

GCE

Biology

Unit F212: Molecules, Biodiversity, Food and Health

Advanced Subsidiary GCE

Mark Scheme for June 2016

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

| Annotation | Meaning of annotation |
|------------|---|
| | Correct answer |
| × | Incorrect response |
| BOD | Benefit of Doubt |
| NBOD | Not Benefit of Doubt |
| ECF | Error Carried Forward |
| GM | Given mark |
| ~~~ | Underline (for ambiguous/contradictory wording) |
| ^ | Omission mark |
| I | Ignore |
| • | Marking point criteria partially met |
| @wc+ | Point contributing to QWC* awarded |

Here are the subject specific instructions for this question paper

- **CON** is used when a correct response that would otherwise have been awarded a mark is associated with a piece of clearly incorrect science within the same statement. If this occurs, do not award the mark at this point. However, if, later on in the candidate's answer, the correct response is seen, and is not contradicted in the same statement, the mark can be awarded. This is particularly useful in questions testing biochemistry. Sometimes, incorrect science does not warrant negation of a particular marking point and, where this is likely to occur, there is often advice in the Additional Guidance column.
- For questions in which the command word is 'suggest' ignore incorrect responses and credit a correct response wherever it occurs
- Accept phonetic spellings unless otherwise indicated
- All marks are stand-alone unless otherwise stated in Additional Guidance
- For 'idea of' marking points a wide range of wording is acceptable. The mark is to be awarded for the idea.

Here is the mark scheme for this question paper.

| | Quest | ion | Expected Answers | Mark | Additional Guidance |
|---|-------|-------|---|------|--|
| 1 | (a) | (i) | X: C / carbon; Y: O / oxygen; Z: OH / hydroxyl (group); | 3 | Mark the first answer. If the answer is correct and an additional element or group is given = 0 marks. For example X = C or CH ₂ = 0 marks Y DO NOT CREDIT O ₂ Z IGNORE hydroxy / hydroxide Z IGNORE OH ⁻ |
| 1 | (a) | (ii) | OH and H groups reversed / AW (on single C atom); on , C ₁ / right hand C atom / AW; | 2 | Max 1 if any other change is described / shown. CREDIT a correct diagram ACCEPT right hand part of molecule only IGNORE parts of molecule labelled X, Y and Z IGNORE C number if it contradicts an otherwise correct answer OH OH = 2 marks |
| 1 | (a) | (iii) | (α / alpha / a / A) 1-4 glycosidic; | | ACCEPT glycosidic 1,4 |
| | | | maltose; | 2 | IGNORE covalent |

| (| Questic | on | | Expected Answers | Mark | Additional Guidance |
|---|---------|----|----------------|---|------|--|
| 1 | (b) | | G1 G2 | (contains α-) glucose which is , a respiratory substrate / used in respiration; (glycogen) can be , broken down / hydrolysed / digested , by enzymes; | | G2 ACCEPT (glycogen) phosphorylase / transferase / (α1-6) glucosidase / amylase |
| | | | S1 S2 | polymer / polysaccharide / macromolecule / large molecule / long chains; | | S1 IGNORE many glucose monomers |
| | | | S3 | insoluble ; does not affect , <u>water potential</u> / Ψ ; | | S3 IGNORE refs to osmosis |
| | | | С | (compact so) <u>energy</u> dense / large amount of <u>energy</u> in small volume ; | | C ACCEPT dense so can store a lot of energy C ACCEPT space / mass , as AW for volume |
| | | E | 31 32 33 | (also) 1-6 glycosidic bonds (at branches); branched; multiple sites / greater surface area / AW , for , | | |
| | | E | 34 | breakdown / (named) enzyme activity ; quickly , broken down / glucose can be removed quickly ; | | B4 IGNORE easily B4 IGNORE energy release for this marking point |
| | | , | A 1 | animals / feature of animal's lifestyle , require , rapid / AW , energy / ATP , release ; | | A1 ACCEPT 'they' as AW for 'animal' A1 must be a direct statement related to an animal's lifestyle, e.g. exercise / muscle contraction / (animal) movement |
| | | | A2 | animals have high(er) metabolic rate; | 6 | movement |
| | | | | C – linking structure to function nark and 1 B mark ; | 1 | AWARD if, e.g. A1 and B2 are given |

