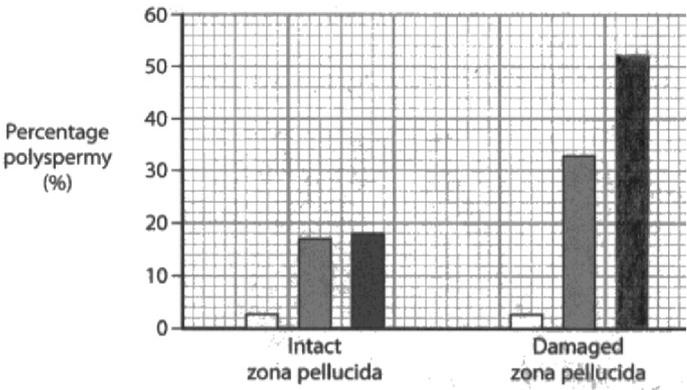


| Question Number | Answer | Additional guidance | Mark | | | | | | | | | | | | |
|-----------------------|--|--|-----------------------|---------------|--------------|---------------|--------|---|----|----|---------|---|----|----|-----|
| 8(c)(i) | <ul style="list-style-type: none"> correctly plotted bar with shading (1) |  <p>Percentage polyspermy (%)</p> <table border="1"> <thead> <tr> <th>Zona Pellucida Status</th> <th>White Bar (%)</th> <th>Grey Bar (%)</th> <th>Black Bar (%)</th> </tr> </thead> <tbody> <tr> <td>Intact</td> <td>2</td> <td>18</td> <td>18</td> </tr> <tr> <td>Damaged</td> <td>2</td> <td>33</td> <td>52</td> </tr> </tbody> </table> | Zona Pellucida Status | White Bar (%) | Grey Bar (%) | Black Bar (%) | Intact | 2 | 18 | 18 | Damaged | 2 | 33 | 52 | (1) |
| Zona Pellucida Status | White Bar (%) | Grey Bar (%) | Black Bar (%) | | | | | | | | | | | | |
| Intact | 2 | 18 | 18 | | | | | | | | | | | | |
| Damaged | 2 | 33 | 52 | | | | | | | | | | | | |

| Question Number | Answer | Additional guidance | Mark |
|-----------------|--|--|------|
| 8(c)(ii) | <p>An explanation that makes reference to four of the following points:</p> <ul style="list-style-type: none"> there was more polyspermy of egg cells when the zona pellucida was damaged / converse for intact zona pellucida (1) due to cortical reactions only occurring over some part of the egg cell (1) (therefore some) areas of the egg cell not being covered by a hardened zona pellucida (1) there was more polyspermy of egg cells with a higher sperm concentration increased sperm cell concentration increased the likelihood of sperm cells entering {egg cell before cortical reaction occurred / through gap in hardened zona pellucida} (1) | <p>ACCEPT {fewer/no} cortical reactions (with damaged zona pellucida) / converse for intact zona pellucida</p> <p>ACCEPT (therefore damaged) zona pellucida does not {harden / thicken} / converse for intact zona pellucida</p> <p>ACCEPT increased sperm cell concentration increased the {concentration of digestive enzymes / rate of digestion of zona pellucida}</p> <p>ignore increased {concentration / damaged to zona pellucida} increases number of sperm reaching the egg cell</p> | (4) |