer or 5 x 60 or 16+ 5 hours more likely to be out of school.
- 2 hours curriculum time for PE.
- 3 hours extra curricular time.

**14 (b)** There are ten strands to the PESSYP. Name and describe **two** of the strands. (4 marks)

Award **one** mark for naming the strand and **one** mark for description of the effect of each strand of the PESSYP strategy up to a maximum of **four** marks.

- **Club links**/ schools would work with NGB's to create club opportunities.
- **Competition**/ schools would take part in the National School Sport Week/ and extend their provision for intra and inter school competition.
- **Coaching**/ funds made available to school sport coaching/ schools to recruit more coaches.
- **Continuing professional development**/ teachers developing skills through attendance at National CPD programme/ LDA courses for teachers on a specific activity or topic.
- **Gifted and Talented**/ talent identification/ schools support exceptional talent/ to help pupils progress and develop skills/ through the long-term athlete development programme.
- **Swimming**/ increasing opportunities to take part/ increasing numbers able to swim (25m).
- **Leadership and volunteering**/ Step ON, Step IN, Step UP (JSLA/CSLA)/ to increase quantity, quality and diversity of young people engaged in volunteering and leadership in schools and the community.
- **Disability**/ establish Multi-Sport Disability Clubs/ to offer club experience to all disabled athletes/ from playground to podium/ integration of disabled pupils into sport.
- **Extending activities**/ beyond traditional sports/ eg cheerleading, street games.
- **Infrastructure**/ school sports partnerships/ FESCO/ CSPs/ NGBs/ specialist sports colleges.

The names of the strands are definitive. Accept any other suitable response for the **description** only.

**15** London will host the Olympic and Paralympic Games in 2012.  
Describe **two** advantages that London may gain through hosting these events.  
(4 marks)

Award up to **two** marks for each full description of an advantage a host may gain through running an event up to a maximum of **four** marks.

- The provision of new facilities/ which can be used after the games.
- Making a profit/ through merchandising.
- Increased number of visitors/ bringing money into the country.
- Raise the profile of the country/ for attracting future events or by winning more medals.
- Increased nationalism/ feel good factor.
- More employment/ short-term in construction or long-term in tourism.
- Changed infrastructure/ improved transport links.

**16** Safety is an important factor in any physical activity.  
**16 (a)** Using an example, explain how wearing the correct footwear can make participation in a physical activity safer.  
(2 marks)

Award up to **one** mark for the example of correct footwear and a **further** mark for why it makes participation safer.

NB Do not accept inappropriate responses, eg high heels.

- Wearing boots/ to provide grip/ for ankle support.
- Safety studs/ to prevent injury.
- Correct length of stud or spike appropriate to surface or conditions/ to avoid slipping.
- Cushioned soles/ to absorb impact.
- Wearing trampoline slippers/ to prevent toes getting caught in the webbing.
- Wearing dance shoes/ to prevent splinters.

Accept any other suitable response.

**16 (b)** Using an example, explain how following the rules can make participation in a physical activity safer.  
(2 marks)

Award up to **one** mark for an example of a rule and a **further** mark for why it makes participation in a physical activity safer.

NB accept activity guidelines, eg wearing a life jacket in water based activities.

- Wearing shin pads in football or hockey/ to prevent damage to the shins in a tackle.
- No foul play, eg no two footed tackle/ to prevent injury.

Accept any other suitable response.

**17** The media has a large influence over sport.

Identify **one** type of media and describe **two** ways in which it can have a positive effect on sport. *(5 marks)*

Award **one** mark for correctly identifying a type of media.

- Television
- Radio
- Newspapers or magazines or books
- Internet
- CD-ROMs

Award a further **two** marks for describing each way the media can have a positive effect, up to a maximum of **four** marks.

- They demonstrate good performance or give exemplars for athletes to copy/ to improve the standards within the sport.
- They help officials make decisions/ which improves the reputation of the sport.
- They can promote the health benefits/ which can increase participation or popularity of activities.
- Through payment for broadcasting rights or indirectly through sponsorship/ increases revenue coming into the sport.
- They increase the accessibility of a sport/ which increases its popularity or publicity.
- They can make a sport look more interesting or appealing/ and therefore more people want to take part or watch an event.

