系所組別： 生命科學系甲、乙、丙組

考試科目： 普通生物學

考試日期：0226，節次：3

選擇題: (題目共 100 題，每題 1 分，答錯倒扣 0.25 分，未作答則不予計分)

(提醒: 交卷時請一併將答案卡繳回，同時，請將答案劃在答案卡上，寫在本卷將不予計分！)

1. How can biological fitness be estimated?
A) Determine which individuals are strongest.
B) Determine which genotype is the commonest one in a given population.
C) Count the number of offspring produced by different individuals in a population.
D) Document how long different individuals in a population survive.

2. Which of the followings is NOT correct?
A) Aristotle – Father of biology.
B) Lamarck – Father of evolution
C) Linnaeus – Father of taxonomy
D) Mendel – Father of genetics

3. Which of the followings would not change the allele frequencies in a population?
A) Selfing.
B) Migration.
C) Mutation.
D) Genetic drift.

4. Why is genetic drift aptly named?
A) It is the ultimate source of genetic variation.
B) It occurs when populations drift into new habitats.
C) It causes directional change in the genetic composition of a population.
D) It causes allele frequencies to drift up or down randomly.

5. Which of the followings is not the paradigm of Darwinism?
A) Survival of the fittest.
B) Natural selection.
C) Common descent with modification.
D) Gradualism.

6. Of the following evolutionary forces, which would reduce the differences between populations?
A) Mutation.
B) Genetic drift.
C) Gene flow.
D) Inbreeding.

7. Which of the following species concepts emphasizes the species monophyly?
A) Biological Species Concept.
B) Recognition Species Concept.
C) Ecological Species Concept.
D) Phylogenetic Species Concept.

(背面仍有題目,請繼續作答)

8. Which mode of natural selection will maintain genetic polymorphisms?
A) positive selection.
B) negative selection.
C) balancing selection.
D) diversifying selection.

9. Homeostatic mechanisms that help regulate body weight,
A) operate as positive-feedback circuit.
B) control the storage and metabolism of glucose.
C) are regulated by a neuronal network function dependent of input from central nervous system.
D) are regulated by long term circuit, *ab* and *db* genes.

10. Regarding the evolutionary adaptation of vertebrate digestive system, which of the following is correct?
A) Non mammalian vertebrate generally have more specialized dentition.
B) Carnivorous vertebrate have small stomachs due to the high amount of protein from their prey.
C) Herbivores and omnivores have longer alimentary canal relative to their body size than do carnivores.
D) Mutualistic symbiosis exists in carnivores.

11. To adjust blood pressure independently in the capillaries of the gas-exchange a surface and in the capillaries of the general body circulation, an organism would need a(n)
A) open circulatory system.
B) lymphatic system.
C) two-chambered heart.
D) four chambered heart

12. The Bohrshift on the oxygen-hemoglobin dissociation curve is produced by changes in
A) the partial pressure of oxygen.
B) the partial pressure of carbon monoxide.
C) pH.
D) hemoglobin concentration.

13. What coefficients must be placed in the following blanks so that all atoms are accounted for in the products?

$$C_6H_{12}O_6 \longrightarrow \_\_\_\_\_\ C_2H_6O + \_\_\_\_\_\ CO_2$$

A) 1;2
B) 2;2
C) 1;3
D) 1;1

14. Which of the following is a hydrophobic material?
A) paper
B) table salt
C) wax
D) sugar

15. Which action could produce a carbonyl group?
A) the replacement of the -OH of a carboxyl group with hydrogen
B) the addition of a thiol to a hydroxyl
C) the addition of a hydroxyl to a phosphate
D) the replacement of the nitrogen of an amine with oxygen

16. The enzyme amylase can break glycosidic linkages between glucose monomers only if the monomers are the α form?
A) Glycogen, starch and amylopectin
B) Glycogen and cellulose
C) Cellulose and chitin
D) Starch and chitin

17. Which structure is common to plant and animal cells?
A) chloroplast
B) wall made of cellulose
C) central vacuole
D) mitochondrion

18. Which structure is not part of the endomembrane system?
A) Nuclear envelope
B) chloroplast
C) Golgi apparatus
D) Plasma membrane

19. Which cell would be best for studying lysosomes?
A) muscle cell
B) nerve cell
C) phagocytic white blood cell
D) leaf cell of a plant.

20. Which of the following factors would tend to increase membrane fluidity?
A) a greater proportion of unsaturated phospholipids
B) a greater proportion of saturated phospholipids
C) a lower temperature
D) a relatively high protein content in the membrane.

