| Question | Answer | Extra information | Marks | AO /  Spec ref. |
| --- | --- | --- | --- | --- |
| **01.1** | ozone – destroys microorganisms  desalination – removes dissolved salt  filtering – removes solid particles |  | 1  1  1 | AO2×1  AO1×2 |
| **01.2** | Any **one** of:   * enough rainfall/ground water in UK * seawater treatment uses a lot of energy. | Allowseawater treatment is expensive. | 1 | AO2  C10.1.2 |
| **02.1** | natural: cotton/wool/silk/leather  finite: polyester/nylon/acrylic | Allowany correct natural material;  allowany correct oil-derived material. | 1  1 | AO2  C10.1.2 |
| **02.2** | renewable – replaced as quickly as they are used  sustainable – available for future generations |  | 1  1 | AO1  C10.1.1 |
| **03.1** | 13 (%) |  | 1 | AO1  C10.1.1  MS1c |
| **03.2** | extracting new iron causes serious pollution  reserves of copper ore will be conserved |  | 1  1 | AO1  C10.1.1 |
| **03.3** | the price of copper has risen greatly |  | 1 | AO2  C10.2.2 |
| **04** | A – salt water  B – steam  C – distilled water  D – iced water |  | 1  1  1  1 | AO3  C10.1.2 |
| **05.1** | 2400 (%) | accept 2350–3200 | 1 | AO3  C10.1.2  MS1c |
| **05.2** | 30 | accept 20–40 | 1 | AO3  C10.1.2  MS4a |
| **05.3** | Idea ofincreased demand. | Acceptmore cars/transport/uses for chemicals/polymers. | 1 | AO2  C10.1.2 |
| **05.4** | Idea ofeasily accessible oil already discovered/used up. | Acceptmost oil discovered/used up. | 1 | AO2  C10.1.2 |
| **05.5** | Any **two** from uncertainties about:   * future demand for oil * amount of oil remaining * success of replacement by renewable energy. |  | 2 | AO2  C10.1.1 |
| **06.1** | Idea ofmanufacturing and packaging;  idea ofuse/maintenance/operation during lifetime. | Allow distribution;  either order. | 1  1 | AO1  C10.1.1 |
| **06.2** | **Level 3 (5–6 marks):** Reasonably detailed comparison of extraction/processing **and** disposal. | | 6 | AO1×4  AO2×2  C10.2.1 | |
| **Level 2 (3–4 marks):** Basic comparison of extraction/processing **and** disposal. | |
| **Level 1 (1–2 marks):** Basic comparison of extraction/processing **or** disposal. | |
| **Level 0 (0 marks):** No relevant content. | |
| **Indicative content:**  Extraction/processing poly(ethene):   * (crude oil) is finite * drilling/processing (oil)/distribution requires a lot of energy * processing (oil).and sometimes distribution in oil tankers causes pollution.   Extraction/processing paper:   * (wood) is renewable * (wood) is more sustainable * risk of pollution in rivers at paper mills * land usage to grow trees is high/can’t be used for growing food crops.   Disposal of poly(ethene):   * non-biodegradable * visual pollution/pollutes sea/harming wildlife * could be recycled * could be burned * releases energy if burned * not carbon neutral * uses landfill space.   Disposal of paper:   * biodegradable * is recycled * (ignoring processing) carbon neutral.   This indicative content is not exhaustive, other creditworthy responses should be awarded marks as appropriate. | |  |