Accept any other suitable response.

**Section B – Questions based on the preliminary material**

**18 (a)** Rachel takes part in a lot of physical activity and she may experience fatigue as a result.

State what fatigue is and explain the effects it could have on Rachel's performance in **one** of her chosen activities. *(4 marks)*

Award up to **four** marks in total. **Two** marks for stating what fatigue is and up to **two** further marks for explaining the effect on performance.

Fatigue, either physical or mental, is a feeling of extreme/ tiredness/ due to a build up of lactic acid/ working for long periods of time.

**Two** further marks for:

- temporary loss of strength or energy/ so that you are unable to carry on/ which has a negative effect on performance
- concentration levels will drop/ leading to more mistakes/ which will have a negative effect on performance/ or could lead to injury
- skill levels will drop/ leading to mistakes/ which could lead to substitution.

**18 (b)** Rachel's football club has only just been formed and needs to attract sponsorship.

**18 (b) (i)** Describe **one** acceptable type of sponsorship that would be useful to the football club. *(2 marks)*

Award **one** mark for each acceptable type of sponsorship described up to a maximum of **two** marks.

- Specialised training equipment/ footballs, bibs, cones.
- Clothing/ such as team kit or tracksuits or footwear.
- Training/ specialist facilities could be provided to improve performance, eg AstroTurf.
- Coaches/ specialist coaches to run training sessions.
- Money/ which the club could use to buy what it needs.
- Specialist support eg physiotherapist/ to help player recover from injury.
- Specialist support eg nutritionist/ to help monitor diet.
- Transport/ to get teams or individuals to matches.

**18 (b) (ii)** Explain why an alcohol company may not be an acceptable sponsor for Rachel's football club. *(2 marks)*

Award up to **two** marks for explaining why an alcohol company may not be an acceptable form of sponsorship.

Illegal or U18 or underage/ and also harmful to health/ could encourage under age drinking/ bad image for the club.

**18 (c)** State **two** components of physical fitness that Rachel would need when taking part in either football, swimming or cross country. Explain how these components could improve her performance in that activity. (4 marks)

Award **one** mark for stating an appropriate aspect of fitness and **one** further mark for explaining how it would contribute to a good performance up to a maximum of **four** marks.

- Dynamic strength/ to be able to work continuously, arm pull in swimming training.
- Explosive strength/ jumping for the ball in football.
- Cardiovascular endurance (stamina)/ ability of the heart and lungs to work efficiently through a football match or cross country run.
- Flexibility/ to allow better range of movement in the arm action in swimming.
- Speed/ to get away from players in football.
- Agility/ to be able to change direction quickly to avoid an opponent or get to the ball in football.
- Power/ to get the drive off the wall after a tumble turn.
- Coordination/ to produce a fluent and efficient stroke in swimming.
- Muscular endurance/ for the muscles to keep working for an extended period of time throughout a game of football or a race.
- Balance/ staying upright when avoiding a tackle or on uneven terrain in cross country.
- Reaction time/ reflex save by football goal keeper or getting a good start in swimming.

Accept any other suitable response with the explanation.

**18 (d)** Describe a training method that Rachel could use **and** explain in detail how she could also use the principle of overload to improve her fitness.

**(Answer in continuous prose)**

*(8 marks)*

Award up to 8 marks using the criteria outlined in the grid below.

Examples of content could include:

- circuit training a series of exercise stations that could be fitness or skill
- weight training a series of exercises used to improve muscular endurance or strength
- continuous training exercise designed to keep the heart rate up over an extended period of time using activities such as running, cycling and swimming
- interval training periods of work mixed with periods of rest depending on activity demand
- Fartlek training form of interval training using a mixture of brisk walking, jogging and steady pace running
- frequency increase how often you train or increase the number of sessions
- intensity increase how hard you train in terms of effort or increase the weight lifted, distance covered or number of repetitions or sets
- time or duration increase how long you train for.

Accept any other suitable response.

