2\textsuperscript{nd} Term - Helping Questions for Final Exam of Bio 110

1) ___________ requires a continuous supply of O\textsubscript{2} and the disposal of CO\textsubscript{2}.
   A) Transpiration
   B) Cellular respiration
   C) Tissue respiration
   D) Photosynthesis
   E) A and C are correct choices

2) ______ and other small animals use their entire outer skin as a gas exchange organ.
   A) Grasshoppers
   B) Flatworms
   C) Roundworms
   D) Earthworms
   E) B and C choices are correct

3) The _______________ system, which is an extensive system of branching internal tubes, is usually used only by arthropods for gas exchange.
   A) lymphatic
   B) tracheal
   C) blood
   D) immune
   E) secretory

4) ___________ in aquatic animals increase surface to volume ratio, therefore increase surface area for gas exchange O\textsubscript{2} absorbed and CO\textsubscript{2} released.
   A) Tracheal surfaces
   B) Gills
   C) Respiratory surfaces
   D) Simple lungs
   E) C and D are correct choices

5) Gas exchange in fish is enhanced by ventilation of the gills and by the _______________ flow of water and blood.
   A) exact
   B) different
   C) analogous
   D) countercurrent
   E) negative

6) The insect tracheal system uses tiny branching tubes that reduce water loss and air is piped ___________ to the cells.
   A) indirectly
   B) vigorously
   C) directly
   D) simultaneously
   E) mutually

7) The mucus in the trachea traps dust, pollen grains, and other contaminants where cilia move the mucus upward to the ___________ where it is swallowed or spitted.
   A) larynx
   B) pharynx
C) epiglottis
D) esophagus
E) nostrils

8) **Land vertebrates have** ---------------------.
   A) single circulation
   B) pulmonary circulation only
   C) heart circulation only
   D) double circulation
   E) systemic circulation only

9) **_______ animals need high blood pressure to support more efficient blood movement.**
   A) Ectothermic
   B) Endothermic
   C) Aquatic
   D) Poikilothermic
   E) Exothermic

10) Erythropoietin hormone (EPO) regulates red blood cell production and sometimes is misused by athletes, this might cause______________.
    A) heart failure
    B) blood clotting
    C) stroke
    D) death
    E) all of the above choices are correct

11) **________ is the process by which animals maintain an internal temperature within tolerable range.**
    A) Excretion
    B) Thermoregulation
    C) Sweating
    D) Osmoregulation
    E) Defecation

12) **Endothermic animals mostly warm their bodies by heat generated from their own** ____________.
    A) excretion
    B) homeostasis
    C) metabolism
    D) sweating
    E) circulation

13) **Heat exchange with the environment may occur through** ---------------------
    A) convection.
    B) radiation.
    C) conduction.
    D) evaporation.
    E) all of the above choices are correct.

14) **Honey bees survive winters by clustering and ________ so that the metabolic activity of all bees together generates enough heat to keep the cluster alive.**
    A) resting
B) hiding  
C) shivering  
D) sleeping  
E) b+d are correct choices

15) In _________ adaptation of thermoregulation, warm and cold blood flow in opposite directions in two adjacent blood vessels.
   A) active  
   B) inhibitory  
   C) countercurrent  
   D) functional  
   E) inactive

16) Both endotherms and ectotherms control body temperature through _________ responses including migration, bathing and movement to the sun or shade.
   A) structural  
   B) functional  
   C) morphological  
   D) behavioral  
   E) geographical

17) Osmoconfermers are animals having the same internal _________ concentration as seawater.
   A) blood  
   B) basic  
   C) solute  
   D) acid  
   E) neutral

18) Which of the following statements regarding freshwater fish is TRUE?
   A) Freshwater fish frequently drink to obtain salt ions.  
   B) Freshwater fish use their gills to actively take up salt ions.  
   C) Freshwater fish lose water through their gills by osmosis.  
   D) Freshwater fish do not produce urine.  
   E) Freshwater fish cannot directly exchange water with the environment by osmosis.

19) Most animals get rid of nitrogenous waste like ammonia, urea and _________ from their bodies.
   A) phosphoric acid  
   B) nitric acid  
   C) uric acid  
   D) nitrous oxide  
   E) urea

20) _________ is a process by which water and all other molecules small enough to be forced through the capillary wall enter the nephron tubule from the glomerulus under forces of blood pressure.
   A) Absorption  
   B) Excretion  
   C) Filtration  
   D) Secretion  
   E) Reabsorption
21) Which of the following statements regarding asexual reproduction is TRUE?
   A) Asexual reproduction involves only a single individual (organism).
   B) Asexual reproduction creates an individual that is a genetic copy of one parent.
   C) Asexual reproduction does not involve gametes.
   D) Asexual reproduction does not generate variations.
   E) All are true of asexual reproduction.