21. Which of the following results from a physical exchange between chromatids of homologous chromosomes?
A) chiasma
B) bivalent
C) tetrad
D) synapsis

22. In cats, black fur color is caused by an X-linked allele; the other allele at this locus causes orange color. The heterozygote is tortoiseshell. What kinds of offspring would you expect from the cross of a black female and an orange male?
A) tortoiseshell female; tortoiseshell male.
B) tortoiseshell female; black male.
C) orange female; black male.
D) black female; orange male.

23. Sex determination in mammals is due to the SRY region of the Y chromosome. An abnormality could allow which of the following to have a male phenotype?
A) Turner syndrome, 45, X
B) A person with one normal and one shortened deleted X
C) Translocation of SRY to an autosome of a 46, XX individual
D) Translocation of SRY to an autosome of a 46, XX individual

24. Given the parents AABBCc × AabbCc, assume simple dominance and independent assortment. What proportion of the progeny will be expected to phenotypically resemble the first parent?
A) 1/4
B) 1/8
C) 3/4
D) 3/8

25. How many Barr bodies would be present in white blood cells of an individual with karyotype 48, XXYY?
A) 0
B) 1
C) 2
D) 4

26. Two parents with blood types A and B have a child who has O blood type. What is the chance that their next child will be A?
A) 0
B) 1/2
C) 1/4
D) 1

27. A fellow student brought in a leaf to be examined. The leaf was dark green, thin, had stoma on the lower surface only, and had a surface area of 100 square meters. Where is the most likely environment where this leaf was growing?
A) the floor of a deciduous forest
B) a tropical rain forest
C) a large, still pond
D) a dry, sandy region

28. A plant developed a mineral deficiency after being treated with a fungicide. What is the most probable cause of the deficiency?
A) Active transport of minerals was inhibited.
B) Proton pumps reversed the membrane potential.
C) Mycorrhizal fungi were killed.
D) Mineral receptor proteins in the plant membrane were not functioning.

29. Active transport involves all of the following except the
A) transport of solute against a concentration gradient.
B) a specific transport protein in the membrane.
C) diffusion of solute through the lipid bilayer of a membrane.
D) hydrolysis of ATP.

30. The biological clock controlling circadian rhythms must ultimately
A) depend on environmental cues.
B) affect gene transcription.
C) speed up or slow down with increasing or decreasing temperature.
D) stabilize on a 24-hour cycle.

31. If you wanted to genetically engineer a plant to be more resistant to drought, increasing amounts of which of the following hormones might be a good first attempt?
A) abscisic acid
B) auxin
C) cytokinins
D) brassinosteroids

32. In order for a plant to initiate chemical responses to herbivory,
A) volatile "signal" compounds must be perceived.
B) phytoalexins must be released.
C) the plant must be directly attacked by an herbivore.
D) gene-for-gene recognition must occur.

33. The transduction pathway that activates systemic acquired resistance in plants is initially signaled by
A) salicylic acid.
B) antisense RNA.
C) red, but not far-red, light.
D) Pfr phytochrome.

34. In the communication link between a motor neuron and a skeletal muscle,
A) action potentials are possible on the skeletal muscle but not the motor neuron.
B) the motor neuron is considered the presynaptic cell and the skeletal muscle is the postsynaptic cell.
C) the motor neuron fires action potentials but the skeletal muscle is not electrochemically excitable.
D) the motor neuron is considered the postsynaptic cell and the skeletal muscle is the presynaptic cell.

35. If the concentration of potassium in the cytoplasm of a nerve cell with a resting membrane potential of -70 mV were elevated above normal, the new resting potential would
A) still be -70 mV.
B) be -69 mV or higher.
C) be -71 mV or lower.
D) be 0 mV.

36. Disruption of neural signaling can produce profound changes in mood and behavior. Cocaine exerts its effects by
A) blocking dopamine reuptake from synapses.
B) blocking serotonin reuptake from synapses.
C) preventing neurotransmitter vesicle fusion with presynaptic neuron membranes.
D) binding to the GABA receptor to enhance inhibitory neurotransmission.

37. If you were writing an essay, which part of the brain would be most active?
A) temporal and frontal lobes
B) parietal lobe
C) Broca's area
D) occipital lobe

38. The number of legs an insect has, the number of vertebrae in a vertebral column, or the number of joints in a digit (such as a finger) are all strongly influenced by
A) haploid genomes.
B) introns within genes.
C) heterogeneous genes.
D) *Hox* genes.

