

※ 注意：請於試卷上依序作答，並應註明作答之部份及其題號。

Part I: 共 50%

簡答題: (每題 3%, 共 30%)

- (1) nucleosome (2) RNAi (3) histone acetylation and deacetylation (4) RNA edition
(5) polycistron (6) DNA methylation (7) Mi RNA (8) basal transcription apparatus
(9) mix and match of *cis*-element in promoter (10) constitutive heterochromatin and
facultative heterochromatin

問答題: (每題 10%, 共 20%)

1. Regarding RNA splicing process, please answer the following:
(a). The difference among nuclear splicing, group II and group I
splicing process.
(b). What is the significant function of alternative splicing?
2. Regarding the interaction of *Agrobacterium* bacterium and plant, please
answer the following:
(a). What is the functional difference between *Agro. tumefaciens* and
Agro. rhizogene in plant infection.
(b). The function of *vir. A*, *vir. G*, *vir. D* and *vir. E* for single strand
DNA transfer.

Part II: 共 50%

簡答題 (每題 3%, 共 30%)

- (1) Ti plasmid and T-DNA; (2) miRNA; (3) DNase footprinting assay;
(4) polycistronic; (5) EMSA (electrophoretic mobility shift assay); (6) attenuation in
tryptophan operon; (7) Rho termination factor; (8) SRP (signal recognition particle)
and SRP receptor; (9) D-loop DNA replication; (10) briefly draw the structure of
puromycin, a protein synthesis inhibitor

問答題 (每題 10%, 共 20%)

- (1) Thymine dimers can be removed by light and dark repair systems in bacteria,
please described. (10%)
(2) The ColE1 plasmid replication is controlled RNA, please describe. (10%)

試題隨卷繳回