**Please use the following grid to award a mark for both the content and the Quality of Written Communication (QWC) based on the following information.**

QWC is part of the award of marks in levels marked questions only. In levels marked answers the quality of physical education is assessed and a level mark awarded based on the content. As is sometimes the case, the physical education may be sound at a particular level but the examiner may not be sure as to whether there is quite enough to raise the mark **within** that level. In this case the examiner should consider the QWC of the answer. QWC that fulfils the criteria for the level should lead to a rise in the mark but where QWC does not fulfil the criteria, the answer should remain at the mark first thought appropriate.

In cases where QWC has been used in the award of marks, the examiner should indicate this in a comment box say 'QWC raised mark to show an upward trend'. QWC cannot be used to raise a candidate's mark into the next level.

<b>Level 3</b>	<b>6 – 8 marks</b> Suitable training method justified and/or fully described. The principle of overload is fully explained or at least two of the FIT or FID principles are identified and applied to the training method to show how they will add overload to improve fitness. Candidates spell, punctuate and use rules of grammar accurately and use a wide range of specialist terms precisely.
<b>Level 2</b>	<b>3 – 5 marks</b> Suitable training method justified and/or described. Some explanation of the principle of overload or at least two of the FIT or FID principles are identified and some application to the training method is made to show how they will add overload to improve fitness. Candidates spell, punctuate and use the rules of grammar with reasonable accuracy and use a range of specialist terms appropriately.
<b>Level 1</b>	<b>1 – 2 marks</b> Suitable training method identified with no or limited description. The principle of overload or the FIT or FID principles are only stated with no application made to the training method to show how they will add overload to improve fitness. Candidates spell, punctuate and use the rules of grammar with some accuracy. Limited use of specialist terms.
<b>0 marks</b>	No creditworthy material.

### Example Answers

Level 3 (7 marks)

*Circuit training would be a good training method for Rachel to choose because it is easy to apply overload. Circuit training consists of a series of exercise stations like press ups and sit ups which you perform for a set period of time with a rest in between. Overload should be increased gradually so during the programme she could increase the frequency by doing more sessions each week. The easiest part to increase is the intensity, by making the work interval longer or the rest between stations shorter Rachel can make the training harder. If she doesn't want to change the time she could just make the exercise harder for example by doing a full press up rather than a press up on knees.*

Level 2 (4 marks)

*There are lots of training methods that Rachel could use to improve her fitness for example interval training. Interval training is periods of work like sprinting mixed with periods of rest. She could also use this training method for her swimming by doing a set number of lengths followed by a rest after each set. To apply the principle of overload Rachel will need to make sure she increases the frequency of her training so she could go from two sessions a week to three sessions. To make it harder she will need to work harder during each interval.*

Level 1(1 mark)

*Rachel could use a training method like fartlek training which is where during a long run she varies the speed she runs at to improve her fitness. Overload is an important principle when planning training.*

**19 (a)** Name **two** social groups and explain how they may have influenced Rachel's decision to participate in football, swimming and cross country. (4 marks)

Award **one** mark for naming each social group up to a maximum of **two** and a further mark for explaining how each group has influenced Rachel's decision to participate in football, swimming and cross country up to a maximum of **four** marks.

- Peer group or friends/ will have a considerable influence/ if friends take part in an activity it is likely that you will as well/ to maintain contact with them/ to share a common interest.
- Family/ will encourage participation/ due to the support they offer/ either financially in the form of equipment/ coaching/ or by providing transport/ or moral support.
- Family/ may also be role models/ in that children follow other family members/ into the sports that they do.
- Gender/ some activities are stereotypically male or female (or equivalent 'girls play netball').
- Ethnicity/ due to cultural or religious beliefs, some people are stereotypically drawn towards certain activities.
- Ethnicity/ dress code may restrict participation, eg swimming.

**19 (b)** Rachel works with younger students in her school and has become a role model. Explain what a role model is and describe how they can affect the level of participation in a sport. (4 marks)

Award **one** mark for stating what a role model is.

- A role model is somebody who other people aspire to be like or who they look up to.

Award a further **three** marks for explaining how a role model influences the level of participation in a sport.

A performer may try a sport/ to be like or copy their role model/ because they enjoy watching their performance/ or because they make it look fun/ or interesting/ therefore they may choose to take part/ increasing participation.