39. A researcher is trying to construct a molecular-based phylogeny of the entire animal kingdom. Assuming that none of the following genes is absolutely conserved, which of the following would be the best choice on which to base the phylogeny?
A) genes involved in chitin synthesis
B) collagen genes
C) genes involved in eye-lens synthesis
D) genes that cause radial body symmetry

40. While sampling marine plankton in a lab, a student encounters large numbers of fertilized eggs. The student rears some of the eggs in the laboratory for further study and finds that the blastopore becomes the mouth. The embryo develops into a trochophore larva and eventually has a true coelom. These eggs probably belonged to a(n)
A) Chordate
B) echinoderm.
C) mollusk.
D) arthropod.

41. The feeding mode of the extinct conodonts was
A) herbivory.
B) suspension feeding.
C) predation.
D) filter feeding.
42. The endoskeletons of most vertebrates are composed of calcified
A) cartilage.
B) silica.
C) dentin.
D) enamel.

43. Modern conservation biology increasingly aims at
A) protecting federally listed endangered species.
B) saving as much habitat as possible from development and exploitation.
C) sustaining biodiversity of entire ecosystems and communities.
D) maintaining genetic diversity in all species.

44. Parental protective behavior in turkeys is triggered by the cheeping sound of young chicks. What term best applies to this behavior?
A) sign stimulus
B) cognition
C) imprinting
D) classical conditioning

45. How might an ecologist test whether a species is occupying its realized or its fundamental niche?
A) Study the temperature range and humidity requirements of the species.
B) Observe if the niche size changes after the addition of nutritional resources to the habitat.
C) Remove a competitor species to see if the species expands its range.
D) Measure the change in reproductive success when the species is subjected to environmental stress.

46. Which statement describes how climate might change if Earth was 75% land and 25% water?
A) Terrestrial ecosystems would likely experience more precipitation.
B) Earth's daytime temperatures would be higher and nighttime temperatures lower.
C) Summers would be longer and winters shorter at midlatitude locations.
D) Earth would experience an unprecedented global warming.

47. Which of the following sets of measurements is the most useful when studying populations?
A) density, dispersion, and demographics of a population
B) gene frequency over time and the ratio of reproductive to nonreproductive individuals
C) annual precipitation averages and mean annual temperatures
D) minimum and maximum amounts of precipitation and annual temperature extremes

48. Which of the following best describes "game theory" as it applies to animal behavior?
A) The fitness of a particular behavior is influenced by other behavioral phenotypes in a population.
B) The total of all of the behavioral displays, both male and female, is related to courtship.
C) An individual in a population changes a behavioral phenotype to gain a competitive advantage.
D) The play behavior performed by juveniles allows them to perfect adult behaviors.

(背面仍有題目,請繼續作答)

49. Exponential growth of a population is represented by dN/dt =

A) $\frac{rN}{K}$

B) rN

C) $rN\frac{(N-K)}{K}$

D) $rN\frac{(K-N)}{K}$

50. Resource partitioning would be most likely to occur between
A) sympatric populations of a predator and its prey.
B) sympatric populations of species with similar ecological niches.
C) sympatric populations of a flowering plant and its specialized insect pollinator.
D) allopatric populations of the same animal species.

51. Which of the following locations is the reservoir for nitrogen in the nitrogen cycle?
A) atmosphere
B) sedimentary bedrock
C) fossilized plant and animal remains (coal, oil, and natural gas)
D) plant and animal biomass

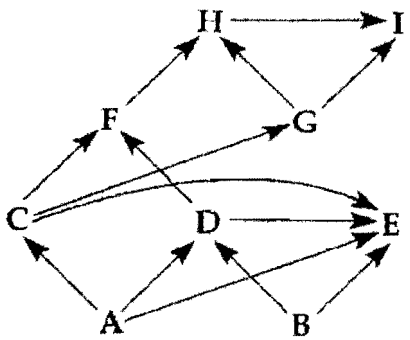

Diagram of a food web (arrows represent energy flow and letters represent species)

52. If the figure above represents a terrestrial food web, the combined biomass of C + D would probably be
A) greater than the biomass of A.
B) less than the biomass of H.
C) greater than the biomass of B.
D) less than the biomass of A + B.

