

Question Number	Answer	Mark
5 (a)	Correct ref to: <ol style="list-style-type: none"> <li>1. flagellum / eq ;</li> <li>2. overall shape e.g. streamlined / eq ;</li> <li>3. fewer mitochondria / other organelles / eq ;</li> <li>4. acrosome / eq ;</li> <li>5. zona (pellucida) / jelly layer eq ;</li> <li>6. cortical granules / eq ;</li> <li>7. differences in food store types / eq ;</li> <li>8. sperm cell has less cytoplasm / eq ;</li> </ol>	<b>maximum (3)</b>

Question Number	Answer	Mark
5 (b)	<ol style="list-style-type: none"> <li>1. enzyme {digest / eq}{ zona (pellucida) / eq} ;</li> <li>2. idea that sperm can get through to egg {cell / nucleus / eq} ;</li> <li>3. {contact with / receptor on} {zona pellucida / (glycoprotein) jelly coat / surface of ovum } ;</li> <li>4. (causes) {acrosome / eq to {rupture / open / eq} ;</li> </ol>	<b>maximum (2)</b>



Question Number	Answer	Mark
5 (c)	<ol style="list-style-type: none"> <li>1. meiosis (II) is completed / eq ;</li> <li>2. {male and female / eq } chromosomes come together / (both) nuclei fuse / eq ;</li> <li>3. {cortical granules / enzymes/ chemicals} released (from cell surface membrane) / eq ;</li> <li>4. {bind / eq } with { zona (pellucida) / eq } / {zona (pellucida) / eq } then {thickens /hardens / eq } ;</li> <li>5. to form fertilisation membrane / to make cell impenetrable (to other sperm) / prevents polyspermy / egg cell membrane {changes its charge / becomes positive} / eq ;</li> </ol>	maximum (2)

Question Number	Answer	Mark
5 (d)(i)	<ol style="list-style-type: none"> <li>1. to produce a {zygote / eq} ;</li> <li>2. to produce {original / full} complement of {DNA / chromosomes / genetic material } / diploid / 2n number / eq ;</li> <li>3. to allow mixing of {genes / genetic material } / ref to { genetic variation / eq } ;</li> </ol>	maximum (2)

Question Number	Answer	Mark
5 (d)(ii)	(triploid) endosperm nucleus ;	(1)