

Multiple Choice Answers

Q32: D
Q33: C
Q34: A
Q36: D

4(a)(i)	grasshopper / marmot ;
4(a)(ii)	grass → grasshopper → marmots / (corsac) fox → (steppe) eagle ;
4(a)(iii)	<i>any two from:</i> <i>idea that</i> energy is lost between each trophic level ; named example of energy loss ; if less energy available then less biomass can be supported ;
4(b)(i)	<i>any three from:</i> 1 little genetic variation ; 2 increased risk of, genetic / inherited, disease ; 3 <u>inbreeding</u> / <u>inbred</u> ; 4 decreased heterozygosity / greater chance that an organism may be homozygous (recessive) ; 5 less likely to adapt to changes in the, environment / AW ; 6 increased susceptibility to (transmissible) disease ; 7 AVP ;
4(b)(ii)	<i>any four from:</i> 1 (named) protection of habitat ; 2 ref to legislation protecting species / banning hunting ; 3 monitoring / tracking / named example of monitoring ; 4 education / awareness campaigns ; 5 provision of (named), food / nutrients / veterinary care ; 6 removal of predators ; 7 removal of invasive species ;
4(c)	X – fertilisation ; Y – mitosis / cell division ; Z – implantation ;

3(a)(i)	single clear outline with no shading ; width of drawing greater than 93 mm ; detail 1 : 5 arms and enclosed shape in middle that doesn't touch the edges ; detail 2 : indication of where colour changes on all limbs
3(a)(ii)	length of line PQ : 93 ± 1 (mm) ; 290 ;;

3(a)(iii)

max two differences from:

spiny starfish / Figure 3.2		necklace starfish / Figure 3.3
spines / AW	AND	smooth / scales / no spines ;
light / bright, in centre	AND	dark in centre ;
has five, ossicles / AW, in the centre or has a central pentagon shape	AND	does not have five, ossicles / AW, in the centre or no central pentagon shape ;
no white ends to the limbs	AND	white ends to the limbs ;
more uniform shaped limbs	AND	less uniform shaped limbs ;
straight limbs	AND	bent / curved / AW, limbs ;
lines going down the arms	AND	no lines going down the arms ;

*max one similarity from:**(both have)*

five, arms / AW ;

circle in the middle ;

dark arms / arms that are a different colour to the centre ;

tapering limbs ;

radial symmetry ;

3(b)(i)

any two from:

same region ;

same size of area / 20 m², (sampled) ;

same day / same time of year / both in July / same date ;

depth measured at, same time of tide / high tide / when water at its
highest ;

3(b)(ii)

axes labelled with units ;

suitable linear scale on number of starfish axis **and** ranges given for
depth axis **and** data occupies at least half the grid in both directions ;
five accurate plots $\pm$ half a small square ;
bars of equal width $\pm$ half a small square with **no gaps** between them ;

3(b)(iii)

10–19.9

3(b)(iv)

total number of starfish photographed: 3428 ;
percentage in the 0.0–9.9m range: 10 (%) ;;

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Q36: C