53. Which of the following is true about the current research regarding forest fragmentation?
A) Fragmented forests support a greater biodiversity because they result in the combination of forest-edge species and forest-interior species.
B) Fragmented forests support a lesser biodiversity because the forested-adapted species leave, and only the edge and open-field species can occupy fragmented forests.
C) Fragmented forests are the goal of conservation biologists who design wildlife preserves.
D) Harvesting timber that results in forest fragmentation results in less soil erosion.

54. "How do seed-eating animals affect the distribution and abundance of the trees?" This question
A) would require an elaborate experimental design to answer.
B) would be difficult to answer because a large experimental area would be required.
C) would be difficult to answer because a long-term experiment would be required.
D) All options are correct.

Four major stages of cellular respiration are: **(for question 55 and 56)**
A) pyruvate oxidation, B) oxidative phosphorylation: electron transport and chemiosmosis, C) glycolysis, and D) citric acid cycle.
55. What is the first stage of cellular respiration?
A) A.
B) B.
C) C.
D) D.

56. ATP synthase is involved in which stage?
A) A.
B) B.
C) C.
D) D.

There are three major phases in the Calvin cycle of photosynthesis. **(for question 57 - 58)**
A) reduction , B) carbon fixation, and C) regeneration
57. A three-carbon sugar (Glyceraldehyde-3-phosphate or G3P) could be generated in which phase(s)?
A) A.
B) B.
C) C.
D) A and C.

58. What is the sequence of the Calvin cycle?
A) A-B-C
B) C-A-B
C) B-A-C
D) C-B-A

59. What biotechnology uses the "dideoxy chain termination" method?
A) Polymerase Chain Reaction (PCR)
B) Southern blotting.
C) DNA sequencing.
D) Gel electrophoresis.

60. The ability of one person to produce over a million different antibody molecules does not require over a million different genes; rather, this wide range of antibody production is due to
A) rearrangements of cytosolic proteins in the thymus cells.
B) alternative splicing of exons after transcription.
C) increased rate of mutation in the RNA molecules.
D) DNA rearrangements.

(背面仍有題目,請繼續作答)

61. An example of antagonistic hormones controlling homeostasis is
A) progestins and estrogens in sexual differentiation.
B) thyroxine and parathyroid hormone in calcium balance.
C) epinephrine and norepinephrine in fight-or-flight responses.
D) insulin and glucagon in glucose metabolism.

62. During a stressful interval
A) the calcium levels in the blood are increased due to actions of two antagonistic hormones, epinephrine and norepinephrine.
B) the alpha cells of islets secrete insulin and simultaneously the beta cells of the islets secrete glucagon.
C) TSH stimulates the adrenal cortex and medulla to secrete acetylcholine.
D) ACTH stimulates the adrenal cortex, and neurons of the sympathetic nervous system stimulate the adrenal medullA)

63. Yearly vaccination of humans for influenza viruses is necessary because
A) flu leads to autoimmune disorders.
B) rapid mutation in flu viruses alters the surface proteins in infected host cells.
C) surviving the flu one year exhausts the immune system to nonresponsiveness the second year.
D) flu can generate anaphylactic shock.

64. Fertilization of an egg without activation is most like
A) placing the key in the ignition of a car but not starting the engine.
B) resting during halftime of a basketball game.
C) preparing a pie from scratch and baking it in the oven.
D) walking to the cafeteria and eating lunch.

65. The "slow block" to polyspermy is due to
A) a transient voltage change across the membrane.
B) the consumption of yolk protein.
C) the jelly coat blocking sperm penetration.
D) formation of the fertilization envelope.

66. Which of the major senses responds by means of a very large gene family?
A) taste
B) smell
C) vision
D) hearing

67. Duchenne muscular dystrophy is a sex-linked condition in humans that results from abnormal dystrophin protein. The condition results in progressive weakening and atrophy of muscles, usually beginning with the legs. This is most consistent with which of the following?
A) an abnormality of actin protein distribution
B) a structural abnormality of the sarcomere
C) a disturbance of smooth muscle
D) an abnormality of calcium channels

68. The cells lining the air sacs in the lungs make up a
A) cuboidal epithelium.
B) simple squamous epithelium.
C) stratified squamous epithelium.
D) simple columnar epithelium.

69. Endothermy
A) is a characteristic of most animals.
B) involves production of heat through metabolism.
C) is only seen in mammals.
D) is only seen in insects.