22) Nearly all terrestrial animals exhibit __________ fertilization, which is an adaptation that enables sperm to reach an egg in a dry environment.
   A) external
   B) mixed
   C) internal
   D) asexual
   E) none of the above are correct choices

23) Signals from the brain to the hypothalamus, secretes the release hormone that regulates the production of the follicle-stimulating hormone (FSH) and luteinizing hormone (LH) from the __________.
   A) gonads
   B) anterior pituitary
   C) prostate gland
   D) bulbourethral gland
   E) posterior pituitary

24) In humans, male spermatogenesis occurs in the seminiferous tubules, where primary spermatocytes are formed by mitosis divide by __________ to produce secondary spermatocytes.
   A) meiosis II
   B) fractionation
   C) meiosis I
   D) disintegration
   E) duplication

25) Estrogen and progesterone are produced by ____________.
   A) anterior pituitary
   B) corpus luteum
   C) posterior pituitary
   D) hypothalamus
   E) ovarian follicle

26) Which of the following statements regarding spermatogenesis is TRUE?
   a) Meiosis in spermatogenesis produces one cell.
   b) Meiosis in spermatogenesis produces two cells.
   c) Meiosis in spermatogenesis produces four cells.
   d) Mitosis in spermatogenesis produces two cells.
   e) Mitosis in spermatogenesis produces four cells.

27) Which of the following statements regarding oogenesis is TRUE?
   a) Meiosis in oogenesis produces one mature egg.
   b) Meiosis in oogenesis produces two mature eggs.
   c) Meiosis in oogenesis produces four mature eggs.
d) Mitosis in oogenesis produces one mature egg.
e) Mitosis in oogenesis produces two mature eggs.

28) __________ is the formation of an egg.
a) Spermatogenesis
b) Oogenesis
c) Embryogenesis
d) Organogenesis
e) None of the above choices are correct

29) __________ involves inheritance of unique combination of genes from two parents.
A) Regeneration
B) Fragmentation
C) Budding
D) Sexual reproduction
E) Binary fission

30) Which statement regarding sexual reproduction is FALSE?
A) Offsprings are similar to parents, but show variations in traits.
B) Involves inheritance of unique sets of genes from two parents.
C) Includes the development of fertilized eggs.
D) Increases genetic variation than is asexual reproduction.
E) None of the above choices is false.

31) To prepare for cell division, the _______ becomes highly compact, and the _______ are visible with a microscope.
A) protein - DNA
B) chromatin – chromosomes
C) DNA – RNA
D) chromosomes - DNA
E) nucleus – genes

32) Cytokinesis is the __________
A) same process in plant and animal cells.
B) the division of cytoplasm and the formation of two cells.
C) the first stage of mitosis.
D) the middle stage of mitosis.
E) the movement of kinetochores.

33) __________ is the structure across a dividing plant cell that signals the location of new plasma membranes and cell walls.
A) Centromere
B) Centrosome
C) Cell plate
D) Kinetochore
E) Cleavage furrow

34) DNA packing tends to _______ gene expression.
A) prevent
B) allow
C) facilitate
D) stimulate
35) Replication of DNA is considered semiconservative because each old strand serves as a __________ for the formation of a new strand.
   A) template
   B) fragment
   C) catalyst
   D) copy
   E) pair

36) The backbones of the DNA double helix are made up of ________________
   A) ribose and phosphates.
   B) deoxyribose and phosphate.
   C) ribose and nitrogenous bases.
   D) deoxyribose and nitrogenous bases.
   E) deoxyglucose and phosphate.

37) If one strand of a DNA molecule has the base sequence ATTGCAT, its complementary strand will have the sequence:
   A) ATTGCAT.
   B) ATTGCAA.
   C) TAACGTA.
   D) GCCATGC.
   E) CGGTACG.

38) __________ is a mass of genetic material composed of DNA and proteins that condense to form chromosomes during eukaryotic cell division.
   A) RNA
   B) Gene
   C) Plasmid
   D) Chromatin
   E) Histone

39) Replicate copies of each chromosome are called __________ and are joined by the _____________.
   A) homologues/centromere.
   B) sister chromatids/kinetochore.
   C) sister chromatids/centromere.
   D) homologues/kinetochore.
   E) sister chromatids/spindle.

40) In animal cells, cytokinesis takes place by the _____________.
   A) membrane fusion
   B) cleavage furrow
   C) formation of cell plate
   D) cytoplasmic contraction
   E) binary fission