

Name of the Student: _____

Max. Marks : 24 Marks

Time : 24 Minutes

Mark Schemes

- Q1.**
- | | | |
|-----|---|---|
| (a) | 1. Chromosome is formed of two chromatids; | |
| | 2. (Because) DNA replication (has occurred); | |
| | 3. (Sister) chromatids held together by centromere. | 3 |
| (b) | 1. Chromosomes in homologous pair; | |
| | 2. One of each into daughter cells / haploid number. | 2 |
| (c) | Separation of (sister) chromatids / division of centromere. | 1 |
| (d) | 1. Independent segregation (of homologous chromosomes); | |
| | <i>Accept random assortment</i> | |
| | 2. Crossing over / formation of chiasmata. | 2 |
- [8]**

Q2.

- | | | |
|-----|---|---|
| (a) | Translation. | 1 |
| (b) | Transfer RNA / tRNA. | 1 |
| (c) | TAC;
UAC. | 2 |
| (d) | Have different R group.
<i>Accept in diagram</i> | 1 |
| (e) | 1. Substitution would result in CCA / CCC / CCU;
2. (All) code for same amino acid / proline;
3. Deletion would cause frame shift / change in all following codons / change next codon from UAC to ACC. | 3 |

[8]

Q3.

- (a) Species richness measures only number of (different) species / does not measure number of individuals. 1
- (b) Trees vary in height. 1
- (c) 1. Index for canopy is 3.73;
2. Index for understorey is 3.30;
3. Index in canopy is 1.13 times bigger;
If either or both indices incorrect, allow correct calculation from student's values. 3
- (d) 1. For *Zaretis itys*, difference in distribution is probably due to chance / probability of being due to chance is more than 5%;
2. For all species other than *Zaretis itys*, difference in distribution is (highly) unlikely to be due to chance;
3. Because $P < 0.001$ which is highly significant / is much lower than 5%. 3

[8]