70. Where and from what compound(s) is urea produced?
A) liver from NH_3 and CO_2
B) liver from glycogen
C) kidneys from glucose
D) bladder from uric acid and H_2O

71. In animals, nitrogenous wastes are produced mostly from the catabolism of
A) starch and cellulose.
B) triglycerides and steroids.
C) proteins and nucleic acids.
D) phospholipids and glycolipids.

72. In correct chronological order, the three phases of the uterine cycle are
A) menstrual → ovulation → luteal
B) follicular → luteal → secretory
C) menstrual → proliferative → secretory
D) follicular → ovulation → luteal

73. A primary response by the Leydig cells in the testes to the presence of luteinizing hormone is an increase in the synthesis and secretion of
A) inhibin.
B) testosterone.
C) oxytocin.
D) prolactin.

74. A researcher lyses a cell that contains nucleic acid molecules and capsomeres of tobacco mosaic virus (TMV) The cell contents are left in a covered test tube overnight. The next day this mixture is sprayed on tobacco plants. Which of the following would be expected to occur?
A) The plants would develop some but not all of the symptoms of the TMV infection.
B) The plants would develop symptoms typically produced by viroids.
C) The plants would develop the typical symptoms of TMV infection.
D) The plants would not show any disease symptoms.

75. Which of the following is the most probable fate of a newly emerging virus that causes high mortality in its host?
A) It is able to spread to a large number of new hosts quickly because the new hosts have no immunological memory of them.
B) The new virus replicates quickly and undergoes rapid adaptation to a series of divergent hosts.
C) A change in environmental conditions such as weather patterns quickly forces the new virus to invade new areas.
D) The newly emerging virus will die out rather quickly or will mutate to be far less lethal.

76. What is proteomics?
A) the linkage of each gene to a particular protein
B) the study of the full protein set encoded by a genome
C) the totality of the functional possibilities of a single protein
D) the study of how amino acids are ordered in a protein

77. In order to determine the probable function of a particular sequence of DNA in humans, what might be the most reasonable approach?
A) Prepare a knockout mouse without a copy of this sequence and examine the mouse phenotype.
B) Genetically engineer a mouse with a copy of this sequence and examine its phenotype.
C) Look for a reasonably identical sequence in another species, prepare a knockout of this sequence in that species, and look for the consequences.
D) Prepare a genetically engineered bacterial culture with the sequence inserted and assess which new protein is synthesized.

78. Jams, jellies, preserves, honey, and other foodstuffs with high sugar content hardly ever become contaminated by bacteria, even when the food containers are left open at room temperature. This is because bacteria that encounter such an environment
A) undergo death by plasmolysis.
B) are unable to metabolize the glucose or fructose, and thus starve to death.
C) experience lysis.
D) are obligate anaerobes.

79. Chloramphenicol is an antibiotic that targets prokaryotic (70S) ribosomes, but not eukaryotic (80S) ribosomes. Which of these questions stems from this observation, plus an understanding of eukaryotic origins?
A) Can chloramphenicol also be used to control human diseases that are caused by archaeans?
B) Can chloramphenicol pass through the capsules possessed by many cyanobacteria?
C) If chloramphenicol inhibits prokaryotic ribosomes, should it not also inhibit mitochondrial ribosomes?
D) Why aren't prokaryotic ribosomes identical to eukaryotic ribosomes?

80. An Okazaki fragment has which of the following arrangements?
A) 5' DNA to 3'
B) 3' RNA nucleotides, DNA nucleotides 5'
C) 5' RNA nucleotides, DNA nucleotides 3'
D) DNA polymerase I, DNA polymerase III

81. In *E. coli*, there is a mutation in a gene called *dnaB* that alters the helicase that normally acts at the origin. Which of the following would you expect as a result of this mutation?
A) Replication will require a DNA template from another source.
B) No proofreading will occur.
C) Replication will occur via RNA polymerase alone.
D) No replication fork will be formed.

82. In eukaryotes there are several different types of RNA polymerase. Which type is involved in transcription of mRNA for a globin protein?
A) RNA polymerase III
B) ligase
C) RNA polymerase I
D) RNA polymerase II

83. Two potential devices that eukaryotic cells use to regulate transcription are
A) histone amplification and DNA acetylation.
B) DNA amplification and histone methylation.
C) DNA acetylation and histone amplification.
D) DNA methylation and histone modification.

