

7.2 Transcription & Gene Expression

Question Paper

Course	DP IB Biology
Section	7. Nucleic Acids (HL Only)
Topic	7.2 Transcription & Gene Expression
Difficulty	Easy

Time allowed: 10
Score: /5
Percentage: /100

Question 1

Which of the following provides the most accurate definition of a promoter?

- A. DNA sequences that code for the production of polypeptides
- B. DNA sequences that produce RNA molecules
- C. DNA sequences that act as a binding site for RNA polymerase during transcription
- D. DNA sequences that codes for the production of enzymes

[1 mark]

Question 2

Which of the following is **not** an example of how the external environment can influence gene expression?

- A. Fur colouration of Siamese cats
- B. Petal colour of snapdragons
- C. Skin colouration after sun exposure
- D. Sea turtle eggs hatching as females if incubated at 30°C

[1 mark]

Question 3

Which of the following are examples of groups that could be added to the tails of histones to chemically modify them?

- I. Acetyl
 - II. Hydroxyl
 - III. Phosphate
 - IV. Amino
- A. I. and III. only
 - B. II. and IV. only
 - C. I., II. and III.
 - D. II., III. and IV.

[1 mark]

Question 4

Which of the following correctly compares the modification of RNA in prokaryotes and eukaryotes?

	Prokaryotes	Eukaryotes
A.	mRNA can be spliced to remove non-coding sequences	A methylated cap can be added to the 5' end of the mRNA molecule
B.	A poly-A tail is added to the 3' end of the mRNA molecule	mRNA does not require modification after transcription
C.	mRNA does not require modification after transcription	mRNA can be spliced to remove non-coding sequences
D.	mRNA can be spliced to remove non-coding sequences	A poly-A tail is added to the 3' end of the mRNA molecule

[1 mark]

Question 5

Which of the following best describes the importance of regulating gene expression?

- A. To ensure that essential genes are expressed all the time in the relevant cells
- B. To ensure that only the relevant genes in the relevant cells are expressed at certain times
- C. To ensure that only the relevant genes are expressed in the relevant cells at all times
- D. To ensure that the same group of essential genes is expressed in all cells of the organism at certain times

[1 mark]