**19 (c)** Rachel's body type is mesomorph and is well suited to her chosen sporting activities.

Describe a mesomorph body type and explain why this body type helps Rachel to perform well in her chosen sporting activities. *(4 marks)*

Award up to **two** marks for describing what a mesomorph is.

- Well defined muscles/ broad shoulders/ wedge shaped or triangular or v-shaped/ narrow hips.

Award up to a further **two** marks for explaining why it allows her to perform well in her chosen activities.

- Well defined muscles – which allow her to be strong/ in the tackle.
- Well defined muscles – which will give her more power/ for a start in swimming.
- Well defined muscles – which will give her muscular endurance/ to maintain performance in any of her activities.
- Broad shoulders – develop power/ needed in swimming arm action.

Accept any other suitable response.

**19 (d)** Using examples, explain how advances in technology could help Rachel to improve her performance.

**(Answer in continuous prose)**

*(8 marks)*

Award up to 8 marks using the criteria outlined in the grid below

Examples of content could include:

- swimming costume material has been designed to allow swimmers to be more buoyant and streamlined in the water leading to faster times
- football boots have been designed to be lightweight and protective but still give strength and flexibility
- heart rate monitors used to make sure training is at the right level and that athletes are not working too hard
- electronic timing in swimming to give accurate times
- computer software (Dartfish or Kandle) that can be used to analyse performance to identify weaknesses that can then be worked on
- digital cameras and videos to review performance.

Accept any other suitable response.

**Please use the following grid to award a mark for both the content and the Quality of Written Communication (QWC) based on the following information.**

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In cases where QWC has been used in the award of marks, the examiner should indicate this in a comment box say 'QWC raised mark to show an upward trend'. QWC cannot be used to raise a candidate's mark into the next level.

<b>Level 3</b>	<p><b>6 – 8 marks</b></p> <p>At least three examples explained, at least two fully, to show how they can be used to improve performance.</p> <p><b>NB</b> If only two examples are given and fully explained (maximum 6 marks). Candidates spell, punctuate and use rules of grammar accurately and use a wide range of specialist terms precisely.</p>
<b>Level 2</b>	<p><b>3 – 5 marks</b></p> <p>At least two examples with some explanation given to show how they can improve performance.</p> <p><b>NB</b> If only one example is given and fully explained (maximum 3 marks). Candidates spell, punctuate and use the rules of grammar with reasonable accuracy and use a range of specialist terms appropriately.</p>
<b>Level 1</b>	<p><b>1 – 2 marks</b></p> <p>At least one example with limited explanation given to show how it can improve performance.</p> <p><b>NB</b> A list of examples with no explanation (maximum 1 mark). Candidates spell, punctuate and use the rules of grammar with some accuracy. Limited use of specialist terms.</p>
<b>0 marks</b>	No creditworthy material.

### Example Answers

#### Level 3 (8 marks)

*Improvements in technology can help Rachel improve her performance in lots of ways. For example, it is important during training to monitor how hard you are working so using a heart rate monitor is a much better way than taking the heart rate by hand. If Rachel sees that her HR is too low she can work harder which will improve her fitness and therefore her performance. Some heart rate monitors even allow you to download information to computer. Computer software like Dartfish allows Rachel to analyse video footage of her performance to find weaknesses she can work on in training and then improve. Rachel could even compare her performance to a good performer side by side. Rachel plays a lot of football and technology has advanced so much that good quality light football boots make it easier to pass the ball accurately as they give her more feel for the ball. Rachel has worked hard to improve her swimming times so electronic timing makes it more accurate and reliable.*

#### Level 2 (4 marks)

*There are new inventions that may make a difference to Rachel when she takes part in sport. As a swimmer the material that her swimming costume is made of will make a difference. Some costumes are made of new materials that will give her more buoyancy in the water which means that she can swim faster times in races. Rachel could use a video camera to record her performance which she can then replay lots of times so she can identify her strengths and weaknesses. Some cameras you can watch in slow motion or a shot at a time. Once she has identified the problem she can then work with her coach to correct it and hopefully improve her performance.*

#### Level 1 (1 mark)

*Technology has improved a lot in sport and can help to improve performance. Rachel could use a heart rate monitor whilst she is exercising and a camera to film her performance.*