

| Question Number | Answer   | Additional guidance   | Mark       |
|-----------------|--|---|------------|
| 3(a)            | <ol style="list-style-type: none"> <li>1. presence of { membrane bound / named membrane bound } organelle in eukaryotic cells / eq ;</li> <li>2. presence of { plasmids / slime capsule / pili / eq} in prokaryotic cells ;</li> <li>3. size of ribosomes i.e. larger in eukaryotic cells / 70S in prokaryotes and 80S in eukaryotes / eq ;</li> <li>4. DNA in a nucleus in eukaryotic cells /eq ;</li> <li>5. { DNA / chromosome } linear in eukaryotic cells and circular in prokaryotic cells / eq ;</li> <li>6. relevant comment regarding cell walls e.g. cell walls always present in prokaryotic cells, only in some eukaryotic cells;</li> </ol> | <p>ACCEPT converse where appropriate</p> <ol style="list-style-type: none"> <li>1. ACCEPT reference to a named organelle such as mitochondria or nucleus present in eukaryotic cells and NOT in prokaryotic cells</li> <li>2. ACCEPT reference to mesosomes</li> <li>6. cell walls in prokaryotic cells contain{ peptidoglycan / murein} and in eukaryotic cells they contain {cellulose /chitin }</li> </ol> | <b>(3)</b> |

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| <b>3(b)</b>     | 1. idea of molecular { differences / similarities } ;<br>2. in { DNA / RNA } ;<br>3. in proteins / proteomics ;<br>4. idea of (evolutionary) relationships between organisms ; | 2. ACCEPT base sequences<br>3. ACCEPT amino acid sequences<br>4. ACCEPT idea of closely related species | <b>(3)</b> |

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|-----------------|--|--|------------|
| <b>3(c)(i)</b>  | 1. idea of cell membrane being different ;<br>2. idea of different number of protein molecules ; | 1. ACCEPT description of difference e.g. ether bonds, branched hydrocarbons<br>2. ACCEPT NOT same number, they have 10 protein molecules | <b>(2)</b> |

| Question Number | Answer  | Additional guidance | Mark       |
|-----------------|---|---------------------|------------|
| <b>3(c)(ii)</b> | 1. number of protein molecules is closer to Eukaryota than to Bacteria / eq ;<br>2. no peptidoglycan in cell wall ; |                     | <b>(2)</b> |