

科目 普通生物學 類組別 A1 共 2 頁第 1 頁 \*請在試卷答案卷(卡)內作答

配合題：1. 請注意每題的說明：每大題10分(即每小題2分)。2. 作答時不用抄題，但請註明題號，並依範例作答模式作答。

範例：1. Match each of the following.

1. C=O	A. covalent single bond
2. Polar attraction of one water molecule for another.	B. double bond
3. One atom gains electrons; the other loses one.	C. hydrogen bond
4. Sharing of a pair of electrons.	D. ionic bond
5. Two atoms share two pairs of electrons.	E. pair bond

Answer: 1. 1-B, 2-C, 3-D, 4-A, 5-B.

皆為單選題，每一小題請選出最佳的答案一個。

1) Match each of the following. (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. A protein that regulates transcription by binding to the operator.	A. operon	B. repressor
2. A protein that initiates the transcription of genes that allow the use of non-glucose molecules.	C. promoter,	D. operator
3. A cluster of functionally related genes encoded into a mRNA molecule; a mode of prokaryotic gene regulating unit.	E. CAP.	F. co-activator
4. A site of negative genetic regulation; binding by repressor blocks transcription.		
5. A site at the 5' end of a gene to which RNA polymerase attaches to initiate transcription.		

2) Match each of the following. (右邊字母的答案可能被選一次以上、或都未被選上 some letters may be used more than once or not at all)

1. DNA in a membrane-bound structure.	A. prokaryotes only	B. eukaryotes only
2. Cell wall present, at least in some members of the group.		
3. Cell wall of nitrogen-containing carbohydrate, cross-linked with short amino acid chains.	C. both prokaryotes and eukaryotes	
4. Employ RNA and protein as the only hereditary materials.	D. neither prokaryotes nor eukaryotes	
5. Large cells, nucleus, inner membrane, and one or the other compartments.	E. not consistently	

3) Match each of the following. (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. Pyruvate oxidation; carrier of acetyl groups.	A. GTP	B. NADH
2. Chief energy currency of cells; formed by chemiosmosis.	C. FAD	D. AMP
3. Coenzyme electron carrier; associated with Krebs cycle only.	E. G-3-P	F. ATP
4. Intermediate in glycolysis; finally oxidized to pyruvate.	G. NAD <sup>+</sup>	H. acetyl CoA
5. Oxidized form of the most common electron carrier; needed in both glycolysis and Krebs cycle.		

4) Match each of the following (some letters may be used more than once or not at all).

1. Cytoplasmic organelles are partitioned equally between two daughter cells.	A. G <sub>1</sub>	B. both G <sub>1</sub> and S
2. Hereditary information is partitioned equally between two daughter cells.	C. S	D. sub-G <sub>1</sub>
3. Duplicate copy of the hereditary information is made.	E. G <sub>2</sub>	F. both G <sub>2</sub> and M
4. Growth of the cell; synthesis of enzymes; normal metabolism.	G. M	H. C (Cytokinesis)
5. Chromosomes are readily visible under the microscope.		

5) Match each of the following. (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. Has a double headed globular region.	A. tropomyosin	B. myoglobin
2. Interferes with the attachment of myosin to actin.	C. calmodulin	D. sacromere
3. Holds tropomyosin on the actin filament.	E. myosin	F. microtubulin
4. Calcium binding protein of smooth muscle.	G. actin	H. troponin
5. Makes up the thin filaments along with two other proteins.		

6) Match each of the following. (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. Smallest of the RNA molecules; 45 different kinds.	A. DNA	B. DNA ligase
2. Single long strand that passes from the nucleus to the cytoplasm in eukaryotes; contains information for polypeptide assembly.	C. RNA polymerase	D. tRNA
3. The basic genetic information of the cell; contained in chromosome	E. mRNA	F. rRNA
4. An enzyme that synthesizes all three forms of RNA; present in the nucleus of eukaryotes.	G. DNA polymerase	
5. Exists as a complex with many large proteins in ribosomes; many different kinds of molecules.		

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7) Match each of the following. (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. Long-lived affect cells very distant from the releasing cell; hormones.	A. paracrine molecules; signals
2. Molecules on the plasma membrane; important in early development; lipids, carbohydrates, and proteins.	B. direct contact cell's
3. The molecules neurons; signals released very close to the target cells; neurotransmitters.	C. endocrine released by signals
4. Short-lived causing local effects; destroyed by extracellular enzymes; important in early development and coordination of activities of neighboring cluster of cells.	D. synaptic molecules signals
5. Cells send signals to themselves, secreting signals that bind to specific receptors on their own plasma membranes	E. autocrine molecules; signals
	F. exocrine

8) Match each of the following (右邊字母的答案可能被選一次以上、或都未被選上 some letters may be used more than once or not at all)

1. One of a pair of chromosomes with similar genetic information and from different sources like the sperm and egg.	A. chiasma	B. kinetochore
2. Several X-shaped structures may be visible under the microscope and indicate where crossing over has occurred.	C. homologue	D. mitosis
3. A lattice of protein holds two replicated chromosomes in precise register with one another.	E. maternal gamete	F. synapsis
4. Four chromatids are held together by a zipper-like structure.	G. synaptonemal	
5. A process in which pairs of homologous complex chromosomes line up side by side.		

9) Match each of the following. (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. Phagocytes that circulate in the blood.	A. T cells	B. plasma cell
2. Helper and inducer cells.	C. macrophages	D. mast cell
3. Source of antibody-producing cells.	E. monocytes	F. antigen
4. Macrophage precursor cells.	G. B cells	
5. Produce specific antibodies.		

10) Match each of the following (右邊字母的答案皆可能只被選一次、或都未被選上 All letters may be selected only once or not at all)

1. Shortest wavelength and highest-energy photons within the visible spectrum; one of the regions where chlorophylls absorb.	A. green	B. far red
2. Visible light not strongly absorbed by light.	C. violet-blue	D. white
3. High energy component of the electromagnetic spectrum; associated with sunburn.	E. red	F. yellow-orange
4. Apparent color of chlorophylls.	G. ultraviolet	
5. Visible light with longest wave length and lowest-energy photons; one of the regions where chlorophylls absorb.		