

| Question Number | Answer | Mark |
|-----------------|--------|------|
| 1(a)(i) | C ; | (1) |

| Question Number | Answer | Mark |
|-----------------|--------|------|
| 1(a)(ii) | D; | (1) |

| Question Number | Answer | Mark |
|-----------------|--------|------|
| 1(a)(iii) | D ; | (1) |

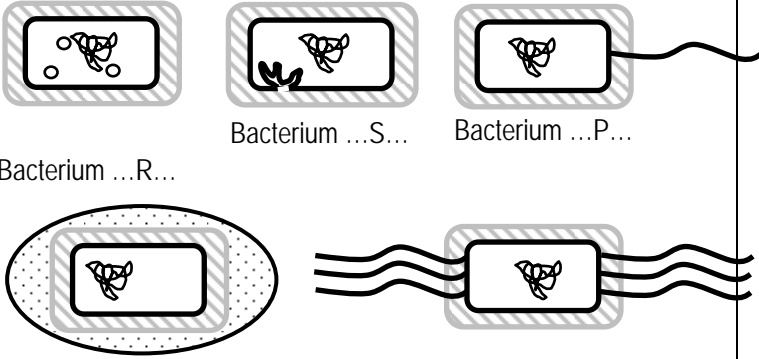
| Question Number | Answer | Mark |
|-----------------|---|------|
| 1(b)(i) | <ol style="list-style-type: none"> 1. humans more closely related to chimp (than to orang utan and gorilla) / eq ; 2. reference to humans and chimps more closely related to orang utan than gorilla ; 3. reference to similarity of sequence indicates closeness of ancestral relationship / eq ; 4. human and chimp sequence identical / eq ; 5. orang utan has one difference, gorilla has two differences / eq ; 6. reference to {number 19 for orang utan / number 9 and 19 for gorilla} different ; | (4) |

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| 1(b)(ii) | <ol style="list-style-type: none"> 1. reference to similarity (of DNA) indicates closeness of relationship ; 2. because genes are sections of DNA / eq ; 3. genes are the codes for protein / eq ; | (2) |

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| 1(b)(iii) | <ol style="list-style-type: none"> 1. reference to source of DNA sample, e.g. blood, saliva, semen ; 2. reference to small samples of DNA can be amplified by PCR ; 3. reference to use of (restriction / eq) enzymes to {break / eq} DNA ; 4. reference to use of {electro potential / potential difference / eq} ; 5. reference to {treatment / staining / eq} ; 6. show up as {bands / bars / eq} ; 7. reference to the {number of bands / eq} that match indicates similarity of the DNA ; | (3) |

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| 2(a)(i) | 1. circular DNA box ; 2. small / 70s ribosomes box; | (2) |

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|----------------------------------|--|----------------------------------|--|---------------------------------|---|----------------|---|--------------|---|--------|---|------------------|---|-------------------|---|-----|
| 2(a)(ii) | <table border="1"> <thead> <tr> <th>Features present in mitochondria</th> <th>Feature also present (✓) or absent (✗) in chloroplasts</th> </tr> </thead> <tbody> <tr> <td>Surrounded by a double membrane</td> <td>✓</td> </tr> <tr> <td>Crista present</td> <td>✗</td> </tr> <tr> <td>Circular DNA</td> <td>✓</td> </tr> <tr> <td>Matrix</td> <td>✗</td> </tr> <tr> <td>Glycogen granule</td> <td>✗</td> </tr> <tr> <td>Stalked particles</td> <td>✗</td> </tr> </tbody> </table> <p>1 mark for any two correct ;;;</p> | Features present in mitochondria | Feature also present (✓) or absent (✗) in chloroplasts | Surrounded by a double membrane | ✓ | Crista present | ✗ | Circular DNA | ✓ | Matrix | ✗ | Glycogen granule | ✗ | Stalked particles | ✗ | (3) |
| Features present in mitochondria | Feature also present (✓) or absent (✗) in chloroplasts | | | | | | | | | | | | | | | |
| Surrounded by a double membrane | ✓ | | | | | | | | | | | | | | | |
| Crista present | ✗ | | | | | | | | | | | | | | | |
| Circular DNA | ✓ | | | | | | | | | | | | | | | |
| Matrix | ✗ | | | | | | | | | | | | | | | |
| Glycogen granule | ✗ | | | | | | | | | | | | | | | |
| Stalked particles | ✗ | | | | | | | | | | | | | | | |

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| 2(b) |  <p> Bacterium ...R... Bacterium ...S... Bacterium ...P... Bacterium ...T... Bacterium ...Q... </p> | (4) |