| C | Question | | Expected Answers | Mark | Additional Guidance |
|---|----------|--|---|------|---|
| 1 | (c) | | beta- / β- / B / b , pleat(ed sheet) / fold ; | | |
| | | | hydrogen / H; | | DO NOT CREDIT H ⁺ / H ₂ |
| | | | secondary; | | ACCEPT 2° IGNORE tertiary / fibrous |
| | | | subunits / chains ; | | ACCEPT globins |
| | | | | | IGNORE strands / units / peptides |
| | | | quaternary ; | 5 | ACCEPT 4° IGNORE globular |
| | | | Total | [19] | |

| (| Question | | Expected Answers | Mark | Additional Guidance |
|---|----------|-----|--|-------|--|
| 2 | (a) | | tick in second box | | DO NOT CREDIT if there is a tick in any other box |
| | | | active and artificial , | 1 | |
| 2 | (b) | (i) | viral RNA , acts as , host cell / m , RNA ; | | ACCEPT RNA / DNA , produced from viral RNA DO NOT CREDIT tRNA |
| | | | RNA , carries , code / sequence (for viral protein); | | ACCEPT RNA is , translated into / used as a template to produce , (viral) protein (or description) ACCEPT RNA codes for (viral) protein DO NOT CREDIT tRNA |
| | | | (to) ribosomes ; | 2 max | ACCEPT as a standalone mark |

| C | Questi | ion | Ex | xpected Answe | rs | | Mark | Additional Guidance |
|---|--------|-------|--|-------------------------------------|--|------|-------|---|
| 2 | (b) | (ii) | altered base sequence (of viral RNA) means , altered , primary structure / (sequence of) amino acids ; | | | | | ACCEPT if a nucleotide (in RNA) is different the amino acid (in the protein) is different |
| | | | R-groups / disulphide | | n bonds / ionic , interact differen | tly; | | ACCEPT changed as AW for interact differently |
| | | | tertiary structure is def secondary structure amino acids; | | | | | |
| | | | 3-D shape is tertiary s | tructure ; | | | 3 max | ACCEPT implication that 3D is tertiary structure |
| 2 | (b) | (iii) | money would be saved days / reduced spread practice / few teachers | (of virus) / good will have immu | d example of hea | | 4 | IGNORE so they don't get the flu without further qualification IGNORE because they are at risk of infection |
| 2 | (c) | | | | | | 1 | |
| | | | | primary response | secondary response | | | |
| | | | concentration of antibodies produced | low(er) | high(er) | ; | | ACCEPT unambiguous AW IGNORE numbers |
| | | | duration of response | short(er) | long(er) | ; | | ACCEPT stated time periods where secondary response is longer than primary |
| | | | | | , | | 2 | |

| C | Questi | on | Expected Answers | Mark | Additional Guidance |
|---|--------|----|--|-------|--|
| 2 | Questi | on | helper cells , release , cytokines / interleukins or helper cells , activate / stimulate / AW , B cells ; or helper cells , produce (T) memory cells ; killer / cytotoxic , cells , secrete / release , toxic substances / hydrogen peroxide / H ₂ O ₂ / perforin or | Mark | CREDIT cause B cells to , differentiate / proliferate IGNORE B memory cells ACCEPT involved in clonal selection AWARD memory cells once only anywhere in the answer ACCEPT lysins IGNORE enzymes |
| | | | <pre>killer / cytotoxic , cells , kill / AW , infected cells ; or killer cells , produce (T) memory cells ;</pre> | | IGNORE kill / attack / enter , pathogens ACCEPT killer cells , target / attack , infected cells AWARD memory cells once only anywhere in the answer |
| | | | memory cells , allow a , secondary / faster , (immune) response ; | | AWARD memory cells once only anywhere in the answer |
| | | | AVP; | 2 max | AWARD 1 mark for suppressor cells / regulator cells , stop immune response |
| | | | Total | [11] | |