84. Of the following, which is the most current description of a gene?
A) a DNA sequence that is expressed to form a functional product: either RNA or polypeptide
B) a unit of heredity that causes formation of a phenotypic characteristic
C) a DNA—RNA sequence combination that results in an enzymatic product
D) a discrete unit of hereditary information that consists of a sequence of amino acids

85. The lactose operon is likely to be transcribed when
A) the cAMP level is high and the lactose level is low.
B) the cyclic AMP and lactose levels are both high within the cell.
C) the cyclic AMP levels are low.
D) there is glucose but no lactose in the cell.

86. Which of the following statements correctly describes the alternation of generations in a plant life cycle?
A) Diploid gametophytes that produce gametes by meiosis alternate with diploid sporophytes that produce spores by mitosis.
B) Diploid gametophytes that produce spores by mitosis alternate with haploid sporophytes that produce gametes by meiosis.
C) Diploid sporophytes that produce spores by meiosis alternate with haploid gametophytes that produce gametes by mitosis.
D) Diploid sporophytes that produce gametes by meiosis alternate with haploid sporophytes that produce gametes by mitosis.

87. Which of the following features is unique to them and helps account for the success of angiosperms?
A) dominant gametophytes
B) embryos enclosed within seed coats
C) fruits enclosing seeds
D) wind pollination

(背面仍有題目,請繼續作答)

88. Which of the following are most responsible for supporting mature, nongrowing parts of the plant?
A) collenchyma cells
B) parenchyma cells
C) sieve-tube elements
D) tracheids and vessel elements

89. The functional role of sporopollenin is primarily to
A) assist in spore dispersal.
B) provide nutrients to spores.
C) reduce spore dehydration.
D) repel toxic chemicals.

90. Among ascomycetes, which of these correctly distinguishes ascospores from conidia?
A) Ascospores are haploid, whereas conidia are diploid.
B) Ascospores are produced only by meiosis, whereas conidia are produced only by mitosis.
C) Ascospores have undergone genetic recombination during their production, whereas conidia have not.
D) Ascospores will germinate into haploid hyphae, whereas conidia will germinate into diploid hyphae.

91. Which of the following best describes the physical relationship of the partners involved in lichens?
A) Algal cells and fungal cells mix together without any apparent structure
B) Algal cells are surrounded by fungal hyphae.
C) Fungal cells are enclosed within algal cells.
D) Lichen cells are enclosed within fungal cells.

92. Which of the following is a true statement about angiosperm carpels?
A) Carpels are features of the gametophyte generation.
B) Carpels are structures that directly produce male gametes.
C) Carpels consist of highly modified microsporangia.
D) Carpels surround and nourish the female gametophyte.

93. A botanist discovers a new species of plant in a tropical rain forest. After observing its anatomy and life cycle, he notes the following characteristics: flagellated sperm, xylem with vessel elements, separate gametophyte and sporophyte generations with the sporophyte dominant. This plant is probably most closely related to
A) ferns.
B) flowering plants.
C) gymnosperms.
D) mosses.

94. Which of the following would be most helpful in determining the correct classification of either a lycophyte sporophyte or a pterophyte sporophyte?
A) whether it has microphylls or megaphylls
B) whether or not it has true leaves
C) whether or not it has seeds
D) whether or not it has chlorophyll a

95. The mathematical expression for the change in free energy of a system is $\Delta G = \Delta H - T\Delta S$. Which of the following is correct?
A) ΔS is the change in enthalpy, a measure of randomness.
B) ΔH is the change in entropy, the energy available to do work.
C) ΔG is the change in free energy.
D) T is the temperature in degrees Celsius.

96. Choose the pair of terms that correctly completes this sentence: Catabolism is to anabolism as _____ is to _____.
A) exergonic; spontaneous
B) exergonic; endergonic
C) free energy; entropy
D) work; energy

97. Which of the following is true of transcription factors?
A) They regulate the synthesis of DNA in response to a signal.
B) They transcribe ATP into cAMP.
C) They initiate the epinephrine response in animal cells.
D) They control gene expression.

98. A drug designed to inhibit the response of cells to testosterone would almost certainly result in which of the following?
A) lower cytoplasmic levels of cAMP
B) an increase in receptor tyrosine kinase activity
C) a decrease in transcriptional activity of certain genes
D) an increase in cytosolic calcium concentration

99. During which phase of mitosis do the chromatids become chromosomes?
A) telophase
B) anaphase
C) prophase
D) metaphase

100. Besides the ability of some cancer cells to overproliferate, what else could logically result in a tumor?
A) metastasis
B) changes in the order of cell cycle stages
C) lack of appropriate cell death
D) inability to form spindles