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ST BENEDICT'S COLLEGE

SUBJECT	LIFE SCIENCES	DATE	26 JANUARY 2023
GRADE	12	MARKS	50
EXAMINER	MRS S. STEGMANN	MODERATOR	MRS B. ZAJAC
		DURATION	50 MINUTES

MARKING GUIDELINES

Question 1:

- 1.1.
1.1.1. D ✓
1.1.2. B ✓
1.1.3. A ✓
1.1.4. D ✓✓ (5)

- 1.2.
i) A ✓
ii) H ✓
iii) F ✓
iv) C ✓
v) I ✓
vi) B ✓
vii) D ✓ (7)

Question 2:

- 2.1.
A. Endemic ✓ (1)
B. Population (accept species) ✓ (1)
C. Predator-prey/ predation ✓ (1)
- 2.2. They live on coast/sandy and rocky shores✓; make simple nests/shallow holes in sand to lay eggs✓; they eat marine organisms/feed on rocky shores✓; excrete nutrient rich guano✓; guano feeds algae✓; role is to control prey species in its area✓; they provide food for other predators✓ (max 4)
- 2.3. Near-threatened ✓ (1)
- 2.4. Human disturbance-cars on beaches✓; introducing predators at breeding sites e.g. domestic dogs eating young chicks✓; urban developments; mining disturbances✓; pollution- would prevent breeding/ reduce the population numbers/reduce areas for breeding✓ (max 3)
- 2.5. Yes✓: must protect African black Oystercatcher as it is a threatened species/ could become extinct if breeding sites are not protected. Any relevant answer. ✓
- OR
- No✓: beaches are public property and should be open to all for recreational activities; access can be monitored or controlled. Any suitable answer. ✓ (2)
- 2.6. Educate public✓ about the importance of leaving nests/breeding sites alone ✓ (2)

- 2.7.
- 2.7.1. All members of a 'population' have equal chances of being selected ✓ and it eliminates bias/ ensures that the sample represents the true distribution ✓ (2)
- 2.7.2. Total 6 quadrats
 $5 + 2 + 3 + 4 + 8 + 1 = 23$ ✓
 $23/6 = 3,8$ ✓
Total area = $10\text{m}^2 \times 10\text{m}^2 = 100\text{m}^2$ ✓
Total number of mussels = $100/3,8 = 380$ ✓ (4)
- 2.7.3. Repeat the sampling more than once and average results; don't let too much time lapse between sampling so births and death don't affect data; accept other suitable answers- NOT migration from area- move too slowly. ✓✓ (any 2)
- [23]

Question 3

- 3.1.
- 3.1.1. A ✓, B ✓, C ✓ (3)
- 3.1.2. $25\% \times 70 = 18,75$ / 18 hunts ✓ (2)
- 3.1.3. Competitive co-existence/ resource portioning ✓ (1)
- 3.1.4. Kudu & Giraffe/ leopard & lion/ ANY relevant example ✓ (1)
- 3.1.5. Large herd- more eyes & ears to lookout for predators/ greater numbers allow them to mob predators/ vulnerable & weak are protected by other members in the herd/ when herd scatters it causes confusion for predators ✓✓✓ (any 3)
- 3.1.6. Mark-recapture ✓ (1)
- 3.1.7. Time x-axis and population number y-axis ✓
Key ✓
Correct sketching of both organisms ✓✓ (4)
- [15]

TOTAL: 50 MARKS