| C | Quest | ion | Expected Answers | Mark | Additional Guidance |
|---|-------|-------|--|-------|--|
| 3 | (a) | (i) | add / AW, biuret solution / biuret reagent / biuret mixture / NaOH and CuSO ₄ ; | | IGNORE 'biuret' unqualified DO NOT CREDIT heat / warm / neutralise / put in water bath |
| | | | observe colour; | 2 | ACCEPT see if it goes , lilac / purple / mauve / violet DO NOT CREDIT if incorrect colour change described DO NOT CREDIT precipitate |
| 3 | (a) | (ii) | (enzymes are) <u>globular</u> , proteins / polypeptide ; | | |
| | | | hydrophilic / water soluble , (R-)groups on outside (of enzyme) ; | 1 max | |
| 3 | (b) | (i) | concentration 1.4 ± 0.025; | | |
| | | | 0. 35; | 2 | ALLOW ECF if stated concentration is not 1.4 (i.e. concentration x 250/1000) |
| 3 | (b) | (ii) | test more (known), concentrations / solutions; | | IGNORE repeat |
| | | | between 1.0 and 2.0 / near 1.4; | 2 | IGNORE bigger range of concentrations |
| 3 | (b) | (iii) | carry out Biuret test / test again ; | | |
| | | | (using) no enzyme / no protein / (distilled) water; | | DO NOT CREDIT 'boiled enzyme' Measure absorbance of biuret solution alone = 2 marks |
| | | | set colorimeter to zero ; | 2 max | |

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| C | Quest | ion | | Expected Answers | Mark | Additional Guidance |
|---|-------|-----|---|---|-------|--|
| 3 | (c) | | 1 | cofactors / coenzymes / prosthetic groups ; | | |
| | | | 2 | bind to , enzyme / active site / allosteric site ; | | 2 ACCEPT prosthetic groups form part of the enzyme |
| | | | 3 | (cofactors / coenzymes , bind to enzyme) temporarily ; | | |
| | | | 4 | change , shape / tertiary structure , of active site ; | | |
| | | | 5 | affect charges on active site ; | | 5 ACCEPT affects , ionic / hydrogen , bonds in active site |
| | | | 6 | bind to / interact with , substrate ; | | 6 IGNORE in context of prosthetic group |
| | | | 7 | increase (likelihood of) , substrate binding to active site / ESC formation ; | | 7 ACCEPT help the substrate bind to the active site 7 ACCEPT make ESC formation easier |
| | | | 8 | carry (named) chemical , between / to , (named) enzymes ; | 5 max | 8 ACCEPT substrate as chemical 8 IGNORE substance |
| | | | | Total | [14] | |

| (| Quest | ion | | Expected Answers | Mark | Additional Guidance |
|---|-------|-------|-----|--|-------|---|
| 4 | (a) | | exa | bal warming; ample of consequence of climate change | | ACCEPT climate change IGNORE environmental change |
| | | | mu | d has dried up / mud now too wet / flooding / disease / (new) herbivore / pest; | 2 | ACCEPT (new) predator / heavy rainfall / drought IGNORE refs to temperature for this marking point IGNORE competition |
| 4 | (b) | (i) | (at | the) level / number / range , of species ; | | ACCEPT amount of species / species richness IGNORE species evenness |
| | | | (at | the level of) genetics / genes / gene pool / DNA; | | |
| | | | , | the level of) habitat / ecosystem; | 2 max | ACCEPT e.g. range of habitats IGNORE area / in a habitat |
| 4 | (b) | (ii) | pla | nts are a source of (new) , medicines / drugs / treatments ; | 1 | IGNORE nutritional / health , benefits IGNORE antibiotics |
| 4 | (b) | (iii) | 1 | Any three from: genetic variation / source of (named) useful genes ; | | 1 ACCEPT maintaining gene pool / genetic diversity |
| | | | 2 | (used for) genetic engineering; | | 2 ACCEPT description of genetic engineering |
| | | | 3 | (used for) selective breeding / breeding with , cultivated / crop / AW , varieties ; | | 3 ACCEPT cross as AW for breed |
| | | | 4 | variety might be useful in a changing climate; | | 4 ACCEPT species as AW for variety 4 ACCEPT examples of features useful in a different climate, e.g. drought resistance |
| | | | 5 | (habitat for) pollinators | | climate, e.g. drought resistance |
| | | | 6 | (habitat for) agents of biological control; | | |
| | | | 7 | source of a new medicine for livestock; | 3 max | 7 IGNORE antibiotics |

