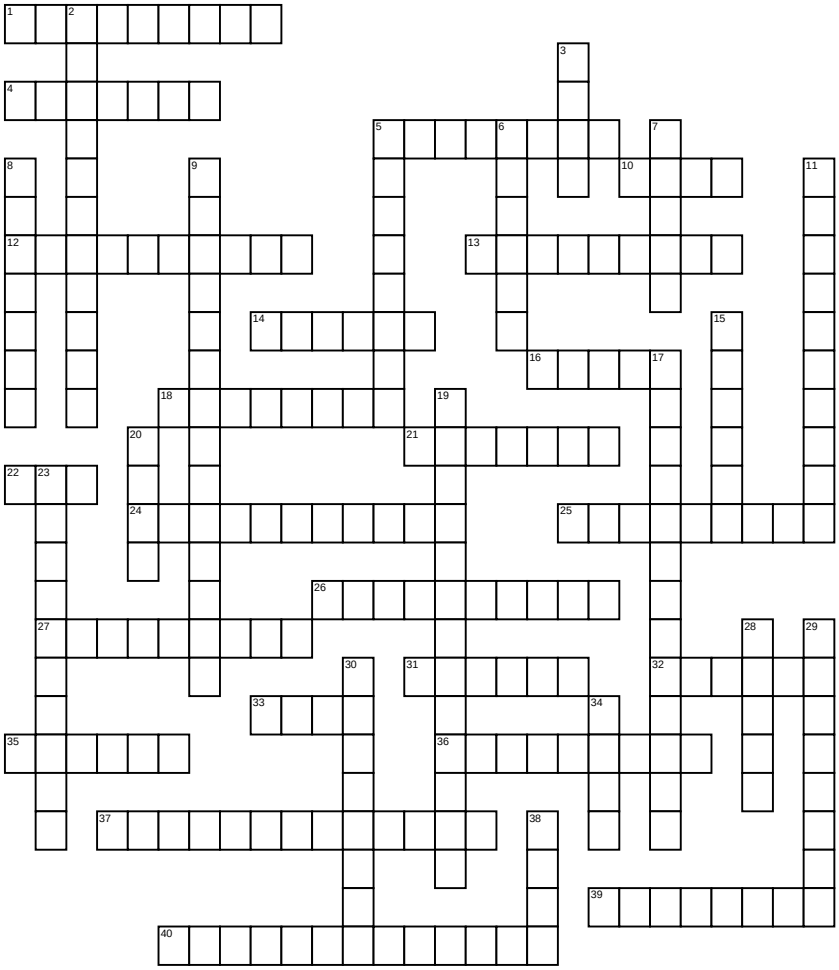

ACROSS

1 A protein _____, also called a pro-protein or pro-peptide, is an inactive protein that can be turned into an active form by posttranslational modification.

4 A gene _____ is the biochemical material, either RNA or protein, resulting from expression of a gene.

5 Alternative _____ is the variation mechanism in which the exons of the primary gene transcript, the pre-mRNA, are separated and reconnected so as to produce alternative ribonucleotide arrangements.

10 The genetic _____ is the set of rules by which information encoded in genetic material is translated into proteins by living cells.

12 RNA _____ is an enzyme that makes an RNA copy of a DNA or RNA template.

13 A _____ protein is any of the proteins that, in conjunction with rRNA, make up the subunits of the ribosome.

14 The _____ region of a gene is the portion of DNA that is transcribed into mRNA and translated into proteins.

16 The codon ATG in DNA, which corresponds to AUG in RNA, is the _____ codon or initiation codon which the amino acid methionine in eukaryotes and a modified methionine in prokaryotes.

18 A _____ is a small, dense, structure found in most known cells that assembles proteins in a process called translation.

21 A _____ transcript is an RNA molecule that has not yet undergone any modification after its synthesis.

22 A _____-regulatory element is a region of DNA or RNA that regulates the expression of genes located on that same strand.

24 Messenger RNA is decoded in the process of _____ to produce a specific polypeptide according to the rules specified by the genetic code.

25 _____ ribonucleic acid is a molecule of RNA encoding a chemical blueprint for a protein product.

26 A _____ gene is a gene that codes for any RNA or protein product other than a regulatory element.

27 Enzyme _____ is a process in which a molecule, such as a drug, induces the expression of an enzyme.

31 The _____ recognition particle is a protein-RNA complex that recognizes and transports specific proteins to the endoplasmic reticulum in eukaryotes and the plasma membrane in prokaryotes.

32 _____s are non-coding sections of DNA which are spliced out once a DNA sequence has been transcribed as a hnRNA strand.

33 A base _____ consists of two nucleotides on opposite complementary DNA or RNA strands connected via hydrogen bonds.

35 A _____ is an enzyme that can catalyse the joining of two large molecules by forming a new chemical bond.

36 Protein _____ or sorting is the mechanisms by which a cell transports proteins to the appropriate positions in the cell or outside of it.

37 _____ is a type of eukaryotic gene organization in which genes may not be physically linked, but they are involved in the same process and they are coordinately expressed

39 A _____ is a regulatory region of DNA located upstream of a gene, providing a control point for regulated gene transcription.

40 A _____ factor is a protein that binds to specific parts of DNA using DNA binding domains as part of the system that controls the transfer of genetic information from DNA to RNA.

DOWN

2 _____s are enzymes that cleave nucleotides one at a time from an end of a polynucleotide chain.

3 A _____ is a locatable region of genomic sequence, corresponding to a unit of inheritance.

5 A DNA _____ is a succession of letters representing the primary structure of a DNA molecule or strand.

6 The non-_____ or template strand is the DNA strand that is read by the RNA polymerase.

7 The central _____ of molecular biology is a framework for understanding the transfer of sequence information between sequential information-carrying biopolymers in living organisms.

8 A signal _____ is a short portion of a protein dedicated to directing the post-translational transport of a protein.

9 _____ refers to the end-to-end chemical orientation of a single strand of nucleic acid.

11 A _____ is a section of genetic sequence that marks the end of gene or operon on genomic DNA for transcription.

15 A _____ is a functioning unit of key nucleotide sequences including an operator, a common promoter, and one or more structural genes, which are controlled as a unit to produce messenger RNA.

17 Post-_____ modification is the chemical modification of a protein after its translation.

19 _____ is the process by which genetic information from DNA is transferred into RNA.

20 A _____ box (also called Goldberg-Hogness box) is a DNA sequence found in the promoter region of most genes in eukaryotes, which is considered to be the core promoter sequence.

23 _____ factors are proteins that bind to the small subunit of the ribosome during the initiation of protein synthesis.

28 A reading _____ is a contiguous and non-overlapping set of three-nucleotide codons in DNA or RNA

29 A _____ is a short region of DNA that can be bound with proteins to enhance transcription levels of genes in a gene-cluster.

30 _____ RNA is a small RNA chain that plays a role during translation in shuttling a specific amino acid to a growing polypeptide chain at the ribosomal site of protein synthesis.

34 A _____ codon, or termination codon, is a nucleotide triplet within messenger RNA that signals a termination of translation.

38 A _____ is any region of DNA within a gene that is transcribed to the final messenger RNA molecule, rather than being spliced out from the transcribed RNA molecule.