

المستوى الثالث (لائحة الساعات المعتمدة) برنامج علوم البحار  
بيولوجية جزيئية (316 ع ب)

Date: 13/ 6 / 2023

Time: 2 Hours

Mark: 90

الامتحان في صفتين

**Question One (20 Marks):**

-The transcription results initially in a pre- mRNA which must undergoes a number of modifications ,or what is known as **RNA processing** before it leaves the nucleus. **Mention the three steps of Post-transcription modification.**

**Question Two (20 Marks):**

**Complete the following:**

- The term semiconservative DNA replication means .....1.....
- The alternating ...2..... and ...3.....residues make the backbone of the DNA strand .
- Two DNA strands run in ...4.....directions to each other and are therefore .....5..... .
- DNA replication process is vital because it ...6..... the transfer of genetic information from one generation to another .
- The Enzyme .....7..... unwinds and separates the 2 parental DNA strands by .....8..... hydrogen bonds producing single strand templates
- In *E. coli*, the polymerase is composed of ...9...polypeptide subunits, two of which are .....10.....

**Question Three (20 Mark):**

**Mention the scientific term:**

- 1- (.....) the process of producing two identical copies from one original DNA molecule.
- 2- (.....) the enzyme responsible for the synthesis of the new DNA strands.

3- (.....) are molecules that store information for cellular growth and reproduction.

4- (.....) carries the genetic code to the ribosomes.

5- (.....) the smallest of the 3 types of RNA, possessing around 75-95 nucleotides.

6- (.....) the DNA message is converted into an mRNA molecule.

7- (.....) is a DNA sequence onto which the transcription machinery binds and initiates transcription .

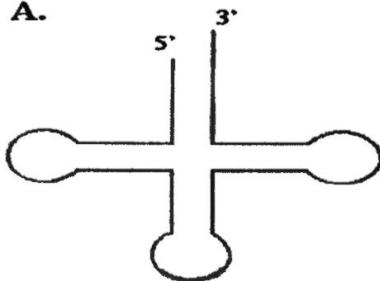
8- (.....) the specific proteins which are necessary for the initiation of RNA construction.

9- (.....) is the set of "rules" that a cell uses to interpret the nucleotide sequence within a molecule of mRNA.

10- (.....) the sequence that is broken into a series of three-nucleotide. units.

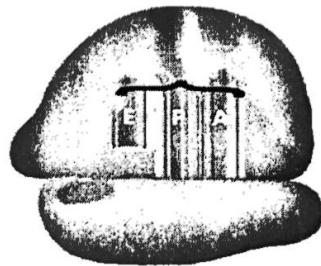
**Question Four (30 Marks):**

A.



- Mention the name of this figure.
- Mention its structure.

B



- Mention the name of this figure.
- Mention its structure.

*With Best Wishes*

*Dr. lamiaa Deef*

*Dr. Basma gabr*

*Head of Department: Prof.dr. Ola abu samak*