| C | uesti | on | | Expected Answers | Mark | Additional Guidance |
|---|-------|------|------------|---|-------|--|
| 4 | (c) | | 1 | grow / AW , (N. thermarum) in a range of (soil) water content; | | 1 IGNORE in presence and absence of water 1 ACCEPT in context of , seed / cutting / plug etc |
| | | | 2 | leave for / over , same / stated , time ; | | 2 IGNORE rate |
| | | | 3 | measure height / count number of (viable) individuals; | | 3 ACCEPT measure , (dry) mass / width / spread / number of leaves 3 IGNORE measure growth |
| | | | 4 | calculate mean (from the results); | | 4 ACCEPT perform statistical test (on the results) 4 IGNORE average but ACCEPT mean average 4 DO NOT CREDIT if there are no measurements to process |
| | | | 5 | keep two other named variables constant; | | 5 ACCEPT (soil) pH / mineral content / type / mass 5 ACCEPT temperature / CO ₂ concentration / light intensity / light duration / light wavelength / number of seeds etc. (if they are being counted) / age / size (if they are being measured) 5 IGNORE humidity / health / nutrients / species / light availability / soil fertility |
| | | | | | 4 max | |
| 4 | (d) | (i) | <u>C</u> o | nvention on <u>I</u> nternational <u>T</u> rade in <u>E</u> ndangered <u>S</u> pecies <i>I</i> CITES ; | 1 | accept cites acronym even if incorrect words are given accept cites / Cites IGNORE extra information that is not contradictory |
| 4 | (d) | (ii) | Ric | Convention / (Rio) Convention on Bio(logical) Diversity; | 1 | IGNORE extra information that is not contradictory |

| (| Question | | Expected Answers | Mark | Additional Guidance |
|---|----------|--|--|-------|--|
| 4 | (e) | | range of , values / intermediates ; quantitative ; | | ACCEPT no distinct , categories / groups ACCEPT (sketch of) normal distribution / bell-shaped curve IGNORE 'can be measured' |
| | | | influenced by environment; | | ACCEPT example, e.g. those with more access to nitrate could grow larger |
| | | | influenced by more than two genes / polygenic; | 3 max | |
| | | | Total | [17] | |

| (| Question | | Expected Answers | Mark | Additional Guidance |
|---|----------|----------------|---|------|---|
| 5 | | C1 | damage to / paralyses , cilia / ciliated epithelium ; | | C1 IGNORE cilia die / stick together C1 ACCEPT destroys cilia |
| | | C2 | over-production of mucus by goblet cells; | | C2 Must contain the idea of more mucus than normal |
| | | С3 | persistent / AW / smoker's , cough to , remove mucus / remove (trapped) pathogens / improve air-flow ; | | C3 Benefits of coughing must be clearly stated |
| | | C4 | an example of damage to airways ; | | C4 forms scar tissue / increases wall thickness / reduces lumen diameter / inflammation / smooth muscle formation C4 IGNORE reference to alveoli for this marking point |
| | | B1 B2 | mucus , accumulates / not wafted by cilia ; chronic bronchitis ; | | B1 & C3 Repeated coughing to remove accumulated mucus = 2 marks |
| | | E1 | phagocytes , release <u>elast</u> ase / break down <u>elast</u> in ; | | E1 IGNORE white blood cells E1 ACCEPT macrophages / monocytes / neutrophils |
| | | E2 E3 E4 | loss of alveolar , recoil / elasticity; emphysema / COPD; damage to alveoli reduces surface area (to volume ratio) for , gas exchange / O ₂ uptake; | | E4 IGNORE increased diffusion distance |
| | | L1 | causes <u>muta</u> tions (in cells lining airways); | | L1 ACCEPT contains mutagens L1 IGNORE carcinogens |
| | | L2 | uncontrolled cell, division / multiplication; | | L2 IGNORE growth L2 IGNORE ref to speed of cell division |
| | | L3 | (lung) cancer / formation of tumour(s); | | L3 ACCEPT formation of , mass / lump , of cells |
| | | 614 | | 8 | AWARD and GOA DA and LO |
| | | | C – range of effects s with 3 different letters have been awarded. | 1 | AWARD e.g, if C1, B1 and L3 are awarded |
| | | iviali | | | |
| | | | Total | [9] | |

| C | Questi | ion | | Expected Answers | Mark | Additional Guidance |
|---|--------|-------|------------------|---|-------|---|
| 6 | (a) | (i) | fun | ngi ; | 1 | |
| 6 | (a) | (ii) | (Do | o the cells have) <u>cellulose</u> cell walls / chloroplasts (?); | 1 | DO NOT CREDIT chlorophyll / autotrophic IGNORE vacuole |
| 6 | (a) | (iii) | , | o the cells have) a nucleus / (named) membrane bound organelles / 80S ribosomes(?); the organism) multicellular (?); | 1 max | ACCEPT Are the cells eukaryotic / is a cell wall absent / does it form a blastula / can it produce fertilised eggs(?) IGNORE all other responses |
| 6 | (b) | (i) | Q phylum / phyla | | | If any answer is wrong AWARD max 1 if the other 3 taxa are correct If Q is wrong AWARD max 1 if all stated taxa are in the correct consecutive sequence Q IGNORE phylus |
| | | | Ro | class order family ;; | 2 | |
| 6 | (b) | (ii) | 1 2 3 | eukaryotes / in eukaryote domain; (classified on the basis of) genetics / amino acid sequences; genetics / observable features / amino acid sequences, distinct from other, (eukaryotic) kingdoms; genetics / amino acid sequence, less similar to, | | ACCEPT 'genes / DNA / RNA / base sequences / proportion of bases' as AW for genetics 4 IGNORE observable features for this marking point |
| | | | | protoctists or genetics / amino acid sequence , more similar to , plants / fungi ; | 3 max | 4 IGNORE animals |

| C | Quest | ion | | Expected Answers | Mark | Additional Guidance |
|---|-------|-------|---|---|-------|---|
| 6 | (b) | (iii) | 1 | idea that 3 domains fits phylogeny better; | | 1 ACCEPT e.g. classifies species that are more closely related together / it is a better representation of the true relationship / reflects evolutionary history better 1 IGNORE clearer 1 IGNORE reference to common ancestors |
| | | | 2 | (there are) key / many / fundamental / important , differences between , bacteria / prokaryotes , and , eukaryotes / other (4) kingdoms ; | | 2 ACCEPT there are fundamental similarities between the 4 eukaryotic kingdoms that are not shared with prokaryotes |
| | | | 3 | eukaryotes all have , nucleus / membrane-bound organelles / 80S ribosomes ; | | |
| | | | 4 | (there are) key / many / fundamental / important , differences between bacteria and archaea ; | | 4 ACCEPT 'there are good reasons why prokaryotes should be split' 4 ACCEPT 'bacteria and archaea are more different that we thought' |
| | | | 5 | bacteria and archaea have different , cell membrane / flagella / (named) enzymes / transcription / DNA replication / RNA; | 3 max | |
| | | | | Total | [11] | |

| (| Question | | | Expected Answers | Mark | Additional Guidance |
|---|----------|-----|----|---|-------|---|
| 7 | (a) | | | | | CREDIT displayed formulae for groups throughout |
| | | | 1 | central , C / carbon (atom) ; | | 1 DO NOT CREDIT if joined to another group by an incorrect bond |
| | | | 2 | NH ₂ / amine (group) ; | | 2 ACCEPT amino group / HNH |
| | | | 3 | COOH / carboxyl (group) opposite amine group ; | | 3 ACCEPT carboxylic (acid) group 3 DO NOT CREDIT if single bond drawn between C and O |
| | | | 4 | CH ₃ / methyl (group) , opposite , hydrogen / H ; | 4 | H H ₂ N — C — COOH CH ₃ = 4 marks If diagram is correct, IGNORE contradictory prose. If diagram is incorrect, DO NOT AWARD mark for correct prose |
| 7 | (b) | (i) | LD | reases level of / produces (more), low density lipoproteins / LDL; Ls carry cholesterol from liver to , (named) tissues / cells / blood; creases the activity of (LDL) receptors (on cells) / less binding (of LDL) to cells; | 2 max | ACCEPT converted to LDLs IGNORE saturated fats contain LDLs |

| C | Questi | ion | | Expected Answers | Mark | Additional Guidance |
|---|--------|------|-----|---|-------|---|
| 7 | (b) | (ii) | 1 | (increased) deposition of , fat / lipid / cholesterol / LDL (in artery wall); | | 1 ACCEPT 'build up' as AW for deposit |
| | | | 2 | in artery wall / <u>under</u> endothelium ; | | 2 ACCEPT under , epithelium / lining of artery wall |
| | | | 3 | atherosclerosis / formation of atheroma; | | 3 ACCEPT plaque formation 3 IGNORE arterio- / arth- |
| | | | 4 | narrowing / AW , of <u>lumen</u> of <u>coronary</u> artery ; | | 4 IGNORE conary |
| | | | 5 | reduced / restricted , blood flow ; | | |
| | | | 6 | less oxygen delivered to , cardiac / heart , <u>musc</u> le ; | 4 max | 6 ACCEPT myocardium gets less O ₂ |
| 7 | (c) | | enz | zyme / lipase , inhibitor ; | 4 | ACCEPT any description of competitive or non- competitive inhibition of enzyme |
| | | | | Total | [11] | |

| _ | Question | | | Expected Answers | Mark | Additional Guidance |
|---|----------|--|-----|--|--------|---|
| 8 | (a) | | cor | ncentration; | 1 | IGNORE volume / mass |
| 8 | (b) | | 1 | breeding does not cause mutation ; | | 1 DO NOT AWARD if any incorrect science is associated with this statement, e.g. 'breeding doesn't cause mutations it just makes them more likely to happen. |
| | | | | Any one from: | | парропі |
| | | | 2 | mutation is , random / spontaneous / chance ; | | |
| | | | 3 | mutation is , change / damage , to , DNA / base / nucleotide sequence ; | | |
| | | | 4 | inbreeding reduces , gene pool / range of alleles / genetic variation / genetic diversity ; | | |
| | | | 5 | inbreeding increases likelihood of individual possessing two (harmful) recessive alleles (of the same gene); | 2 max | |
| 8 | (c) | | 1 | high , Simpson's Index / biodiversity , means not likely to be , approved / built ; | Zillux | 1 ACCEPT 'will not be' as AW for 'not likely to be' |
| | | | | Any one from: | | |
| | | | 2 | damage to biodiversity would be great(er); | | 2 IGNORE habitat 2 ACCEPT rare species might be affected |
| | | | 3 | idea that planning decisions are often based on factors other than biodiversity; | 2 max | 3 ACCEPT EIAs also assess (measures to minimise) impact 3 ACCEPT the area might be an SSSI already |

| C | Question | | Expected Answers | | Mark | Additional Guidance |
|---|----------|--|------------------|---|-------|--|
| 8 | (d) | | 1 | enzymes not denatured ; | | DO NOT CREDIT if the answer states that the bacterium has been denatured |
| | | | 2 | Any two from decay / food spoilage , is slow(er); | | |
| | | | 3 | molecules / enzymes / substrates , have little / AW , kinetic energy / KE / $E_{\rm k}$; | | 3 DO NOT CREDIT no kinetic energy |
| | | | 4 | fewer collisions , between substrate and <u>active site</u> / forming ESC ; | | 4 DO NOT CREDIT no collisions |
| | | | 5 | (liquid) water availability reduced / AW; | 3 max | |
| | | | | Total | [8] | |

APPENDIX 1 – this contains a generic mark scheme grid

Mark Scheme Conventions

The following conventions appear in the Mark Scheme

- 1. Bracketed words. The words in brackets are there to 'set the scene' and indicate the context in which the answer is expected. They do not need to appear. Award the mark as long as the statement in the brackets is not contradicted.
- 2. Solidus /. A solidus indicates alternative ways that a mark might be gained for a given Mark Point.
- 3. Use of the comma in a mark point. This indicates that some information from either side of the comma or commas is needed. It is used in conjunction with the solidus.

In some cases the Guidance column may indicate examples of wording or terms that are acceptable (ACCEPT) or that should be ignored (IGNORE). In the case of IGNORE read on to see if something creditworthy appears later in the response.

- 4. Underlining.
 - solid underline. The word or part of word underlined is required but minor mis-spellings are acceptable as long as the word is phonetically the same
 - wavy underline. This indicates that whilst the word underlined is not precisely needed, alternative responses need to be closely related in meaning or be a clear description.
- 5. *idea of.* This is used as a prefix to marking points where there may be a fairly wide range of responses which cover the essence of the required response. This often requires examiner judgement. These often, but not exclusively, appear in questions such as those related to environmental or health issues.

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